EBERHARD KARLS
UNIVERSITÄT
TÜBINGEN

European
Historical
Economics
Society

Faculty of Economics and Social Sciences
Department of Economic History

European Historical Economics Society Conference 2017

12th European Historical Economics Society Conference

Neue Aula - University of Tübingen

1st and 2nd September 2017

Programme Committee
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PROGRAMME - FRIDAY, SEPTEMBER 1ST 2017

08.00 - 09.00	Registration
09.00 - 10.00	**Welcome & Keynote lecture by Prof. Jane Humphries**
10.00 - 10.30	Coffee break
10.30. - 12.00	**Session I** Risk and Growth - *Audimax* Human Capital I - *Lecture Hall 2* Agriculture - *Lecture Hall 5* Money Markets I - *Lecture Hall 6* Resources and Crime - *Lecture Hall 10* Taxes - *Seminar Room 225*
12.00 - 13.00	**Dissertation Session**
13.00 - 14.00	Lunch
14.00 - 15.00	**Presentation in Walking I**
15.00 - 16.30	**Session II** Gender - *Audimax* Labor Market and Demography - *Lecture Hall 2* Human Capital and Human Growth - *Lecture Hall 5* Market Integration - *Lecture Hall 6* Money Markets and Crises - *Lecture Hall 10* Resources I - *Seminar Room 225* Taxes and Trade - *Seminar Room 236*
16.30 - 17.00	Coffee break
17.00 - 18.30	**Session III** Human Capital II - *Audimax* Business - *Lecture Hall 2* Geography - *Lecture Hall 5* Migration and Ethic Diversity - *Lecture Hall 6* Money Markets and the Fisc - *Lecture Hall 10* Africa and South Asia - *Seminar Room 225* Technology - *Seminar Room 236*
18.30 - 20.00	Social Event
20.00	Conference Dinner

PROGRAMME - SATURDAY, SEPTEMBER 2ND 2017

09.00 - 10.30	**Session IV** Growth I - *Audimax* Capitalism - *Lecture Hall 2* Inequality I - *Lecture Hall 5* Migration and Regional Development - *Lecture Hall 6* Political Economy I - *Lecture Hall 10* Selectivity - *Seminar Room 225* Trade I - *Seminar Room 236*
10.30 - 11.00	Coffee break
11.00 - 12.30	**Session V** Growth II - *Audimax* Consumption and Growth - *Lecture Hall 2* Inequality II - *Lecture Hall 5* Mobility - *Lecture Hall 6* Political Economy II - *Lecture Hall 10* Stock Markets I - *Seminar Room 225* Trade II - *Seminar Room 236*
12.30 - 13.30	Lunch
13.30 - 14.30	**Presentation in Walking I**
14.30 - 16.00	**Session VI** Demography - *Audimax* Health - *Lecture Hall 2* Inequality III - *Lecture Hall 5* Money Markets II - *Lecture Hall 6* Political Economy III - *Lecture Hall 10* Stock Markets II - *Seminar Room 225* Violence - *Seminar Room 236*
16.00 - 16.30	Coffee break
16.30 - 18.00	**Session VII** Heigth and Food - *Audimax* Institutions - *Lecture Hall 2* Wages and Growth - *Lecture Hall 5* Money Markets III - *Lecture Hall 6* Religion and Nation - *Lecture Hall 10* Stock Markets III - *Seminar Room 225*
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Peng Zhou, Cardiff University

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Jörg Baten, University of Tübingen

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Christopher L. Colvin, Queen's University Belfast
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Elena Korchmina, New York University in Abu Dhabi

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Maria Stanfors, Lund University

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Alexandra de Pleijt, Utrecht University
Jörg Baten, University of Tübingen

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Björn Eriksson, Lund University
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Ulf Christian Ewert, University Münster
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Alfredo García-Hiernaux, Universidad Complutense de Madrid

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Felix Roesel, Ifo Institute-Leibniz Institute for Economic Research

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Max-Stephan Schulze, London School of Economics
Paul Caruana Galizia, Legatum Institute London

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Lucie Coufalová, Masaryk University
Libor Žídek, Masaryk University

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Graeme G. Acheson, University of Stirling
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Lars Boerner, Humboldt University Berlin
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Mauro Rota, University of Rome
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Enrique Jorge-Sotelo, London School of Economics

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Sarah Gust, University Tübingen
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Ousmène Jacques Mandeng, London School of Economics

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Nicholas Meinzer, University Tübingen

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Christian Ochsner, Ifo Institute–Leibniz Institute for Economic Research at the University of Munich e.V. - Dresden Branch

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Jouni Helske, University of Oxford
Harri Högmander, University of Jyväskylä

The making of a growth-promoting autocracy: the role of merit-based bureaucracy and lessons from the mandarins (1776-1911)

Xun Yan, The World Bank
Colin L. Xu, The World Bank

GROWING, SHRINKING AND LONG RUN ECONOMIC PERFORMANCE: HISTORICAL PERSPECTIVES ON ECONOMIC DEVELOPMENT

Stephen Broadberry John Wallis

Economies can experience episodes of negative growth of per capita GDP (i.e. “shrinking”) as well as positive per capita GDP growth (i.e “growing”). To date, most work on long run economic performance has focused on “growing”, but recent work for the post-1950 period has suggested that economies vary as least as much in how they “shrink” as in how they grow. Despite these findings, there has been little research into why poor societies shrink so often or by so much. Furthermore, economic historians have not so far systematically investigated the possibility that improved long run economic performance could have been due to less shrinking rather than faster growing, despite the widespread acceptance of the idea that living standards increased only slowly during the Industrial Revolution. In this paper, we draw on recently available annual series of GDP per capita reaching back to the medieval period to show that economic historians, as well as development economists, need to explain a reduction in the rate and frequency of shrinking rather than an increase in the rate of growing, if they are to understand economic performance over the long run.

The key empirical findings reported here can be summarised as follows: (1) In most of the world since 1950, and historically for today’s countries where data are available back to the thirteenth century, growing rates and shrinking rates have been high and variable. (2) When average growing rates have been high, average shrinking rates have also typically been high. Similarly, when average growing rates have been low, average shrinking rates have been low. (3) The improvement of economic performance since the 13th century has occurred primarily because the frequency and rate of shrinking have both declined, rather than because the growing rate has increased. (4) Indeed, as long run economic performance has improved over time, the short run rate of growing has normally declined rather than increased, but the frequency of growing has increased.

Despite this important role for a reduction in the rate and frequency of shrinking in the transition to modern economic growth in today’s mature developed economies as well as in later developing countries, most analysis of the process of economic development has hitherto focused on increasing the rate of growing. Here, we make a start on redressing the balance by analysing the forces making for a reduction in shrinking, including (1) demography (2) war and peace (3) economic structure (4) technological change and (5) institutions. Our historical analysis points to institutional change as the key common factor behind the transition to modern economic growth.

Notes

Late Marriage as a Contributor to the Industrial Revolution in England

James Foreman-Peck
Peng Zhou

Hajnal identified a distinctive European marriage pattern: the late age at first marriage of females in western Europe by 1500, and the high proportion of females remaining celibate. This 'low pressure' European demographic regime was later linked to precocious European economic growth. Yet European countries with the most extreme forms of the marriage pattern did not become the most economically advanced in these years. Moreover, many other causal influences compete to explain European economic growth. The purpose of this paper is to show that these concerns about the role of the marriage pattern in English economic development can be addressed by estimating an identified structural model. The test is whether, without this nuptiality pattern, the Industrial Revolution, here defined as a sustained rise in real wages, would have occurred when it did.

We provide new historical evidence consistent with one vital element of the explanation: the association of late marriage age with human capital accumulation. The following figure illustrates the conceptual framework of our dynamic, stochastic general equilibrium model constructed from microeconomic rationality principle. We go on to show that the model, consistent with the long but unbalanced or fragmentary demographic and economic time series available for England, can explain the onset of the Industrial Revolution. Growth is triggered by the high mortality of the fourteenth century and the subsequent re-balancing of power that broke the feudal system. In the model the gradual accumulation of human capital eventually launches a strong growth in real wages. The merit of our identified structural model is that it can support counterfactuals implied by our central hypothesis, and the simulated method of moments estimation permits a closer connection between theory and data than simple calibration allows.

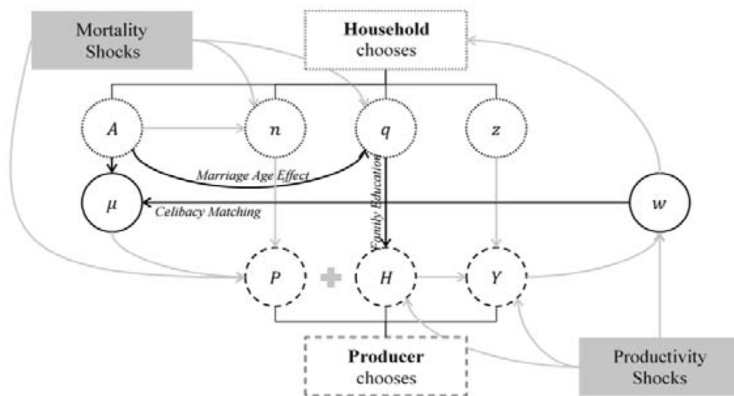


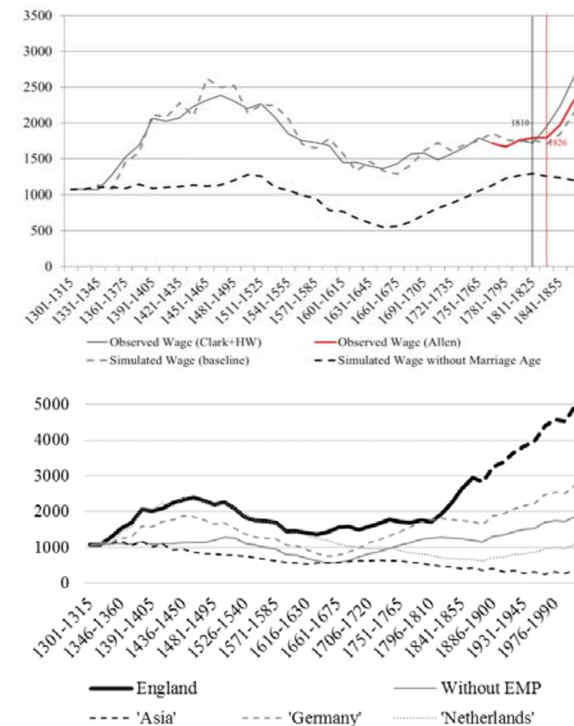
Figure notes: A: female marriage age, n: target number of children, q: target quality of children, z: consumption; P: aggregate population, H: aggregate human capital, Y: aggregate output, w: wage/income; μ: celibacy rate determined by A and w.

The following figure shows how well our structural model can match the long time-series wage data among others. A simulation based on this model also shows that, without the contribution of late marriage to human capital accumulation, real wages would not have risen strongly in the early nineteenth century and would have been about half the level actually achieved.

To assess the capability of the model to explain the growth experiences in other economies, we simulate the model by re-calibrating the parameters and changing the path of shocks. The simulations are not intended to match exactly other countries' growth of real wages. Rather, the purpose is to show how the English economy might have deviated from the actual historical path. Simulating a non-European environment with a low marriage age and low real wages that we term 'Asia', we broadly follow Jones (1981) in the model adjustments.

Under these conditions the simulated model of the English economy yields a real wage that is very low and that barely rises at all until the last decade of the twentieth century. Female marriage age remains below 20 and population oscillates wildly. In the first half of the seventeenth century the Netherlands was probably the most productive economy in the world. Then the country experienced a series of strong negative productivity shocks from 1650 to around 1820.

We show that, had England been subject to similarly timed shocks, real wages would have fallen as they did in the Netherlands. Germany's economy may have been more constrained by guild power than England's; the production function then was less efficient. The English simulation with this 10 percent reduction in efficiency shows no increase in real wages until after 1870.



The productivity race in industry (1870-1935): Empirical evidence on the role of energy in labor productivity growth

Hana Nielsen

Sofia Henriques

Paul Warde

Astrid Kander

The major aim of this paper is to analyze energy use and particularly energy productivity in some of the major manufacturing processes. Energy, as one of factors of production and substitute to labor, has often been neglected in various productivity benchmark studies. It is the aim of this paper to further investigate this relationship between energy and labor productivity, with a specific focus on the manufacturing industries across Europe and the US. The paper consists of three major parts. First, we discuss the overall developments of energy intensity of various manufacturing processes. Second, we analyze and compare the levels of energy productivity trends in relation to other factors of production. Last, we calculate the energy/labor ratio and estimate the annual compound growth rates in labor productivity and in the energy/labor ratio.

The preliminary results show that some goods, such as sugar and pig iron, the staple goods of the first industrialization, show remarkable rates of energy intensity declines and very little cross-country variations by 1935. If we compare the dispersion of labor and energy productivity, it is also clear that energy productivity shows far lower disparities in cross-country comparisons than is the case of labor productivity. For the production of pig iron, for example, the energy productivity gap between the most and least efficient country in our sample was just 113% in 1913. Although this may seem like a significant difference, the labor productivity gap in the pig iron smelting was far larger.

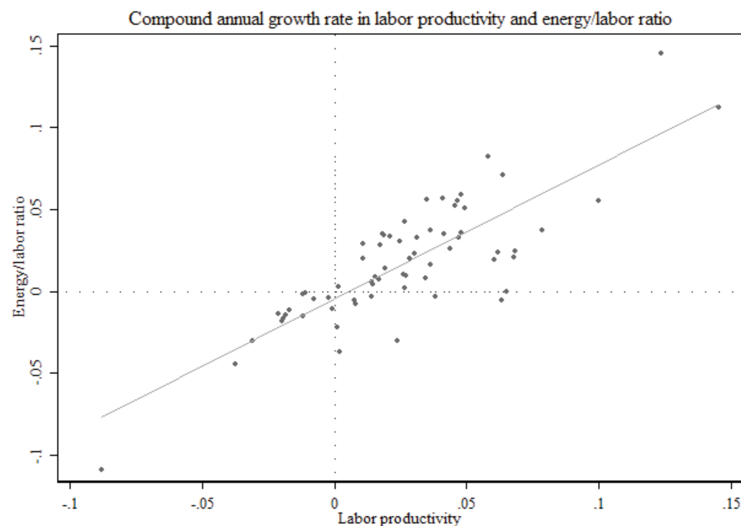


Figure 1: Compound annual growth rate in energy/labor ratio and labor productivity

Finally, we calculate the energy use relative to labor for various productive sectors. This ratio (energy/labor) relates to the amount of energy used (GJ) per one industrial worker in the specific sector. The results show a very constant pattern of energy/labor ratio growth, and an average elasticity of the energy/labor ratio in respect to labor productivity close to one. Importantly, disaggregating our data into various manufacturing sectors or time periods still yields very similar results (Figures 1 and 2). This is an indication that much of the technical change that occurred between 1870 and 1935 was largely labor-saving but energy-using. In a world of constantly rising labor costs, the technical innovation was thus more oriented towards labor productivity growth rather than saving energy. We find that increasing labor productivity is also accompanied by a rising energy/labor ratio. The near unit elasticity suggests that for an additional percentage point of labor productivity growth, the energy used per labor also grew by one percentage point on average. The paper relates these findings to a similar study of post-WWII developments, which finds that technical change was largely of energy-using and labor-saving character between 1950 and 2012.

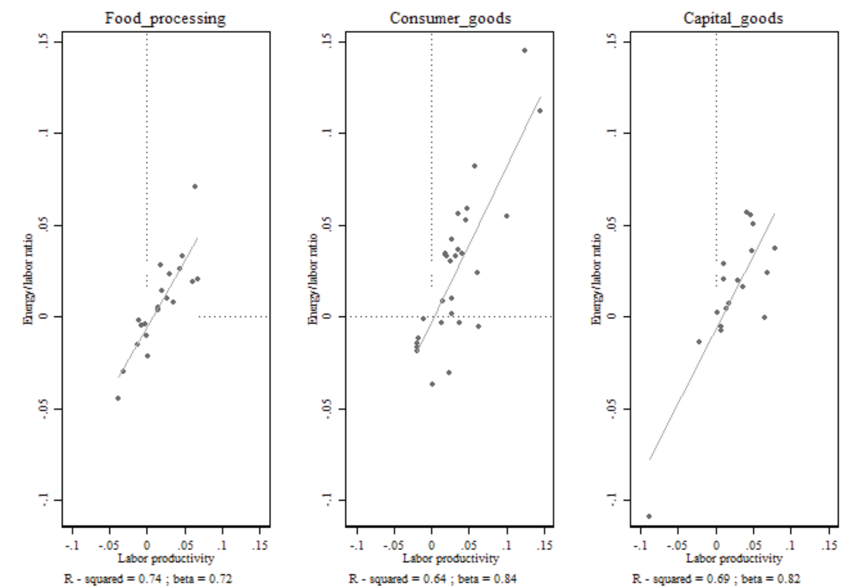


Figure 2: Compound annual growth rate in energy/labor ratio and labor productivity by manufacturing sector

Colonial human capital, technology and African development. The case of Italian Libya, 1920-2000

Mattia C.
Bertazzini

A vast literature has emphasized the role of colonial investments in shaping the developmental trajectories of former colonies. Despite this increased interest, little attention has been paid to investments in agriculture. In particular, with respect to settler economies, the existing scholarly work has presented a contradictory picture which, on the one hand, emphasizes the positive effect of skills and technological transfers while, on the other, it stresses the negative impact of settler farming on African agriculture.

In fact, migrations of skilled workers, especially if coupled with substantial capital inflows, are thought to be beneficial for the receiving regions. Talented labourers raise productivity by adopting more efficient technologies and through interpersonal skills transfers (Hornung, 2014; Fourie and Von Fintel, 2014; Peri, 2012). Furthermore, the literature posits positive agricultural technological spillovers between neighbors (Parman, 2012; Conley and Udry, 2010). By contrast, settler economies in Africa were extractive in nature: in Kenya and Zimbabwe, for instance, Europeans took the best lands, pushed African producers below subsistence level and hampered African productivity (Arrighi and Saul, 1973; Mosley, 1983; Feinstein, 2005).

By looking at the case study of Italian settlement in Libya between 1920 and 1940, this paper aims to compose this puzzle. Firstly, I ask the question of what impact white settlement had on productivity and agricultural output in 1939, at the end of the colonial period. Secondly, I explore the mechanisms that drive this effect. Finally, I ask whether Italian agricultural activities show a persistent long-run effect on Libyan agriculture.

Supported by the Italian government, capitalistic farms and state corporations implemented large investment plans during the 1920s and the 1930s. Major improvements were achieved, for instance in irrigation and employment of modern agricultural machinery but, although plots cultivated by locals were never legally expropriated, this process substantially reduced the land and the resources left available to Libyans. Following the defeat of the Italian army in World War II, Italian settlers were expelled from the Eastern region of Cyrenaica in 1942 while, the remaining farmers in Tripolitania were repatriated after Kadafi's coup in 1969.

To answer the above-mentioned questions, I create a spatially explicit dataset containing 218 Libyan villages and cities. I match each village with unpublished archival data on invested capital, employed agricultural workers and type of cultivated crops in Italian farms, from the firm-level Italian Agricultural Census of 1937. I harmonize these data with village-level information on grain production and cultivated land from the 1938-9 governmental agricultural survey of Libya and the FAO-GAEZ dataset from 2000. I start by running OLS regression analysis to test the effect of Italian settlement in 1939 (dummy for Italian presence, or number of Italian holdings per village) on productivity (measured as output per Hectare). In order to capture the effect of Italian presence in the surrounding areas, I add to the right-hand side binary variables that equal 1 if a village is located within 20km, between 40 and 60 km or 40 and 60 km from Italian farms, respectively.

TABLE 1: The Effect of Italian Farming on Libyan Agriculture (1939-2000)

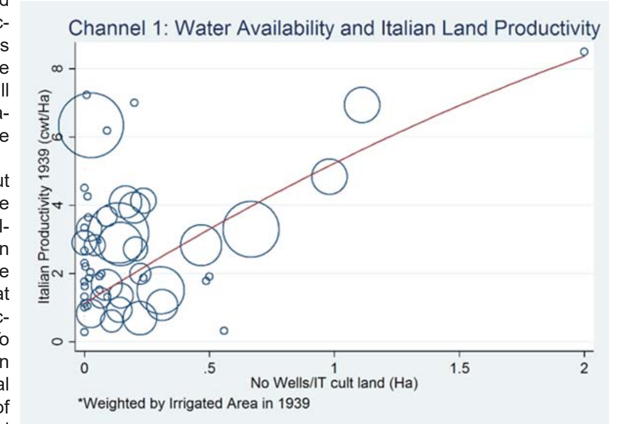
	(1)	(2)	(3)	(4)
Dependent Variables:	Land Productivity (1939, cwt/Ha)	Nominal Value Cereal Production (1939, $)	Real Value Total Production (2000, GK$)	Real Value Total Production (2000, GK$)
IT Dummy 1939	**2.031*** **	8,879.328**	**536.856** **	
	(0.441)	(3,482.117)	(215.077)	
IT Dummy*D_Tripolitania				454.616*
				(256.678)
IT Dummy*D_Cyrenaica				737.500**
				(313.696)
Dist IT Village, 0-20km	**-1.967*** **	59.664	**584.009** **	587.546***
	(0.691)	(1,705.294)	(211.191)	(205.313)
Dist IT Village, 20-40km	**-1.962*** **	6,771.111**	**308.586**	309.223
	(0.673)	(3,222.016)	(220.853)	(217.046)
Dist IT Village, 40-60km	**-1.909*** **	-2,327.336*	-12.005	-28.764
	(0.575)	(1,356.156)	(108.473)	(110.089)
Observations	218	218	218	218
R-squared	0.36	0.18	0.18	0.18
Provincial FE	YES	YES	YES	YES
Geographical Controls	YES	YES	YES	YES

Notes: Robust standard errors clustered for 27 municipalities in brackets. Provincial fixed effects for the 5 provinces in which Italian Libya was divided are added in each specification. Geographical controls include: average annual temperature; average rainfall; land suitability; altitude; distance from the coast in km and from the closest river. *** p<0.01, ** p<0.05, * p<0.1

The results show a positive effect of Italian presence on land productivity and nominal output in 1939, together with a strong and negative one on Libyan productivity in the surrounding villages (columns 1 and 2, table 1). While former Italian locations are still more productive today, the negative spillovers disappeared in the long-run (Column 3, table 1).

The main concerns about the validity of these results relate to the omitted variable bias. Italians might have chosen location that were already more productive in the pre-colonial period and that were historically draining resources from the surrounding areas. To tackle this problem, I employ an IV strategy based on the historical characteristics of the patterns of settlement: Italian farmers faced heavy constraints, due to lack of military control over certain regions and necessity to settle close to the main centers for protection and access to basic services. Consequently, I expect intensity of settlement to be a function of the expansion of Italian military control over the territory, which I proxy by distance from main cities. Therefore, I implement an IV test using the logarithmic interacted distance from Tripoli and Benghazi. Due to the concern that market access might violate the exclusion restricions and consequently undermine the validity of my instrument, I make my estimates conditional on various measures of market access and I run a propensity score matching test that compares treated and untreated villages at the same interacted distance from Tripoli and Benghazi. Finally, I run a placebo test employing those villages that were created after 1939. All exercises reassure about possible endogeneity and provide evidence of the causal link between Italian presence and higher agricultural productivity.

Additional tests show how the direct positive effect is only partially explained by a more widespread adoption of new crops (such as wheat), but rather by the systematic employment of capital-intensive irrigation techniques, that mostly relied on the construction and of modern wells (See graph 1). Contrary to the literature, my estimates show that the observed negative indirect effect is not driven by a reduction in quantity or quality of the land accessible to Libyans, but rather by a drainage of the available local workforce into waged labour for Italian landowners.



Future research will explore the long-run mechanisms and will study how the Italian agricultural legacy has affected Libya's primary sector in the post-colonial era. This will require granular post-colonial data from the 1960 and 1973 agricultural censuses, that will be harmonized with the employed colonial data. The focus will be on disentangling the relative effect of decreasing returns linked to the depreciation of colonial sunk investments from increasing returns related to the diffusion of modern agricultural techniques.

The Evolution of Human Capital in Africa, 1730 – 1970: A Colonial Legacy?

Gabriele Cappelli

Jörg Baten

How did colonialism interact with the development of human capital in Africa? We create an innovative panel dataset on numeracy across African countries before, during and after the Scramble for Africa (1730 – 1970) by drawing on new sources and by carefully assessing potential selection bias. The econometric evidence that we provide, based on OLS, 2SLS and Propensity Score Matching, shows that colonialism had very diverse effects on human capital depending on the education policy of the colonizer. Although the average marginal impact of colonialism on the growth of numeracy was positive, the premium that we find was driven by the British educational system. Especially after 1900, the strategies chosen by the British were associated with faster human-capital accumulation, while other colonies were characterized by a negative premium on the growth of education. We connect this finding to the reliance of British education policy on mission schools, which used local languages and the human capital of local teachers to expand schooling in the colonies. We also show that this, in turn, had long-lasting effects on economic growth, which persist to the present day.

The colonial period was clearly a dark time for colonized countries, as they lacked political freedom and experienced inhuman treatment perpetrated by their colonizers; however, there has been much debate about the impact of colonialism on the long-term economic development of colonized countries. In particular, research has focused on whether colonial rule left a legacy that affects current economic performance and human development in developing countries. Ferguson (2011) argues that colonialism brought about modernization. In Ferguson's provocative view, the alternatives to colonialism might have been even more detrimental for long-term economic development than European rule. For example, African rulers were already engaged in the slave trade prior to European settlements and were unlikely to spark sustained economic growth. Instead, colonized territories benefitted from what Ferguson calls Western "killer apps", i.e., competition, science, democracy, medicine, consumerism and a work ethic. The idea that African rulers could have adopted these innovations autonomously is, in Ferguson's view, naive.

By contrast, Huillery (2014) supports a more negative view of colonialism. She estimates the economic cost of the French colonization of West Africa; contrary to the positive hypothesis proposed by Ferguson, she finds that colonial rule represented a substantial burden on development for African taxpayers. Indeed, Huillery challenges the argument that French African colonies benefited from imperial public investments. She finds that, above all, a large share of resources was destined to French officials. This represented a remarkable financial burden for the colonies (but not for France) that limited the capability to supply public services. Huillery also discusses how colonization hindered access to markets and changed the distribution of rights within the colonies (see Austin 2016 for an excellent overview; see also Ferro 2003, Liauzu 2004, Bancel, Blanchard and Lemaire 2005, Manceron 2005).

We contribute to this ongoing debate by identifying the effect of colonial rule on the growth of basic human capital. We focus on numeracy, which is one of its core components. We approximate it with the widely used age-heaping indicator (see section below). Is it possible to identify a common and persistent effect from colonial rule on human capital across African countries prior to independence? Did this effect change over time and across metropoles and if so, how? By exploring the evolution of numeracy skills through the 18th and 19th centuries and up to independence (1730 – 1970), we answer these research questions and avoid a simple "compression of history" (Austin 2008, see also Jerven 2015) – thanks to our data, we can explore how the strength of the "colonial effect" on human capital changed over time. We focus on numeracy as an output measure of human capital because – as Hanushek and Woessmann (2012) have recently argued – math and science abilities are the most crucial determinants of economic growth. Indeed, these two authors employed a wide range of country-level and migration data to assess the causality of this relationship; they find that numerical skills explain much more of the variation in growth rates across countries than do measures focused on the quantity of schooling provided. While their research focuses on the 1960 – 2006 period, Baten and Juif (2014) show that numeracy in approximately 1820 – measured using the share of those who were able to report their exact age, the measure we use in this study – is strongly correlated with later math and science skills. They argue that some societies were able to start down a human-capital-intensive development path and that only few economies left this path thereafter. Taken together, these two contributions suggest that basic numeracy during the early-modern period can provide precious insights into patterns of long-term development. Given the evidence discussed thus far, it is crucial to reconstruct the path of long-term human capital accumulation to elucidate the development of Africa: our estimates of numeracy allow research on the growth of human capital in the continent to be conducted, for the first time, for the period from the early 18th century to the eve of the 20th century.

The empirical strategy of this study is based on identifying a common effect of colonial rule on human capital accumulation in Africa prior to independence and on exploring whether this changed over time and across metropoles using the largest human capital data set ever assembled for pre-, post-, and colonial Africa: we mobilize 284 country-decade observations for the period until the 1960s. We propose that colonialism positively influenced the development of the basic quantitative skills of Africans. This hypothesis stems from qualitative literature on the effort to provide education during the colonial era as well as from evidence of a significant impact of colonial education policy on African schooling in the 20th century, which is discussed in the literature review. We also explore the possibility that this effect might have been heterogeneous and connected to the identity of the European colonizer and its type of educational policy.

We address potential selectivity issues in our estimates of numeracy, and we find that selection bias was probably not very substantial in the historical samples used to reconstruct long-term human capital trends in Africa. Our regression analyses take into account other factors that might have influenced the development of numeracy over time, such as quantity-quality trade-off behavior, urbanization and the frequency of conflicts. Furthermore, we provide two different robustness tests to combat potential bias due to reverse-causality and other causes of endogeneity. Finally, we investigate the mechanism behind the positive impact of colonialism on human capital by assessing the role of slavery, direct colonial rule and missionary activity.
Although we find that the impact of colonialism on basic numeracy was positive, the very heterogeneous effects that existed across African countries suggest that colonial rule was often detrimental to African development; indeed, the positive impact of European rule on Africa's human capital in the period under study appears to have been driven by British rule only. Interestingly, as other contributions have recently suggested, the primacy of British school policy in Africa might stem from its reliance on local languages and on the human capital of African teachers, which was enhanced by missionaries in the British colonies (Frankema 2012, Gallego and Woodberry 2010). In the case of long-term human-capital development, the outcome depended on foreign rule as much as it was connected to local conditions.

Finally, we find a strong correlation between historical numeracy and current GDP per capita across African countries, even after controlling for GDP per capita in 1950. Numeracy explains approximately one third of the variation in economic performance observed across African countries in 2000; because we find that colonialism had a large impact on human capital accumulation on the continent, we argue that the interaction of colonial institutions and local endowments created a legacy affecting African development.

The Making of a Liberal Education: Political Economy of the Austrian School Reform, 1865 – 1875

Tomas Cvrcek
Miroslav Zajicek

The rise of modern schooling in the 19th and 20th centuries is often explained as a consequence of broadened suffrage and stronger political voice of the masses, which overcame the political opposition from old ruling landed elites. We investigate this hypothesis, using the case of a school reform undertaken in Imperial Austria in 1869. The 1860s were the first time in the Habsburg Empire's history when public policy was discussed in the context of representative government. But since the electoral system was deliberately designed to ensure political representation for various special interest groups (such as the landed elites or business elites), we can observe their political decisions directly.

The school reform intended to extend compulsory schooling from 6 to 8 years and to modernize the curriculum, so as to make it more useful on the labour market. We have the record of the votes cast by all elected representatives in the Viennese Reichsrath (Austria's highest representative body at that time) on this reform. We also have detailed data on the schooling situation in all the electoral districts prior to the reform, which we use to construct estimates of what the proposed reform could have been expected to cost in those various districts. We then investigate to what extent the representatives' votes depended on the expected costs of implementing the reform vs their affiliation with this or that special interest group.

We show that while landowners were less likely to vote for school modernization than urban and business interests, the strongest opposition came from the "plebeian" representatives of the rural areas where the suffrage was in fact most numerous. We also show that the expected costs of implementation of the reform explain about a half of the "political distance" between the various constituencies. The reform passed in spite of the popular opposition and with lukewarm support from the landed elites.

Since the reform law also introduced the practice of regular statistical surveys of schools, we can compare our pre-reform data (for 1865) with the 1875 survey of the reformed system. The evidence suggests that passive resistance to reform implementation continued in the countryside in proportion to the expected costs of implementation and in spite of the alleged benefits that education was billed to bring the masses. Primary schooling expanded most vigorously in urban and industrialized districts where not only was the reform-mandated expansion of schools implemented but the education market was large enough to leave space for considerable private provision of primary education.

Our research shows that the usual assumptions about political economy of schooling expansion – eager masses vs recalcitrant elites – cannot be taken for granted and that in many areas the cost-benefit calculus of the educational reforms proposed was such that the returns to the public investment in schools did not justify the costs.

Green front, brown tide? Agriculture, the great depression and the collapse of the Weimar Republic

Pablo Martinelli Lasheras

This paper explores the role played by the agricultural component of the Great Depression in the collapse of the Weimar Republic. Its implications also contribute to the literature on the link between economic crises and political extremism by focusing on the economic motives driving voting behavior in interwar Germany.

During decades, scholars have argued over the catch-all as against lower-middle class nature of the Nazi movement. The prevailing consensus today acknowledges that the Nazi party was able to draw support from all sections of German society, although this support was not uniform across constituencies. Hence, recent research increasingly focuses on the role played by particular constituencies (and mechanisms) in its ascent. Though this uneven association between social and economic composition and voting behavior is often labeled "economic voting", economic motives are barely introduced into the analysis as such.

The most spectacular case is the role played by peasantry. Peasantry has been identified as one of the key constituencies of the Nazi Party by many quantitative studies. Yet the actual motives for the political behavior of the German countryside remain largely and surprisingly unexplored. Despite the dynamism of urban Weimar Germany, almost half of the Germans lived in the countryside or in small towns with less than 5000 inhabitants and one quarter of them earned their life from agriculture at the eve of the Depression. It was in the countryside that the Nazi Party scored its first electoral successes. Without the electoral support of the countryside, it would have been unthinkable for Hitler to seize power.

Although recent research has expanded our understanding of the rise of political extremism by identifying long-run persistence or particular diffusion mechanisms, most scholars simply assume that the growing rural support to National Socialists was driven by a peasantry homogeneously hard-hit by the Great Depression.

This paper aims at filling this gap by actually exploring the mechanism linking sectoral economic distress and rural voting patterns. In order to do so, it exploits regional variation in product composition, in exposure to international markets and in the impact of the Great Depression from a new database on interwar German agriculture at a disaggregated geographical level. With it, it explores if and to what extent different measures of peasants' economic stress are actually associated with the surge in peasants' electoral support to the Nazi party in rural and largely agricultural electoral districts.

Were peasants in areas more affected by the Depression actually more prone to vote for Hitler? Or did peasantry as a whole just grow more disaffected with the way establishment parties were coping with the Depression and the political crisis, independently of their actual economic conditions? The answers to these questions are key in order to understand how political extremism spreads in a context of economic collapse and are of great relevance for our interpretation of the whole interwar period in Germany (and therefore in the world).

The Deep Roots of Rebellion: Evidence from the Irish Revolution (1913-21)

Battista Severgnini

Gaia Narciso

This paper studies how cultural norms shaped by negative historical shocks can explain conflicts in the long-run. Exploiting a unique dataset constructed from historical archives, we test whether the Irish Famine (1845-1850), one of the most lethal starvation in history, changed political attitudes and contributed to the Irish Revolution (1913-1921). First, we investigate the determinants of joining the rebellion movement on the basis of the 1911 Irish Census and the official lists of rebels. We find that rebels are more likely to be male, young, catholic and literate. Second, we explore whether the famine played a role in the probability of joining rebellion activities. Controlling for the level of economic development and other potential concurring factors, we provide evidence of the role of the great Irish famine as an exceptional legacy of rebellion during the movement of independence.

African agricultural productivity and the transatlantic slave trade: evidence from Senegambia in the nineteenth century

Dimitrios Theodoridis

Klas Rönnbäck

The role of agriculture has been central in Africa's long-term economic development. Is Africa poor partly as a consequence of a challenging ecological factor endowment – poor soils and challenging climate? Or was African agricultural productivity in reality destroyed by the growth of the external slave trade and could have been much higher had it not been for the slave trade? The discussion has been going on between scholars for several decades, but has been surprisingly devoid of empirical support. Many scholars have attempted to analyze the historical productivity of the agricultural sector in Africa and most seem to have believed that the prospects facing African farmers historically generally were quite bleak, since African agriculture for a long time was understood as quite static and suffering from very low productivity. A low agricultural productivity might also have had a very important implication for Africa's external slave trade.

In this paper, we study the historical productivity of agriculture in one particular case, Senegambia, in the early nineteenth-century. We believe the case to be highly relevant, as many previous scholars have argued that Senegambia might have been among the more productive regions on the African continent. We study the production of five key crops: cotton, indigo, rice and maize/millet, and estimate both land- and labour productivity in the production of these crops.

In order to do this, we have collected primary quantitative data from archival materials from the two West African regions in focus – Senegal and The Gambia. In the case of Senegal, we employ a source on agricultural productivity in early nineteenth-century Senegal, to our knowledge previously unused for this purpose, obtained from the French National Archives. The official source contains information on the cultivation of cotton, indigo, millet and maize in the colony, for a couple of benchmark years in the 1820s and 1840s. In the case of The Gambia, data are obtained from a Report of the Commissioner of Inquiry on the Western Coast of Africa, available in the British National Archives. Our results are then compared to quantitative data on the land and labour productivity found in the production of the same crops elsewhere in the world, most importantly in the plantation complex in the Americas, both at the contemporary time but also at much earlier stages in the history of the American plantation complex.

Our results show that, for all the crops studied in the paper, both land and labour productivity was lower in Senegambia than it was in all other parts of the world for which we have found comparable data. In virtually all cases, furthermore, the differences are very large, with productivity in the Americas often at least twice as high as what we find in Senegambia, both when it comes to land- and labour productivity. The possibility that the differences simply might be due to measurement errors is therefore limited.

Our case thus lend empirical support to claims that Africa historically has suffered from low productivity of agriculture. This would have inhibited further socio-economic development by limiting the agricultural surplus available to supply other economic activities and sectors. In might also have provided a rationale for the external slave trade, as many scholars previously have argued, in that it might have been more profitable to sell slaves overseas than to exploit them in agricultural production domestically in Africa.

The Dawes Bonds: Selective Default and International Trade

Olivier Accominotti · Philipp Kessler · Kim Oosterlinck

Trade sanctions are often presented as a powerful mechanism to force sovereigns to reimburse their debts but their effectiveness is hard to establish empirically. This paper relies on a unique historical example, Germany's external default of 1933, in order to analyze the relationship between sovereign defaults and international trade. After defaulting on its external loans, the German government negotiated separate settlements with various creditor countries. Using daily prices of the sterling Dawes bonds traded in Amsterdam, London, Paris and Zurich between 1930 and 1938 we assess how market participants valued these deals. We show that investors started expecting a differential treatment of foreign creditors as of 1934 and that these expectations were closely related to creditor countries' trade relationships with Germany. However, we argue that trade sanctions did not act as an effective punishment mechanism for creditor countries. Rather, the German government used trade negotiations in order to play out its creditors against each other and minimize its debt burden. This strategy was crucially facilitated by a general trend towards international bilateralism that stifled attempts to maintain a united creditor front.

One of the main reasons invoked for why sovereign countries repay their external debts is the fear of punishment from creditors through trade sanctions. Threatening to reduce trade with defaulting countries seems at first sight a good way to enforce sovereign debt contracts. The use of, let alone the effectiveness, of commercial sanctions is however hard to establish empirically. To be true, several authors have
shown that countries defaulting on their sovereign debts experience a strong decline in trade in the following years. On basis of a database covering 200 commercial partners over 50 years, Rose (2005) reports an average 8% decline in international trade following a default. But attributing the observed trade decline to post-default sanctions may be misleading as the reduction in trade may very well be due to the economic consequences of default rather than to creditors' retaliation. Martinez and Sandleris (2011) find that the decline in bilateral trade with a defaulting country is not statistically different for creditor and non-creditor countries suggesting that it cannot be attributed to sanctions. Evidence that the threat of trade sanctions induces sovereigns to repay their debts seems, in most instances, elusive at best (Panizza et al., 2009).

This paper relies on a unique historical example, the German default on its external debts of 1933, in order to analyze the relationship between sovereign defaults and international trade. On May 15 1933, the Reichsbank announced that its holdings of foreign reserves did not allow it to service its foreign debts in full. The German debt default of 1933-1939 was remarkable because: 1) it was a selective default where the various creditor countries did not receive equal treatment and 2) the negotiations towards a debt settlement between Germany and its creditor countries were closely linked to commercial negotiations. In addition, the segmentation of sovereign bond markets implemented as of 1934 and the absence of international arbitrage for German bonds makes it possible to assess how market participants perceived the likelihood of a preferential debt treatment in favor of certain creditors.

In order to assess market participants' expectations, we rely on the daily prices of the German Dawes bonds traded in Amsterdam, London, Paris, and Zurich from 1929 to 1939. These bonds, which were linked to WW1 reparations, had been floated in 1924 by the German government in the various financial centers and were traded actively in the following years. One important characteristic of the Dawes bonds is that they all had the same coupon (7%) and were denominated in sterling.1 Since the bonds traded in the various centers had the exact same characteristics and were all denominated in the same currency, differences in their prices only reflected expectations of a discriminatory treatment between creditors. Our data show that there was no statistically significant difference between the prices of bonds traded in different centers until the summer of 1934 when Germany started negotiating separate commercial agreements with its creditors. In the following years however, Dawes bonds traded at a much higher price in London than in any other financial center, reflecting the expectation that British creditors would receive a more favorable debt treatment in the future, given the distinct kind of agreement reached between the United Kingdom and Germany. Dawes bond prices were also higher in Amsterdam and Zurich than in Paris throughout the 1934-1939 period.

We then relate investors' expectations of preferential debt settlements to bilateral trade data and the process of trade negotiations between Germany and its creditors.
We find that the intensity of creditor countries' bilateral trade relationships with Germany mattered crucially for investors' expectations of a preferential debt treatment. However, the way in which trade mattered in the settlement of the German sovereign debt was far more complex than what is suggested by the trade sanctions literature. While several creditor countries (e.g. Switzerland, France) threatened to impose a trade clearing on Germany, the introduction of such sanctions do not appear to have been perceived by investors as an effective punishment mechanism. Rather, we argue that the German government used the threat to impose disadvantageous debt treatments, and the need to generate foreign exchange through trade surpluses in
order to service the debt, as a way to play creditor countries against each other and minimize the real burden of its debt.

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An Economic Conversion? Rural Cooperative Banking in the Netherlands at the Turn of the Twentieth Century

Chris Colvin
Stuart Henderson
John Turner

In the low-growth aftermath of the 2008 Global Financial Crisis, economists are beginning to question whether banks are engines of growth or are instead harbingers of economic and social instability. By going back to the beginning of our modern banking systems, we caan gain new insights into the original functions of banks.

In this paper, we explore the genesis of Dutch rural savings and loans banks to understand the original economic and societal function of one of the Netherlands' largest and most successful banks today: the Coöperatieve Rabobank U.A. Our results suggest that these new innovative financial institutions played an important role in giving farmers improved access to finance as Dutch agriculture emerged from a period of crisis and faced new capital-investment needs. However, our evidence suggests that these cooperative banks were partly founded out of socioreligious rather than strictly economic concerns.

With the advancement of the nineteenth century, and in common with other parts of Europe (Polsi, 1996; Guinnane, 2001; Fälting et al., 2007; McLaughlin, 2009), the Netherlands experienced a significant growth in the formal provision of personal finance. During this period, a variety of new financial institutions emerged across the country with the aim of providing savings and loans solutions to low and middle-class clientele (Deneweth et al., 2014).

On the savings side, savings banks (spaarbanken), which had emerged already in the early-nineteenth century, were joined in the 1880s by the Post Office Savings Bank (Rijkspostspaarbank), and then from the 1890s by cooperatively-owned rural Raiffeisen banks (boerenleenbanken). While on the loans side, incumbents, such as pawn banks (banken van leening), which had existed throughout the nineteenth century, and "help banks" (hulpbanken), which emerged from the mid-century, were likewise accompanied by Raiffeisen banks; these new entrants had a dual savings-and-loans goal.

The increasing diversity of financial provisioning in the Netherlands raises important questions about the role these new financial institutions fulfilled, and perhaps more fundamentally, why they existed in the first place. Existing evidence from elsewhere in Europe in the nineteenth century shows that early philanthropic influences on organisational innovation can quickly recede amidst the realities of the marketplace, suggesting a dynamism in organisational purpose (Ó Gráda, 2008; Perriton and Maltby, 2012). In this paper, we address this functional puzzle from the perspective of the Raiffeisen banks, focusing on their entry propensity and early performance.

We compile a dataset of bank-level and municipality-level information taken from annual reports published by the Netherlands' central statistical agency, and supplement these with demographic and land-use data from the census and government surveys. We direct our attention to the years 1898, 1904, and 1909, as it is over this horizon that the early entry of Raiffeisen banks occurs.

Our analysis is motivated by three hypotheses, which have been advanced in various parts of the existing Dutch literature: (1) Raiffeisen banks emerged to meet market demand for financial services from the unbanked or underbanked (Sluyterman et al., 1998); (2) they represented an organisational response to agricultural depression and technological change (Bieleman, 2008); and (3) they were founded as a means of extending and consolidating the influence of confessional, pillarised, sociopolitical organisations across Dutch society (Jonker, 1988). By considering these alternative explanations together in one single analysis, we aim to deduce the factors that precipitated entry and to understand whether those factors influenced subsequent operational effectiveness.

We find evidence of all three hypothesised explanations for the entry and early performance of Raiffeisen banks. Firstly, with respect to market demand and competition, we find that the presence of a Post Office Savings Bank branch was favourable for bank emergence, while the presence of another Raiffeisen bank was generally inhibitive to entry. We also find that the presence of incumbents was negatively associated with performance as measured by deposit growth and outreach. This may suggest that while Raiffeisen banks offered financial services to a new clientele, they also "competed" with their contemporaries for business.

Secondly, in relation to the agricultural environment, we find that a greater proportion of horticultural land is negatively associated with the emergence of the first banks, perhaps reflecting a greater resilience in this sector to the agricultural crisis of the late-nineteenth century, and thus a reduced demand for credit from these farmers. We also show that for the later entry phase, bank emergence is negatively related to more land per farmer and a higher tax value per hectare, perhaps indicative of their increasing penetration into less affluent areas. Unsurprisingly for performance, wealth, as proxied by tax value, is positively associated with account size and outreach.

Finally, we find that the percentage of Roman Catholics in a municipality is positively and significantly associated with both bank age and bank presence, albeit becoming less important in the later entry phase, and no longer statistically significant for performance. This suggests that while Catholic influence may have been an important initial catalyst in the emergence of Raiffeisen banks, in the longer term it was less vital for sustained growth, social outreach, and operational success.

Overall, these results suggest that the existence of Raiffeisen banks, in this context at least, should be understood as a response to both social and economic demand. Yes, the agricultural crisis of the late-nineteenth century and an absence of (appropriate) incumbent financiers may have provided an economic rationale for their existence. But it seems unlikely to have been a sufficient precondition.

Rather, the Catholic Church, by taking advantage of its religious network, could provide the necessary impetus for the initial diffusion phase. Then, once the banks had been established, the organisational model of Raiffeisen banks was able to benefit from efficiencies accrued from religion-related social collegiality (Colvin and McLaughlin, 2014), perhaps with the function of religion ultimately transitioning from philanthropy to economy.

Geographic location of boerenleenbanken, 1898, 1904 and 1909

Exchange rates, catch up, and lagging behind in Europe since 1870

Jonas Ljungberg
Anders Ögren

It is well known that a country by manipulating the value of its currency can push up its competitiveness in international markets. This notwithstanding, it is much overlooked how exchange rates have influenced economic growth and convergence of income among nations in a longer perspective. In particular have the consequences, under different exchange rate arrangements, of asymmetric trends of prices and wages in different countries been disregarded.

For example, in the period between the pegged exchange rates under Bretton Woods and the 'irrevocably fixed exchange rates' of the euro, there was a rapid convergence in Western Europe with catch up by countries such as Spain and Ireland. Despite the political aim to peg currencies, in practice this was a period of flexible exchange rates, due to frequent so called realignments of currencies. Had it not been for this flexibility, would the competitiveness of the catching up countries have been eroded by the faster increase of their wages and prices. Now the realignments compensated for the faster increase of wages and prices. On the contrary since 1999, among those countries which joined the euro, GDP per capita have diverged and the less rich countries have lagged behind. Hence, in the past half-century, catching-up by countries in Western Europe have benefitted with flexible exchange rates and lost with fixed exchange rates. The question this paper aims to answer is whether this pattern holds true also in a longer perspective, and under different exchange rate regimes back into the late nineteenth century.

The real effective exchange rate (REER) captures the difference in the inflation rates and the nominal exchange rates and REER is the central indicator in our analysis. Official REERs exist only back to 1960 but the authors are currently, when these lines are in the writing, finalizing REERs for more than fifteen European countries, most of which back to 1870.

This paper is the first and preliminary analysis of this REER database, which is constructed from diverse open sources on nominal exchange rates, trade flows, consumer prices, and historical GDPs. By taking this longer and comparative perspective we are able to examine to what extent there is a sustained pattern between economic growth and the behaviour of the exchange rate.

Spending a Windfall: American Precious Metals and Euro-Asian Trade 1531-1810

André C. Silva

Nuno Palma

The large and persistent current account deficit of Western countries vis-a-vis Asian nations is not new. In the early modern (1500-1800) period, Europe also ran a significant current account deficit with Asia, which lasted over 300 years. In this paper, we use a dynamic general equilibrium model to show that discoveries of precious metals in America can explain the volume of international trade between Europe and Asia during that time. We show that the discoveries of precious metals in America in the early modern period were fundamental for the increase in imports by European consumers of Asian goods. This is contrary to the idea that the decrease in trading costs after the discoveries of new trading routes in the period was the most important factor.

We use data on the discovery of precious metals in America to simulate paths for the historical and counterfactual scenarios. With the discoveries of precious metals, European purchases of Asian goods are up to thirteen times those of the baseline counterfactual scenario. This effect is over six times larger than that which can be attributed to the discovery of new overseas trade routes to Asia. No Asian preference for hoarding is required to explain these patterns, as the conventional historical explanation holds. Our conclusions support a historical hypothesis which suggests that American precious metals are key to understanding Euro-Asian early modern trade (DeVries 2003).

In an effort to understand the rise of Europe, much recent research has emphasized the importance of new opportunities initiated with the age of discoveries. Researchers have stressed the importance of trade in precious commodities such as pepper and other spices, profits from trade in association with political economy, and the importance of London's trade-driven growth in driving up English real wages (Williamson and O'Rourke 2009, Acemoglu, Johnson and Robinson 2005, Allen 2009). We focus on evaluating the role of American precious metals in Euro-Asian trade.

Europe and its colonies paid 90% of their imports from China during the early modern era using silver (Pomeranz 2001, p. 159), a pattern which was not too different from that of trade with India (Steensgaard 1995, Chaudhuri 1968). It would have been difficult for European traders to position themselves in Asian markets without access to American precious metals. While European consumers were interested in purchasing Asian luxuries, the reciprocal demand did not exist. Asians were only interested in precious metals.

If Europe did not have access to bullion from America during the early modern era, there is no obvious substitute which could have been used. Payment by means of debts of long maturities was not possible as no credible enforcement mechanism was avaliable, and no predictable horizon existed for the reversal of equilibrium trade flows. Indeed, „the whole commercial system (...) in the Indies would have come to a standstill without the prompt supply of ready money" (Chaudhuri 1963, p. 29).

When this deficit finally ended, it did so largely by force. In the case of India, with the takeover of the Mughal empire by Britain. In the case of China, with the Opium wars. It is unlikely that much earlier in time European powers could pack the necessary military means to successfully implement these actions.

Contemporaries were well aware that Asia absorbed much of the precious metals that Europeans brought from the New World. For instance, DeVries (2003, p. 94) cites a merchant wrote in 1621 that the world's silver flocks to China „where it remains as if at its natural center". According to DeVries, „India also attracted silver (and gold), yet in both Asian centers the demand seemed to be insatiable." But while Asians did not show much interest in purchasing European goods the opposite was true for Europe. Early modern Euro-Asian trade brought to Europe exciting exotic goods such as pepper, spices, silk, tea, porcelain, and lacquered furniture. These were the iphones of the time. These good induced extra work, specialization and market activity, and, as time went by, were increasingly consumed by people from all social classes (McCants 2007, 2008, Pomeranz 2001, p. 273, DeVries 2008, Voth 2001, Hersh and Voth 2009). Trade in Asian goods such as Chinese porcelain and Indian textiles shaped European tastes and were a prerequisite to the subsequent British industrialization effort.

The traditional and still currently accepted explanation by historians for the imbalance of early modern Euro-Asian trade relies on cultural factors. Earl J. Hamilton, for instance, states that „[f]or some inexplicable reason Orientals have always had a penchant for hoarding treasure (...) even in response to a protracted inflow of specie, Oriental prices, unlike those of the Western World, did not rise sufficiently to induce a counter flow" (Hamilton 1929, p. 347, our emphasis). In turn, Keynes (2013) wrote about India that „[t]he oriental habit of hoarding or transforming into jewelry vast amounts of precious metals appears to be a chronic one." This view has not changed in recent decades (see for instance Kindleberger 1990, or Maddison 2007, p. 312). By contrast, our explanation for the patterns of Euro-Asian trade in the early modern period does not rely on different preferences for Asians. Instead, our explanation emerges as a natural consequence of rational agents taking decisions in a dynamic general equilibrium context.

In order to understand the role of American precious metals in promoting Euro-Asian trade, we start by reviewing evidence on the size and effects of the monetary injections caused by the higher availability of precious metals. To understand trade flows as equilibrium phenomena, we review the relative size and development of Asia versus Europe during this period.

While world money stocks for the early modern period are unknown, production of specie is a good proxy to estimate the magnitude of the monetary injections, as bullion was the main input in the production of money. We estimate Europe's stock of precious metals at some key periods during the early modern period using Europe's initial stock measured in tonnes of silver, and data on the discoveries of precious metals in America. We then estimate a dynamic general equilibrium model which makes transparent that monetary flows were an equilibrium phenomena. In our model, there are two frictions. The first is that money is necessary to conduct transactions. The second is that there are transaction costs to international trade, which represent both transportation and agency costs. The aim is to reproduce how Euro-Asian trade responded to the discovery of new trading routes and to the monetary shocks of the early modern period. The model can be used to explain observed history and to predict the counterfactual: what would have happened if no precious metals were available in America? and what mattered the most, was it American precious metals or the new overseas trade routes to Asia?

A small amount of Euro-Asian trade was already taking place in the middle ages through overland routes, but trade grew exponentially during the early modern period. We emphasize the role of American precious metals as a cause to explain the observed growth in trade. However, alternative factors have been pointed out. DeVries (2003, p. 38) raises three possibilities. First, was the trade boom induced by „new opportunities for arbitrage in regional differences in the purchasing power of silver"? (this is the factor we emphasize). Second, „was it the result of a major reduction of transaction costs, as new technologies and commercial organization lowered the cost of acquiring and shipping goods (...) [or] because political barriers to trade fell in the face of the military power of the trading companies"? Third, perhaps Euroasian trade grew due to rising incomes in Europe raising demand for imports from Asia? The possibilities raised by DeVries are evidently not mutually exclusive. But how should we think about their relative importance? Using our model, we are able to decompose which part of the observed increase in early modern Euro-Asian trade can be attributed to the discoveries of precious metals, the decrease in transaction costs, or the increase of income levels in Europe. The model is hence useful to disentangle the effects.

We find that the discoveries of precious metals were by far the most important factor. The discovery of new overseas routes to Asia (the Cape route and the Pacific route) would have at doubled Euro-Asian trade in the absence of American precious metals relative to medieval trade levels. On the other hand, European access to American precious metals without the discovery of new routes imply that Euro-Asian trade was over six times what it would have been without them. Under access to both new routes and American precious metals, Euro-Asian trade increased to thirteen times what it would have otherwise been.

Silver, Murder, and Institutions: Did the "Curse of Resources" impact on Homicide Rates? Global evidence since 1890

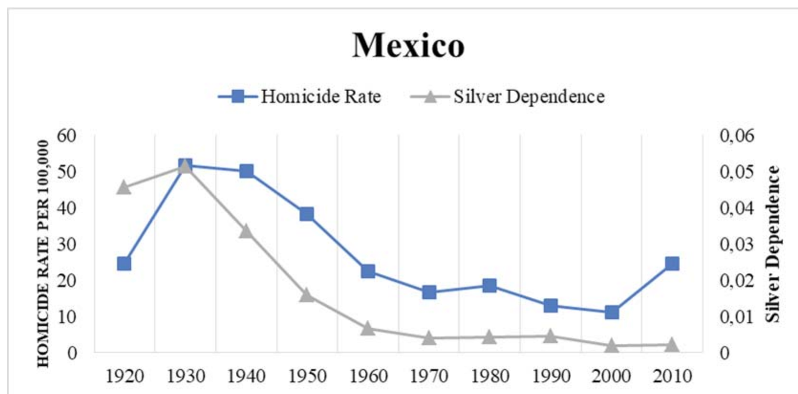
Jessica Baier

Jörg Baten

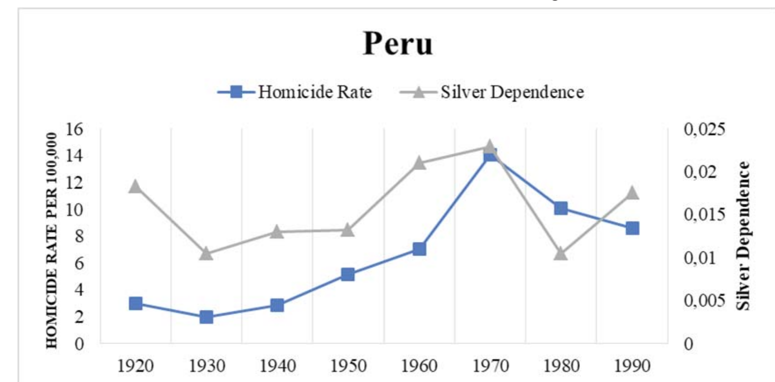
While a substantial amount of evidence has been gathered on the fact that natural resources can increase the risk of violent interstate conflict and civil war (van der Ploeg 2001), there are few studies that look at the effect resources can have on a second form of violence – namely day-to-day, interpersonal violence.
In this study, we assess whether one prominent example of mining resources, silver, increases interpersonal violence. Our main hypothesis is that interpersonal violence is indeed one of the negative consequences of the "curse of resources" of silver (Sachs and Warner 2001).

Silver is one of the most universal and notorious resources which has been important since ancient times. It is present in all world regions, making it a resource indicator with universal validity over our 100-year period. To gauge the importance of country-level silver production, we use the share of gross value added by silver production relative to total GDP as our resource indicator. We measure country-level violence using homicide rates, since they have the advantage of being relatively clearly defined and the definition varies little over time and space. In contrast, many other crimes need to be interpreted and are sometimes counted differently in different national statistics. Hence, the degrees of measurement error are normally lower for homicide rates than for other crimes. Homicide is also a very important crime for the offender, the victim and the public. Most societies invest a large amount of resources to prevent homicides (on all these aspects, see Baten et al. 2014).

We have collected and consistently coded contemporary statistical publications and archival data on homicide rates for numerous countries. These collections were supplemented with data from publicly available sources (WHO mortality database, ClioInfra, Historical Violence Database, Interpol) to construct a large unbalanced panel. The data set covers more than 65 countries, including data on Africa, Latin America, Asia and all other world regions. For many of these countries a time span of 10 decades is covered, from the 1890s until the 1990s.



To test the hypothesis that silver dependence increases homicide rates empirically, we employ three different regression models. In all of them, we use decadal averages to rule out short-term fluctuations. First, fixed effects as well as correlated random effects models are estimated. We include a number of control variables. Most prominently, GDP per capita is included. Low GDP levels might not only proxy low opportunity cost (allowing easier recruiting of young men or criminal gangs) but also an undiversified economic structure in which high silver dependence could also measure economic monoculture. By controlling for GDP per capita, we take this effect into account. Another important control variable is inequality, which might have a distinct effect as criminal gangs often appear when assets can be transferred from rich to poor in high inequality settings. We also control for education, drug production and trade, violent conflicts and other factors. The results show that silver dependence does in fact have a negative effect on personal security when looking at the global data set. This effect also survives the inclusion of these and other control variables.



Secondly, we also assess the interaction of silver dependence with autocratic regime types (using Polity IV data). A number of articles have hypothesized that law and order policies (which might be associated with autocratic regimes, see Chile 1970s/80s) might reduce crime and homicide (Pinker 2011). In the absence of mining resources, we actually confirm this. However, in silver mining countries, the interaction of autocracy and silver leads to further homicide, suggesting that kleptocratic behavior emerges more often in autocracies and that dissatisfaction in parts of the population is also more likely. The takeaway message is that – especially in the presence of valuable resources – the quality of the institutional landscape is crucial in avoiding violence and crime.

In a third and final step, we employ an instrumental variable approach to make sure that the results are not caused by endogeneity that might occur due to omitted variables or reverse causality: By altering the incentive structure in an economy, homicide rates might increase or reduce silver production. We use the world market price of silver as well as the number of sites in which silver occurs, per country, relative to the country size. Both variables are arguably good sources of exogenous variation that influence silver production in a country, but they cannot be impacted by the violence characteristics of a single country. The results show that the effect is even more pronounced when integrating these exogenous sources of variation. We conclude that the previous results were not artificially bolstered by reverse causality or an omitted variable, but rather that the effect might even be underestimated.

Climate Shocks and Crime in 19th Century Sweden

Thor
Berger

Climate shocks often have dramatic impacts in societies that are characterized by a dependence on inherently volatile agricultural activities and widespread poverty—two features shared by all pre-industrial economies and many present-day developing countries (Miguel, 2005; Dell et al., 2012; Hsiang et al., 2013). Widespread burglary, looting, and theft in the wake of such shocks is an extreme manifestation of how desperate citizens adapt to sharply rising food prices and reduced incomes, which alter the opportunity cost of engaging in criminal activities (Becker, 1968). Yet, although correlations between income and crime are frequently interpreted as evidence of a causal link by criminologists, economists, and sociologists our understanding of this relationship is limited due to the challenge involved in identifying exogenous sources of variation in real incomes.

This paper exploits exogenous weather-induced harvest failures in 19th-century Sweden to (1) examine the causal impacts of localized economic shocks on criminal activity; and (2) how this relationship evolved as areas were opened up to trade due to the spread of the railroad network. Sweden provides an empirically useful setting to identify the link between economic shocks and criminal activity since the vast majority of the population was dependent on rain-fed agricultural activities, with most rural citizens living close to subsistence levels of income making them particularly susceptible to years of poor harvests.

1 A second key advantage is the magnitude and considerable geographical dispersion of agricultural shocks: the localized harvest failures of 1867-68, for example, led to a remarkable 10.2 percentage drop in GDP, which constitutes a larger shock than both the Great Depression and the recent Great Recession.

As harvest failures were confined to certain regions but never affected the whole country, this provides a quasi-experimental setting to exploit their spatial and temporal variation to identify the causal impact of income shocks on criminal activity.

Analyzing the relationship between localized agricultural shocks and crime using a newly collected annual dataset on county-level criminal activity and harvest outcomes between 1830 and 1870, I document that local shortfalls in agricultural production led to significant increases in property crimes—that include, for example, petty larceny, robberies, and theft—that were particularly exacerbated in years of consecutive harvest failures, which underline the importance of studying the cumulative impact of negative weather shocks (Dell et al., 2014). Additional results from exploiting the exogenous variation in localized agricultural shocks as an instrument for prices and real wages similarly underline a tight relationship between income shocks and property crime.

After the mid-19th century railroads proliferated throughout the countryside, which meant that previously closed local economies were opened up. Although Swedish economic historians at least since Eli Heckscher have emphasized the importance of improved transport infrastructure for lessening the local impacts, theory suggests that increased trade openness can also serve to increase the volatility of incomes and prices as local economies become more exposed to external shocks, which may be further exacerbated by an increased degree of specialization (Stiglitz and Newbery, 1981; Giovanni and Levchenko, 2009).

To empirically evaluate whether railroads served to exacerbate or mitigate the impacts of local agricultural shocks, I begin by showing that the link between localized agricultural shocks and criminal activity fully disappears after a region was connected to the railroad network. A reduction in the responsiveness of crime to local economic conditions is consistent with the prediction that real income volatility decreases as economies are opened up. Auxiliary estimates indeed show that the spread of railroads made both local prices and real incomes less volatile to the extent that local agricultural shocks had virtually no effect on local prices and real wages as the connected areas approached the small open economy limit.

2 My findings contribute to a rapidly growing body of work that examines the effects of climate shocks on conflict and criminal activity (Bai and Kung, 2011; Brückner and Ciccone, 2011; Iyer and Topalova, 2014; Jia, 2014), and a related literature by economic historians examines the link between climate or production shocks and criminal activity (Mehlum et al., 2006; Bignon et al., 2016). Although this literature has documented a link between economic shocks and criminal activity, it has provided less evidence on factors that may serve to mitigate this link. A key finding in this paper is therefore that the diffusion of railroads broke the link between local agricultural shocks and criminal activity, which constitutes a novel margin along which improvements in market integration contributed to raising the welfare of poor rural citizens and a complementary explanation for the historical decline in crime in most European countries in the 19th century. A weakening of this relationship due to railroads facilitating market integration and lowering price volatility also provides novel evidence of how the improved external and internal price integration in 19th-century Europe mattered for economic development (e.g., Jacks, 2005; Jacks et al., 2011; Sharp and Weisdorf, 2013).

Why did people pay taxes? Fiscal innovation in Portugal and state making in times of political struggle (1500-1680)

Leonor Freire Costa
Paulo Brito

The literature on state making and fiscal capacity in early modern Europe has seldom accounted for taxpayer's behavior. Resistance or compliance to taxation are taken as dimensions of any fiscal system, mostly depending on political or administrative institutions, but quantitative and comparative analyses of fiscal efficacy have not integrated the assessment of evasion due to tax payer behavior. This paper considers fiscal capacity as depending on incentives to free riding (evasion). It puts the hypothesis that potential war damages guided the taxpayer's perception of the costs of evasion. To test the hypotheses, we consider the case of Portugal in times of political struggle against the Habsburgs to regain and keep the political autonomy in the 17th century. The war was financed by an entirely new, universal income tax that remained in the fiscal system well until the liberal revolution in 1821, although it was enforced by a decentralized and non-specialized administrative structure, which must have reduced the coercive component of the system. A model derives the optimal tax rate from the standpoint of the taxpayer as a function of perceived probability of war, risk aversion, and awareness that evasion would enhance the potential war damages. Data on damages, contemporary assessments of the tax base, and amounts enforced allow the model's calibration. Results suggest the accuracy of the hypothesis and draw the conclusion that taxpayers' utility in evasion determined the effective tax rate (tax enforced). This paper claims that ultimately improvements in the fiscal capacity of states needed increased levels of destruction, hence any political regime in early modern Europe must have found in war damages a persuasive argument to make effective a fiscal innovation. Results broaden the current view on constraints on fiscal capacities, such as the role of political institutions (absolutism versus parliamentary regimes) and tax systems (more or less centralized/ decentralized) and how these variables interacted with the economic background of the political units.

Did Russian nobles want to pay taxes before the Napoleonic invasion?

Elena Korchmina

At the beginning of the 19th century Russia teetered on the brick of economic disaster, so Mikhail Speranskii was put in to introduce economic reforms. A key point in his program was to levy new taxes upon all Russian estates, including nobility. In February, 11, 1812 the temporary progressive income tax for landowners was imposed as far as payment of state debts should be a responsibility of every Russian social group. Surprisingly, only some historians mentioned this episode of Russian fiscal history; those, who did, argued that nobles did not pay just because they were nobles (Petrov, Shatsillo, Marnei). Archival data show that Russian aristocrats were ready to pay a new tax, so the question is why.

The research is based on a set of new sources, gentry' tax returns, which are introduced for the first time. According to the law, every nobleman or his steward should send to Noble Deputy Assembly a report of his/her real income (deistvitelnyi dokhod). Real income is the consolidated income which a landowner got from all kinds of his economic activity excluding the paid interests on state and private debts. Despite the fact that it was a voluntary tax, there was a sanction to those who did not send such a report, they must pay a double tax. In the dataset there are about 2 200 statements of nobles from Moscow and Smolensk provinces.

There could be two research strategies. First of all, tax returns of Russian nobles show what their revenues were, and crosschecking with other financial documents will indicate whether nobles and their stewards underreport incomes. Secondly, as far as aristocrats could reduce the taxable base by the amount of interest paid on loans, we compare the size of their debts in tax returns with other available financial documents to establish whether they overstated their debt obligations in order to pay less taxes.

The data show nobles didn't try to circumvent a new tax system. At this very preliminary stage we suggest some plausible explanations of aristocrats' readiness to pay taxes. The first one is that nobles considered the fiscal demands of Russian state equal to their possibilities and fair, especially in front of Napoleonic invasion. The second one is that it was an absolutely new practice for them so they hadn't learnt yet how to cheat.

Table: Income of Moscow nobles and civil service ranks in 1812, before Napoleonic invasion.

	Number of Observations				Total Income (in rubles)	Average Income (in rubles)		
	F	M	Joint	Total		F	M	Joint
Noble	971	941	221	2 133	11 212 152	3 551	6 425	7 790
Merchant from noble	1			1	700	700		
Clerks	2	5		7	2 465	210	409	
Civil service rank	23	25	2	50	28 319	487	624	750
Grand Total	997	971	223	2 191	11 243 636	3 466	6 222	7 727

Albrecht
Ritschl

Nazism got to power in Germany in 1933 with the explicit goal of destroying the economic livelihood of Germany's Jewish population. Dispossession ranged from private robbery and pogroms to state-sponsored theft. Any direct estimation of the sums involved is therefore inevitably difficult and imprecise. For the most part, however, dispossession of Germany's Jews was a highly bureaucratic process. This short paper is about identifying the main fiscal instruments used in this process, and about assessing the quantitative impact.

The quantitative fallout can be ascertained from tax statistics, from internal estimates produced by Germany's Statistical Office at the time, and from a report by a statistics task force of former German finance ministry officials put together for the Allied occupation authorities in 1947. Seminal work of (Junz, 2002) has made use of the tax data, enhanced by detailed archival evidence from Austrian archives. The internal estimates by the Statistical Office and the statistics task force report have been used in recent work by (Fremdling, 2016). That report surveyed the decrees against Germany's Jews issued in the 1930s and gave an overview of the financial impact as reflected in the Reich's central government accounts.

The principal quantitative finding of this paper is that the fiscal booty from the dispossession of Germany's Jews: over a range of estimates presented here, the Jewish share of Germany's real wealth matched the Jewish population quite well. I also calculate effective tax rates on German Jewish migrants. Together with prohibitive bureaucratic obstacles, these punitive taxes provided a substantial disincentive to emigrate and often rendered emigration outright impossible. This disincentive was only mitigated in late 1938 when confiscatory taxation was imposed also on the resident Jewish population, contributing to a substantial spike in Jewish flight from Germany. The principal qualitative result of this exercise is that the spoils from Jewish dispossession were nowhere nearly large enough to warrant an economic interpretation of the Holocaust as in (Aly, 2007). Germany's Jews were on the whole better trained than the average German but not necessarily much richer.

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Notes

Understanding The Gender Gap Among Turn-of-the-Century Swedish Compositors

Joyce Burnette

Maria Stanfors

Women have always earned less than men, with men's greater strength explaining a large portion of the difference. This raises the question of why the gender gap did not disappear when the importance of strength waned. The existing literature suggests that the rise of internal labor markets, with firms offering different wage profiles to men and women, explains the rise of wage discrimination around the turn of the twentieth century. This paper explores the wage gap among Swedish compositors in 1902–03. Once we include firm characteristics we are able to explain the gender wage gap. Differences across firms are essential for understanding the gender gap, and our results are consistent with the hypothesis that larger, more urban firms began to offer men and women different training opportunities and different wage profiles.

We examine compositing, an occupation that required skill but not strength. The Swedish Board of Commerce surveyed the entire Swedish printing industry in 1902/3, and asked questions about both the employer and employees. We limit our study to compositors, so that all workers in our study were doing the same job, though some workers used the new linotype machine, and some used traditional hand techniques. Our sample contains 2247 male and 343 female compositors.

On average, women's hourly earnings were 71 percent of men's. Wage-experience profiles were similar for men and women up to six years of experience, after which male wages exceeded female wages. Individual characteristics, including years of experience in the industry, marital status, and union membership, explain a substantial portion of the gender wage gap, and reducing it to 7 log points. To explain the remainder of the gap we examine training and differences across firms.

Though gender differences in training are difficult to measure in cross-sectional data, we do find evidence that women received less training than men. While the average female worker was more likely to be an apprentice than the average male worker, this was entirely due to women's lower experience levels. Controlling for experience, a woman was less likely than a man to be an apprentice. While apprenticeship rates were similar at one to three years of experience, men were more likely than women to be apprentices at four to six years of experience, suggesting that women had shorter apprenticeships (See Figure 1). Such differences may have been due to choice, if women expected short careers, or to unequal opportunities for men and women.

We also exploit the fact that our data set includes information on the employer. We include controls for the size and location of the firm. Firms located in one of the three largest cities paid more. While larger firms also paid more, once we control for urban location the effect of firm size on wage is negative. We also control for the average education level of the workforce, the share of the workforce with secondary education or in a union, and the share female. Including these firm characteristics, the gender wage gap falls to 2 log points and becomes statistically insignificant. Similarly, including firm fixed effects results in an insignificant coefficient on the female dummy. The gender gap appears to have more to do with differences across firms than with pay differentials within firms.

To further explore differences across firms, we divide the sample into small (less than 50 workers) and large firms, and urban (in the three largest cities) and rural firms. We find that gender differences in apprenticeship rates appeared among large firms but not among small firms, and at urban firms but not rural firms. Using either firm fixed effects or the full set of individual characteristics we can fully explain the gender wage gap among small firms, but not among large firms. Similarly, we find evidence that men and women were treated differently by urban firms but not by rural firms. It appears that women faced discrimination in larger, more urban, firms, but not in smaller firms in less urban locations.

Firms also differed in whether they rewarded firm tenure. While firm tenure had no effect on wages at small firms, large firms rewarded tenure for men, but not women. Tenure mattered for both men and women at urban firms, but for neither at rural firms. Such a difference is consistent with the rise of internal labor markets at larger, urban firms, and with different career opportunities for men and women at large firms. These results are consistent with studies from the US which have shown that the rise of internal labor markets resulted in unequal opportunities for men and women.

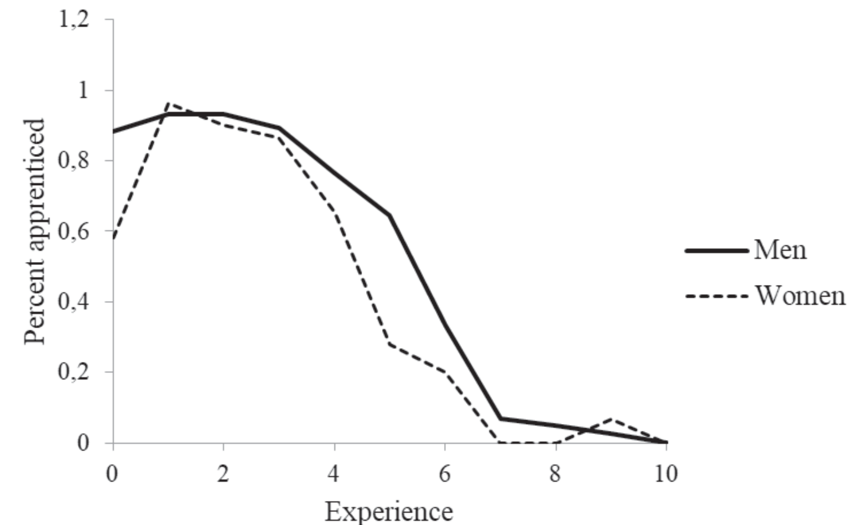

Figure 1: Apprenticeship Rates by Sex and Years of Experience

We conclude that characteristics of the firm are important for understanding the gender wage gap among Swedish compositors circa 1900. For small rural firms the gender gap is fully explained once we include firm characteristics. Large urban firms, however, did not treat men and women equally. They offered women less training and rewarded men for firm tenure. These results are consistent with the hypothesis that gender differences in training and wage profiles contributed to gender wage discrimination.

Girl-power Generates Superstars in Long-term Development: Female Autonomy and Human Capital Formation in Early Modern Europe

Alexandra M. de Pleijt

Jörg Baten

Recent research has found an important role of human capital formation for long-run economic growth. Galor (2005) emphasises the role of human capital in his unified growth theory. Baten and van Zanden (2008) have shown empirically that human capital (measured by per capita book consumption) systematically explains real wage increases in Europe from 1450 to 1800, instrumenting human capital with religious diversity and religiously motivated school laws. Human capital was actually more important in their regressions than political-institutional factors and trade. This came as a surprise because earlier studies found a stagnation of literacy in England during the Industrial Revolution period; hence human capital was regarded as being of modest importance (Mitch 1993, Mokyr 2002, for an overview see Mokyr and Voth 2007). However, this stagnation in the UK took place on a much higher level of human capital compared to what all other countries had achieved – human capital in the first industrial nation had grown before the late 18th century already (Kelly et al. 2014, Baten and van Zanden 2008). A similar confirmation of the role of human capital came from Voigtländer and Squicciarini (2015) who found that technical knowledge and skills were most relevant for French regional city growth in the 18th century. Cantoni and Yuchtman (2014) analysed the effects of medieval universities on city growth employing the natural experiment of the Great Schism, again supporting the nexus between human capital and growth. The findings of de Pleijt and van Zanden (2016) indicate the importance of human capital for the "Little Divergence" – i.e. the process whereby the North Sea region forged ahead of the rest of Europe in the centuries leading up to the Industrial Revolution. They confirmed that human capital outperforms the potential growth determinants of trade and political institutions.

Whereas the importance of human capital for pre-industrial growth has been confirmed, very little is known about what has caused or hindered the increases in human capital in early modern Europe. Since the writings of Weber (1930/1976) the link between religion and economic development has been much discussed. This debate has received new attention as a result of econometric research trying to confirm such a relationship. Becker and Woessmann (2009) have tested this relationship for early 19th century Prussia and concluded that Protestantism may have had a strong positive effect on human capital formation. Cantoni (2015) however took a sceptical view on the role of Protestantism.

Yet, another hypothesis that has been put forward is that of de Moor and van Zanden (2010). They argue that female marriage ages, amongst other components of the European Marriage Pattern (EMP), might have been among the crucial factors of the increases in human capital formation in early modern Europe. More specifically, consensus-based marriage and other institutional elements resulted in greater female autonomy and therefore higher investment in human capital formation (see also van Zanden 2009). In a similar vein, Diebolt and Perrin (2013) argued that gender inequality retarded modern economic growth in many countries.

However, Dennison and Ogilvie (2014) have argued that the EMP did not lead to economic growth. They found that the highest marriage ages were not observed in England, which at the time was undergoing the industrial revolution, but in Northern and Central Europe. Furthermore, they presented a number or conceptual issues, such as – the major issue – endogeneity. Contracts and other non-familial, exogenously determined institutions were the drivers of both general development and higher female autonomy in their view. The link between female autonomy and human capital formation in early modern Europe has not been formally tested in a dynamic model, partly because consistent evidence was not available until now (on East Central and Eastern European regions see Baten et al. 2017).

Given the crucial role of endogeneity issues in this debate, we will take care to assess the causal nature of the relationship. We exploit relatively exogenous variation of lactose tolerance as an instrumental variable for female autonomy. The idea is that a high lactose tolerance increased the demand for dairy farming, allowing women to participate in income generation, because their traditional role was stronger in this field (Voigtländer and Voth 2013). Hence, this genetic factor influences long-term differences of gender-specific institutions. This is especially true for the ratio of dairy to grain farming, as the latter activity requires substantial upper-body strength and often limits female participation (Alesina et al. 2013). In instrumental variable regressions, we will show that the relationship between female autonomy and human capital is likely to be causal. We also discuss potential violations of the exclusion restriction intensively below. Moreover, employing Arellano-Bond strategies allow us to obtain additional hints about endogeneity, using lagged first differences. We gain insights into identification issues by applying Altonji-Elder-Taber ratio strategies and find that omitted variables would probably not eliminate the female autonomy effect.

The contribution of our study is to argue for a strong role for female autonomy in the early European human capital revolution. Institutions that were formed very long ago, perhaps even before the Middle Ages, had an impact on gender relations, which again affected human capital formation. This model provides crucial insights for understanding the roots of the Industrial Revolution in Northwestern Europe, as well as the convergence of Scandinavia and Central Europe during the "Second Industrial Revolution".

Another contribution of our study is the use of numeracy as an indicator of human capital formation. Previous studies have mainly focused on literacy rates derived from marriage records (e.g. Mitch 1993, Allen 2003). They proxy very basic reading and writing abilities (Schofield 1968). However, recent evidence documents that numerical skills are the ones that matter most for economic growth. Hanushek and Woessmann (2012) argued that math and science skills are crucial for economic success in the 20th century. They argued that this kind of skills outperforms simple measures of school enrolment. Baten and Juif (2013) found these math and science skills were predetermined already in the early 19th century, using age-heaping based estimates as we do in this study. Hence, we will focus in this study on math-related skills indicators of basic numeracy.

Gender Wage Inequality in Western Europe, 1400-1800

Jan Luiten van Zanden
Alexandra M. de Pleijt

There has been a lot of work on long-term trends in real wages of men in the world economy. The new wave of interest started with the classic paper by Robert Allen (2001) studying the skilled and unskilled wages of urban builders in 9 countries from the Middle Ages up to the First World War. The pattern that emerges from this for Western Europe is the so-called "Little Divergence" or "reversal of fortunes" (Allen 2003, de Pleijt and van Zanden 2016). This is the process in which the North Sea region, notably the United Kingdom and the Low Countries, developed into the most prosperous and dynamic part of the continent. In all European countries real wages went up after the Black Death (1347-48). On the continent real wages went back to pre-plague levels in the long run, thereby confirming Malthusian expectations. In the North Sea region, however, real wages remained relatively high. This pattern is also clear from the more recent evidence on per capita GDP (e.g. Broadberry et al 2015, van Leeuwen and van Zanden 2012, Bolt and van Zanden 2014): there was almost continuous growth in the Low Countries and England, whereas levels of per capita GDP stagnated in the rest of Europe.

One of the explanations for this divergent path of economic growth in the North Sea region is the "European Marriage Pattern" (EMP) – i.e. in this particular region of the world women married relatively late, there was a small spousal age gap, and a high share of single women (Hajnal 1965). Following the ideas developed by de Moor and van Zanden (2010) this favourable demographic regime emerged in the North Sea region in the late Medieval period as a result of the preaching of the Catholic Church promoting consensus based marriage, the rise of well-functioning labour markets, and favourable institutions of property transfers between parents and their offspring that promoted wage labour by women. In turn, this interplay of demographic and economic changes in the North Sea region limited fertility and increased human capital formation.

Recently Baten and de Pleijt (2017) have found a relationship between female autonomy (measured by average age at marriage) and human capital formation (proxied by numeracy) in early modern Europe, thereby confirming part of the hypothesis suggested by de Moor and van Zanden (2010). Another important part of this hypothesis however stresses the importance of wage labour by women. In order to bring about the favourable conditions of the EMP, women should have had access to the labour market and have earned a decent wage. This may translate itself in a smaller gender wage gap and the possibility that women earn their own living and have the option to remain single.

These are highly relevant questions for our understanding of why the EMP emerged in this particular region of the world (and for our understanding of the causes of the Little Divergence), but so far very little is known about how much women earned in the past. In this paper we therefore provide evidence on the wages of unskilled women for a large set of European countries over the long run. Following Allen (2001), the series on wages of unskilled female workers has been derived from key publications of sources of wages and prices. This gives us evidence for Flanders (Antwerp: Verlinden 1959), Spain (Aragon, Barcelona, Navarra, Sevilla, Valencia and Old Castile: Hamilton 1940), Germany (Augsburg, Wurzburg and Leipzig: Elsas 1936), Sweden (Jansson et al (1991) and Austria (Weyer: Geyer and Koran 1938). Moreover, we scanned the current literature on this topic and were able to add much new data to these classic sources. The series for this subset of European cities/countries is then supplemented by the recent work of Humphries and Weisdorf (2015) for England; and added data from the yet unpublished research by Gary (2016) for Sweden. Although more tentative, we were also able to collect some evidence for Italy for the Medieval period and the 17th and 18th century. In order to keep our female wage series comparable to previous work on male wages (e.g. Allen 2001), we focus on unskilled occupations, and on daily wages only (for harvest work, weeding, and unskilled work in the building industry). For all observations of female wages we also collected the comparable wages of male workers, to get precise estimates of the gender wage gap at the lower end of the income distribution, unaffected by differences in skills and profession.

Having derived the evidence for unskilled female wages for a set of European countries allows us to study the trends in the gender wage gap across countries and over time. The pattern that emerges from this is that the gender wage gap was relatively high in Central and Southern Europe: In Italy and Spain (and France), the gap was ca. 50% after the Black Death. In the North Sea Region (England and Flanders, but also in 16th century Sweden) quite the opposite was true: the daily wages of unskilled women were ca. 80-90% - and sometimes 100% - of those of men after the Black Death. Interestingly, when men and women worked in teams and did the same job, they often got paid the same wage (or only a slightly lower wage). Our analysis therefore shows that women were much more marginal at the labour market in Southern and Central Europe than in the Northern and Western parts of Europe (England, the Low Countries and Sweden) confirming the hypothesis of de Moor and van Zanden (2010) about why the EMP emerged in this particular region of the world.

More puzzling is the rise of the gender wage gap over the course of the early modern period. Whereas the relative wage of women had been relatively high after the Black Death until the early 16th century, the gender wage gap increased rapidly afterwards, and in England in the 18th century, for example, women earned less than half the wage of men. We argue that slack labour markets help to explain the decreases in the relative wages of women. Periods of economic growth saw a decreasing wage gap (Antwerp in the 16th century; Sweden in the early 17th century; England between 1650-1750; and, finally, Germany after 1648), whereas times of economic hardship saw the wage gap increase (England after 1750; but also Antwerp and Sweden during the 17th and 18th centuries). The implication of this finding is that women seem to have suffered more than men in times of economic hardship.

Moreover, we determine if single women were able to generate enough income to survive. In doing so, we have estimated how many days of work were needed for women to earn the barebones basket (i.e. minimum subsistence package for one person) (see Allen 2001 and Allen and Weisdorf 2011). The picture that emerges from this is that there was a 'golden age of labour' in the countries bordering the North Sea. Before the Black Death 80 to 100 days of work were required for the barebones basket, whereas this had declined to only 40 days of work after the arrival of the plague. After 1500, when the population level climbed back to pre-plague levels, this again increased to 80 to 100 days.

Looking for Malthusian Mechanisms in Denmark

Cristina Victoria Radu
Peter Sandholt-Jensen
Paul Sharp

One of the major contributions to growth theory in recent years has been that of Unified Growth Theory (Galor 2005 or Galor 2011). This rests on the assumption that a true understanding of the process of economic development can only be realized by modeling how societies emerged from so-called 'Malthusian stagnation' and into the industrial age. They did so through the gradual accumulation of technological knowhow prompted by the gradual expansion of the population (so-called 'scale effects' - see Boserup 1965 and Kremer 1993), which in turn was made possible by the productivity advances due to the technological advances.

The goal of this paper is to analyze the data available for the economy and demographics of pre-industrial Denmark, to identify and study the mechanisms that caused the era of slow technical progress and slow population growth. The unique amount of detail on wages and prices for the whole of Denmark during the 18th century available in the data from the Danish Price History Project means that after identifying these mechanisms with a good degree of confidence, we can perform even more complex tests to understand how they work.

In 1798 Thomas Robert Malthus published "An Essay on the Principle of Population". The modern growth theorist's model for a pre-industrial society is based on his work and has three assumptions. The first is that an increase in wages determines an increase in the birth rates because people marry earlier and so they have more children (this was called "the preventive check"). The second effect is that the increase in wages determines a decrease in death rates because people will live in better conditions. ("the positive check"). The third assumption is that an increase in labor gives diminishing returns, because the amount of land that can feed the population is fixed. This means that an improvement in technology will lead to an increase in wages. With higher wages, the population will grow and the wages will decrease again. This model is valid for most of human history, until the recent transition to the post-Malthusian regime. In this second period, the growth rate of the output per capita increases, while the positive relation between income and population is still maintained, leading to rapid population growth. This is associated with the industrial revolution. This regime paves the way for a demographic transition that leads the way to the period of sustained economic growth that we see today in developed countries, where the rise in income is no longer counterbalanced by a population increase. A Boserupian mechanism implies that the breakout from the Malthusian regime was caused by the accumulation of know-how under pressure from population expansion, with innovation outpacing the population growth.

The availability of new data in recent decades has allowed increasingly sophisticated tests on preindustrial data, which by and large have confirmed some of Malthus' theory. Much of these analyses have looked at England. For example, Møller and Sharp (2012) build on earlier work by Nicolini (2007), who first suggested that the Malthusian model should be estimated as a VAR model, and contribute to this literature by formalizing the Malthusian model as it is generally understood today and demonstrating how it can be tested within a Cointegrated Vector AutoRegressive (CVAR) framework. This approach has the advantage that it allows a focus on what can be interpreted as long run equilibrium relationships rather than the emphasis on short run effects which had previously been common in the literature (see for example Lee 1981), or on non-classical estimation techniques with only loose theoretical underpinnings (Lee and Anderson 2002, Rathke and Sarferaz 2010).

A disadvantage with the focus on England, however, has been that it was certainly an historical outlier in many ways. Important in this context is the early industrialization, which Møller and Sharp identify as central to the disintegration of the Malthusian mechanisms in the late eighteenth century. Other scholars have recently attempted tests using data from other countries: France (Murphy 2010), Germany (Pfister and Fertig 2010), Northern Italy (Chiarini 2010, Fernihough 2010). Klemp and Møller (2016) looked at all of Scandinavia and provided evidence for the existence of a post-Malthusian phase during the 19th century. The data available in this project would, however, allow us to go further back in time, to check for Malthusian effects in 18th century Denmark. In addition, it allows for the construction of different types of wage series, based on occupation or by region. Focusing on this country, gives clear advantages. Denmark was poorer, and thus might be expected to be 'more Malthusian' than the core, since it was presumably less developed. Moreover, it was poorer for longer, only industrializing in the late nineteenth century at the same time as they it went through the demographic transition, so even relatively recent data can be useful. In addition the demographic data is considered to be of superior quality, since official statistics of births and deaths were kept from the 1730s (Gille 1949), which although sometimes of dubious quality, are an order of magnitude more reliable than the samples of church records of christenings and funerals used to provide estimates of the vital rates of other countries (see for example Wrigley and Schofield 1989). Of particular interest is the fact that it is possible to use wages series for a variety of different types of workers, and even for women, which is an interesting robustness check compared to studies which make use of one rather unrepresentative series, typically for builders.

Pushing and Pulling: Determinants of migration during Sweden's industrialisation

Björn Eriksson Siddartha Aradhya Finn Hedefalk

Ravenstein's (1885, 1889) "The Laws of Migration" laid the foundation of the push and pull model of migration which has provided the basic framework for analysing migration for more than a century. Its simple intuition stands in contrast to the empirical challenges associated with estimating the parameters of the model. In his seminal work, Ravenstein used late nineteenth century censuses to generalize the predominant causes of migration. In this spirit we take a fresh look at the historical determinants of migration using linked historical census data.

There is a rich historical literature which considers the impact of economic conditions and individual characteristics on migration and destination choice using either aggregate or micro data.. Examples include studies of nineteenth century European circular and rural to urban migration (Söderberg 1985; Boyer 1997; Boyer and Hatton 1997; Lundh 1999; Dribe 2003; Grant 2005; Long 2005; Silvestre 2005) the trans-Atlantic emigration from Europe to North America (Gallaway and Vedder 1971; Hatton 1997; Hatton and Williamson 1998; Bohlin and Eurenius 2010; Abramitzky, Platt Boustan and Eriksson 2013) and the labour migration from the rural American South to the industrialised North (Collins and Wanamaker 2014, 2015; Hornbeck and Naidu 2014; Black et al. 2015). Aggregate analysis typically relies on some form of gravity model to estimate push and pull parameters based on migration flows. Micro data allows for the explicit modelling of either the migration decision or the choice of destination using discrete choice analysis. Both approaches have its shortcomings: aggregate analysis prohibits conclusions to be drawn regarding individual behaviour while micro data tends to be constrained geographically and limited to migrations between a subset of possible origins and destinations.

Important migration flows are typically analysed and understood as the result of economic differences between sending and receiving regions. Within this paradigm, individuals from regions with a large endowment of labour relative to capital migrate to destinations with higher wages and lower relative endowments of labour in order to improve their economic conditions, a process which proceeds until an equilibrium state between the source and destination is met (Barro and Sala-i-Martin 1991). Consequently, when modelling the migration decision, the economic characteristics at both the origin and possible destinations are important in order to accurately assess the push and pull mechanisms at play. Historically, economic differences has been shown to be an important explanation for migration from mainly agricultural and rural areas, with plentiful labour and low wages, to urban and industrialized areas where labour was in demand and wages accordingly higher (Bengtsson 1990; Boyer 1997; Boyer and Hatton 1997; Silvestre 2005; Grant 2000). As a consequence migration eroded geographic differences and drove wages to convergence both between and within countries (Boyer and Hatton 1997; Taylor and Williamson 1997). In Sweden, aggregate migration flows were an important factor in driving regional convergence, particularly in the period leading up to 1910 (Enflo, Lundh and Prado 2014; Enflo and Roses 2015).

At the micro-level, migration decisions are conducted at the individual level through a cost benefit analysis of expected returns to migration. Therefore, regional wage differentials may not systematically drive migration, as skilled and unskilled migrants are driven by separate economic influences. Differences in earnings and skill premiums may thus reflect distinct occupational structure and returns to skills between the destination and origin (Borjas 1987). By moving to a location with better prospects for upward occupational mobility, anticipated earnings increase as a result (Sjaastad 1962; Long 2005; Borjas 1989). Moreover, these expectations should be adjusted in order to account for differences in the probability of employment (Harris and Todaro 1970). The unemployment characteristics of the destination region may thus play an important role in determining migration (Todaro 1969, 1970).

From an individual perspective migration may be conceptualised as an investment decision in which each possible move is associated with certain costs and benefits. Expectations about the benefits of migrating to a certain locations are formed based on anticipated income gains and other non-pecuniary amenities .If the net return from moving is positive, migration subsequently takes place to the chosen destination (Sjastaad 1962). Several aspects relating to individual characteristics, the origin, potential destinations and intervening factors all form part of the decision process and affect the probability of migration and the destination choice (Lee 1966; Borjas 1987). This study is grounded in this framework through the explicit modelling of push and pull factors at both the macro and micro level. In doing so, one must consider the economic drivers of migration, the intervening obstacles, and the individual characteristics of the migrants.

We seek to improve on past studies through the use of new data and a more comprehensive empirical migration model. We contribute to the literature by modelling the complete migration decision at the individual level, considering both the decision between staying and migrating and the subsequent destination choice. Our methodological approach facilitates simultaneous modelling of the migration decision and the destination choice, also accounting for individual characteristics. We are thus able to estimate push and pull factors as part of one individual utility maximizing decision, and not separately as normally done.

Our focus is on late nineteenth century Sweden, a country experiencing rapid economic growth and increasing rates of internal migration. The analysis is based on a cohort of men and women born between 1860 and 1870 that transitioned into adulthood during the height of Swedish industrialisation. These men and women are first observed as adolescents residing with their parents in 1880, and then again ten years later in 1890. Upon leaving their parental home, most moved a relatively short distance, often to a rural area not dissimilar to that in which they were born. By doing so, these migrants were following a well-established pattern dating back to pre-industrial Sweden. Many did however not follow in these well-trodden tracks, instead migrating further away. We focus on these medium and long range moves by considering inter county migration and the push and pull factors which determined the migration decision and the location choice.

Seasonality of casual labor in Southern Sweden, 1500 – 1850

Kathryn E.
Gary

Real wages studies are a foundational tool for economic historians. The real wages of day laborers have been used to compare and contrast economic development and living standards between different European countries, especially, and these differences have shaped many of the perennial debates in economic history today.

Wage studies today are typically structured on methodology popularized by the seminal paper by Allen (2001). This approach uses the wage that an unskilled building laborer earns in one day, multiplies it by a (assumed) number of work days in one year, and then deflates this annual 'income' by the costs that a working class family would face over the course of the year. The resulting measure, the number of 'baskets' of annual support that a working man's wages could cover, has been instrumental in allowing for international and intertemporal comparison, removing the barriers of currency and commodity. Further work by many economic historians in honing the contents of regional cost baskets and family composition has given even more specific levels of local living standards. But the number of days worked in a year remains more or less universally applied, and is essentially an educated guess.

However, work conditions in construction are strongly dependent on weather and seasonal patterns, and winter weather in the dark and regularly-frozen north of Europe is drastically different than that in the Mediterranean south.

This paper uses data from daily payments in the construction industry in Southern Sweden to reconstruct the seasonal availability of construction work. This is combined with other data which proxy the availability of labor, such as shipping schedules to measure demand of dock labor, as well as harvest schedules. Preliminary results indicate that there was not nearly the number of workdays available to the large majority of causal workers that Allen's (2001) estimates would reply upon. Collaborative evidence from England (Burn 2017) indicates that seasonality may have also been a strong limiter of casual labor in other northern regions, as well.

Regional differences in available casual labor within Europe further complicates the story of divergences in living standards as proposed by Allen (2001) and is a in important area of further research for better understanding the development of Europe's little divergence.

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Human Capital and Protestantism: Micro Evidence from Early 20th Century Ireland

Alan Fernihough

Stuart Henderson

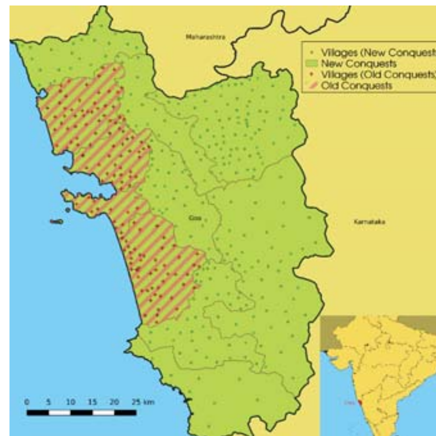
This paper contributes to a growing literature examining the eect of Protestantism on economic growth in historical economies. Recent ndings in this area have emphasized the importance of human capital as a mediating channel rather than the more conventional \Protestant work-ethic" platform.

Using a large individual-level dataset from the 1911 Irish census, we provide new evidence on this human capital channel from a microeconometric perspective. Focusing on both literacy and numeracy, as revealed by ageheaping propensity, we show that all protestant denominations were less likely to be both illiterate and age heap compared to their Roman Catholic counterparts. This dierence is consistent across a variety of subsamples and robust to the inclusion of an extensive set of control variables. This result also holds when we exploit the geographical variation in Protestantism using the minimum distance to a British port as an instrument for Protestantism.

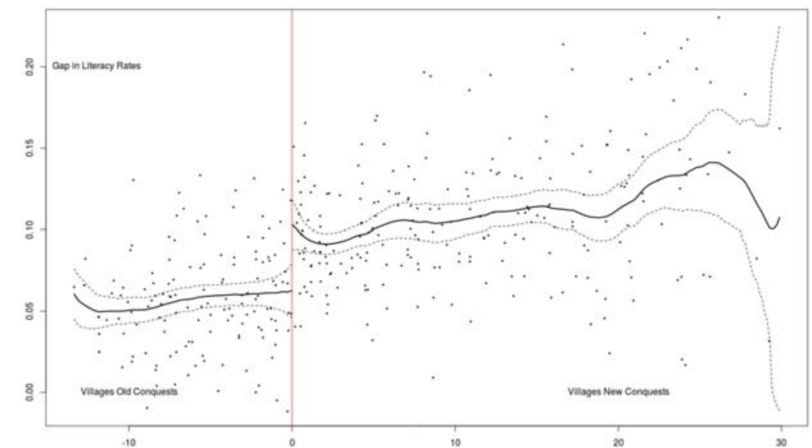
450 Years of Portuguese Colonialism in India: Missionaries, Education, Gender Gaps

Alexander
Lehner

Goa was conquered by the Portuguese in 1510 and subsequently served as the capital of the so-called Estado da India for several centuries. Through trade it became one of the world's most important and richest cities in the 16th century. It was called the „Rome of the East“ and had more inhabitants than almost any European city at that time. From around 1600 a sharp economic decline set in. Albeit losing virtually all territories of their vast thalassocracy, the Portuguese managed to expand their initial territories in Goa; the Velhas Conquistas (four contemporary districts). Around 1780 they added the so-called Novas Conquistas (additional seven contemporary districts). Only in 1961 Goa gained independence from its colonisers, having been uninterruptedly colonised for almost 450 years. One main objective of the Portuguese colonising strategy was to intermarry with local women and convert people to Christianity. The Lusitanians always brought monks and priests with them which, inter alia, educated the local populace through a parish infrastructure and the schools which they built up. In fact historians agree that within 30 years of the conquest of Goa, public education was in the hands of the Church. Furthermore efforts were made to alleviate the position of women in the local society. Upon Portuguese arrival women were given property rights. Moreover polygamy and practices like early childhood marriage and sati were curbed. In this study I argue that a persistent effect of these activities can be seen up until today in terms of education (measured in literacy rates), the male/female gap in literacy rates, and sex ratios (number of women per 1000 men). The latter typically being male-biased all over India. To show this, I exploit the fact that in the year 1759 the Jesuits were expelled from Goa. Furthermore all remaining religious orders were forbidden in 1835. Therefore the Novas Conquistas were not penetrated by the priests' and monks' activities. My identification strategy to show that this is most likely the underlying channel, is to use a geographic Regression Discontinuity Design. As discontinuity I exploit this historical quasi-experiment and use the border between the Old- & New Conquests which doesn't exist anymore since almost 250 years. The former experienced around 450 years of Portuguese colonial rule, of which around 250 were marked by heavy influence of the religious orders. Especially by the Jesuits, which grew very powerful throughout the years: they set up the printing press, a college, were important landowners and served as lenders, even for the Portuguese administration. The latter were exposed to Portuguese colonial institutions for almost 250 years without any Christian missionary- or other cultural influence. Other important factors such as soil quality, climate, ruggedness, rainfall and the like are completely identical on both sides of this old border which is located in the rural hinterland of Goa.



The units that I consider for my quantitative analysis are all villages & towns in Goa (Indian census of 2011). My results suggest that being just outside this border that doesn't exist anymore since around 1780, on average reduces the respective educational levels (as measured by contemporary literacy rates) by around 3.5 percentage points. Throughout the years, I argue, the notion that education is important diffused within village communities, maintaining a persistent difference in education to the parts of Goa in which Christian missionaries never were present. Additionally, the missionary activities can somewhat be seen as an infrastructural treatment since a network of schools and even several colleges were built up.



This effect is partly driven by female literacy rates. Stepping inside this virtual, non-existing border, the gender gap in literacy rates drops by 4 percentage points. Since the mean gap across Goa is 8 percentage points, this jump is quite substantial. Another variable that exhibits a similar discontinuity is the sex-ratio which is considerably higher in 2011 in the Old Conquests. Because of my research design and further robustness checks, I claim that I can rule out several other possible channels. By shifting the border slightly in- or outwards, the effect vanishes completely. So-called placebo outcomes, variables that should be correlated with literacy rates and sex-ratios, do not exhibit a jump across the old border (e.g. number of schools and number of nurses/doctors obtained from the 2011 census). Furthermore the data from recently digitised colonial censuses provide further evidence: the sex-ratios observed on a village & district level were different already in the early 19th century. It is also very unlikely that the differences that I observe were there before the Portuguese arrival in 1510. In the decades before they arrived there were several skirmishes between local rulers and borders were redrawn many times. All data that I examine confirm that the districts that once were in the Old Conquests on average are different in several respects. The so-called 1967 opinion poll for example (in fact it was a referendum which decided whether to merge Goa with neighbouring Maharashtra) was decisively pivoted by the votes of the four old districts. Literacy rates and sex-ratios on average are substantially higher in the older districts albeit the demographic structure changed heavily (e.g. the share of Christians declining from over 90% to 20-30%). All in all the historical narrative points to the activities of Catholic missionaries and the exposure to education that they induced and the role of women in society that they alleviated at a comparatively early stage in history. Differing contemporary educational levels for Hindus across the old border provide tentative evidence that apart from vertical diffusion throughout time, there was also horizontal diffusion within villages communities taking place.

Persistence of Natural Disasters on the Development of Children: Evidence from the Great Kanto Earthquake of 1923

Kota
Ogasawara

The fetal-origins hypothesis argues that the metabolic characteristics of fetus that had been exposed to inadequate nutrition in utero are more likely to lead to diseases in adulthood (Barker 1992). In the field of economics, long-run adverse effects of fetal damage have been widely studied since Almond and Mazumder (2005), and Almond (2006) found the causal link between fetal influenza exposure, and later-life health and socioeconomic outcomes.

A growing body of literature has employed the random assignment of fetal health shocks through a wide range of natural experiments (Almond and Currie 2011; Currie and Vogel 2013). The results obtained in these studies widely support the evidence that fetal damages through sudden exogenous shocks can be associated with later-life human resource outcomes. However, except for a few studies, the adverse long-run effects of earthquakes have been understudied.

Glynn et al. (2001) investigated 40 pregnant women who had experienced an earthquake of a magnitude of 6.8 that occurred in Northridge, California in 1994 during or shortly after a pregnancy. They found that maternal stress experienced in early pregnancy was associated with shorter gestational periods. Torche (2011) investigated the influence of acute stress exposure to the Chilean earthquake of 2005 with a magnitude of 7.9 on birth weight by using birth registry data. According to her results, maternal stress results in a decline in birth weight and an increase in the proportion of low birth weight. These studies show the causal link between fetal earthquake exposure and low birth weight. This finding is rather striking as low birth weight due to reduced gestational age and intrauterine growth restriction can cause adverse effects on the development of children (Gupta et al. 2013). Moreover, a low birth weight can significantly increase the later-life risk of higher blood pressure, heart diseases, and diabetes (Yeung et al. 2016).

However, very limited evidence establishes a link between fetal earthquake exposure and child growth (Kousky 2016). Moreover, among related literature on the long-run effects of fetal health shocks, the number of studies investigating the development of children continues to be scarce. In order to narrow this gap, I examine the physical development of cohorts of Japanese children, who were in utero during the Great Kanto Earthquake of 1923.

I prefer to use the "old" earthquake of 1923 as the research object rather than the recent earthquake for the following reasons. First, I seek to examine the adverse health shock of the earthquake in an industrializing country. A growing body of literature investigating the impacts of fetal disaster exposure on perinatal health tend to set their target as developed countries, where detailed data is more likely to be available (Harville et al. 2010). However, a large proportion of the natural disasters have occurred in the developing countries (Rasmussen 2004). Second, the Great Kanto Earthquake of 1923 was unprecedented in the history of Japan. The number of individuals killed, injured, or missing due to the earthquake was 156,000. The total value of damage due to the earthquake to the gross national product in 1922 was estimated to be 35.4%, while the ratio of the damage of the Great East Japan Earthquake of 2011 to the gross domestic product in 2010 was 3.5%. This fact implies that the affected cohorts who were in utero during the earthquake may have experienced the obvious adverse effects on their developments relative to the other cohorts. Considering these reasons, I utilize the earthquake of the early 20th century and select Chiba prefecture as the main research area, where the physical disruption was primarily caused by the vibrations.

In order to examine the causal effects of the earthquake on children, we drew a unique school-level multidimensional panel dataset on the height of children aged between 6 and 11 years from 430 schools between 1925 and 1935, and compiled the regional variation of the damage from the official report (Figure 1). The sample consisted of more than 90% primary school aged children in primary schools in Chiba during the period.

I found that fetal earthquake exposure had negative effects on the development of children and the magnitude increased with the devastation. The estimates suggest that the height of boys and girls who experienced the earthquake in the womb, whose mothers lived in highly devastated areas where on an average, 85% of the households were damaged due to earthquakes of the intensity of 7.0, is slightly lesser than the surrounding cohorts. Significantly smaller stunting effects are observed in children born in moderately or marginally affected areas, which experienced earthquakes of an intensity of 5.0 or 6.0. I also found that prenatal exposure could be more important than postnatal exposure in order to explain the stunting effects. However, these stunting effects are attenuated when prefecture-level dataset is used. This implies that the impacts of earthquakes on child health are limited on a local-level as the physical disruption due to the earthquake are concentrated on a set of municipalities in a certain prefecture.

This paper would contribute to literature through the following three points. First, it shows the impacts of fetal health shock owing to natural disasters on child growth. As described previously, the adverse effects of fetal damage on infants and adults have been widely studied in literature (Almond and Currie 2011b). However, studies on juvenile population are less likely to be analyzed, with a few exceptions (Kelly 2011). Considering the link between wealth and human physique found in the recent related study, understanding the impacts of fetal health shock on the development of children also contributes to literature (Bozzoli et al. 2009). The nature of shorter latent periods of children when compared to adults enables us to provide direct evidence on the long-run effects of fetal health shock.

Second, this paper is the first to examine the impacts of an historic earthquake on human health in a previously-developing country. A number of previous studies testing the fetal-origins hypothesis have investigated the current developed countries. Although these countries that are equipped with better institutions and infrastructure are more likely to deal with the adverse shocks of earthquakes, a one-off disaster could cause significant negative effects on developing countries (Noy 2009; Akter and Mallick 2013). In addition, countries with a higher level of threat from natural disasters can suffer considerable loss due to the disaster (Schumacher and Strobl 2011). Considering this, investigating the consequences of disasters on human health in an industrializing country shall be necessary for launching effective prevention policies. Moreover, Japan is one of the most appropriate study subject as it is located in Asia, a continent which has frequently experienced massive earthquakes due to its geographical location. Considering that few studies focus on Asia, this paper contributes to new evidence as a case of a previously-developing Asian country (Lin and Liu 2014).

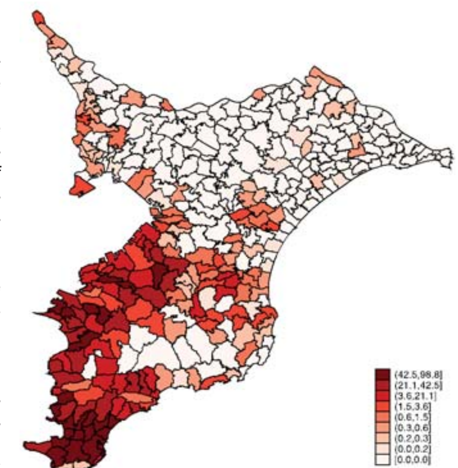


Figure 1: Spatial distribution of affected households in Chiba

Notes: The number of affected households is defined as the number of households that collapsed and were partially destroyed by the earthquake. Source: Calculated by the author from the Division of Social Affairs, Chiba Prefecture (1933).

Third, this paper contributes to earthquake literature in the field of economics. Literature on the economic impacts of earthquakes remain limited (Cavallo and Noy 2010; Hallegatte and Przluski 2010). In relation to the Great Kanto Earthquake of 1923, a few studies have analyzed the effects of the earthquake on market functions (Hunter and Ogasawara 2016). However, its impacts on human capital have been widely neglected. This paper attempts to examine the potential long-run health effects of the earthquake by using comprehensive school physical examination records during the early 20th century in Japan.

The Economics of Grain Storage in England, 1663-1846

Edmund Cannon   Liam Brunt

We utilise a wide variety of sources to examine various aspects of grain storage and how the grain storage issue interacted with the operation of grain markets in England.

A large majority of the many papers analysing historical grain markets are based upon price data: see for example, the survey by Federico in the Economic History Review (2012) of papers on markets ranging from the Middle Ages to the twentieth century. Many of these studies use prices observed at a much higher frequency (weekly) than the frequency of production (annually, since there is only one harvest per year) and do not discuss in much detail the chain of buyers and sellers from the producer (farmer) to the consumer: during the year the entire year's output had to be stored.

We analyse the storage of wheat as it progressed from the farmer to the miller and the baker, a progression that involved further production (value added) as threshing and milling. In the absence of a large set of systematic data, we utilize a wide variety of contemporary sources: contemporary writing on farming; individual farmers' diaries; corn books and inventories; farm labour books (revealing the point in the year when grain was threshed); official data showing when grain was traded (for the end of the period); and qualitative information from official sources.

We show that most grain was stored on farms and that much of it was not threshed until relatively late in the harvest year. Indeed wheat was occasionally stored from year to year without being threshed. The threshing process meant that farmers would be unable to arbitrage sudden short-run changes in prices since their stocks were not available for immediate sale. On the other hand there is evidence that richer farmers took advantage of the fact that prices tended to rise throughout the harvest year to sell wheat later, suggesting that these farmers were less credit constrained.

Storage costs within the year were not particularly high and there were benefits to storing wheat on the farm rather than in a granary (where grain needed to be turned to keep it in good condition). As grain markets became more efficient the benefits of granary storage declined. Some grain was sold directly to millers, circumventing grain traders and regulated markets: this pattern strengthened over time as grain came to be sold by sample and it became easier for farmers to obtain external finance. Increased efficiency in financial markets made it easier for farmers to sell direct to millers, since the financing rôle of middlemen and grain merchants became less important.

Grain prices in the Russian Empire: did convergence come by train?

Vera
Ivanova

Commodity prices across regions are not randomly distributed. Prices in one region may be correlated with those in another region, and to a large extent, price differences depend on the proximity of regions. Locational patterns of economic activity and transportation infrastructure are crucial for understanding interregional trade, therefore, introducing a new transportation system may affect existing commodity prices. This paper studies proximity of regions affected comovements of grain prices and how the development of railroad network affected grain prices in the Russian Empire.

There are few papers studying regional grain prices in the Russian Empire. Mironov (1985) provides an extensive data review and analysis of grain prices in the Russian Empire from 1707 till 1914. Because of lack of data, Mironov estimated the role of transportation costs in the volatility of grain prices indirectly, by means of the price index of goods and the purchasing power of money, and using unexplained variation of grain prices. Metzer (1974) estimated trend coefficients of yearly grain price differentials for pairs of main Russian cities and towns connected by major railroads and reveal significant decline of the price differentials during 1893–1913. Ivanova (2015) analyses rye prices in European provinces of the Russian Empire and shows that reduction of grain prices was largely due to a change in this indicator in neighboring provinces.

To the best of my knowledge, existing empirical studies on grain prices in the Russian Empire do not exploit regional-level data nor on grain prices, neither on the railroad development, so inference about the role of the transportation system in grain price convergence in the Russian Empire is collateral. In this paper, I use a unique geo-coded dataset consisting of annual grain prices and other regional variables on 50 European provinces of the Russian Empire, 1860--1913, and annual GIS shape-files of the Russian Imperial railroads.

First, I analyze spatial distribution of grain prices across the Russian Empire from 1860 to 1913 using spatial autocorrelation of grain prices with different spatial weights. I find that strength of spatial interaction of grain prices increased over time, see Figure 1 for Moran's I values.

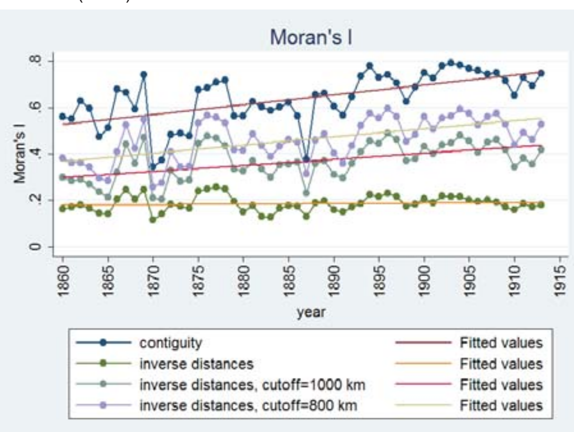


Figure 1. Moran's I for relative rye prices, 50 provinces, 1860-1913

Using spatial models of the simple growth regression, I show that the data on prices in provincial cities of the Russian Empire yield strong empirical support for spatial convergence in grain prices across provinces during the period under consideration. I find that the speed of grain price convergence was consistent with those of comparable time period in the US states reported by Solakoglu and Goodwin (2005).

Second, I study the impact of railroads on reduction of grain price differences. Space itself cannot be a pure source for price convergence, if there are no changes in transaction costs, in transportation routes, in commodity traffic etc. Railroad development could have had an impact on grain price convergence in the Russian Empire. I have constructed annual GIS shape files on railroads for each year (Figure 2).

Using GIS software, I compute annual railway distance matrices (shortest path length) between provincial centers. In the spirit of Donaldson (2017), I run regressions on grain price differentials between regions and find that the railway distance effect reduced significantly – and differently for different types of grain – the grain price differentials. Furthermore, the effect of railways on price gap reduction depended on the time that passed after a pair of provinces had been linked by railroads.

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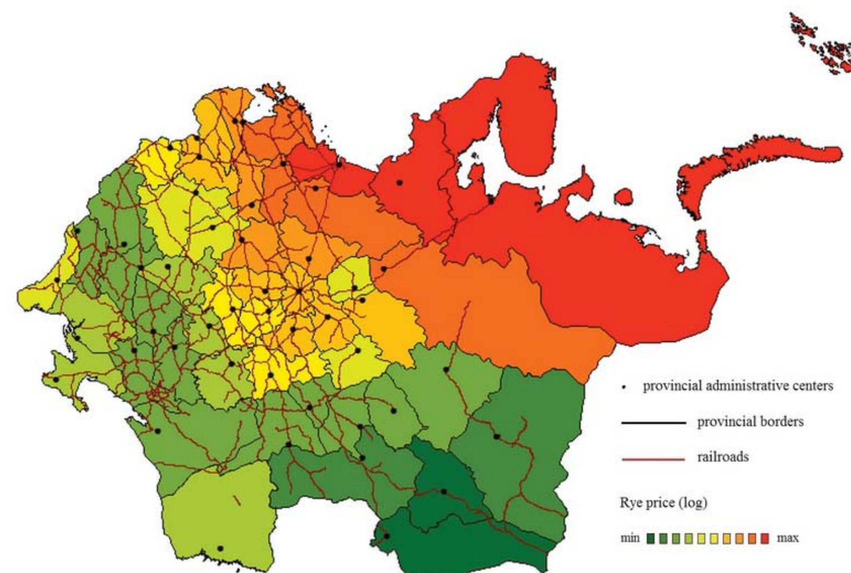


Figure 2. Rye prices and railroads network in the European Russia, 1905

Market Integration in the Indian Ocean: Colonial Port Cities and the Colonial Hinterland, 1870 – 1914

Kevin
Tang

The colonization of Africa and Asia by overseas European empires in the nineteenth century occurred through the economic, social, and political control of the coastal port cities, which then functioned as the base through which further imperial control extended to the continental interior. Large port cities subsequently emerged as entrepots, interacting with and connected to the global economy in contrast to the continental hinterland, which remained isolated and economically specialized. The distinction that therefore existed within a colony was between the hinterland and the port. This framework has been widely applied to colonial economies, and particularly to that of the Indian Ocean region in the first period of globalization from 1870 to 1914. This paper documents the comparative integration of colonial port cities with either the colonial hinterland or with the international network of other Indian Ocean ports.

Using grain price data for 85 cities across the Middle East, South and Southeast Asia, this paper addresses three topics on the economic history of the Indian Ocean: market integration in the first period of globalization, the relative orientation of port city integration either with the global economy or with the colonial hinterland, and the relative impact of innovations in railroad versus steamship transport in Indian Ocean integration.

In contrast to the widespread literature on the role of colonial railroads in integrating colonial hinterlands and ports, by expanding the scope of analysis to include a wider range of cities across a larger region, such as the Middle East, South and Southeast Asia, the role of port cities as they linked other ports are shown to have a greater role in contributing to Asian integration than railroads, demonstrating that the port cities were more internationally oriented than internally integrated with the rest of the colony.

Notes

Banking Crises and the International Transmission of Vulnerability

Markus Eberhardt
Jakob Madsen
Andrea Presbitero

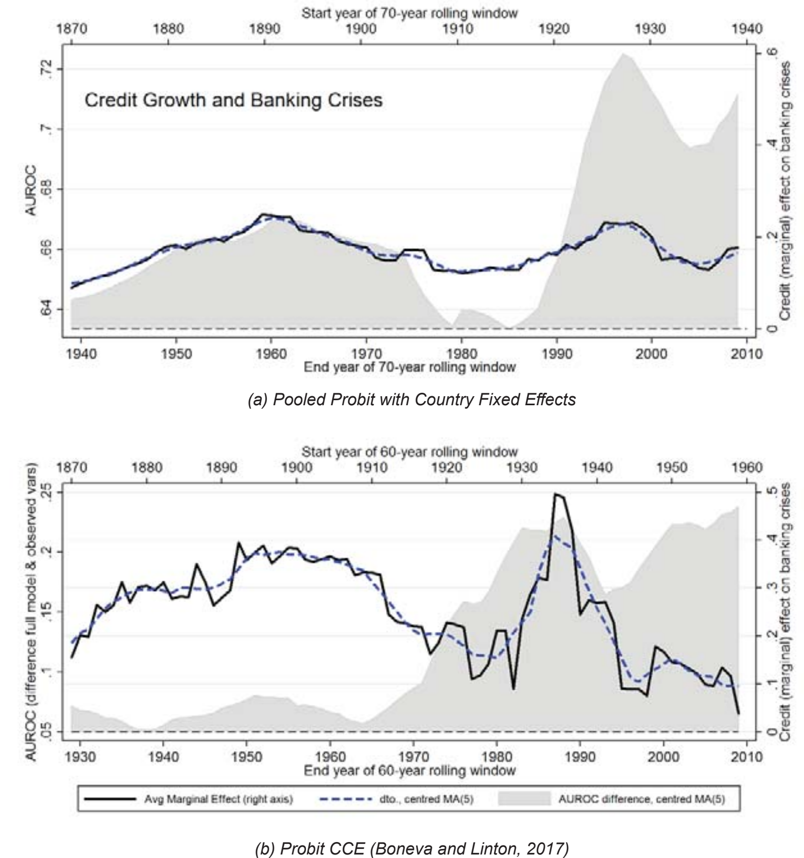
The theoretical and empirical investigation of the determinants of banking crises, along with the construction of early warning systems, has seen a wave of renewed interest among academics and policymakers in the aftermath of the Global Financial Crisis of 2007/8, and a number of important contributions in this field have been made over recent years. Perhaps most relevant in the context of financial crises in (modern day) advanced economies is the insight that the relative rarity of crises in this group over the post-WWII period necessitates a broadening of the sample so as to increase the number of crisis events and thus provide 'better' identification of crisis determinants in empirical studies. Extending the sample to include more countries will likely not serve as a suitable solution, given the heterogeneity in the development of macroeconomic institutions (public and private) between advanced, emerging and developing economies. Instead, economic historians have come to address this issue by delving deep into the archives of central banks and statistical offices to provide datasets with substantially increased time series (Reinhart and Rogoff, 2009; Jorda, Schularick and Taylor, 2017) along with careful empirical analysis which has not only fashioned a "new (near consensus) view" (Bordo and Meissner, 2016: 31) of crisis determinants, centred on the dynamics of private credit growth, but has also set new benchmarks for this literature in terms of empirical implementation and testing.

Our main empirical point of departure from this emerging literature is to suggest that existing work on financial crises (i) has (tacitly) treated the relationship between crises and their 'determinants' as common across all sample countries; (ii) has behaved in a somewhat cavalier fashion with regards to possible cross-country contagion effects (crisis transmission), the possibility that some crises may have been triggered by events beyond the control of the individual country or that latent crisis signals may not reflect the economic conditions within the country in question but instead in the world at large (van den Berg, Candelon and Urbain, 2008); and furthermore (iii) has primarily focused on analysing the entire sample period, which in case of Schularick and Taylor (2012) and related work amounts to 140 years and for Danielsson, Velanzuela and Zer (2016) to over 200 years. These studies provide results for sub-periods but lose out on the rich narrative arising from the analysis of a rolling time window we pursue in the present study. Perhaps most significantly, this allows us to gauge the relative dynamic evolution of unobservables and the transmission of international vulnerability on the one hand, and domestic fundamentals, referring to any observed variable of country characteristics included in the empirical model, on the other.

Our empirical approach implements the widely favoured binary choice model approach (e.g. Schularick and Taylor, 2012; Anundsen, Gerdrup, Hansen and Kragh-Sorensen, 2016; Danielsson, Velanzuela and Zer, 2016) on crisis events data but allows for unrestricted cross-country heterogeneity in crisis determinants and accounts for unobserved spillover and contagion effects. Thus we seek to go beyond the standard approach which provides crisis determinants and the predictive fit of the empirical model for the entire sample of countries; instead we offer insights into the differential patterns of these determinants and their empirical fit across countries. We achieve this by adopting a recent theoretical contribution by Boneva and Linton (2017) which combines a heterogeneous binary choice setup with the common factor structure which has dominated the panel time series literature over the past decade (seminal contributions include Bai and Ng, 2002; Pesaran, 2006; Bai, 2009). We employ a new dataset for 21 OECD countries building on Madsen and Ang (2016) but extending the sample backwards to the start of the 19th century and up to the present day. These data are used to compare and contrast the empirical results from standard pooled logit estimators and the novel heterogeneous probit CCE of Boneva and Linton (2017).

Preliminary results (for a 1870-2008 sample and with various caveats which we seek to address in ongoing work) point to significant differences in the secular patterns of the marginal effects of credit growth for banking crisis prediction between the pooled model (in panel (a) of Figure 1) and the heterogeneous model in panel (b). One interesting aspect is the explanatory power of the two rival empirical models, which (measured by the AUROC statistic) increases over time. In the probit-CCE model, it is however possible to trace this secular rise to the increasing explanatory power of the unobservable variables, which are conflated with the credit growth variable in the standard

Figure 1 – Average Marginal Effects and AUROC (rolling window analysis)



(a) Pooled Probit with Country Fixed Effects

(b) Probit CCE (Boneva and Linton, 2017)

Notes: The black lines indicate the average marginal effects from (a) standard pooled probit regressions and (b) Probit-CCE regressions for (up to) 21 countries where the credit/GDP growth variable is entered with five lags or as an MA(6) process. These are estimated in a rolling window of 70 and 60 years, respectively. Countries drop out of the sample if they did not experience a crisis during the individual window or if the model predicts the outcomes perfectly. Confidence bands are omitted for readability. The dashed blue lines are centred MA(5) transformations of the estimates. In panel (b) the grey area indicates the difference between two ROC curves derived from the Probit-CCE predictions: the full model (including unobservables) less the observed variable predictions -- again transformed into a centred MA(5). In panel (a) the grey area is simply the AUROC statistic. At present there is a clear mismatch (60 vs 70 year rolling windows, lags versus MA-transformations) which limits the comparability of these results.

Sovereign bonds during Break-up of Nations: When Belgium left the Netherlands

Stéphanie
Collet

Sovereign bonds have singular characteristics. On one hand, given the official nature of the issuer, sovereign obligations are often considered as risk free assets. On the other hand, the real capacity of investors to force reimbursement is extremely limited. Understanding the implications of this paradoxical situation represents one of the main challenges of this topic (Eaton and Fernandez, 1995).

Recent papers have attempted to determine the impact of certain events on sovereign bonds' expected rates of return. The well-known example of an event which disturbs the course of government bonds is war: American Civil War (Willard, Guinnane and Rosen, 1996; Weidenmier, 2002; Oosterlinck and Weidenmier, 2007), Second World War (Frey and Kucher, 2000; Waldenström and Frey, 2004) or Russian revolution (Landon-Lane and Oosterlinck, 2006). For more peaceful periods, the reactions of bond prices following political changes have also been scrutinized. For instance, political changes can impact sovereign bond prices (Bordo and Oosterlinck, 2005; Saiegh, 2005).

In the same way, the reaction of financial markets in the case of an annexation has been investigated for Texan (Burdekin, 2006) and Hawaiian (Burdekin and Laney, 2008) debts. State breakup, like annexation, can also disturb sovereign bond markets. This paper focuses on the implications for state bonds of a country undergoing state's breakup. Indeed, when major political crises between the different parts of a country occur, its bonds are likely to be affected. Economic studies have focused on the key distribution of debt between secessionist State and original State. Puzzlingly, in spite of the importance of the amounts involved, there has been little investigation on the financial impact of a state's breakup.

This paper provides an empirical analysis of the evolution of sovereign debt prices when a state breaks up, or when it faces such an event. The topic keeps coming into the spotlight as the cases of Scotland and Catalonia recently demonstrate. Based on an original database of Dutch and Belgian bonds, this paper studies the impact of Belgian independence in 1830 on Belgian bonds.

When a country breaks up, two additional risk premiums on sovereign bonds are to be expected: one risk premium on the sovereign bonds of the original country and one risk premium on the sovereign bonds of the new country. The first risk premium may be attributed to the break up of the country. The second risk premium may be attributed to the lack of experience and the possible instability of the new country.

This paper showed that both risk premiums are non-trivial. The break-point analysis of the Belgian-Netherlands break-up in 1830 has shown that investors required a 'country break-up' risk premium of 142 basis points for the sovereign bonds of the original country.

There was no 'new country' risk premium for Belgian bonds, but the Belgian authorities still had to pay a risk premium. This effect was likely due to the role of the House of Rothschild which underwrote Belgian debt after the break-up. Underwriters of sovereign debt played a very important role at that time. It seems that they not only provided liquidity, but also had a signalling role. Rothschild's reputation apparently reassured investors that the sovereign debt of Belgium was not riskier than the sovereign debt of the Netherlands. As a result, there was no 'new country' risk premium for the sovereign bonds of the new country. However, Rothschild charged a premium to the Belgian government. Consequently, the Belgian authorities still had to pay a risk premium which is computed as the "effective rate". This result which suggests that Rothschild had a signalling role is complementary to the finding of Flandreau et al. (2009) that defaults were not randomly distributed among underwriters in the 19thcentury.

Finally, this paper has underlined the certification role that Rothschild played for Belgium first loans. Nowadays, there are some institutions which could perform part of Rothschild's role, like credit rating agencies and the IMF. This paper has shown that an institution with a certification role can be key to reduce the sovereign debt market turmoil in case of a nation's break-up.

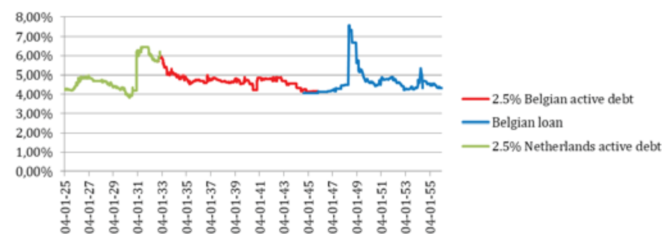


Figure : Belgium sovereign debt

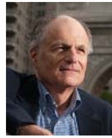
Table 1 : Break Test result

Break Date	Long term change in yield	Explanation
30/11/1830	142 bp	Country break-up
29/02/1848	88 bp	Financial crisis of 1848

Table 2: The Effective Rates

Loan's name	Issue's year	Interest rate	Issued @	Effective rate	Type
10 M fl loan	1831	0.00%	-	-	Forced
12 M fl loan	1831	5.00%	-	-	Forced
Rothschild's 24 M fl loan	1831	5.00%	75	6.93	Rothschild
Rothschild's 48 M fl loan	1832	5.00%	79	6.71	Rothschild
Rothschild's 100 M fr loan	1832	5.00%	79	6.71	Rothschild
30 M fr loan	1836	4.00%	-	-	Public
Rothschild's 50 M fr loan	1838	3.00%	73.5	5.1	Rothschild
1840's loan	1840	5.00%	93.47	5.35	Rothschild
1844's loan	1844	4.50%	59.75	-	Public/ Rothschild
1848's loan	1848	5.00%	-	-	Forced
1852's loan	1852	5.00%	97.1	5.15	Rothschild
1854's loan	1854	4.50%	85.24	5.28	Rothschild

Gold, Silver, and the Price Revolution



Francois Velde

Thomas J. Sargent

For centuries scholars have debated the role played by discoveries of precious metals in the variations in price levels of the Early Modern era. We propose a quantitative assessment of the question.

This paper is a first step in a project intended to better understand the monetary arrangements of the 19th century, alternative arrangements that were proposed, and their impact on the price level. Specifically, we are interested in modeling various monetary instruments, including coins, tokens or notes, and deposits. To evaluate the impact on prices of alternative arrangements (such as William Jennings Bryan's proposal to return to bimetallism in the US in 1896, as well as impose a form of narrow banking), we need a model in which prices are endogenous, that is,

To obtain estimates of these preference parameters we turn to the "Price Revolution" or, more broadly, the period from 1500 to 1800 during which large increases in gold and silver production in the Americas and elsewhere changed both the total quantity of gold and silver and their relative proportions, inducing changes in the price level as well as in the relative price of these two metals.

The model we use is an "off-the-shelf" model of commodity money. At its simplest the model is an endowment economy, in which the consumption good as well as the total stocks of metals is exogenous. Endogenous objects are the money stocks and prices; the decisions to allocate metal between monetary and non-monetary uses reflect preferences for nonmonetary uses and the consumption good.

The basic logic of the model is straightforward. The demand for money comes from a cash-in-advance constraint which can be met with a set of various monetary objects, with potentially different relative costs of use: alternative monetary arrangements are simply modelled as changes in this set. In the simplest version, with a single metal, the only decision is to split the exogenous stock of metal into coin and non-coin, the former used to meet the cash-in-advance constraint, the latter yielding utility. Increases or decreases in the stock of metal will be shared between coin and non-coin. Real balances are determined by transactions demand so that prices are proportional to the money stock, but the money stock is endogenous. At one extreme, if all metal is coined its relative price is infinity and real balances are too high; at the other extreme if no metal is coined real balances are too low. Equilibrium is somewhere in between. In the special case of Cobb-Douglas preferences prices are proportional to the stock of metal, with more general preferences the relation is nonlinear.

The Price Revolution involves both gold and silver. In a model in which both gold and silver coins meet the transactions demand equally well, there is a fundamental multiplicity (as Walras remarked long ago). Start from an equilibrium with both gold and silver coins, and a certain relative price. Melting down some silver coins increases non-coin silver and reduces its marginal utility, while minting some gold reduces non-coin gold and increases its marginal utility. The result is to keep the real stock of money constant while changing the gold-silver ratio. The multiple equilibria correspond to different gold-silver ratios, although the mechanism works as long as there are still gold and silver coins: hence the range of possible ratios is limited by total stocks (and by preference parameters).

For prices to be endogenous we have to specify preferences for the metals: we use either a Cobb-Douglas or a CES parametrization. The data we need are a measure of the general price level, the gold-silver ratio, metal stocks, GDP and population (to have per-capita transactions demand for currency). Data quality is an obvious problem, more so for population and quantities than for prices. Many long time series are now available for prices of individual goods, but we need a measure of the general price level. For the gold-silver ratio, a well-known series starts in 1687, but we lack market-based measures for the earlier period.

To extract a measure of the general price level (in terms of silver) for Europe, we use the time series collected by Robert Allen, and extract a common component using a simple state-space model. This method exploits the information in all the time series about common trends, while handling missing observations and an unbalanced panel with ease. We use the same model to extract a measure of the gold-silver relative price before 1687, using the exchange rates quoted at the Bisenzone fairs: almost all cities were quoted in local currency, typically indexed to silver, against a notional but gold-based common unit. We assess the validity of the resulting series for the gold silver ratio by comparing it with legal ratios in France and England and the share of each metal in their minting output.

The metal stock series are based on the classic 19th c. studies of Soetbeer, but updated with recent scholarship. Population and GDP estimates, taken at half-century intervals, are clearly the weakest link, along with the initial stocks of metal in 1500. We want to give the model its best shot at capturing the data while acknowledging the data's limitations.

The procedure is to find parameters that minimize the distance between predicted and actual prices. There is one equilibrium equation that determines the monetary stocks given a gold-silver ratio, and the solutions must be checked against the upper bounds (the total metal stocks); if either one is violated the equilibrium is monometallic. The model seems to do a good job of replicating the pattern of prices over the 1500-1800 period.

You Reap What You Know: Origins and Dynamics of State Capacity

Thilo R. Huning

Fabian Wahl

To better understand the role of taxation on the emergence of states, this article presents an incomplete contract model of an agricultural society in which information asymmetries cause inefficient taxation, and hence outmigration, uprisings, and rent-seeking, but also urbanization. We propose a geographic index of information costs, observability, to test our model. Our case study is the Holy Roman Empire, which had a relatively homogeneous institutional framework, state of technology, culture, and ethnic composition across hundreds of observed states, and for over 500 years. We find a robust link between observability and states' tax capacity, their size, and their survival.

This paper studies the determinants of tax capacity in medieval central Europe. It benefits from the coincidence that the HRE was a federation of states for hundreds of years. This allows us to trace the whereabouts of hundreds of states, and connect their history to their geographic circumstances via our model. We are able to theoretically and empirically show that the observability of agricultural output, via its impact on taxation capacity and the political structure of states, was a primary determinant of state size and survival in medieval central Europe. We employed the theory of incomplete contracts to shed light on the dynamics of state capacity before various revolutionary social and economic events, from 1496 onwards, changed the game.

Our results provide evidence for the interaction of agriculture, climate, and geography in explaining political outcomes like state capacity or regime. This adds a new perspective to the existing large and influential literature that links geography, climate and agriculture to long-run differences in economic outcomes. We have proposed a GIS measurement of observability of agricultural output that actually measures the degree of information asymmetry in an early society. As this index is well grounded in theoretical economic reasoning, it is potentially useful for several other research endeavors in economic history, and long-run development.

The present paper can be seen as starting point for important further analyses, like for example, on why exactly agricultural observability lost its explanatory power for state capacity during the early-modern period. This would be the next step to better understand the dynamics of state capacity in Europe over the last 1000 years. Likely candidates to explore are the increased impact of technological innovations, or advances in education which come along the Reformation, and leading to increased urbanization and less reliance of a state's revenue on agricultural output. Our mechanism's role for single states and other world regions could also be insightful.

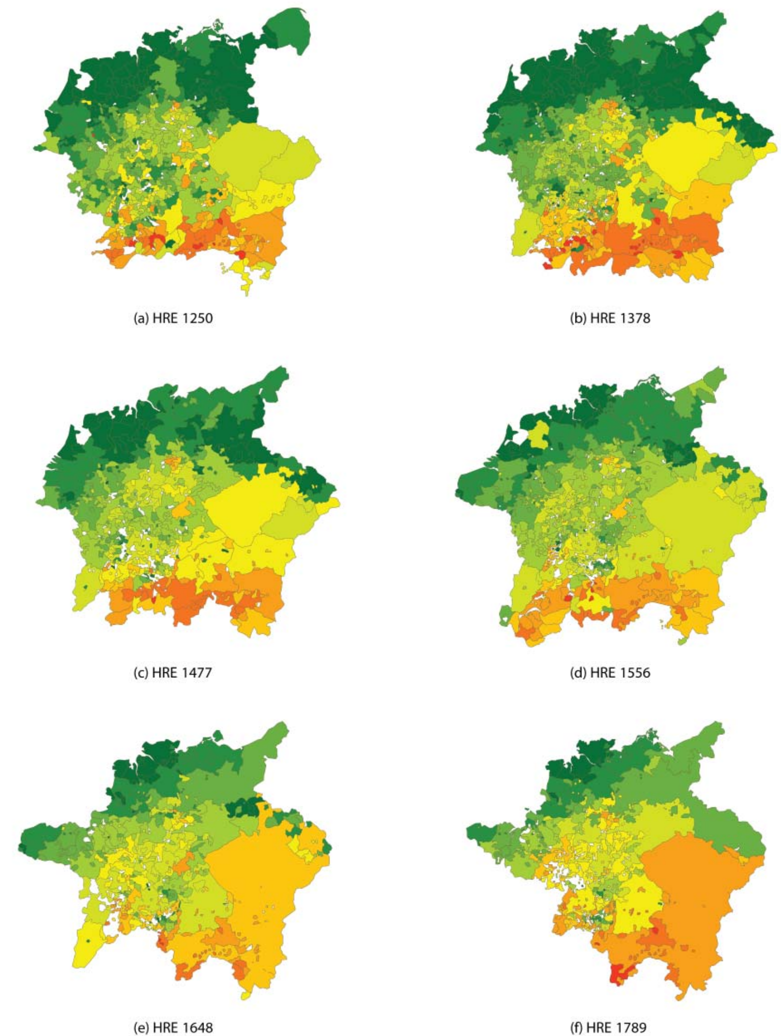


Figure 1: Observability of Argicultural Output in the States of the HRE

Note: This figures shows the average Caloric Observability Index in each of the territories of the HRE at the different sampling years. After 1500 New World crops becoming available due to the Columbian exchange are included in the calculation of the COI. The higher caloric observability is, the more dark-green colored the territories are. The lower caloric observability is, the darker-red the territories are colored.

The Paradox of Plenty: Theory and History in Russian Case

Andrey
Volodin

Russia is blessed with vast natural resources and rich environment. But from the viewpoint of economic history it's not so obvious that such blessing could be effective. Modern Russian economy dates to early modern times, and the start of first steps to sustained economic growth. As Sachs and Warner claimed: "One of the surprising features of economic life is that resource-poor economies often vastly outperform resource-rich economies in economic growth" .

So, it's possible to define a contradiction known as the paradox of plenty that refers to the discrepancy that countries with an abundance of natural resources (mostly non-renewable ones like minerals and fuels) tend to have less economic growth than countries with fewer natural resources . Debates about economic curse caused by quantity of resources started in the 1950s and 1960s . But the resources themselves are unlikely can have a significant impact on economic growth, technology is gaining importance. Technology is known as the "crucial factor in how humans interact with nature" . So, the natural resources became a factor of economic growth thanks to technology. I wonder if the interaction can be measured in terms of economic efficiency. The comparison of different measurements is a usual research procedure in economics; but in economic history quantitative approach commonly provokes qualitative curiosity. Measurement, by definition, is the assignment of a number to an object or event, which can be compared with other objects or events. When we meet documents of the Russian imperial archives the objects of nature that we under control for financial or fiscal reasons are extremely different and usually not comparable in long dynamics. It's a vital issue that comparisons in economic history are important only if they cover the field broadly. Comparisons in economic history are generally relative (e.g. per capita) than nominal. And discussions on what is worth measuring in study of natural resources compared to social dimensions.

Gregory Clark in his "Farewell to Alms" asked a question about possibilities to compare different economies: how is it possible to compare the world of the Stone Age with the one of 1800? The most obvious way is to define income per capita. From historical point of view, the most complex problem how to estimate the real income in the absence of direct data. Famous attempt to compute the income in the very long run was contributed by Angus Maddison . Income per capita shows not the real economic lifestyle of the society, depended on possibilities of natural resources, but its distributed growth. But it gives a chance to look at the very long run economic development of the world. And three main effects of the economic evolution became visible: Malthusian trap, Industrial revolution, and the Great Divergence. But it's not the same story with natural resources, because of the specific patterns of distribution as well as different efficiency.

"Resource turn" is a shift to modern economy (important not less than Great Divergence), when treasures became controlled, and then measured, and afterwards treasures became resources that are strengthened, and protected. Resources by definition shape institutions: from ownership to principles of nature protection . But institutions are different and usually are not well aggregated to general growth model. That's why institutions are to be studied as probably the main factors of economic development in economic history of the paradox of plenty.

The paradox of plenty in today's research literature is usually connected or even sometimes synonymic to the natural resource dependence . Historically it's not so obvious, because such connection is mostly based on studies of oil-economies . The usual way to efficiency can be explained differently. One is Hotelling's rule . It states that usage of a non-renewable resource is profitable when the price determined by the marginal net revenue from the sale increases at the rate of interest. In Russian case we find many difficult aspects of extremal development . But still comparative research for presence of Russia in economic development driven by natural resources is well linked to meta-regional approach of economic history .

In this presentation four case will be discussed:

1. creation of Waldmeister office under Peter I;
2. experts debate happened at the start of the 20th century, e.g. industrial police agenda of Dmitry Mendeleev (in 1902-1905);
3. the Decree on Land in 1917 explaining the new definition of natural treasures; and
4. the "resource curse" debate launched with the Oil shock in 1970s in the USSR?

Main questions we pose to retrospective development of usage of natural resources are the following:

- Does the 'plenty' strike productivity?
- Does the 'plenty' slow technology?
- Does the 'plenty' disrupt distribution?
- And more metaphorically, is the 'plenty' a bless or a curse?

These questions are quite important for general framework of retrospective understanding of natural resources contribution into economic growth, especially in Russia.

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Wheels of Change: Skill biased Natural Resources and Industrialization in eighteenth century England

Karine van der Beek
Joel Mokyr
Assaf Sarid

This study offers an explanation to Lancashire's prime role in the industrial revolution based on a theoretical and an empirical spatial analysis of England's geographical features and of the evolution of its mechanical labor force. The study emphasizes the important role played by the general expansion of the English textile industry in the eighteenth century and its effect on the evolution of a highly skilled mechanical labor force, and argues that this was the main force behind the significant technical improvements in this period. We claim that England's industrialization eventually came to be heavily concentrated in Lancashire (and in the west riding) rather than in the other major textile centres (i.e. Norfolk Suffolk, and Cambridgeshire in the east, or Devon, Gloucestershire, Wiltshire, and Somerset in the south-west), because Lancashire had both the necessary natural resources for the implementation of mass production technologies (i.e. appropriate river flows for watermills, and coal provisions for steam) and it happened to specialize in cotton, which fibres' were more suited for mechanical handling and therefore benefited more from the implementation of mass production technologies. Thus, Lancashire's industrialization was the result of its specialization in cotton combined with its availability of natural resources.

We use various sources of data to show that textile production, as a whole was more extensive in agriculturally fertile counties. The early textile industry depended amongst other things on agglomeration and on machinery operated by mills (mainly fulling) and agricultural areas were suitable as they were both more heavily populated, and more abundant in millwrights, a group of highly skilled mechanics who whose occupation is planning and building mills or setting up their machinery.4 Using the potential for wheat growing as an instrumental variable we also find that the number of wrights increased with the general expansion in textile production while technical improvements were also taking place. Since for various reasons cotton textiles were more strongly affected by these improvements, their price declined rapidly, increasing exports and the benefits from the implementation of mass production technologies. Soon, spinning machinery was housed in water-powered mills on streams and the need for more power stimulated the production of steam-powered. Although a number of counties had one of the necessary conditions for industrialization but Lancashire was the one to have all of them.

Domestic Barriers to Internal and International Trade: New Evidence for Brazil, 1920-1940

Marc Badia-Miró
Michael Huberman
Anna Carreras-Marín
Christopher M. Meissner

This paper studies the mediating role of geography on internal and international trade in interwar Brazil. We challenge several clichés of Brazilian economic history: geography was destiny, dependence on resource exports forestalled the development of domestic manufacturing, and industry performed poorly until the advent of import substitution polices. We find that the country's fate was not locked in by geography. In the great wave of globalization before 1914, international transport costs were low and domestic trade costs were high. The interwar period saw a reversal: international trade costs spiked and the Brazilian state intervened to reduce internal barriers. Domestic industry, unexpectedly robust, made the most of the opportunity. As the domestic market integrated, producers, increasingly concentrated in the São Paulo region, extended their reach. With regard to international exports, manufacturers first developed a deep home market, a slow and uneven process, before successfully accessing foreign destinations.

A contribution of this paper is the new granular evidence we assemble on the expansion in coastline (cabotagem) trade of Brazilian states. Since the mass of the country's population resided along the seaboard, coastline trade was the dominant national transport system into the 1950s. Our information on cabotagem is broken down by the exports and imports at the state and product levels. We find that growth in the extensive margin (the contribution to trade of new products) outstripped that of the intensive margin (the contribution of existing products), an outcome which is consistent with the fall in domestic fixed trade costs.

We cast particular attention to the cotton-textile industry, the largest employer in Brazil's manufacturing sector. Before 1914, the industry, which faced imposing internal trade barriers, was dispersed across Brazil. As relative trade costs moved in favor of domestic manufacturers, industry concentrated in the São Paulo region. By 1930, São Paulo shipments to the regions outstripped that of foreign imports. The productivity gains of agglomeration were muted, however. The positive effects of market integration and enhanced competition on productivity were offset by the entry of small and medium-sized firms, caused by the fall in domestic trade costs. New to the exporting sector, these firms were often less productive than incumbents. In this fashion, Brazil's performance was not the consequence of inferior institutions, poorly designed state policy, or listless business leaders. Paradoxically, the opening up of the country itself precipitated, the slowdown in productivity.

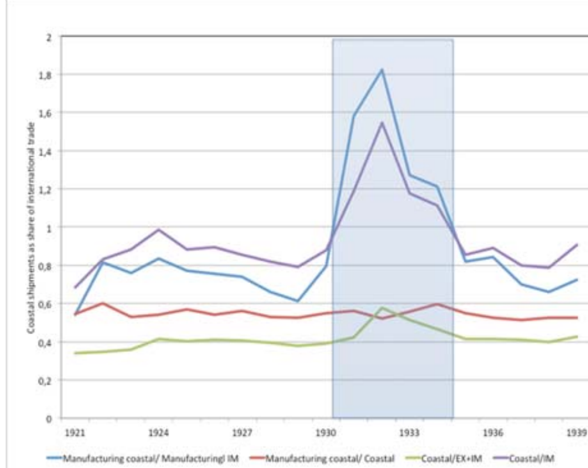


Figure 1: Coastline Trade as Share of International Shipments, 1921-1939

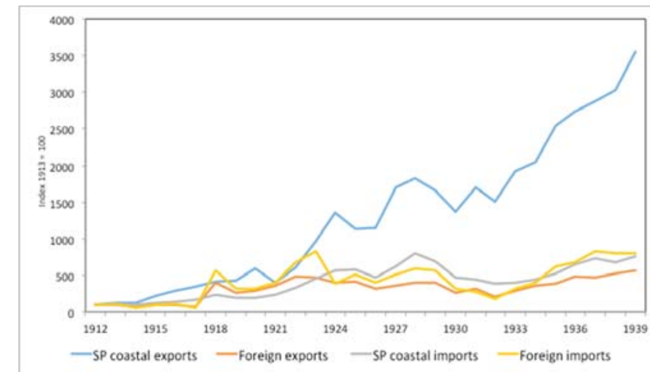


Figure 2: São Paulo Coastline Trade and International Trade, 1912-1939

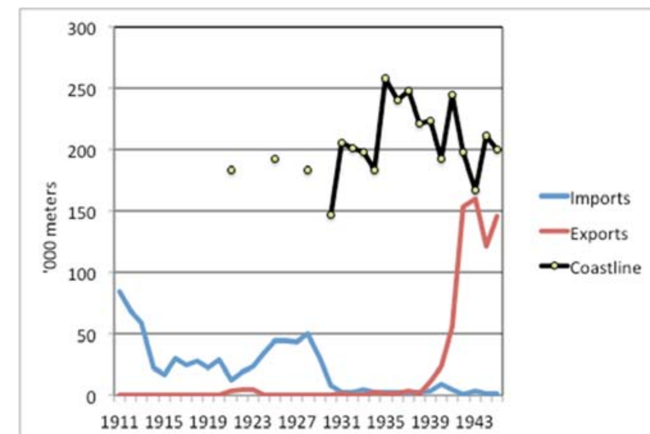


Figure 3: Cotton Textiles: International and Coastline Trade, 1911-1945

Trade Imbalances or Specie Arbitrage? Anglo-Asian Bullion Flows in the Early Modern Period, 1664-1811

Pilar
Nogues-Marco

Anglo-Asian trade in the early modern period consisted mainly of the exchange of Asian commodities for English bullion. The East India Company (EIC) imported cotton textiles, pepper, silk, tea, coffee, indigo, and saltpetre from Mocha, India, China and South East Asia and exported precious metals, mainly silver, together with some wool cloths and other metals (iron, copper and lead). Precious metals were the most relevant items exported by the EIC as they represented around three quarters of total exports.

Because of the great relevance of precious metals in intercontinental trade, there is a large tradition in historiography of quantifying silver flows in the early modern period (Barret 1990, De Vries 2003). However, there is not agreement about the role of these flows in Euro-Asian trade. Scholars on trade, as Krishna (1924), Chaudhuri (1968, 1978, and 1982) and Prakash (1976, 1986, 2004) interpret intercontinental precious metals flows as a passive balancing item. According to these authors trade between Europe and Asia (India) was dependent on precious metals to compensate payment resulting from large and persistent trade disequilibria. The EIC was unable to expand domestic exports to the East and, as a result, it was obliged to balance their trading accounts though the shipment of large amounts of bullion, mainly silver.

Contrary to this view, scholars on money, as Flynn and Giráldez (1995a, 1995b, 2002, and 2004), and Flynn (1986, 2012) argue that there was no imbalance of trade between Europe and Asia (China) for which monetary resources had to flow in compensation. They estimate the gold-silver bimetallic ratios and conclude that silver flows were just the result of arbitrage which responded to profitability. Merchants purchased silver where it was cheap in gold (Europe) and shipped it to where silver was expensive (China). These authors claim that silver was the active cause of the expansion of East-West trade. Commodities were offered in exchange for Western silver because silver was valued most highly in Asian markets. As a consequence, these authors consider that silver was unquestionably the most significant trade commodity in the early modern world, so they emphasize upon silver's role in initiating globalization.

Were silver flows a passive balancing item (i.e., money) or an active balancing item (i.e., commodity) in Euro-Asian trade? Price information is needed to discriminate between the two competing hypotheses. This is the first paper that computes precious metal's prices in order to measure the profitability of arbitrage and, therefore, the role of silver in Euro-Asian trade.

The law of one price measures the profitability of arbitrage. If gold or/and silver were transferred without profit, they were passive items in the Anglo-Asian trade, that is, they were traded to pay the imports. On contrary, gold or/and silver should be considered as active items in case that they were traded for profit. This research facilitates the inclusion of the Treasure in the debate on the early modern intercontinental market integration.

In order to calculate the law of one price to estimate the profitability of Anglo-Asian precious-metal flows, I have hand-collected prices of both gold and silver from in origin and destination centres (London, Mocha, Bombay, Surat, Madras, Calcutta, Bencoolen and Canton), as well as the exchange rates between origin and destination centres. I have collected the prices of all transactions and then aggregated them in yearly series. The period considered is related to data availability (1664-1811). Accounting books of the EIC, the General Ledger Books, started to report systematically prices and quantities of gold and silver purchased and sold from 1664. By 1811 the Company aggregated the accounting information and prices stop being reported.

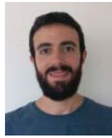
Two conceptual questions should be clarified to calculate the law of one price. First, what is the unit of measurement to price precious metals? There is a large body of scholars who had traditionally measured silver in gold (and gold in silver, i.e., they calculate the bimetallic ratio). This approach misinterprets the concept of silver price (and gold price) because it imposes (by definition) that gold and silver must flow always in the opposite direction. However, this suppose is against the empirical evidence. This paper will demonstrate that during long periods, concretely 1664-1714 and 1750-1758, both gold and silver moved in the same direction, that is, from London to Asia. Both gold and silver were measured in the unit of account as any other commodity, because the unit of account was conceived by contemporaries to be the unit of measurement (numeraire).

Second, what is the exchange rate between London and Asia? There is a large body of scholars who have traditionally considered that the exchange rates in early modern period could be approximated by the intrinsic par (i.e., measuring commodities in grams of silver). This approach misinterprets the concept of exchange rate because it imposes (by definition) that the exchange rate is always identical to the intrinsic par, that is, the grams of silver contained in the currency of one country compared to that of another. This paper will demonstrate that the exchange rate between London and Asian centres was not defined according to the intrinsic par, but according to a fixed but adjustable exchange rate closed to the arbitrated par, i.e., the relative market prices of silver between London and Asian centres.

The paper is organised as follow. First section describes how exactly the EIC priced gold, silver and defined the exchange rate. Second section computes the profitability of silver arbitrage according to the law of one price. Silver was always a passive item of Anglo-Asian trade because the EIC defined a fixed and adjustable exchange rate that followed the silver arbitrated parity. Third section incorporates the result for gold arbitrage and identifies the phases in which gold acted as a passive item to balance trade (1664-1712 and 1751-1758) and when it was as active item to arbitrate for profitability (1714-1748). From 1759 the EIC stop operating with gold.

To summarise, this papers aims at contributing to the debate about the role of silver in Anglo-Asian trade. The thorough measurement of the law of one price for silver and gold shows that silver arbitrage was not profitable because the exchange rate gravitated around the arbitrated parity. There were episodes of arbitrage by which the EIC imported limited amounts of gold from China to London for profit (1714-1748, more relevant during the period 1729-1748), but the vast majority of both silver and gold was exported from London to Asia without profit to pay for the imports.

Income tax and war inflation: was the 'blood tax' compensated by taxing the rich?



Oriol Sabaté

Sara Torregrosa-Hetland

Major warfare and mass mobilization during the two World Wars have been associated to increasing top rates in income taxes in most Western countries (e.g., Piketty 2014; Scheve and Stasavage, 2010, 2016). The outcome of this fiscal policy points towards increases in the progressivity of tax systems – for example, in the United States World War I gave place to "soak the rich taxation" (Brownlee, 1996) and in the United Kingdom a fragile political equilibrium sought to increase revenue without imposing heavy consumption taxes on the working class (Daunton, 2002). Sven Steinmo (2003) argues that the institutionalisation of income and corporation taxes during World War I had long-term effects for the development of fiscal policy in advanced countries, since taxes came to be widely understood as a valid redistributive instrument.

We argue, however, that this war-related effect on the progressivity of the income tax is less clear-cut than previously thought, as wartime inflation could have exerted a significant counteracting impact. When tax exemptions and bracket limits are not adjusted for inflation, increases in nominal incomes push citizens into higher tax brackets, or include new individuals from the bottom of the income distribution into being taxpayers (the phenomenon known as 'bracket creep'). This takes place even when there is no increase in purchasing power in real terms, and some calculations with both modern and historical data have shown it to have a regressive effect (e.g. Smith, 2001; Immervoll, 2005). At the same time, inflation reduced the real value of family allowances, which tend to be relatively more important for taxpayers at the bottom of the distribution. Therefore, we hypothesize that during the two World Wars the progressive effect of increasing top marginal tax rates was partially compensated by the impact of inflation.

In order to address this topic, we study the developments in the income taxes of a sample of developed countries, both involved and neutral during World War I and World War II. Future versions of this paper will present synthetic measures of tax progressivity. Currently, we describe several indicators that provide relevant preliminary insights, such as 1) the extension of the income tax (changes in rates, thresholds and number of taxpayers), 2) the average marginal tax rates by income levels and by percentiles of income, and 3) the average effective tax rates by percentiles of income. To do so, we have collected all available information regarding the distribution of tax returns, reported incomes, allowances, and tax payments, by income levels.

Our current dataset includes Sweden, the United Kingdom, and the United States. We intend to also include France, Germany and Switzerland in future versions of this paper. The main data sources are original tax statistics compiled by tax administrations and statistical agencies. These sources have been previously used by the top incomes literature (Atkinson and Piketty, 2007, and related work), but only for a focus on the top of the income distribution. Here, we take a novel approach by having a look at the whole range of taxpayers, including low and middle income groups. This allows us to explore not only the evolution of top marginal tax rates but how taxes affected the whole population as they expanded downwards throughout the period.

The original data provide us with the distributions of income and tax paid for selected years. The most complete series exists for the United States, while in the other countries the information is scattered and allows us, for now, to present results for WWI in Sweden and WWII in the United Kingdom. The distributions of income are given by specific levels that do not always coincide with those of the income brackets in the tax schedules, and also change over the years. In order to make calculations comparable across countries and over time, and to illustrate the distribution of tax rates over the population, we adapt these numbers to a percentile distribution. To do so, we follow the method suggested by Shorrocks and Wan (2008) for ungrouping data, which generates a synthetic sample of tax returns and incomes consistent in mean and distribution with the original data. The procedure assumes that incomes follow a log-normal distribution, and has been widely used in previous literature (see e.g. the discussion in Pinkovskiy and Sala-i-Martin, 2009).

Our preliminary results provide some initial support to the hypothesis that inflation partially compensated the progressive effect of increases in top marginal tax rates in our sample of countries. Firstly, the exemption limits for the income tax in real terms heavily decreased over time in the three countries due to inflation and to normative changes decreasing the nominal thresholds. This made the thresholds less restrictive over time, which caused a substantial expansion in the number of taxpayers. Hence, citizens previously relieved from taxation owing to their low incomes started paying the tax. For instance, the number of tax returns soared in the United States from 429.000 in 1917 to 7.3 million in 1921, while almost 40 million households started paying the income tax at some point between 1939 and 1945. Similar patterns can be found in the United Kingdom, where more than 10 million households became taxpayers during World War II. As a consequence, the percentage of the population exempted from paying the tax plummeted from 60 to 20 per cent during the military conflict.

On the other hand, inflation also pushed middle incomes to higher income tax brackets, even without real increases in their purchasing power. These two effects shifted the burden of the income tax from the very top of the income distribution to a broader segment of the population which, at the end of World War II, included middle and low incomes. Additionally, the unprecedented top nominal rates established during the two military conflicts (particularly in the United Kingdom and the United States) affected a tiny part of the population. By way of illustration, the 7 highest income tax rates in the United Kingdom in 1948 (out of 14 tax brackets) only affected the 0.02% of the population. As a result, the top 1% in the United Kingdom was taxed at an average marginal income tax rate of 60%, whereas the average effective tax rate was slightly higher than 40% (far from the top marginal rate, which reached 97.5%).

Therefore, even if we do not dispute the overall progressive impact of the normative changes, we argue that the often overlooked effect of inflation needs to be taken into account in order to assess the real impact of the wartime fiscal policies. Further versions of this research will shed more light on the progressivity of the income tax and the effect exerted by inflation. We aim at calculating synthetic indicators of progressivity and redistribution, as well as extending and systematising the analysis of nominal and effective rates by percentile and level of income for a larger set of countries, and quantifying the impact of inflation in the downward expansion of the tax. We also plan to address the political side of the narrative: should our hypothesis be finally confirmed, new fundamental questions will emerge, such as the extent to which governments and political elites took these effects into account when committing to progressive fiscal reforms.

A Tale of Two Regimes: Educational Achievement and Institutions in Portugal, 1910-1950

Jaime Reis

Nuno Palma

An active debate has been taking place for some time concerning the determinants of schooling or of levels of human capital in different countries, particularly those where historically education has developed more slowly and recently. Although other variables, such as income and land inequality, ethnicity, religion, factor endowments and GDP per capita have been invoked to help account for these divergences, the prevailing view is that political and institutional factors are of prime importance. Studies have argued that countries which lacked democratic forms of government and where the suffrage was not widespread have been apt to have lower literacy rates and school enrolment. The link is that the supply of publicly funded mass education is a political decision and the elite minorities which hold political power do not favor a wide dissemination of human capital. Conversely, the story goes, the majority, who aspire to more education, lack the „voice" that will make this situation change (Engerman, Mariscal and Sokoloff 2009, Gallego 2008, Lindert 2004, 2010).

This literature suffers from several shortcomings. It tends to underplay the fact that human capital is not just the consequence of policy decisions but also of investments made by families whose decisions are strongly influenced by a variety of economic circumstances (Boucekkine et al. 2007). It presents the provision of schools as the panacea for educational backwardness, forgetting that better access to education is only a necessary condition. More favorable schooling policies will cause the appearance of more and better facilities but these expanded opportunities will not necessarily involve students more unless their families also want to send their children to them, and are able to do so. In fact, the historical record registers only few cases where the state was successful at coercing families in this matter. This suggests a need to consider the positive incentives which can determine individual decisions to invest in human capital and make the latter come into existence.

As far as the economic history literature is concerned, results have mostly been obtained by means of panel data and encompasses a large number of countries over fairly lengthy time spans. In these specifications, explanatory variables often have to be aggregated and therefore miss out a lot of information. Dependent variables are all too often of the input variety, such as school enrolment or educational expenditure as a percentage of total expenditure or of GDP, and it is unclear whether they should not be treated as explanatory ones instead. A further difficulty in studying a large collection of countries over time is that this approach does not lend itself to exploring more deeply cross sectional institutional differences which are crucial to the debate In this paper we follow a different methodology. We use individual-level data from one country only. Our dataset includes detailed information on the completed school careers of several thousand individuals, as well as about the circumstances facing their families during childhood. We consider different generations and gather observations at benchmark years using a new source: unpublished military recruitment registers. This allows us to employ a dependent variable which measures years of schooling as well as exam results directly, an attractive feature relative to the more ordinary usage of instead of enrolment data. Our dataset therefore evaluates „scholastic achievement" rather than the system that produces it and thus brings the analysis closer to the ultimate issue of relating education to economic performance. Another advantage is that it invokes a useful though generally ignored discussion on the literacy versus illiteracy dichotomy and draws attention to the diversity of contents which can be present in the concept of being „literate".

The choice of Portugal as a case-study is justified by two circumstances. One is that ever since official statistics have been gathered, it has been one of the worst underperformers in the field of educational attainment in the Western world (Lindert 2004, Reis 1993, Amaral 2002). At the beginning of the 20th century, its illiteracy rate of 75% of the population over 7 years of age was among the highest in Europe -- in Spain it was only 53%, in Italy it was 46%. In 1940, this was still 50% and only fell to a quarter as late as 1970. The other is the succession of political regimes which it experienced during the 20th century, which assumed disparate stances on the questions of schooling and the extent of permitted political participation. In this context, an especially significant contrast opposes the 1st Republic (1910-26), a „limited" parliamentary democracy with an elected head of state; to the corporatist dictatorship of the Estado Novo (1926-74), which denied the population any possibility of freely exercising the suffrage. For Portuguese historians and public opinion, this opposition between the two regimes is the most important of all and epitomizes the main political and ideological struggles which have marked the 20th century.

We have chosen for the present exercise the period 1910-1950, a period in which there was a marked rise in literacy in Portugal. This enables us to compare the efforts at producing human capital by these two regimes over similar time spans (16 and 24 years, respectively), while controlling as much additional factors as possible. Interestingly, during the entire period of our sample, the skill premium is falling: from 2.2 in 1924, 1.84 in 1931, 1.6 in 1941 and down to 1.53 in 1950. This is related to the fact that the real wage for raw labor, fell from a mean of .38 in 1924 to .33 but then rose to .48 in 1941 and again to .55 in 1951.

The fall in skill premium is suggestive evidence that fast accumulation of human capital does not need to be driven by rising returns to human capital. It seems possible that the number of people accumulating human capital at this time grew faster than did the available jobs requiring such skill. Our proxy for the school premium is the ratio of a worker on the textile sector relative to the raw labor wage rate. While this is evidence for one sector only, textile sector output grew in real terms 63% between 1924 and 1940, while male literacy for those of 10 or older years old grew from 1.6 to 2.9 million during the 1920-40 period, which corresponds to a net growth of 81.25%. So perhaps the decline in skill premium is not that surprising. We still need to know what caused it, and in below we suggest that some of Estado Novo's policies targeted towards expanding the educational opportunities of the poor worked, and hence led to some social convergence.

We consider if institutional conditions, in particular with regard to the openness of the political process, had the effect on educational policies which the common political economy view leads one to expect.

We investigate this using individual-level data from military archives in Portugal 1910-1950 in an ordered probit regression in which literacy levels are the dependent variable. There is no selection because every (male) had to go through a military inspection at age 20. We conclude that all else constant, under Portugal's authoritarian Estado Novo an individual of average wealth was almost half as likely to end up illiterate compared with what it would under the more democratic Republic which preceded it. This result controls for a host of factors including economic growth, school density, time, and standard errors are adjusted for year-level clusters. In addition, the effect of the Estado Novo on literacy was stronger for poorer individuals.

The evidence shows that the more „democratic" Republic was substantially less successful than the authoritarian Estado Novo in expanding elementary education (even if under the dictatorship average quality of provision may have been lower). All else constant, under Portugal's authoritarian Estado Novo an individual of average wealth was almost half as likely to end up illiterate compared with what it would under the more democratic Republic which preceded it. This result controls for a host of factors including economic growth, school density, time, and standard errors are adjusted for year-level clusters.

In addition, by considering not only average marginal effects, but also estimated marginal effect at the several moments of the empirical distribution we conclude that the effect of the Estado Novo on literacy was stronger for poorer individuals. All in all our results question the generality of the standard political economy result which claims that countries which lack democratic forms of government and where the suffrage is not widespread necessarily have lower literacy rates and school enrollment as a consequence.

Jared Rubin

Lars Boerner

Battista Severgnini

General purpose technologies can play an important role in generating social and political change. They can facilitate the spread of information, attract progressive-minded individuals to live in proximity to each other, and undermine conservative norms. Yet, data constraints often cause difficulty in drawing causal connections between such technologies and social or political change. This paper addresses this issue by analyzing the impact of the early adoption of two of the most important general purpose technologies of the medieval period - the public mechanical clock and the movable type printing press - on the adoption of the Reformation. A three stage instrumental variables analysis indicates that the clock was an important determinant of the decision to adopt Calvinism, although not Lutheranism, while the press influenced the adoption of all brands of Protestantism, with the strongest effect on Lutheranism.

Human Capital in the Long-Run:
Primary Schooling in Switzerland, 1771-1913

Gabi Wüthrich

Ulrich Woitek

Education is seen as vital for the economic development of Switzerland. At the same time, it is a prime example for the consequences of federalism. Despite being an early industrializer, the take-off for Switzerland did not take place before the so-called “Second Industrial Revolution” (Veyrassat, 2010). In terms of the role of human capital in this process, the historical evidence (mainly from the textile industry in England) shows that formal education was not important, at least for the “First Industrial Revolution” (Mokyr, 2009, p. 233). Recently, Becker et al. (2011) provide evidence on the importance of basic education for non-textile industries in Prussia 1849 and 1882.

Proto-industrialization required minimal standards with respect to schooling for everybody, not only for the elites. Hence, already in 1771/72, the church authorities of Zurich conducted a survey among priests about the ‚state of schooling in the area. Only 30 years later, Philipp Albert Stapfer, the school secretary of the shortlived Helvetic Republic, commissioned a sur- vey among all the teachers, thereby providing a detailed picture of the state of primary schooling for the year 1799. Further school inquiries took place in many cantons after the collapse of the Helvetic Republic, but it took an- other 70 years until the next attempt of a central authority. For the world exhibition 1873, the federal government commissioned the first out of four detailed school statistics, which were published as contributions to several exhibitions until 1915 (Kinkelin, 1875; Grob, 1883; Huber, 1897; Huber and Bay, 1915). The other possibility to obtain information about the state of schooling were the pedagogical examinations at recruitment, conducted since 1875 (Boppart et al. (2013, 2014)).

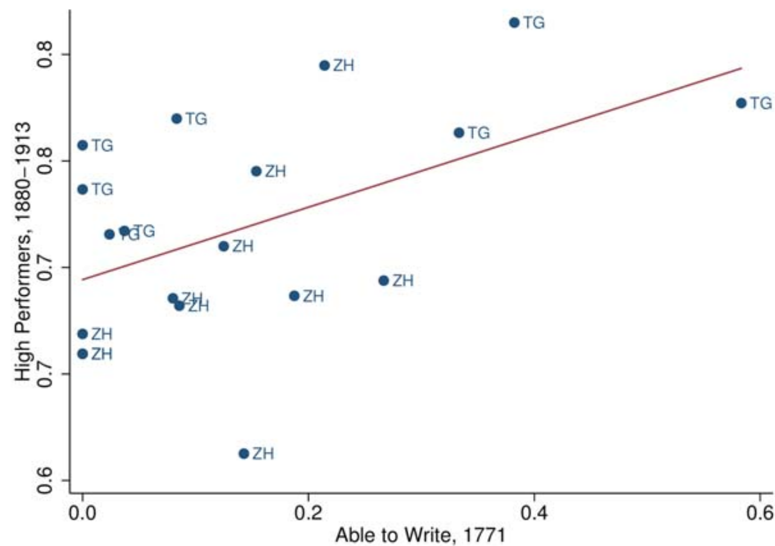


Figure 1: Persistent Primary School Performance?

We use two answers in the 18th century surveys to measure school quality: The share “Able to Write” per district is calculated as the share of schools in the 1771/1772 survey for which the question B b 14 (writing abilities) is answered unambiguously (e.g. “all pupils”). For the 1799 survey, the question is more about supply (“What is taught at school?”). Outcomes in the 19th century are captured by the share of high performers per district at the pedagogical examinations is calculated as the share of conscripts in a district scoring the mark 1 or 2 (reading, essay, maths, Swiss history and geography) in the period 1880-1913. Figure 1 shows the relationship between writing skills in 1771/1772 and the performance of the same districts in the pedagogical examinations 1880-1913. There is a clearly positive correlation, which indicates a remarkable persistence of primary school quality over the 19th century: districts that did well at the end of the 18th century also outperformed the others at the end of the 19th century.

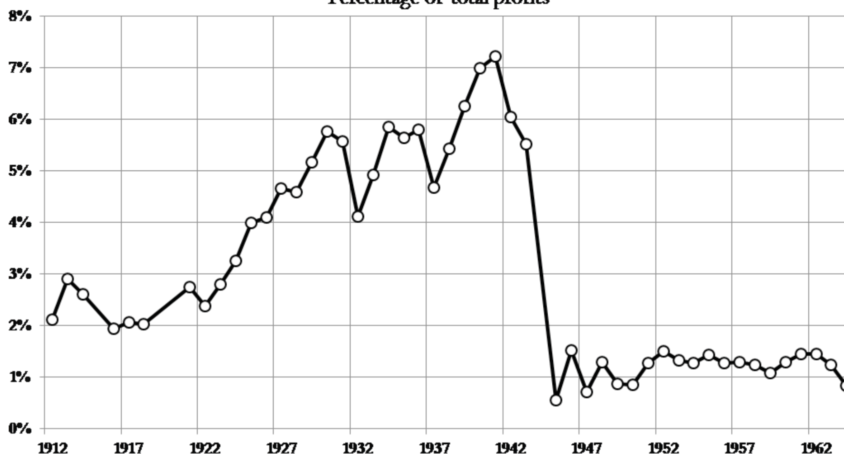
This finding can be interpreted as evidence for a minor role of education for economic development in this period. The picture changes at the end of the 19th century: with the onset of the “Second Industrial Revolution”, the enhanced (and refreshed) basic skills might have proven beneficial in the more and more specialized industrial sector where complex knowledge became a competitive advantage. The introduction of the pedagogical examinations as a monitoring device seems to have been effective, in the sense that the correlation with end of 18th century performance vanishes between 1880 and 1913. Both the new technology and the political pressure caused by the publication of the examination results provided incentives for the cantons to invest in primary education, which did have a positive effect on schooling outcomes.

Executive Remuneration in Europe: From Gentlemanly Capitalism to the Rise of the Modern Manager (1920-1960)

Miguel
Artola Blanco

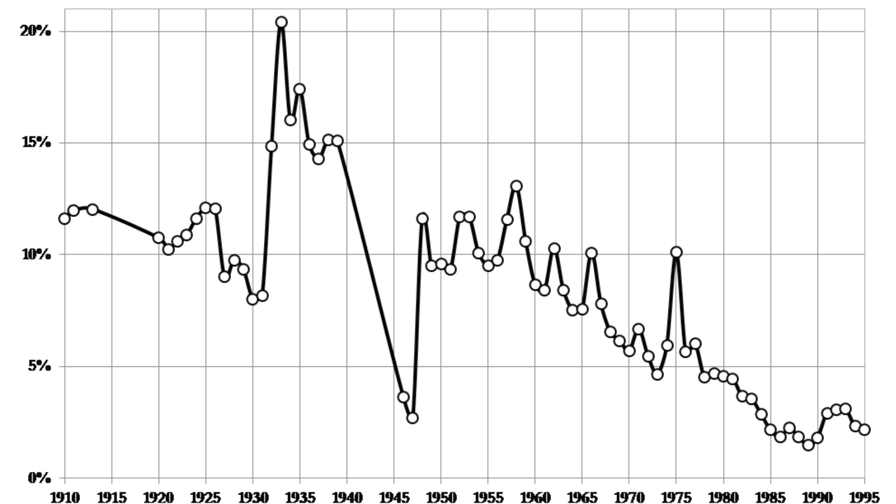
The compensation earned by executives of large publicly traded corporations has been a recurrent theme of debate since the late 1990s until the present day. However, historical knowledge on the patterns of corporate compensation remains much limited. This paper focuses on the most important source of compensation –the tantième– earned by the directors of companies based in Continental Europe during the first half of the 20th century. We explore the factors that affected compensation, the potential conflicts of interests and we provide a first set of estimates on their magnitude for four countries that followed the French civil law tradition (France, Belgium, Switzerland and Spain).

In a second part, we carry a detailed analysis on the compensation earned by the most important directors and managers of Spanish corporations. Our dataset is based upon the individual income tax returns filled by taxpayers living in Madrid in three different benchmark years (1933, 1941 and 1954). We build a model that explains total remuneration based on the number of directorships (i.e. directors could serve on the boards of multiple corporations), the size of companies and the performance of executive duties.



Note: In 1915 and 1944, the aggregate net profit of French corporations is almost zero. However, as some companies still paid dividends and tantièmes the ratio is very high. To simplify, data for these years are not included.

Overall, three main findings emerge. First, on a relative basis (as a percentage of profits or in relation to average salaries), executive remuneration was much higher prior to the Second World War than nowadays. Secondly, tantièmes experienced an irreversible decline due to increasingly regulation, conflicts of interests and cultural norms. Finally, this long-term transition can be related to the progressive displacement of bankers, financiers and ornamental directors (i.e. gentlemen capitalists), and with the definitive rise of modern managers as the most important actors in corporate governance.



Chemistry of the Tariff Formation Process: Business Lobby and the Mendeleev's Tariff 1891

Marina
Chuchko

After several decades of the domination of relatively liberal ideas in the trade policy, in 1876 the Russian government took the course towards reinforcement of the tariff protection. All alterations implemented in the course of the next decade caused a significant discrepancy between the tariff 1868 and actual customs duties, and in 1887 the Ministry of Finance initiated the process of revision of the existing tariff. The consequently implemented tariff 1891, or the Mendeleev's tariff, is considered to be the culmination of Russia's protectionist policy and was described by Witte, the Minister of Finance since 1892 and later Prime-minister of the Russian Empire, as "the primary foundation of our industrial system". Despite the fact that the general tariff did not last long (tariff autonomy was terminated already in 1893 with the first trade agreements of Russia with its trade partners and respective preferences given to the latter), it is of a particular interest for economic history due to the peculiarities of its formation process, viz. active involvement of the business community. The decision to involve business representatives was in line with the ongoing policy towards establishing more efficient dialogue between government and business representatives.

This study aims to identify and analyze the role of representative business associations in the process of the Mendeleev's tariff formation. In particular, it focuses on: (i) relative importance of contribution of all parties participated in the tariff negotiations; (ii) determinants of lobbying success. The paper hence is expected to contribute to the existing literature on trade policy determinants and namely role of interest groups in public policy making in general and in non-democratic societies in particular. The clear majority of the existing empirical investigations are focused on the impact of lobbying in democratic societies assuming that the ability of interest groups to impact policy making in non-democratic states is strictly limited (see e.g. Lake 1992). However, the emerging literature on lobbying in developing countries, primarily China, shows that despite its non-democratic political system business involvement is an integral part of the country's policy process at both local and national levels (see e.g. Deng & Kennedy 2010, Steinberg & Shih 2012). Similar studies in historical perspective are represented by even fewer works. The involvement of business circles into the trade policy of the Russian Empire is still relatively untouched and can be encountered in the literature mainly as a part of the narration on the emergence of entrepreneurial organizations (see e.g. Laverychev 1972, Moshkin 2007, 2010). Scarce existing literature, which started to appear in the last two decades due to the increasing interest in the development of entrepreneurship and establishing efficient business-government dialogue after 70 years of planning economy, does not come to a common conclusion. The statement on strong organized influence of business on decision making in the last decades of the 19th century (Shapkin, 1999, p. 172) is challenged by the position of other scholars (Bessolitsyn 2005, Goryushkina, 2011) on the notional existence of business associations and their inability to influence policy making.

I create a new dataset on the involvement of business groups in formation of the tariff 1891 based on the data contained in the complete series of archival documents produced and/or used by the Tariff Commission between 1887 and 1891. Elaborated dataset includes the proposals of the major actors (Minister of Finance, Department of Railway Affairs, Mendeleev, Experts, regional commercial and trade associations, individual petitioners) as well as the cumulative decision of the Tariff Commission on more than 600 commodities which formed 220 articles in tariff 1891 and allows to track all the modifications taken (or suggested) during the tariff formation process. Previously, the whole set of documents was only used twice, by Mendeleev (1892) and Sobolev (1911). Both authors used selected examples of duties changes to determine the necessity of protectionist (Mendeleev) or liberal trade policy (Sobolev) and neglected the contribution of interest groups as well as the process of tariff formation itself.

I use the methodology of dominance analysis to define the contribution of each participated party in the decision-making. The results determine rather minor contribution of business into the final project of the tariff, whereas the decisions were to a large extent based on the proposals of the specially assigned experts or position of the Minister of Finance. This result, however, is also explained by rather fragmented participation of business associations which was determined by the industrial specialization of the region they were representing. I then test a multivariate regression to define the determinants of lobbying success. Preliminary results show that the better organization of interest groups increases their chances to succeed in lobbying: the more homogeneous the proposals are, the more likely the State Council adopts the position of the business groups. The share of a product in the total production of a region also has a significant positive effect on lobbying success, as well as region's direct participation in the meetings of the Tariff Commission (for manufactured products only).

The Births, Lives, and Deaths of Corporations in Late Imperial Russia

Steven Nafziger

Amanda Gregg

Understanding the birth, growth, and death of firms in the early stages of industrial development is a relatively unexplored area of economic history, largely due to data constraints, and particularly in less advanced economies. This is unfortunate, as such processes are at the heart of the transition to modern economic growth. To help fill this gap in the literature, our paper investigates the competitiveness and financial development of the Imperial Russian economy by examining patterns of entry and exit into the corporate sector. We document firm entry, exit, and life-cycle dynamics using a newly developed panel database of detailed annual balance sheet information from every active corporation in the Russian Empire between 1900 and 1914.

Our new dataset was compiled from numerous sources and documents firm characteristics and financial balance sheet information for all chartered non-financial corporations in the late Empire. Our database consists of a total of just under 20,000 corporation-year observations. After 1899, 1,667 of such firms appear for the first time in a subsequent year, and 1,043 corporations disappear from our dataset. Armed with these data and insights from the broader literatures on the corporate form and firm life cycles, we investigate a series of hypotheses relating firms' financial and governance characteristics to observed entry and exit patterns.

Corporations enter the balance sheets as brand new corporate firms or as partnerships "transformed" into corporations. According to financial life-cycle theories, brand new firms are more likely to rely on equity when they first appear on the balance sheet and to then develop accounts payable (a form of short-term debt) over time. Transformed firms, on the other hand, should show smaller relative changes in accounts payable over time. We explore such possibilities in our dataset. Moreover, by defining sector shares (of total capital or revenues) for each corporation, we can examine the speed at which a new entrant "converges" to the mean market share in their industry. Figure 1 shows a representation of our regression work in this area – we find evidence of convergence after roughly 10 years following the charter date.

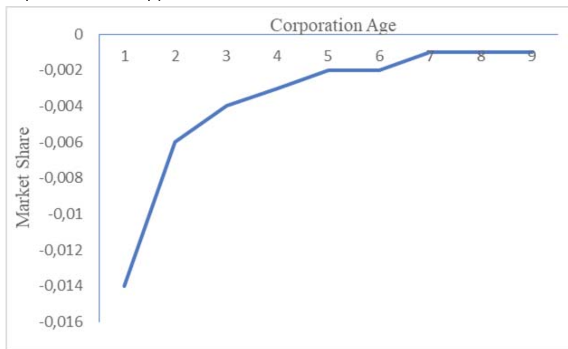


Figure 1: The Evolution of Market Share by Corporate Age in Late-Imperial Russia
Note: This figure depicts the coefficients on age-of-corporation dummies in regressions that use individual corporation market share in a given year as the dependent variable. Full regression results are reported in the paper.

Furthermore, we examine entry and exit by industry. Firms should enter those industries with the highest returns, as measured by profits or revenues minus costs divided by total assets. Deviation from this prediction may suggest financial frictions or other sector specific sources of entry deterrence (and market power). Since firms never transformed from corporations back into partnerships, we can assume that those that exited the balance sheet dataset shut down (we currently cannot observe mergers in our data). If markets were at least somewhat competitive, exiting firms should have demonstrated worse performance than surviving firms on dimensions including profitability and rate of change of property value. We examine the likelihood of firm exit using a standard survivorship models that considers the probability of exit as a function of size, performance, riskiness, and governance characteristics.

Figure 2 provides a visual depiction of related results generated in this line of inquiry. Aggregating our data to the sector level and calculating revenues and exit rates following standard methods in the literature on firm turnover, we find a negative relationship between the two. Along with a positive relationship between our same revenue measure and corporate entry rates (shown in the paper), these findings suggest a certain amount of competitive pressure in late-Imperial Russian industry, a finding that diverges from recent studies that emphasize the market power and lack of dynamism in the corporate sector.

At this stage, we have undertaken preliminary analysis of the data, and the early results confirm many of these and other hypotheses once various controls are included, suggesting that the Russian corporate sector was influenced by factors common to more developed economies. In our view, the paper sheds light on the churning of Imperial Russia's largest firms during a period of significant macroeconomic shocks. Given the ubiquity of macroeconomic instability in most developing countries, our findings have implications for understanding the interplay between the legal environment facings large firms, financial structures, and economic growth in such environments.

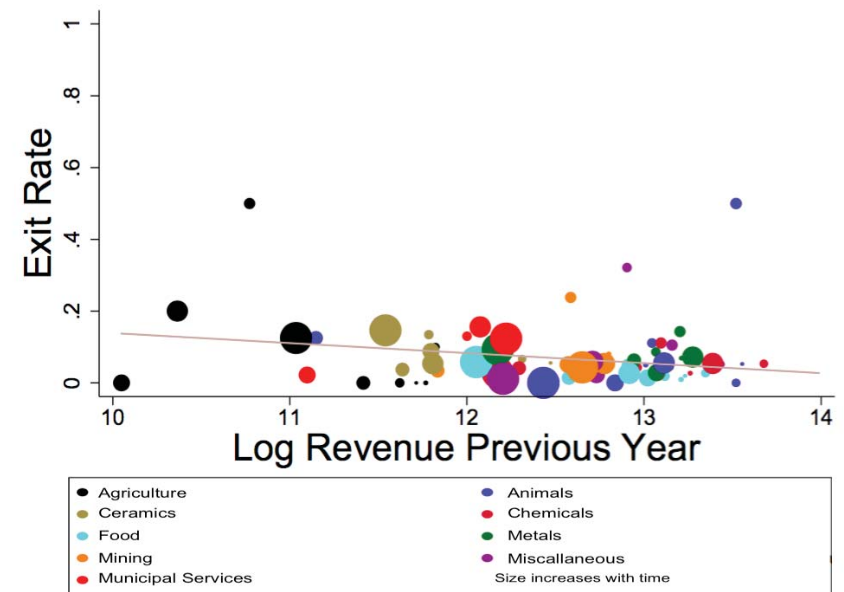


Figure 2: Corporation Exit Rates vs. Revenues in the Previous Year by Industry, 1900-1914
Note: Larger dots reference later years between 1900 and 1914.

Adopting a New Technology: Potatoes and Population Growth in Pre-Industrial Sweden?

Thor
Berger

Sweden's population doubled in size between 1750 and 1850 despite a century of economic stagnation, which has led historians to attribute the population explosion to the introduction of the potato.

This paper provides the first systematic evidence on potato's contribution to Swedish living standards and population growth. Potatoes at least doubled output per acre and welfare ratios that account for potato consumption imply that they significantly raised living standards for laborers in cultivating areas.

Differnce-in-differences estimates further show that cities, counties, and parishes with more land suitable for potato cultivation experienced more rapid population growthas the potato spread in the early 19th century, driven by sharp increases in fertility and muted mortality declines cpnsistent with Malthusian predictions. According to these estimates, the introduction of the potato can account for about a tenth of population growth between 1800 and 1850 thus suggesting it was an important catalyst of the Swedish population explosion of the early 19th century.

Economic Geography in the Long-Run: Spatial Concentration of US Manufacturing Industries 1880-1997

Alexander
Klein

Nicolas
Crafts

The paper investigates the location of manufacturing industries in the USA between 1880 and 1997 using a model which subsumes both market-potential and factor-endowment arguments. We model industrial location taking explicit account of interactions between industrial characteristics and regional characteristics. The approach that we use is grounded in a model of production and trade that takes account both of input price variations resulting from factor endowments and from costs of intermediate inputs and also of the spatial pattern of demand. We creates a unique data set of the employment shares for 48 contiguous US states, 20 SIC two-digit level industries, 6 industry and 4 state characteristics, including market potential for each census year during 1880–1940, and after that for the years 1947, 1958, 1967, 1977, 1987, and 1997. The estimation of market potential follows Harris's (1954) seminal approach, which calculates market potential as the inverse distance-weighted sum of incomes. The results show that market potential was a central determinant of the industrial location until around 1940, that it mattered more than factor endowments, and that its impact came through interactions both with scale economies and with linkage effects. Natural advantage played a role in industrial location decisions in the late 19th century but its importance then faded away. Post World War II industrial location was still influenced by market potential via scale economies, but the most important factor turned out to be human capital endowment, which became the dominant factor by the late 1990s. Factor prices such as the prices of energy (coal and electricity) and money wages do not seem to have a significant influence on the location of manufacturing industries.

Can Kings Create Towns that Thrive? Sweden, 1570-1810

Alexandra López Cermeño

Kerstin Enflo

This paper analyses the causal link between agricultural surplus and urbanisation. While there is a long literature suggesting that urbanisation emerges as a result of agricultural surplus by allowing for greater specialisation into non-food producing industries (Childe [1935], Wrigley [1985]) and (Allen [2001]), recent studies suggest that causality actually goes in the opposite direction (Kopsidis and Wolf [2012], Martinelli [2014]).

We suggest to test for the causality between urbanisation and agricultural surplus by combining panel data from the pre-industrial period with data on artificially created towns. From the mid-16th century onwards the Swedish Crown created numerous towns with the purpose to hold monopoly rights to trade with its local hinterland.

Our dataset includes geocoded information on 2,218 Swedish parishes coming from cameral and fiscal records on agricultural surplus in grain measured at 60 year intervals between 1570 and 1810 (Linde and Palm [2014]). We also use information about the kind of rights held by each town (Lilja [1996]) and the dates these where in force.

We analyse whether the parishes in the surrounding areas of the created towns were likely to respond to their enlarged market potential by increasing their agricultural surplus in grain, by running difference-in-difference regressions. We think of parishes exposed to a changing 'distance to town' as part of the 'treated group' whereas parishes that are not exposed to new towns as the 'control group'. 589 parishes in our sample experience a changing distance to town.

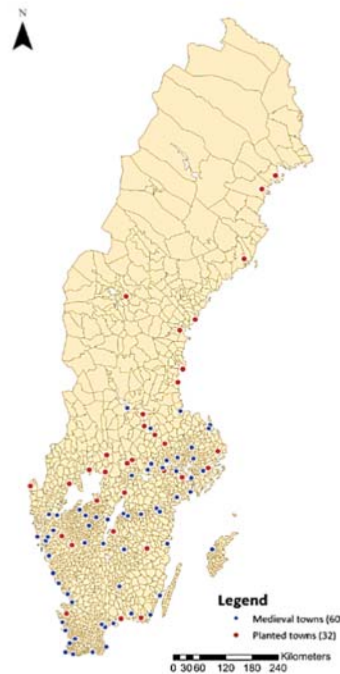


Figure 1: Towns and Parishes in Sweden 1870-1810

We correct for potential bias from the variation of soil productivity in the north of the country by balancing the sample on soil quality to make sure that the treatment and control group are alike, thus, we provide a causal interpretation on the difference caused by the policy on population and agricultural productivity.

Many of the planted towns appeared in suboptimal locations in terms of the carrying capacity of the local hinterland. Nevertheless, we find that the planted towns persisted until today. Our preliminary results underline that pre-industrial towns were organically constrained, but that historical town status still played a significant role in directing long-run urban growth. Agricultural growth around the new towns was merely extensive and did not trigger increases in surplus or yields. Although the new towns were dynamic in terms of local trade, the locations chosen by the Crown had relatively less agricultural potential than areas already taken by medieval towns. The planted towns appear to have been constrained by the lacking agricultural potential in many parts of the country.

However, balancing our sample on soil quality we confirm positive effects of town creation on population density and gross production and a subsequent effect on agricultural surplus and yields in later periods. Thus, we argue that urbanisation can influence agricultural surplus over the longer run, given sufficient soil quality. Our paper shows that many of the planted towns in Sweden lacked the agricultural pre-conditions for growth, which explains their relative stagnation. These towns, often not bigger than rural parishes in terms of population, persisted into the long run. By 1900 the planted towns had already surpassed the 5,000 benchmark and continued to grow as successful small towns into today as mechanisms to coordinate investments and expectations in the national Swedish urban network.

The Road Home: the Role of Ethnicity in Soviet and Post-Soviet Migration

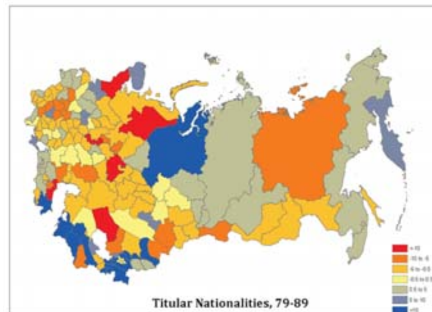
Young-ook Jang

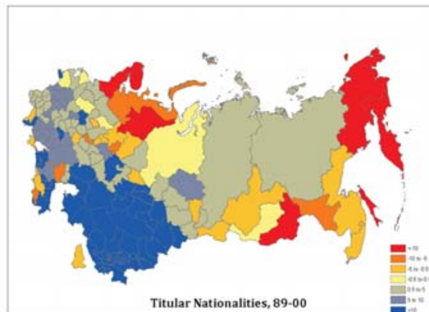
The conventional wisdom in the migration literature is that potential migrants decide to move when the destination can offer better economic opportunities than the source. In the Soviet and post-Soviet contexts, however, I argue that ethnic identity was as important as economic conditions in influencing migration decision and destination choice for three mutually non-exclusive reasons.

First of all, as famously argued by Akerlof and Kranton, people tend to feel happier and safer when they are surrounded by those who have the same identity as theirs. Ethnicity usually comes up to the surface as an important element of identity when people consider migration. Second, migrants would benefit from a specific kind of network effect when they move to the place where their compatriots have already settled, for example, through the channel of access to informal employment. Last but not least, policymakers might also want to avoid high ethnic diversity because it is often claimed by economists that the ethnic fragmentation is harmful for the economic performance, unless there are fine institutions that can deal with the problems arising from this diversity. Therefore, it is possible for the policymakers to adopt the policies favourable to the majority group and/or discriminative to the minorities and there is high chance of this becoming very popular amongst voters as observed in the recent political events. These may affect migration patterns.

The USSR and its successor states after the dissolution offer a fruitful ground to see whether this ethnic factor has worked or not. The Soviet Union was one of the most ethnically diverse political entities in human history, whose residing ethnic groups had been given complex status between autonomy and oppression. Notwithstanding the Marxist ideology of internationalism, Lenin committed to national self-determination and established territorial units based on ethnicity. 15 of over 100 different ethnic groups were given autonomy over their own union republics (e.g. Russian SFSR, Armenian SSR, Kazakh SSR, etc.) and 20 had their autonomous republics (Tatars ASSR, Yakut ASSR, etc.). Many ethnic minorities (Poles, Germans, Jews, Koreans, etc.) were also provided "mother-tongue" education, national units in political parties, and national quotas in colleges, etc.

However, the titular groups had not been confined to their autonomous territories, but kept being sent, or encouraged to move, towards less developed and less densely-populated regions under the slogan of balanced regional development and "ethnic equalisation". The authorities used first coercions and later incentive mechanisms to control migration of their citizens, and this control involved ethnic movements such as dispersion of ethnic Russians and Central Asians to Siberia or massive forced migration of Koreans and Volga Germans to Central Asia. These left the members of different ethnic groups spread across the vast territory of the Soviet Union, with the number of Soviet people living outside their "national" territory being 73 million in 1989.





Figures. Average annual net migration per 1000, titular nationalities

The dissolution of the Soviet Union brought many changes to the ethnic groups. While the restrictions on migration were mostly lifted, the non-indigenous people had suddenly become diaspora in the lands where they had long been living. They also faced the nationalist policies of independent former Soviet Union (FSU) republics during the state-building process in the 90s. Having the freedom of movement in the land they had become discriminated minorities, many members of non-titular groups decided to move out of their residence to the destinations which in many cases were their own historical homelands. The newly constructed database in my paper clearly shows the trend of ethnic sorting or "un-mixing" during the decade after the collapse, which is a complete reverse of the pre-collapse migration patterns of ethnic mixing (See Figures).

This change in the migration patterns cannot be fully explained by the economic conditions because many have moved from more to less developed regions. Ethnicity must have played a role inferring from the fact that most of the FSU states saw an increase in their titular population after the collapse. I, thus, attempt to verify this idea using econometric techniques in the second part of my paper. I regress the regional net migration rates on the share of each ethnic group and economic conditions, e.g. wages and employment rates, to compare the size of their relative contributions. The results of OLS and Heckman 2-step estimations confirm the significant influence of ethnic factor in explaining both pre- and post-collapse migration patterns (See Table). During the post-Soviet period, in particular, migrants were more likely to move out of a region when they have fewer co-ethnics in the region, and they tend to choose the destinations where the proportion of their co-ethnics in the regional population is high.

Table. OLS & Heckman 2-step selection model, after the collapse

Dependent Variable: Net migration per 1,000	(1) OLS	(2) Heckman	(3) OLS	(4) Heckman	(5) OLS	(6) Heckman
Ethnic Share	0.38*** (6.80)	0.38*** (6.80)	0.35*** (6.65)	0.34*** (6.62)	0.35*** (6.74)	0.33*** (6.86)
Wage	1.09*** (4.16)	1.22*** (4.56)	0.89*** (3.47)	1.04*** (4.00)	0.81*** (3.07)	1.10*** (2.78)
Employment	1.59*** (8.97)	1.58*** (8.61)	1.91*** (11.10)	1.93*** (10.98)	0.70** (1.97)	1.33*** (3.62)
Control variables	X	X	Food & Conflict	Food & Conflict	All	All
Dummy for ethnicity	O	O	O	O	O	O
Total observation	723	895	709	881	709	881
R^2 / Inverse mills ratio	0.64	-17.31** (-2.28)	0.68	-27.26*** (-3.46)	0.70	-22.84*** (-2.84)

Note: In parentheses are t-statistics (z-statistics for Heckman estimators). ***, **, * denote the significance level of 1%, 5%, 10% respectively.

In sum, I argue that the ethnic identity worked as a crucial factor shaping the migration patterns during the transition period. The construction of data regarding ethnic migration was entirely new in the literature and the quantitative analysis significantly improved from some econometric studies dealing with an ethnic aspect of post-Soviet migration. The closer look at the ethnically driven Soviet and post-Soviet migration is expected to explain the recent rise of soil-and-blood type nationalism which has been conspicuous in the worldwide anti-immigrants atmosphere, notably Brexit and Trumpism.

Being Bad by Being Good: Owner and Captain Value-Added in the Slave Trade

John T. Dalton

Tin Cheuk Leung

The determinants of the African slave trade remain relevant to this day, with recent papers in the literature uncovering links between the slave trade and current development outcomes. Nunn (2008) shows the poorest African countries are those from which the most slaves were exported, while Nunn and Wantchekon (2011) link this finding with the breakdown in trust associated with the so-called gun-slave cycle. Dalton and Leung (2014) find the effects of the slave trade persist through a different channel, namely the prevalence of polygyny in Western Africa. This paper examines one determinant of the slave trade by quantifying the contribution of managerial quality to the supply of slaves. To the best of our knowledge, we are the first to do so.

Specifically, we ask how important are the fixed effects of managerial quality? And, what explains the substantial variation in managerial quality? To answer these questions, we study the value-added of owners and captains to slave voyage output, measured as the number of slaves disembarked, during the trans-Atlantic slave trade in Great Britain and France during the 18th century. In their capacities as managers, both owners and captains performed a variety of tasks influencing the outcomes of a slave voyage. From securing financing for the voyage to assembling ship and crew, especially the all-important decision about who to hire as captain, owners exerted influence over the slave trade from their positions in European ports. Once the voyage was underway, a captain‘s knowledge of markets in Africa and the Americas and his management of the vessel determined the success of the voyage and how many enslaved Africans disembarked in the New World. Stein (1979, p. 66-67) captures the historian‘s view as follows: “Choosing a captain was not a decision to be undertaken lightly, for no single person besides the armateur [or owner] himself had as much influence over the expedition’s ultimate success as did the captain.” This view appears repeatedly throughout the literature on the history of the slave trades. Klein (1999, p. 83) is another example: “After the owners, the second most important participant was the captain.”

Our analysis proceeds in three steps. First, we make use of the Trans-Atlantic Slave Trade Database to identify unique owners in Great Britain and France who have owned multiple slave voyages. Compared to the standard plant-level or firm-level data which document the overall performance of the plant or firm in a particular time period (say, a year), our data record the performance of an owner and captain in each task or production run, i.e. a slave voyage, which is similar to the data on teacher performance (students’ test scores) in each class.

As a result, in the second step of our analysis, we follow the literature on evaluating teacher effects on students’ academic performance, commonly called the teacher value-added literature, to estimate owner and captain value-added to slave voyage output. While we are not able to quantitatively trace the management practices serving as sources of owner value-added to slave voyage outputs, we find that if we replace all owners with the 90th percentile owner in the country, slave voyage output would be 14% and 17% higher than if we replaced all owners with the 10th percentile owner in Great Britain and in France, respectively. See Table 1 for these results. If we replace all owners in Great Britain and France with their respective 90th percentile owner, our estimates imply nearly 186,000 more enslaved Africans would have been exported over the course of the 18th century in the combined trade.

Table 1: Slave Voyage Output (Share of Actual) Under 10th and 90th Percentile Owners, 1700-1800

	Great Britain			*France*		
Decade	10th	90th	90/10	10th	90th	90/10
1701-10	1.00	1.00	1.00	0.98	1.01	1.03
1711-20	0.92	1.03	1.12	0.97	1.04	1.07
1721-30	0.93	1.05	1.12	0.93	1.12	1.20
1731-40	0.93	1.06	1.13	0.87	1.14	1.31
1741-50	0.92	1.07	1.16	0.83	1.08	1.30
1751-60	0.91	1.10	1.21	0.97	1.05	1.08
1761-70	0.91	1.08	1.19	0.95	1.05	1.11
1771-80	0.91	1.08	1.19	0.87	1.08	1.23
1781-90	0.92	1.08	1.16			
1791-1800	0.95	1.06	1.12			
Mean	0.93	1.06	1.14	0.92	1.07	1.17

Third, we test whether slave owner value-added is associated with some of the owners’ characteristics and the market structure, which we find is the case in both an economically and statistically significant way. In particular, our value-added estimates are negatively associated with family businesses and positively associated with the competition level. We use the unexpected outbreak of the Seven Years’ War, which historians suggest decreased (increased) the market size for French (British) owners and, therefore, decreased (increased) competition in the French (British) slave trade (Holmes and Schmitz 2010), to show that competition has a causal impact on owner value-added. Insofar as the slave trade industry provides a window into the British and French economies at the time, our results suggest managerial quality, driven by competition, mattered significantly for firm outcomes.

We also use the same approach to quantify the value-added of British slave captains who have captained multiple slave voyages in our data. Unfortunately, the data prevent us from calculating estimates for French captains. The 90/10 ratio for British captains is 1.28. If we replace all British captains by the 90th percentile captain, our estimates imply nearly 269,000 more slaves would have been exported from Africa during the 18th century. We find captain value-added is also significantly associated with family businesses and market structure.

This paper contributes to the growing literature on the study of the African slave trades, in particular on factors impacting the demand and supply dynamics of the trade. These factors include geography, such as rugged terrain (Nunn and Puga 2012); climate change and natural disaster (Boxell 2015, Fenske and Kala 2015, Hartwig 1979, Miller 1982); the “raid or be raided” arms race initiated by the gun-slave cycle (Whatley 2012); distortions in product and input markets (Dalton and Leung 2015); and political conflict among ethnic groups (Curtin 1975, Engerman, Genovese, and Adamson 1975, Thornton 1998, Klein 1999, Thomas 1997). Our paper contributes to this literature on the demand and supply dynamics of the slave trade by quantifying the role played by owner and captain value-added on the supply of slaves.

For our other work on the African slave trades cited above, please see the following:

Dalton, J. T., and T. C. Leung (2014): “Why is Polygyny More Prevalent in Western Africa? An African Slave Trade Perspective,” E*conomic Development and Cultural Change*, 62(4), 599–632.

Dalton, J. T., and T. C. Leung (2015): “Dispersion and Distortions in the Trans-Atlantic Slave Trade,” *Journal of International Economics*, 96(2), 412–425.

A comparative Advantage in Labor Exports? Liberia, Fernando Po and the League of Nations

Leigh
Gardner

The contribution of forced labour to the budgets of colonial governments has become an increasingly important topic in the study of African economic history. In 1930, the League of Nations established a commission to investigate the export of forced labor from Liberia to sugar plantations on Fernando Po and other parts of West Africa. This paper revisits the findings of the commission in the context of new research on Liberia's economic history in the nineteenth and twentieth centuries. It argues that the export of forced labor by Liberian elites was an effort to counter the declining relative position of Liberia in West Africa after a long period of economic stagnation, which began in the 1880s. The export and domestic use of forced labour provided a source of revenue to the Liberian government which fell outside the control of international financial organizations, and allowed Liberia to develop a comparative advantage in the region. Subsequently this became part of a larger story of the Liberian government using its unique political status to carve out a new economic position for itself after failing to compete with colonized neighbors in the development of commodity export trades. This paper forms part of a monograph on Liberia's economic history which uses the case of Liberia to examine the implications of different forms of sovereignty for African economic development.

Monetary and Fiscal Policy in England during the French Wars (1793-1821)

Pamfili Antipa

Christophe Chamley

How do you finance a world war or, for that matter, any costly crisis? What role should the central bank play in financing public expenditures? And once public debt has accumulated and inflation occurred, how do you exit from such a situation? We answer these questions by studying the French Wars (1793-1815). As the wars exerted unprecedented pressures on Britain's budget—only World War 1 would prove more expensive—they offer a unique case study of the interactions between fiscal and monetary policies. Their outcome also shaped what economist would put forward as the proper way of implementing monetary and fiscal policies for the century to come.

Our analysis is of great historical interest as the French Wars ushered in Pax Britannica and shaped the political and financial landscape for the century to come. The wars also served as a blueprint for financing World War One. We also inform the policy choice between maintaining a fixed exchange rate and restructuring an outstanding debt overhang, as under discussion in certain member countries of the euro area. Finally, we contribute to the analytical debate concerned with the conditions under which the variations of a central bank's balance sheet affect prices (Chamley and Polemarchakis 1984).

Over the 22 years of almost uninterrupted warfare, policy makers were able to adjust monetary and fiscal policies to meet increasing needs of war finance. This meant implementing necessary monetary and fiscal policy innovations, such as the suspension of the gold standard and the instauration of Britain's first and very successful income tax—60 percent of the extra cost incurred by the wars would be covered by tax revenues (O'Brien 1988). These adjustments signaled the government's commitment to undertake the necessary to win the war, without jeopardizing fiscal sustainability.

Drawing on new hand-collected data, we also show that the Bank of England played an essential role in the decisive phase of the wars by purchasing large amounts of public debt. The variations in the Bank's balance sheet affected asset prices and the aggregate price level because they interacted with fiscal policy choices. In line with the Real Bills doctrine, prices evolved with the fiscal backing of the Bank's notes.

While the Bank's balance sheet increased substantially, its composition may have mattered more than its growth. To resume the gold standard, the Bank needed to restore a balance sheet that was similar to the one before the suspension. The counterpart to note circulation being the holdings of public securities, resumption hinged on the Treasury reimbursing the Bank. The successful return to convertibility came in 1821. ``What had happened was that the government had repaid the Bank [..], thus giving proof of its desire to balance the budget" (Rist 1938). The size of the gold reserve was not determinant for maintaining or returning to convertibility with gold; fiscal policy was (Sargent 1982, paraphrasing Keynes).

Reversing the war stimulus came, however, with high economic and social costs. The rate of unemployment increased from 5 to 17 percent in the post-war depression of 1816 (Feinstein 1998). The costs of returning to the gold standard remained largely unaccounted for since public manifestations of social discontent were rendered illegal and the electoral system entailed an under-representation of the citizens most affected.

The mistakenly perceived ease with which the resumption was undertaken in 1821 shaped British monetary orthodoxy and the global financial system for the century to follow (Fetter, 1965). It also ushered in the gold standard's second resumption after WWI, an event that prolonged and aggravated the Great Depression (Bernanke 1995, Eichengreen and Temin 2000).

This is also a relevant lesson for the current policy choice between maintaining a fixed exchange rate and restructuring an outstanding debt overhang, as under discussion in certain member countries of the euro area.

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Overlooked Sovereign Credit Events and Partial Defaults: British Debt Sustainability in the Post-Second World War Period

Garrick
Hileman

This paper investigates UK sovereign debt sustainability following the Second World War. While the UK in 1946 recorded the highest public debt-to-GDP ratio of the 20th century, the conventional view held by economists and historians is that the UK avoided a sovereign default following the Second World War. New archival evidence shows that Britain in fact 'partially defaulted' multiple times following the Second World War, and several British default instances can be further classified as 'partially excusable'. The British case illustrates the challenge of identifying and accurately classifying sovereign credit events along with the complex dynamics of sovereign debt sustainability vis-à-vis other competing policy objectives, such as geopolitical priorities.

Notes

Money and Monetary Stability in Europe, 1300-1914

Sevket Pamuk   Kivanç Karaman   Seçil Yildirim-Karaman

This paper investigates patterns of monetary stability and causes of changes in the value of money from the late medieval era until World War I in Europe. For this purpose we compile a new dataset of value of monetary unit of account across Europe and empirically investigate alternative theories of determinants of the change in the value of money. The evidence supports the hypothesis that wars and unconstrained executive authority decreased the value of money. As for fiscal capacity, we find that states with intermediate capacity were most likely to depreciate their money.

The first part of the study outlines the workings of the monetary systems and presents an overview of the patterns of change in the value of money over the centuries. Our dataset covers all major polities in Europe between 1300 and 1914 and contains information on periods of silver, gold and fiat standard and annual rate of change in the value of money. An overview of the series identifies periods of depreciation interceded with periods of stability. By the 19th century, some states had stabilized currency, others did not, and there was no overall trend.

To investigate alternative explanations empirically, we first review fiscal explanations offered in the literature, and test them relying on a number of OLS, 2SLS and Discrete Choice models. The evidence supports the hypothesis that wars, the main expenditure item through the period, induced states to depreciate money. Constraints on the arbitrary actions by the executive authority, by allowing economic actors adversely affected by monetary instability to have a say in policy, stabilized the value of money. As for the impact of fiscal capacity, we find that states at intermediate levels of capacity were more likely to depreciate their currency, because weak states lacked the capacity to circulate widely accepted currency in the first place, and strong states did not need seigniorage revenues.

We also discuss and test four different monetary explanations offered in the literature that conjecture depreciations were intended to correct the mispricing of various alternative monies in circulation and to prevent deflation. The anecdotal evidence suggests monetary factors might have mattered in specific instances, but we do not find empirical support in the whole sample.

The paper is the most comprehensive effort at documenting the history of monetary stability and first to systematically test alternative explanations. In line with the recent literature on the role of institutions in shaping economic outcomes, our findings favor political institutions over mechanics of the monetary system as the main determinant of monetary stability. Since monetary stability is in turn a precondition for economic activity and growth, our findings also help explain why Western Europe surged ahead in the early modern period and industrialized first while the rest of Europe lagged behind.

Findings

In this paper, making use of a new and comprehensive dataset, we attempt to put long-term patterns of monetary stability and instability in comparative perspective. The available evidence points to significant variation in patterns of stability over time and across countries. In broad lines, we find that Western European states stabilized value of money in 17th and 18th centuries, while states in Eastern and Southern Europe did not. These patterns cannot be explained financial or technological innovations, because these innovations did not preclude states' opportunity to profit from depreciations, but instead change the ways states profited. Despite a long literature on the subject, we also don't find evidence that the Gold Standard era was associated with stability, because states with stable money had achieved it long before the Gold Standard, while other states switched to fiat standard.

We instead find that it was fiscal factors, and by extension, politics, that shaped monetary policy, and determined stability. The pressure of wars, and unconstrained executive authority induced instability. The gradual rise of strong centralized states from the late medieval era onwards, on the other hand, cut both ways. Strong states were necessary to run and regulate the monetary system, but they also could manipulate money for short-term revenue gains. Eventually, it was a combination of strong states with constraints on executive authority that stabilized money which was first achieved in Western Europe.

We also test monetary explanations that argue depreciations were remedies against mispricing of different monies in circulation and deflation, and do not find empirical support. On the surface, this result seems to conflict the large literature that documents individual instances where states depreciated money in ways consistent with the monetary theories. For a number of reasons, it is possible that monetary factors caused depreciations in individual instances, but were empirically insignificant in the bigger picture. For one, while fiscal explanations imply major depreciations, monetary explanations require minor adjustments, and thus are quantitatively less important. Second, most of the anecdotal evidence for monetary theories is from Western Europe in the 17th century and later, after states stopped depreciating for fiscal reasons. Third, while fiscal explanations are generic and apply to all polities and periods, each monetary explanation applies to specific periods and specific monetary regimes, and are therefore empirically hard to pin down. Consequently, a more cautious interpretation of the available evidence would be that monetary motivations might have mattered, but they were quantitatively less important than fiscal motivations and became the primary concern only in states that solved their fiscal problems

The paper also relates closely to the recent literature that investigates institutional roots of economic development. This literature has argued that strong states facilitated growth by providing public goods, and executive constraints by reigning in predatory incentives of states. In accordance with these arguments, we find that strong states and executive constraint prevented depreciations and price stability. We also document that these political factors were much more important for price stability than the silver and gold inflows from the colonies that have been commonly viewed as the main source of inflation during the early modern era.

Land Inequality in an Egalitarian Utopia: the case of Sierra Leone in the early 19th century

Stefania Galli
Klas Rönnbäck

In both the present day and in the past, land distributions have often been not equitable and founded on principles of discrimination, favoring one social group over another. In particular, the distribution of land has been considered the main contributor to wealth inequality levels and to growing inequality, while influencing subsequent development levels in modern rural societies as well as in pre-industrial societies.

In the present paper, we study land distribution and the development of land inequality in a particular case – the colony of Sierra Leone in West Africa – during the first forty years of its existence. The case is interesting as a critical case of the limits to egalitarian ideals and institutions, since egalitarianism was the key ideal underlying the development of the institutions in the newly founded colony. In fact, the aim of the colonial authorities in Sierra Leone had initially been to provide every new settler with the same access to resources, regardless of their social background. The re-distribution of land was intended to play an important role in this egalitarian society, as means both to guarantee equality among the settlers and to provide agricultural produce for the 'legitimate trade' that would replace the slave trade.

The main source for our study is the 1831 Census of the Population of the Colony of Sierra Leone, an extraordinary snapshot of the colony providing household level data for entire population of the Colony, organized geographically by areas of settlement. This census, regarded by Kuczynski as the most reliable African census of its time, was the result of a thorough and organized effort of the Colonial authorities. The result of such an extensive effort, spanning over five months and ten districts, is information on over 9,000 households, together made up of roughly 29,000 individuals, scattered throughout the country. The source provides various types of information: demographics of the population; household's composition; occupational title, and key assets owned by the household in the form of land holding, housing type and livestock possession. These combined made up the largest share of wealth in pre- industrial societies, and similarly that of the newly settled inhabitants of Sierra Leone.

In the present paper, we compare these data with further data reporting the plans of the first two land redistributions from the Ordinances of the Settlement of Sierra Leone, collected in volumes by Algernon Montagu in 1875. There, data on the size of landholdings, name of proprietor, and specific location, are listed for the first two major groups of migrants settled in the Colony permanently, the Nova Scotians and the Maroons, respectively. These sources are of vital importance for developing a picture of the Colony as it appeared before the large inflow of liberated Africans that would start less than a decade later, allowing us to analyze how the pattern of colonization and of land distribution in Sierra Leone developed over early decades of its existence.

Our results show that – despite official policies of egalitarianism – land distribution was far from equal since the early days of the colony and grew substantially over time. Our estimated Gini-coefficient increased from 0.258 in 1791 to 0.458 in 1831.

The increase in inequality over time was primarily associated with changes in the institutional policies. While egalitarianism remained the official ideal during the period we study, the actual policies implemented shifted from being based on equality of outcome (actual distribution of land) to equality of opportunity (right to appropriate land). This shift, triggered by a rapid increase in population, enabled a rise in inequality in the resulting distribution of land that mostly affected the later settlers.

Notes

Imperial profits – the return on British investments in Africa, 1869-1969

Klas Rönnbäck

Oskar Broberg

Did imperialism and/or colonialism have an impact upon the return on investments for the European investors? The issue has been hotly debated in the field of economic history. Some scholars have argued, inspired directly or indirectly not the least by John Hobson's book Imperialism, that capitalists were able to earn substantial "super-profits" from the British Empire, considerably higher than profits possible from investing elsewhere in the world. In the 1970s and 1980s, some influential studies found little empirical evidence in favour of such an interpretation (see most importantly Edelstein 1982; Davis, Huttenback, and Davis 1986). In recent years, some new publications have however raised this issue again, using larger samples of data, and modern-day techniques of estimating the retun on investments (Dimson, Marsh, and Staunton 2002; Buelens and Marysse 2009; Grossman 2015). These studies would in contrast seem to show that return on investments actually was higher at least in some colonies; the study by Dimson et al does for example suggest higher return on investments in South Africa than elsewhere in the world during much of the twentieth century; the study by Buelens and Marysse argue for higher return on investments in Belgian Congo during Congo's colonial period than in Belgium itself, and the estimates by Richard Grossman indicate that return on investments were substantially higher in Sub-Saharan African during the period 1869-1928 than anywhere else in the world at this time.

In this paper, we study the return on British investments in Sub-Saharan Africa during the colonial period. The paper analyzes the investments in a larger set of countries and over a longer time-period, using a substantially larger sample of data, than what has been done in any previous studies that we know of. Our sample consists of more than 650 companies listed on the London Stock Exchange, and operating in Sub-Saharan Africa during the period 1869 to 1969. The vast majority of these (450 companies) were operating in South Africa, reflecting how important this colony was for British investments in Africa. The Gold Coast (current-day Ghana), Nigeria and Rhodesia (current-day Zambia and Zimbabwe) were other important target countries for British investments. Unsurprisingly, furthermore, most of the investments – both in South Africa, and in other countries – went to the mining sector in particular, which is also reflected in our sample of companies.

In contrast to the previously cited recent studies, our results show that the return on investments was in aggregate not extraordinarily high in Africa when compared to the return on investments in Britain or elsewhere in the world during this time. Over the whole century studied, our results suggest an average (geometric mean) real return on investment of around 6 per cent per year.

If we delineate the estimates to the same time-periods studied by previous scholars, our results are somewhat lower than previous studies' results for the return on investments in Africa, both when comparing our whole sample to Grossman's estimates for Sub-Saharan Africa, and when comparing the South African investments to Dimson et al's data from this country. Much of this difference is presumably driven by differences in the sample, where our sample includes a substantially larger number of companies. Many of these companies were quite small and unsuccessful, and very often exhibiting negative return on investments. Even though they might have had a limited impact upon the market capitalization-weighted index individually because of their small size, they were presumably numerous enough to lead to somewhat lower estimated return on investments than in previous research.

Comparing our estimated return on investments in Africa with other scholars' estimates of the return on investments elsewhere in the world, our results for investments in Sub-Saharan are roughly on par with, or even somewhat lower than, the estimated return on investments elsewhere in the world. Some of the leading companies operating in Africa such as De Beers Consolidated Mining, Consolidated Gold Fields of South Africa, or Anglo-American Corporation, often emphasized in much of the scholarly literature, were certainly yielding return on investments substantially higher than our market capitalization-weighted average index. A large number of the companies operating in Africa were however not very successful at all, thus driving down the total index.

The return on investments did furthermore fluctuate most substantially between the years. The return was highest during the Scramble for Africa and during the interwar period. The latter fact has been almost completely missed in previous research on the profitability of imperialism, since most such studies have been delineated to the period up to the First World War.

The return on investments also varied between the industries that the companies were operating in. The highest average return in the sample was clearly associated with investments in mines in Southern Africa in general (in particular the two Rhodesias and South Africa), and thus seem attributable to a combination of rich mineral deposits, and colonial institutions driving down many of the costs associated with the extraction of these resources.

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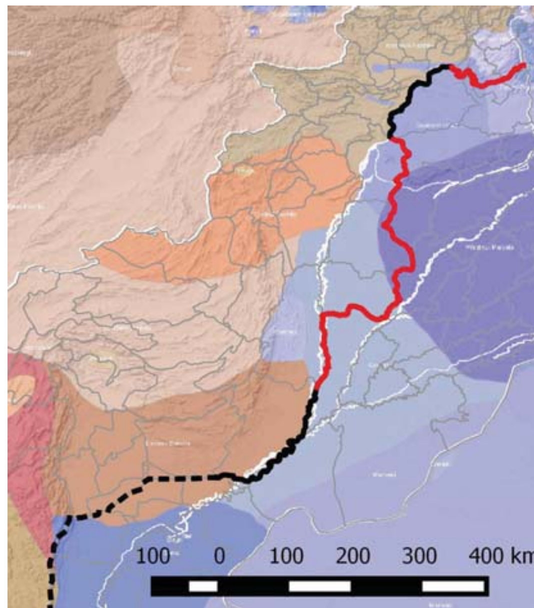
Colonial Indirect Rule and Pre-colonial Ethnic Institutions: Evidence from British India

Arash Naghavi

Shujaat Farooq

Enacting the Punjab Frontier Regulation in 1872 that integrated a pre-colonial institution, called Jirga or council of elders, into colonial administration, the British colonial state indirectly ruled the northwest of colonial India. This colonial policy regulated and administrated justice in cooperation with local elites and transferred Jirga from a council of all adult male members of a community to a council composed of three or more state-appointed members of local elites. We examine the long-term effect of this colonial policy on development and public goods provision. Using a regression discontinuity design across the boundary that separated indirectly from directly ruled areas, we find that the areas exposed to indirect rule are less developed and have inferior access to those public goods which began to be provided in the colonial era. We conclude that the divergence started in that time and persists today and show that one mechanism underlying the long-term effect is the effect of the indirect rule on social norms, specifically interpersonal trust and corruption.



The Frontier Crimes Regulation (FCR) boundary and ethnic distribution

Note: The map of the language distribution, shown in the background, is extracted from the maps of the Genetic Relationship of the World's Languages produced by Huffman (Huffman, 2015). The colors in the shades of red show Baluchi and Pashtu ethnic groups, and those colors in the shades of blue show Punjabi, Sindi, and Hindko ethnic groups. The gray lines are borders of Pakistani districts. The FCR boundary is plotted by dashed and solid black and solid red lines. The dashed black line is the Sind-Baluchistan border. The solid black lines are the ethnic borders. The solid red line is the portion of the boundary we exclusively focus on.

Does innovation foster business profits? Evidence from Italy, 1913 - 1936

Giacomo
Domini

Investigating the relationship between innovation and profitability means investigating the economic reasons for innovating themselves. An established view in economic theory, the roots of which can be traced back to the thought of Schumpeter, argues that innovation, i.e. the introduction of a new product or process, entails a short-term competitive advantage (if not a real monopoly position), lasting until the time competitors can imitate the novel product or process. Besides this view, Geroski and Machin (1993, p.36) argue that innovation enhances firm performance via another, more subtle channel: specifically, 'the process of innovation transforms the firm itself, building up its internal capabilities in a variety of ways that create generic differences between innovating and non-innovating firms'. Unlike the 'traditional' view whereby innovation entails an immediate but temporary competitive advantage, which those authors term the 'product view' of the innovation-profitability nexus, the alternative mechanism they illustrate, which they label the 'process view', unfolds over a long time horizon, as its effects 'do not necessarily manifest themselves only after an innovation occurs'.

That seminal work initiated a line of empirical papers, pointing out that individual innovations do have a significant positive effect on profitability, which however is small, compared to that of market-related variables; while long-term, permanent effects, associated with the development of firms' capabilities, are much more important. To my knowledge, the only empirical work, studying the innovation-profitability nexus in a historical perspective is that by Mowery (1983). Analysing several samples of American firms over the period 1921-1946, this author finds that (both large and small) research-performing firms grew faster than their competitors, and that research increased the likelihood of firms' survival among the ranks of the largest manufacturing firms, over the above-mentioned period.

Acknowledging the relevance of a long-term perspective to providing a thorough assessment of the impact of innovation on firm performance, the present paper also analyses the innovation-profitability nexus in a historical context, namely over the years 1913-1936. However, unlike Mowery's study, dealing with a technological leader country, this work deals with a peripheral laggard economy, as Italy was in the observed period. A poor and backward country in the aftermath of its Unification (1861), Italy experienced considerable growth and significant structural change over the twentieth century, to the extent that, after the Second World War, it converged to the most advanced economies. Yet innovation does not seem to have played an important role in these achievements, as Italian industry was deeply rooted in traditional sectors, where innovation relies on formal research activities very little if at all, while it was weak in sectors characterised by high technological opportunity and patenting intensity.

Besides the appeal of the Italian case per se, a more practical reason for carrying out a historical study about Italy is the abundance of data referring to this country. The IMITA.db database provides extensive information about Italian joint-stock companies, including their balance sheets, for the first three-quarters of the twentieth century (Giannetti and Vasta, 2006). This can be complemented, on the side of innovation, with two different types of data. The first are patents, which are a standard gauge in studies dealing with innovation, and are especially important in historical analyses, as they are available since long ago for many countries. A second proxy for innovation, employed in this study, is data from international exhibitions, proposed by Moser (2005) as an alternative to patent data, for the second half of the nineteenth century and the first decades of the twentieth. In fact, the latter measure can also be employed to verify the relevance of exhibitions as a means of commercialization of firms' products, at a time when mass advertisement was not yet developed (Khan, 2013, pp. 107-108; Schroeder-Gudehus and Rasmussen, 1992, p. 6).

The above-mentioned data are employed in two distinguished econometric analyses, respectively referring to the short and the long run: first, profitability is regressed, by means of panel OLS estimations, on the proxies for innovations and a number of firm- and industry-level controls; then, firms' long-term survival (around 25 years) is regressed on the same variables, using a probit model.

The empirical evidence rejects the 'product view' of the innovation-profitability nexus, whereby the former has an immediate temporary positive effect on the latter. What is more, a short-run analysis does not even support the 'process view': in fact, unlike previous studies, this does not show that innovative firms are less subject than others to competition and to the business cycle, and that they are better in 'absorbing' external knowledge. This is in line with results from Italian historiography, pointing out the scarce relevance of innovation in Italian economic growth (Nuvolari and Vasta, 2015). However, the process view re-emerges, under a different form, if a long-term analysis is performed, as it turns out that innovators were more likely than their non-innovative competitors to survive.

A final contribution of this study is the assessment of the goodness of exhibition data as a proxy for innovative activity, alternative to patent data. Interestingly, the results just expounded are reversed, as being an exhibitor is observed to be associated with a boost in short-term profitability, but not to entail a long-run benefit, in terms of survival. On the one hand, this is an important piece of empirical evidence in favour of the argument that exhibitions were effective means of commercialisation and advertisement for participating firms. On the other hand, if the effect of innovation is that of developing firm capabilities, in such a way that they are better able to survive, then the connection between exhibiting activity and innovation is questioned.

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Innovation and Industrial Renewal in Finland and Sweden 1970-2013

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Innovation and industrial renewal is widely considered the panacea for economic growth, employment, and societal challenges. Stimulating innovation is therefore seen as a top priority among policy makers around the world, something that has been accentuated in view of the poor economic performance since the global economic crisis of 2008 onwards.

There are some optimistic and some less optimistic outlook on the future of innovation and growth. Gordon (2016) relates the current situation of secular stagnation, i. e. low growth rates and low interest rates, to the lack of innovations and suggests that a reason for the poor economic growth performance in many regions of the world is that most of the feasible important great innovations have already been carried out (see also Summers, 2016). On the other hand, Brynjolfsson (2014) have argued that the world is at an inflexion point towards increased technological change. A long term view on innovation, and accurate measurements of innovation, is necessary for this debate to proceed in a healthy way.

The main purpose of this paper is to present and discuss the validity of an aggregate innovation indicator of significant innovations (abbreviated as sinnovations when needed), based on the literature based innovation object (LBIO) method, for the manufacturing sector in two similar and high-performing countries, Sweden and Finland, over the period 1970-2013. The study breaks methodological ground in making LBIO-based data consistent and comparable across two countries.

Our results can make contributions to assess the long-term trends of innovations in Finnish and Swedish manufacturing sectors. Is the aggregate pattern of innovation over time determined by certain sectors, or is the innovation activity spread more evenly across sectors?

Moreover, our long-term data for innovations in Finland and Sweden can illuminate whether innovation trends are negative or positive over time. Admittedly, results for two small countries like Finland and Sweden cannot say very much about the trends in the world pool of ideas, which is what Gordon and Brynjolfsson are actually debating, but at least it is a contribution to the overall picture. Furthermore our contribution to this debate is unique in that we actually measure sinnovation per se, and the method could be scaled up to larger economies, and it could be extended back in time before 1970 .

The Value of Patents in Italy, 1861-1913

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This paper uses renewal data to estimate the value of patents granted in Italy during the so-called Liberal Age (1861-1913) controlling for inventor and patent characteristics. The Italian case is particularly suited for the study of the economic value of patents using renewal behaviour. During the nineteenth century, the Italian renewal system was extremely flexible allowing inventors to take patents for any given duration. Initially an inventor could register a patent for any duration from 1 to 15 years according to his own choice. In addition to this initial fee, it was necessary to pay an annual renewal fee (increasing over time) for keeping the patent "alive". Furthermore, the Law gave also the possibility of "extending" the duration of a patent initially taken for a shorter period. Hence, in the Italian system, inventors could precisely "fine-tune" their expenditures in fees with the economic returns of the patent. We make use of a new dataset comprising all patents granted in Italy in five benchmark years: 1864-65, 1881, 1891, 1902 and 1911 (Nuvolari and Vasta 2015). Following the approach introduced by Bessen (2008), we estimate both the value of patents "ex-ante" (that is in the moment in which the patent was granted) and "ex-post" (that is in the moment in which the patent expires). Overall, we find, in both cases, a highly skewed distribution of patent values. This result is in line with value estimates of contemporary patents. Furthermore, we find that patents issued to firms and to foreign inventors and patents covering high-tech inventions are more "valuable" than those issued to independent inventors and domestic inventors or in low-tech sectors. Our findings suggest that it is important to "weigh" patents with their value in the reconstruction of innovation patterns, also when dealing with historical patent data.

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Growth before steam: A GIS approach to estimating multi-modal transport costs in England and Wales, 1680-1830

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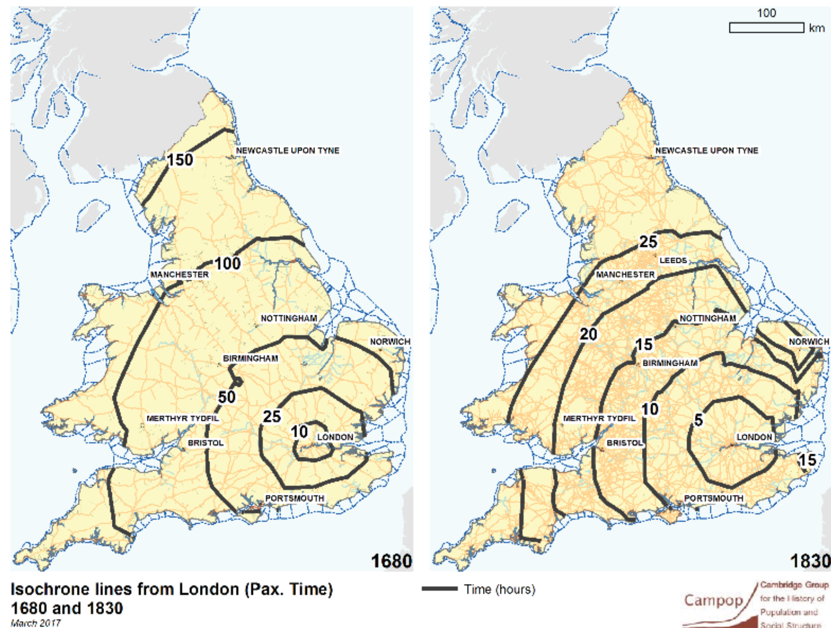
Oliver Dunn

Max Satchell

Leigh Shaw-Taylor

Transport improvements have been one of the most important engines of economic growth throughout human history. The large economic gains from steamships and railways are well accepted, but the extent of transport improvement in the pre-steam era is more debated. In England and Wales, there is evidence for transport improvements before steam. Road surfaces and gradients were improved, the inland waterway network expanded, and technology evolved in sailing ships and passenger coaches. The institutional environment also changed with wars and new methods of public finance. Various studies suggest that transport costs fell and productivity increased before steam, but the overall change has not been established.

This paper estimates transport costs between the 146 most populous towns in England and Wales in 1680 and 1830, just before the steam era. We start by building a multi-model transport model of freight costs, fares, or travel times between towns. The model allows transport by road, inland waterway, or coast shipping, and switching of transport modes within journeys. The lowest cost and time is identified using network analysis tools in GIS. As data for our model, we use new GIS networks of roads, inland waterways, ports, and coastal shipping routes produced by a larger project on transport and urbanization in England and Wales. The parameters of the model are taken from existing estimates of freight rates, fares, and speeds by coastal, road, and inland waterways.



Isochrone lines from London (Pax. Time) 1680 and 1830
March 2017

Our preliminary results show substantial declines in freight transport costs between 1680 and 1830. The average travel time for freight services between the 146 towns declines by 54% and the average travel time for passengers decreases by 78%. An illustration of the declining travel times to London is shown in the following graph.

The average freight cost declines by 57% in nominal terms and the average passenger fare increases by 31% in nominal terms. To deflate the money costs, we use an index of wages, capital prices, and fuel prices. We also use price dual methods and our new estimates of transport costs to calculate the rate of TFP growth in coastal and inland transport. Our current estimates imply that in freight TFP growth averaged 1.03% per year between 1680 and 1830 and in passenger TFP growth averaged 0.43% per year. Based on these figures, the transport sector had the among the highest productivity growth of any sector and accounts for just under one-third of all TFP growth in the English economy between 1680 and 1830.

Of equal interest is the variation in transport costs between towns. Coastal areas always had lower freight costs than inland areas, but interior freight costs declined more between 1680 and 1830. One reason is the significant expansion of road and inland waterway networks. The other reason is the high rate of productivity growth in road transport, and substitution from roads to waterways. In the concluding section of the paper we study the relationship between changes in market access across towns and study the link with town population growth from 1680 to 1840. We find that increases in market access associated with lower freight costs are strongly related to town population growth. Counterfactual calculations suggest that aggregate town population growth would have been 26 percent lower if market access had remained constant from 1680 to 1840.

Unifying the Economic History of Modern Europe: a review essay

Pedro
Lains

The economic history of Modern Europe is naturally a moving target. As findings about old debates, such as the nature of the first industrial revolution or the contribution of technological innovation or foreign trade to economic growth, are consolidated, new questions emerge, such as those concerning the enquire about when and why the "little divergence" of income per capita levels within the continent occurred. There was a time too when typologies abounded, from Rostow to Gerschenkron and Abramovitz, but we now lack grand interpretations on causes of economic growth and retardation of the European nations, and we cannot even be sure that one is needed. Yet as both long-term and world economic history gain vigour, there seems to be an increasing concern with a general and coherent picture of the European economy during the period since industrialization begun. In fact, in global economic histories, Europe often shows up as united entity, albeit of a complex type, and European industrialization often appears as a comprehensive concept in long-run development narratives.

But, is there a unified Modern European economy and a unified economic history of Modern Europe? Due to the complexity of the endeavour, it certainly goes beyond the scope of this paper to provide a definite answer to such questions. Instead we want to discuss here how our knowledge about European economic change can be improved by taking into account the new findings about factors of growth and retardation on its periphery. Such an exercise will help us having a better understanding about what we mean by the Modern European economy, and about its place in the global and the long-term economic history narratives.

We begin this essay by briefly reviewing a number of important books on the economic history of Modern Europe, published since World War II and the heyday of modern growth theories. We can depict three different stages of the field, from focusing essentially on the causes of the British industrial revolution, to studying other successful industrializers and eventually the latecomers in the southern and eastern peripheries. Presently, we have a large number of scattered studies, still mostly of national character, that virtually covers the whole Continent, and a wide range of topics, from industry to agriculture, from demographic transition to the role of technological change. The new research has shown that the emulation or substitution of British sources of growth were not necessary conditions to achieve prosperity, and that the paths to growth or backwardness across regions, nations and countries were different in many ways. Europe, rather than Great Britain or the forerunners, needs to be the focus of the questions – and eventually of the answers - on the sources of industrialization and modern growth.

From there, the paper proceeds with a review of recent developments on the economic history of the European periphery, with particular emphasis on Portugal. The evolution of the scope of studies on the economic history of the periphery followed closely what happened with those concerning the rest of Europe. In fact, they went from addressing questions on why the periphery did not have its own "industrial revolution" to addressing questions on how much growth was there and how backwardness shaped the pace and structure of economic change. Instead of trying to explain why the periphery did not emulate the core, the new studies attempt at understanding the constraints to economic growth stemming either from the institutional framework or from the limits imposed by lower levels of savings, investment and capital infrastructure, or deriving from less advantageous natural resources endowments, and the structure of comparative advantages. Factor productivity growth was harder to achieve in rye rather than iron and also in wine rather than textiles or machinery.

The study of the periphery provides a new set of conclusions regarding the economic history of Modern Europe. The findings relate to a large number of issues, ranging from the relevance of regional factors in determining the pattern of growth and industrialization, to the role of institutions and public policies. So, with the study of the periphery, we know better about how regional borders can be more important than national borders, how international patterns of development remained relatively stable across the Modern age, how catching-up occurred under both free trade and high levels of tariff protection, how public financial probity was neither a sufficient nor a necessary condition for higher growth, how aggregate factor productivity growth in agriculture could outpace that of the industrial sector, how empires were costly but helped financing the balance of payments, how political instability was compatible with growth and catching up and, last but not least, how openness and political integration within Europe was not at all times joined by convergence of levels of income per capita.

By taking into account the experiences of the periphery, the mix of growth narratives and causal factors inevitably becomes more complex and ultimately renders more difficult speaking of a Modern European economy. We may even end up by concluding that Europe is a geographical concept rather than an economic one. Moreover, if that conclusion holds, it goes along with the tendency observed in the more recent economic historiography which is to a large extent based on scattered and unrelated studies, and also helps explaining the demise of European growth typologies. However we should not be too pessimistic. Regarding the causes of industrialization, for example, there were certainly common traits within Europe despite the many causes of domestic, regional or national nature. The question is finding out whether European or domestic causes were predominant and when and why. The answer to such questions will remain open, but that should not come as a surprise. After all economic history is more about asking fruitful questions and opening research agendas then reaching definite answers and closing debates.

With the periphery, the Modern European economy necessarily appears both more unified and more complex, which is of course a source of its own dynamism. That may be the ultimate conclusion of this essay, namely, that economic history is more about increasing our knowledge about how economies function than about finding answers to the causes of economic change or, in other words, it is more about getting the consequences right then about reaching definite conclusions about the causes.

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Sweden Chasing the American and The British Productivity Frontiers in Manufacturing, 1869–2010

Svante Prado

Yoshihiro Sato

This paper establishes comparative levels of Swedish labour productivity in the manufacturing industry vis-à-vis the UK and the US for four benchmark years, 1909, 1924, 1935 and 1963. The method used is the industry of origin approach; the one that is due to Rostas (1948) for the pre-World War II benchmarks, comparing physical output per worker directly, and the one due to Paige and Bombach (1959) for the post-World War II benchmark, establishing real output through unit value ratios. Time series of labour productivity, extrapolated from one of the benchmarks, are used to cover the entire 1869 to 2010 era. To accomplish the establishment of this long-term record, the paper also offers a revised series of Swedish labour productivity in manufacturing in 1869–1950.

The result of this exercise will be used to cast new light on the convergence literature focusing on the long-term record. As our paper, a particular strand of this literature has established comparative levels of sector-specific labour productivity across countries. This literature has focused almost entirely on the US, the UK and Germany. With a keen eye to establishing the long-term record, Broadberry's (1997) argues that the long-term US/UK and Germany/UK evidence indicates that the comparative productivity ratios, despite great swings during especially wars, always gravitated towards a long-run path of stability. He attributes catching up at the whole economy level instead to structural transformation. One wonders, though, whether this result depends largely on the small sample of developed countries all of which experienced industrialization relatively early.

A different strand of literature has, in contrast, been preoccupied with the importance of manufacturing (Kaldor 1966, Cornwall 1977). With emphasis on convergence, Gerschenkron (1962) stressed that the existence of wide productivity gaps carried with them great scope for catching up, and the wider the productivity gap, the greater the potential for improvements. Ever since, it has been stressed that a significant component in the process of income convergence is technology spillover from manufacturing, where most of the convergence potential rests (Abramovitz 1986; Rodrik 2013). If this literature is correct in identifying the most potent forces in manufacturing to propel income convergence at the whole economy level, we should observe narrowing labour productivity gaps in manufacturing as countries converge in GDP per capita terms, hence inconsistent with what the literature on comparative levels of labour productivity levels has revealed as yet.

Thanks to a quite solid empirical foundation, Sweden, that is often considered a typical example of late nineteenth century industrialization, provides a rare opportunity to discriminate between the two visions of convergence outlined above.

Notes

Crisis? What Crisis? Corporate Profit and Growth Dynamics in Historical Perspective

Christian Babirat

Simone Alfarano

Mishael Milaković

Recent literature on corporate profitability reports statistical regularities that persist in times of economic prosperity and crisis during the 1980s to early 2010s (Alfarano et al. 2012). Profit rates (defined as return on assets) display a remarkable stability in their annual averages and dispersion, resulting in a stationary (Laplace) distribution. A proposed reduced-form model of competitive firms and capital reallocation accounts well for these observed regularities. However, so far no comparison between observed statistical patterns in and the applicability of the model for distant historical episodes of economic prosperity and crisis has been made.

We analyze balanced panels of non-financial corporations during three episodes within the last 150 years of U.S. economic and corporate history (1863-1893, 1923-1953, and 1983-2013). This allows us to stress-test the regularity of statistical patterns and the applicability of the model of competitive firms in distinct environments. We find that the stability in statistical moments and the stationarity of the distribution of the profit rates survive substantial market crashes and economic downturns in and after 1873, 2001, and 2008 (Figure 1). The Great Depression after 1929 marks, besides wartime production, the only lasting deviation from these regularities.

Generally, deviations are systematic. Wartime production, on the one hand, makes government a dominant customer that subordinates usual business activities and inflates profits through increased spending. Thus, profitability tends to increase (and in fact almost doubles) above the long-run average in wartime. On the other hand, comparison of economic crises unveils an inherent inability of corporations to adjust their assets to extreme market conditions, especially during the Great Depression. Thus, we observe a departure from the stability in average profitability and the stationary distribution, with profitability decreasing below the long-run average during severe crisis.

Our findings demonstrate that firm-level observations contribute substantially to the understanding of macro-level patterns. Generally, and along the lines of Gabaix's (2011) Granularity Approach, performance of large corporations, in terms of sales, mirrors to a substantial extent the fate of the overall economy, in terms of GDP (Figure 2), thus enabling us to shed light on the impact and severity of historic downturns. Specifically, firm-level comparison of different downturns within the last 150 years adds to the economy-level literature on economic crisis, as we propose disaggregate factors that relate to the length and severity of economic crisis, e.g., a break-down in capital reallocation and accumulation.

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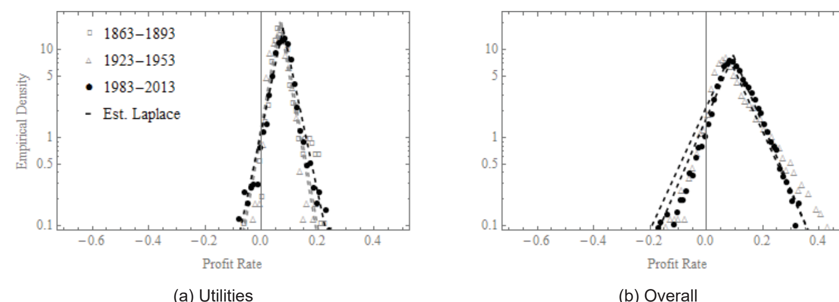


Figure 1: Cross-sectional distributions of corporate profitability. Empirical densities of profit rates in (a) the utilities sector (m1863-1893 = 7.03% and σ1863-1893 = 0.024, m1923-1953 = 6.74% and σ1923-1953 = 0.025, and m1983-2013 = 7.63% and σ1983-2013 = 0.029) and (b) the overall economy (m1923-1953 = 8.60% and σ1923-1953 = 0.058, and m1983-2013 = 9.20% and σ1983-2013 = 0.056). Dashed lines indicate the estimated Laplace distributions for the cross-sectional samples.

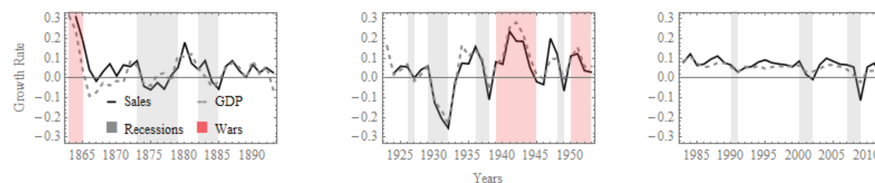


Figure 2: Median corporate sales and GDP growth (both nominal, per annum) for sample periods 1863-1893 (30 companies, 892 observations), 1923-1953 (136 companies, 3,063 observations), and 1983-2013 (562 companies, 17,147 observations). Shaded areas indicate NBER-identified recessions (gray) and major military conflicts (red), both lasting for at least one year.

Why Did Early Industrial Capitalists Suggest Minimum Wages and Social Insurance?

Alfred
Reckendrees

Today the politicians in Europe debate how much public welfare a society should provide and how much private insurance is possible; it is about money rather than the socially stabilizing function of welfare. Yet, looking back at the origins of the industrial society, it seems as if there were limits to private solutions to social problems. In the 1830s, industrial capitalists from Aachen (Prussian Rhineprovince) suggested collective rules regulating working hours and wages. In the 1860s–20 years before Bismarck–they proposed a mandatory pension system with equal contributions of employers and employees; they also suggested labour conflict resolution by joint arbitration panels of employers and elected labour representatives. Their proposals did not gain support from the Prussian government who argued collective agreements would violate freedom of contracting.

This observation –entrepreneurs' demanding social welfare and the Prussian state defending economic liberalism– challenges the conventional view of the emergence of the German 'Welfare State'. It raises the question in how far 'social policy' should be regarded as a "pure" product of capitalism, somehow contradicting the dominant interpretation of the German welfare system. The German social insurance legislation of the 1880s is generally understood as a top down political decision process. Bismarck's political strategy is presented as aiming at reconciling labour with the newly established German State on the one hand, and, on the other hand, as a 'carrots and sticks' policy against the socialist movement. The social insurance system is furthermore interpreted as a 'contribution to state and nation-building'.

In the early 19th century the Aachen district was the most advanced industrial region in Prussia in terms of industrial employment, technology, and modern industrial organisation. The paper shows that the capitalists suggesting welfare did not follow philanthropic motifs, but that economic considerations and collective self-interest were guiding them. Industrialists were aware of existing and potential social conflict within the emerging capitalist society. Based on economic self-interest they developed ideas of how to integrate society. They thus contributed to the slow process of institutional change. Of course, the industrialists of Aachen did not have the political power to implement new legislation. The core argument of the paper is not that these ideas have already been developed before Bismarck – this would be boring. It is that existing tensions within the emerging capitalist society induced the demand for social welfare and security. In the perspective of the elites, the stability of society was dependent on social integration of the labour class. By analysing 'social policy' as a capitalist aim, the article puts the emergence of the German welfare system in a new perspective.

The reasons of the Aachen Chamber of Commerce for proposing a mandatory pension scheme for industrial workers 25 years before Bismarck.

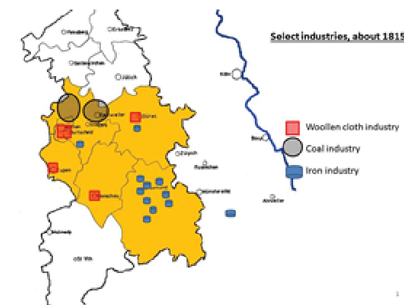
There is a 'disparity between the factory owner who – based on his activity – looks forward to a carefree future, and the worker who only enjoyed a very constricted autonomy in years of full labour capability, whereas his fate is unprotected in his incapacitated age.' (1864)

If 'the price of labour - just like any commodity - only depends on supply and demand or on the business cycle …, the worker would, in case of lack of demand, finally be forced to starve or to live on charity.' (1866)

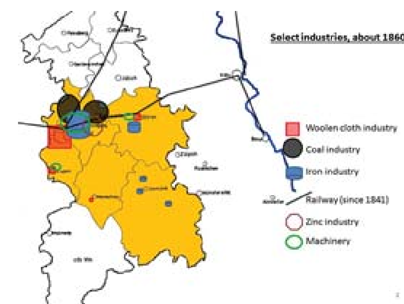
The industrial region, 1861

population	256.000
workers in industry	77.900
	industry workers as share of working population
Aachen	67,5%
Eupen	70,2%
Montjoie	48,4%
Gemünd	49,8%

Region of Aachen: major industries (1815)



Region of Aachen: major industries (1861)



Institutions and Colonial Trade Expansion: Quaker Contract Enforcement, 1682-1772

Esther
Sahle

In the late seventeenth and ealry eighteenth centuries, the Atlantic witnessed an unprecedented expansion of trade. Economic historians often attribute this growth to institutional innovations. The same institutional changes are also held responsible for the succeeding diverging economic development and present day global inequality. Details of these transformations however remain disputed. During this time, London and Philadelphia became the two largest ports in the Western hemisphere. They also became home to the two largest single communities of Quakers, a group that for almost 400 years has enjoyed a reputation for being disproportionately successful in trade. Quakers occupied a central place in business when Britain emerged as the world's leading trading nation. London and Philadelphia in this period displayed completely different institutional characteristics: while merchants in London had access to litigation in an array of courts to enforce the payment of debts, public institutions in the colony were underdeveloped and the enforcement of contracts notoriously difficult. In consequence, we would expect the development of Quaker institutions to diverge, as well. Indeed, the records of the Monthly Meeting of Friends in Philadelphia show that it mediated business disputes between its members. This activity figures prominently in the records: Aside from marriages, mediations are frequently the only entries in the minutes for any one month. In this the Philadelphia Meeting differs strongly from Quaker Meetings in London, which rarely became involved in their members' businesses. Based on data derived from Philadelphia Quaker meeting records, Pennsylvania court records, and Quaker merchant correspondence during the period 1682-1772, this paper argues that the Philadelphia monthly meeting developed its capacity to mediate business disputes in order to fill the institutional vacuum that existed in the newly founded colony. It shows that meeting mediations substituted courts for solving commercial conflicts and thereby secured property rights, facilitating the expansion of trade within the region and the wider Atlantic world and supporting Philadelphia's rise to the primary colonial port by the second half of the eighteenth century.

What really happened to British inequality in the early 20th Century? Evidence from national household expenditure surveys 1890-1961

Ian Gazeley
Andrew Newell
Kevin Reynolds
Hector Rufrancos

This article is a study of long-run movements in income inequality in Britain, exploiting household expenditure data sets from 1890/1, 1904, 1937/8, 1953/4 and 1961, some of which we recovered and digitised. After adjusting for differences in scope and sampling over time, we find little change in inequality among worker households over the period, and a modest fall through World War Two. Our findings stand in contrast to the well-established evidence of falling mean skill wage differentials during the two world wars, but are consistent with the evidence on the overall variance of earnings, which only falls marginally over the period. Our evidence suggests this relative steadiness was the result of opposing proximate forces, one being the decline in manual skill differentials due largely to changing wage-setting institutions. On the other side was growth in the importance of white-collar employment which displays relatively high wage variance. We also argue that two demographic factors played their parts. An equalising force was the decline in fertility in the early part of the century, while the emergence of pensioner households in the 1950s tended to increase inequality in the lower end of the distribution. Our data are consistent with the hypothesis that this wage levelling masked a mild upward trend in working household inequality, due to the changing occupational distribution of the workforce. Lastly, our work suggests a substantial downward revision in the size of the fall in inequality though World War Two. We find a fall of between two and three Gini percentage points between 1937/8 and 1953/4, compared with the often-quoted Blue Book estimate of almost seven Gini percentage points.

Distribution Dynamics in Turbulent Times: Income inequality in Germany and Britain, 1900-1950

María Gómez-León

Herman de Jong

In recent years a number of influential studies on the historical evolution of inequality and its causes have raised new interest on the topic (Alfani and Ammannati 2017; Deaton 2013; Lindert and Williamson 2014; Milanovic 2016; Piketty 2014). While it seems clear that inequality declined in Western European countries during the twentieth century until approximately the 1980s (Milanovic 2016, van Zanden 2014, Piketty 2014, Lindert and Williamson 1988), the slowdown has been attributed to different drivers, from demographic and economic factors (Kuznets 1955) to political forces (Piketty 2016) or the interplay of the above (Milanovic 2016). But was the deceleration of inequality continuous and alike across European countries? Could different inequality drivers have led to different patterns? Turbulent periods during the first half of the twentieth century, including two World Wars, the Great Depression, or the rise of inward looking economic policies suggest that inequality trends might be very different across European countries. Yet, we have little empirical evidence due to the lack of data on income distribution before 1950, especially for the interwar years. This omission may be particularly relevant where, as shown in Figure 1, claims of the above-mentioned drop in inequality during the first half of the twentieth century are based on scattered years in which the interwar period has been neglected. Moreover, studies covering the whole period infer inequality trends from the evolution of proxies such as the top income shares (Atkinson and Piketty 2007, 2010) or wage differentials (Söderberg 1991), which only include particular segments of the distribution.

In this paper, we move beyond previous attempts in two ways. Using dynamic social tables, which have not been used for European countries before, we contribute by providing new data on inequality in Germany and Britain on an annual basis for the first half of the twentieth century. Secondly, we shed new light on the forces behind inequality changes within these two countries by exploring the whole range of the distribution, as well as on the factors explaining the differences between them. Evidence from Germany and Britain suggests that the drop in inequality was neither steady nor equal,

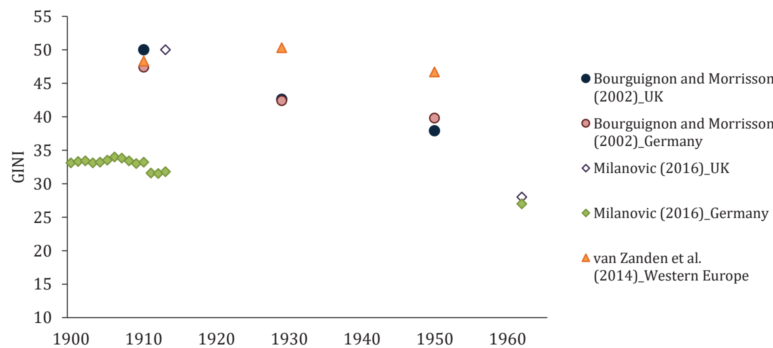


Figure 1. Inequality in Western Europe, 1900-1962

clashing with the idea of an egalitarian revolution across Europe during the twentieth century (Lindert and Williamson 1985, 346, Milanovic 2016, 53, van Zanden et al. 2014, 290). Indeed, as shown in Figure 2, inequality trends in these two countries tend to follow totally opposite movements and support the notion of inequality cycles –Kuznets curves- suggested by Milanovic (2016) and illustrated by the Spanish example in Prados de la Escosura (2008). The decline in inequality in Germany was interrupted during the WWI and the Nazi period, while in Britain the reversal occurred between the end of WWI and the Great Depression.

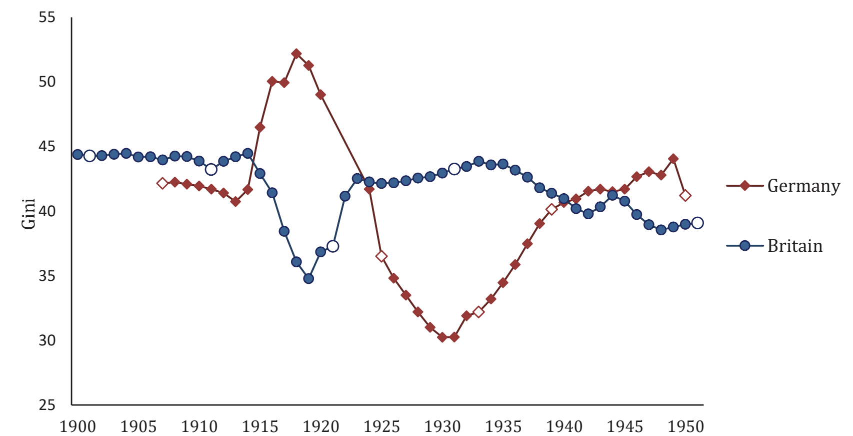


Figure 2. Inequality trends in Britain and Germany (Gini coefficients)

Sources: Dynamic social tables described in Section 3
Notes: Markers in white indicates census benchmark years from which we have interpolated the active population structure. Data on earnings are on an annual basis only interrupted between 1920 and 1924 in Germany and in 1939 in Britain.

We find that before 1933 and from 1939 onwards both variations in the relationship between property and labour incomes as well as variations in labour earnings drove inequality changes in Germany. During the Nazi government only differences between owners and labour earnings determined changes in inequality as the abolition of trade unions and the setting of maximum wages precluded the dispersion of labour earnings. In Britain, earnings dispersion among workers appears as the main driver of inequality changes before WWI and after 1939, when the reduction of skill premiums and gender pay inequalities offset the increase in the owners' ratio. However, from WWI to the outbreak of WWII both differences between proprietors and workers as well as changes in labour earnings dispersion caused inequality variations. Our conjectures point at primarily political and institutional factors as crucial drivers of inequality trends over the first half of the twentieth century.

Unequal poverty and equal industrialization: Finnish wealth, 1750–1900

Anna Missiaia
Erik Bengtsson
Ilkka Nummela
Mats Olsson

What causes variations in economic inequality? Growing inequality today has led to growing interest in historical inequality studies. History offers a variety of cases and scenarios for studying how inequality varies in all kinds of settings. In societies where subsistence was the rule, owning (some) property was the most important determinant of one's living standards, and therefore wealth is the key variable of interest. Thanks to a series of studies building on probate inventories and taxation data, we now have long-run series of wealth inequality before 1900 for Britain, the United States, France and Sweden, as well as several cities and regions elsewhere (Hanson Jones 1980, Lindert 1986, Shammas 1993, Piketty et al 2006, Alfani 2015, Ryckbosch 2015, Bengtsson et al 2017).

We add here another case to the literature by presenting new estimates for wealth and its distribution in Finland from 1750 to 1900 based on information from probate inventories. Finland's peculiarities make this study an important contribution to the historical inequality literature. While countries like Britain, the US and France belonged to the economic core of Europe and were relatively early industrializers, Finland was a much more peripheral, poor and backward economy. First a Swedish province and later a Russian province from 1809 to 1917, in many ways Finland was somewhere in-between a "Western European" and an "Eastern European pattern" (Alapuro 1988, p. 4). While Finland was a part of the Swedish state from the mid-twelfth century until 1809 and its class structure with free peasant farmers were formed by Swedish rule, it resembled more a peripheral, Eastern economy with a low degree of urbanization and monetization. In 1700, Finnish GDP per capita only corresponded to 43 per cent of the British one and 78 per cent of the Swedish; in 1900 its level had further declined to 37 and 76 per cent, respectively (Maddison dataset). The Finnish case thus offers a new perspective on the much-debated issues of the relationship between economic growth, industrialization, structural change, and inequality.

Using wealth data from probate inventories, we show that Finland was very unequal between 1750 and 1850, with the top decile owning about 90 per cent of total wealth. This means that Finland was more unequal than much more advanced economies such as Britain, France and the US, which goes against the common assumption of poorer economies being more equal. It was also far more unequal than its most immediate term of comparison, Sweden. Moreover, when industrialization took off in Finland and contra the commonplace assumption of industrialization increasing inequality (see the Kuznets Curve and its later developments), inequality started a downward trajectory where the share of the top decile decreased from 93 per cent in 1850 to 80 per cent in 1900. Our estimates fit well with the ones for later years by Soltow (1981): the downward trajectory continued with a top decile share of 71 per cent in 1910 and 64 per cent in 1920. We show that the high inequality from 1750 to 1850 is driven from the bottom, by a large share of the population owning nothing or close to nothing of value, while economic development after 1850 is pro-equality since the ownership of forests, since long in the hands of the peasantry, provided new export opportunities as pulp and paper became very valuable.

Finland is the poorest economy for which we now have consistent long-run inequality estimates before 1900. As such, our study provides peculiar insights into the dynamics of inequality. The Finnish case provides evidence against three influential arguments in the extant literature. One, the relationship between average incomes and inequality. As argued by Milanovic et al (2011), we would expect poorer economies to have lower inequality. However, Finland in 1800 was as unequal as the much wealthier countries Britain and France, and more unequal than the wealthier United States. Two, the even more influential argument that inequality grows with industrialization and urbanization (the Kuznets Curve). On the contrary, in Finland inequality grew before industrialization from 1800 to 1850, and decreased heavily from 1850 to 1900, during industrialization. Three, the decrease in inequality from 1850 also questions the argument made by Scheidel (2017) and Alfani (2017) that inequality only decreases in connection to disasters and wars. There was no plague and no war in Finland between 1850 to 1900; inequality instead decreased because of a kind of inclusive growth, built on widespread property rights in a large share of the population, when the forest became more valuable as timber industry and other forest-based industries grew. This is not dissimilar to Lindert's analysis of how inequality decreased in Britain when land – extremely concentrated in the hands of a small elite of landlords – became less dominant as a type of wealth. Together, these three points highlight that our study shows that the historical inequality literature must consider the influence of property rights and their distributions, class, and institutions as well as economic development and external factors such as wars and disasters, if we shall understand long-run inequality (cf. Acemoglu and Robinson 2015; Lindert and Williamson 2016).

On the same boat: The age of mass migration to the United States (1892 - 1912)

Gaspare
Tortorici

In a nutshell (Abstract)

This paper investigates the municipal dimension of Italian mass migration to the United States at the turn of the 20th century (1892 - 1912) from diverse and innovative standpoints. The analysis revolves around Ellis Island administrative records and comprises the entirety of Italian immigrants entering the United States through New York - about 3.5 million observations in total. Fitting the data to economic analysis has required an intensive polishing effort as spelling mistakes often prevented the correct identification of both migrants' residences and surnames. In order to overcome these issues, I developed a script that automates the process, facilitating the identification process. The contributions of the paper could be summarized as follows:

- It defines original measures of migration networks before the departure, ex-ante, highlighting how migrants choosing to leave from a given port tended to travel together proportionally on distance from the hub;
- It explores the presence and significance of cyclical migration patterns, isolating their intra and inter year components. Very conservative lower bound estimates suggest that this is a non-negligible phenomenon.
- It identifies ethnically Italian immigrants who resided in countries other than Italy at the moment of their registration on Ellis Island, suggesting the idea that migration was not a once-off decision but, rather, a dynamic process.

As a whole, the article tests and questions traditional views centred on qualitative studies and deepens the debate on the age of mass migration.

Motivation

Before its unification in 1861, the Italian peninsula was fragmented into heterogeneous entities characterised by diverse political and socio-economic structures; morphological features varied both within and across states, so did customs and dialects. At the turn of the 20th century, Italy was still a scarcely integrated country whose economic development traced regional, if not provincial, idiosyncratic trajectories. Within this microcosm, local peculiarities were mirrored by similarly intricate, jigsaw-puzzle-like, emigration patterns that differed with respect to, at the very least, 4 dimensions:

- Destination; emigration flows from Northern areas had been directed towards Latin America - Argentina and Brazil - and central Europe - France and Austria-Hungary; while remaining significant, emigration never acquired the traits of an actual mass migration towards North America - Canada and the United States. On the other hand, international emigration from the mezzogiorno disproportionally favoured the United States.
- Timing; between 1876 and 1900 the lion's share of Italian emigration had been represented by Northern regions - notably, Veneto, Fiuli-Venezia-Giulia, and Piemonte. After 1901, the universe of Italian immigrants setting foot on Ellis Island disproportionally represented Southern areas.
- Magnitude; the intensity of emigration widely differed both in absolute terms and rate-wise, within and across regions.
- Self-selection; local heterogeneity does not only pertain to relative figures: The degree of self-selectivity into migration also varied, with Southern migrants being more negatively drawn from their origin population than their Northern counterparts. Despite quantitative analysis being scant, these remarks are also likely to apply to return migration.

Figure 1: Cumulative provincial emigration in absolute terms, Deciles

Figure 1 depicts, cumulative provincial emigration to the United States - in absolute terms. These maps
immediately highlight the need for spatially granular data and directly question the reliability of national narratives, prone to aggregation biases. While not new in the literature, the idea that Italian mass emigration should be investigated through municipal magnifying glasses has hardly been incorporated into quantitative economic studies. Recent contributions have already attempted to move the literature forward towards an organic treatment of local determinants of mass migration.

Contributions

At the core of this article lies a data set comprising about 3.5 million observations: The universe of Italian migrants setting foot on Ellis Island between 1892 and 1912. The choice of restricting the limelight to a single country is related to the considerable polishing effort involved in the unambiguous identification of municipalities of residence before departure: The myriad of spelling mistakes the archive is fraught with translates itself into a substantial effort, that is, per se, noteworthy.

While not delving into an econometric analysis, this paper simultaneously adds to 3 different strands of literature:

- Age of mass migration; having remained unexplored, the local dimension of mass migration could shed light on current dynamics. Interestingly, European immigration into the United States had been virtually unrestricted until 1917 for the US border remained essentially open throughout the reference period of this study.
- Temporary migration; I document the existence of both inter year migration flows (seasonal) and return emigration to the United States, further characterising the age of mass migration as the first globalisation era. Moreover, I provide descriptive evidence in favour of path-dependency.
- Italian migration from outside Italy; not all ethnically Italian emigrants arriving in the US hailed from Italy. I document the presence of Italian emigration flows originating from countries such as France, England, and Argentina. Such evidence suggests that Italian migrants might have tried their luck in different, possibly geographically distant, areas before finally entering the US - with nothing guaranteeing that their trip ended there.
- Migration networks; I highlight the importance of ex-ante migration networks as a relevant element of transoceanic migration strategies. Despite not containing information about migrants' residences in the United States, Ellis Island records do convey granular detail about migration networks ex-ante. Indeed, I am able to identify migrants from a given municipality who were travelling on the same boat. Within the context of underdeveloped railroad and transportation systems, reaching departure ports from inland localities might have been a journey in its own right.
- Evidence points towards a general dynamic: During initial stages of migration, migrants would rather leave with their fellow-citizens, independently of how frequent transoceanic crossing was; as information spills over and paths become well-trodden, emigrants depart more frequently, distributed on more than vessels - with the pace of emigration being accelerated by forming migration networks in the United States.

Reconstruction in Overdrive: Refugees, Social Housing and the Rebuilding of Germany

Tamás
Vonyó

As much as history can be informative about current affairs, contemporary concerns inspire historical research. In what ways the migrant crisis may change Europe we can learn from the history of forced mass migration in the postwar era. Nowhere has the scale of such migration been more significant than in Germany, both in our time and after 1945.

Between 1944 and 1951, fifteen million ethnic Germans fled or were expelled from East and Central Europe. By 1950, they made up one-fifth of the West German population. The forced resettlement and the living conditions of these expellees featured prominently in German historiography. Economic historians studied labour-market outcomes (Braun and Mahmoud 2014), the economic integration of refugees (Ambrosius 1996; Falk et al. 2013), or their impact on regional growth in the early postwar years (Vonyó 2012). Remarkably, most of these consequences were found to be only temporary. The initial impact of postwar mass migration was large, but it did not persist beyond the 1950s.

The research I present at the conference is part of my project funded by Bocconi University to explore more lasting legacies of postwar mass migration, which have been overlooked in quantitative investigations. Housing ranks among the main challenges for governments facing an influx of refugees never to return. Inadequate housing becomes an impediment to their successful integration, and was seen as such by German experts already in the early post-war years. Housing policy in the nascent West German state responded to the needs of refugees and became one of the most expensive government programs of the postwar era. It may have created lasting effects on the structure of housing and the behaviour of housing markets.

Voigtländer (2009) suggested that the low rate of homeownership characteristic of Germany to the present day is the consequence of the uniquely high rate of social housing, in comparison with other countries, which Voigtländer saw as the outcome of extensively state-funded urban reconstruction during the 1950s. State intervention was needed to eliminate the housing shortage in German cities decimated in World War II, and the subsidised building of vast amounts of rental housing with socially regulated rents was the means to achieving it. Caruana-Galizia and Wolf (2015) showed that the rate of homeownership across Germany today indeed correlates with regional variation in the destruction of residential housing until 1945. I collected county-level data on population and housing in post-war West Germany to further investigate these historical legacies and, in particular, the role of the refugees.

Careful examination of the evidence contradicts recent findings on several points and suggests more nuanced explanations. Firstly, the rate of homeownership in Germany was already very low, when the rebuilding of the urban housing stock had just begun; this was not the outcome of postwar reconstruction, as previously suggested. There was no causal mechanism between homeownership and the rate of bombing damage, not even after we control for other factors typically taken to influence homeownership. The spurious correlation across micro regions found by Caruana-Galizia and Wolf is driven by differential rates of rental housing between cities and rural areas and between the North and South of Germany, which also differed in the scale of wartime destruction but for other reasons. Secondly, homeownership indeed declined further during the 1950s, but this happened predominantly in towns and villages, not so much in the cities that had to be rebuilt. Third, while social housing was instrumental in eliminating the postwar housing shortage, but it responded more to the demand for affordable housing in counties overloaded with refugees than to the need for urban reconstruction. This is not just a quantitative finding; it concurs with recommendations of experts at the time. Social housing and subsidised rents may have helped maintain an already very high level of rental housing in urban centres, but, more importantly, they reduced homeownership in the countryside despite increasing household incomes.

Refugees were key to this story. In the early postwar years, most of them did not have the accommodation they demanded but what they could afford. With a significant housing deficit in the country, and without stable sources of income, many were sheltered in emergency housing or assigned to live with other indigenous families. In 1950, the share of emergency housing correlated very strongly with the population share of refugees, while the rate of homeownership did not. By 1961, regional variation in rental and social housing was strongly connected to the geographic settlement of the refugees. Socially regulated rents were the first means for many refugee families to acquire adequate housing, partly in the rebuilt cities, but partly in the areas where they were settled after the war.

Once they had rebuilt their existence in the new homeland, they began to demand improved housing facilities, incl. privately owned family homes, which government policy subsidised lavishly. The momentum for home building did not weaken even though by 1961, the housing shortage was scarcely more than 5% nationally, and its regional variation did no longer correlate with the scale of wartime destruction. More and more new homes were added to the housing stock every year until the mid-1960s, and the scale of publically subsidised home building did not decline. In fact, the social housing budget of the 1960s at least doubled that of the 1950s. It was due to social housing programmes initially aimed at accommodating a vast displaced population that left Germany with an oversupply of housing just a quarter century after her cities had been decimated in the war. In housing, post-war Germany did much than rebuild. Between 1950 and 1970, housing supplies more than doubled, adding more than ten million new dwellings to existing stock. But, from the start, this was not an urban reconstruction story, what the recent literature has suggested. Remarkably, most new housing was built in rural Germany, where the refugee influx had made available housing initially more crowded than it was in the most bombed-out cities. Both urban reconstruction and the hasty expansion of rural housing facilities were primarily a response to this condition.

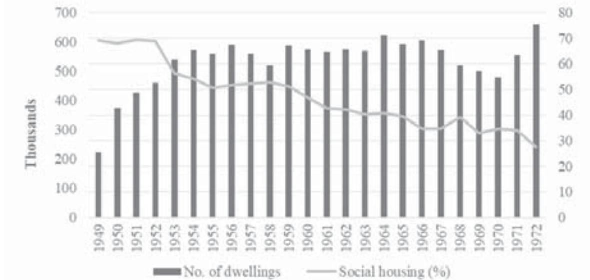


Figure 5.4 Total housing construction and the share of social housing in the Federal Republic
Source: Hafner (1994), p. 186, pp. 361-62.

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The socio-institutional divide. Explaining Italy's regional development over the long run

Emanuele
Felice

Italy's regional economic growth – and the reasons behind the persistent North-South divide in the peninsula – has been a subject of the utmost interest, in the Italian and also in the worldwide debate in economics, sociology, anthropology, and history; by way of masterpieces in cinema and literature, it has echoed through the popular culture of the entire Western world. In recent years, economic historians have produced important step forwards in the measurement of Italy's regional development over the long run and its determinants. New and more accurate regional estimates, running from around the Unification of the country until our days, are now available: for GDP, arguably the main measure of economic growth, employment and productivity; and for several social and non-monetary measures, such as human capital, life expectancy, HDI, heights, inequality, nutrition, poverty, social capital, and the market potential. This broad array of new figures still must be properly discussed and interpreted. Among other things, it shall offer valuable insights into the causes of the North-South divide and the features of Italy's modern economic growth.

This article reviews the debate about the determinants of Italy's regional economic growth, with the avail of the new historical estimates and by light of the international economic literature. Section §1 provides an updated picture of Italy's regional development by the time of the country's Unification (1861), for what concerns GDP and social indicators. In Section §2, I discuss the evolution of regional GDPs from the late XIX century until our days (in twenty-year benchmarks, 1871-2011, and at present borders), in connection with the Italian industrial take-off and modern economic growth. Section §3 proposes a reassessment of the competing hypotheses put forward to account for the persistent North-South divide and the different regional patterns. What is regarded as the most plausible explanation – and the main argument of the article – is presented in Section §4. I argue that a socio-institutional divide between the North and the South of the peninsula pre-existed Unification, in some respects grew stronger after it and was never bridged throughout the history of contemporary Italy: such a divide ultimately impacted on the levels of human and social capital, on the policies, their outcomes and the institutional performances – and thus on economic growth.

In fact, historically the Italian socio-institutional divide does not seem to be a consequence of differences in GDP and production: these were mild by the time of Unification, while the socio-institutional gap was already profound and clear. Therefore, this latter could rather be a cause, of the GDP regional patterns observed in the history of contemporary Italy. Indeed it shaped the growth of regional GDP for a number of reasons. It resulted in high differences in human capital, which arguably was the key factor behind the industrial take-off of the North-West – and of course it remains important to our days. It also resulted in high differences in social capital, which probably in the last decades (in part, even before) played a crucial role for regional development. Not least, from the different socio-institutional structure of southern Italy there followed economic policies which hampered modernization and industrialization in this area: for instance, the grain protectionism, in the liberal age and, more strongly, during the fascist dictatorship; the slow implementation by the southern local elites, during the liberal age, of the national laws about compulsory primary education, which delayed the improvement of human capital in the Mezzogiorno; in the second half of the twentieth century – and especially in the 1970s and 1980s – the diversion of public resources towards unproductive uses, through political or nepotistic criteria.

The socio-institutional divide ran, roughly speaking, between the Centre-North and the South of the peninsula – and was never bridged. It shall not be considered a coincidence that, in the long term, the outcome of regional development in per capita GDP took roughly the same shape: a clear polarization between Centre-North and South, which did non exist before the onset of modern economic growth.

„I Intend therefore to Prorogue“: The Effects of Conflict in 17th century English Parliament

Kara
Dimitruk

This paper examines how conflict in government hindered parliament's passage of an economic legislation, so-called estate bills, in 17th century England. Estate Acts were important for land markets in preindustrial England. Most land was not easily traded, bought, or sold because property rights in land were complex and difficult to change. Estate Acts facilitated important land transactions, giving landholders the powers to sell, mortgage, and lease land. Understanding changes in how parliament passed estate bills is important because parliament‘s provision of estate Acts made property rights more flexible and adaptable to changing economic opportunities.

Figure 1 shows changes in the success rate of estate bills for years sessions of parliament met for the period of study, 1660-1702. A successful bill became an Act of Parliament. It was approved by the House of Commons, the House of Lords, and the monarch. The success rate of estate bills was low on average under the late Stuarts and shows a shift upward after the Glorious Revolution. This paper shows that the monarch‘s sudden closure, or prorogation, of sessions of parliament caused estate bills to fail under the late Stuarts and that procedural changes with Glorious Revolution improved estate bills‘ probability of success.

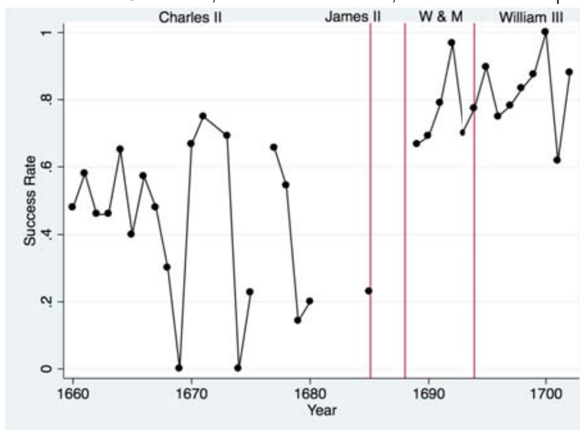

Figure 1: Success Rate of Estate Bills: 1660-1702
Success rate for years sessions of parliament met. Gaps denote years when parliament did not meet. Vertical lines denote new monarch.

It uses a new dataset on the „legislative lifecycle“ of estate bills collected from the Journals of the two Houses of Parliament to examine how sudden closure of sessions, conflict, and the Glorious Revolution changed the probability of estate bill success. The dataset contains detailed information on when parliament legislated on estate bills. It first provides evidence that parliament organized its time in a session to pass estate bills when they expected the monarch to come to parliament to approve a revenue bill or public measure, possibly to prorogue or end the session.

Second, it shows that the monarchs‘ sudden prorogation or closure of a session caused estate bills to fail using probit and OLS models of bill success. I create proxies for sessions that were suddenly prorogued from the monarchs‘ speeches in parliament and historiographies. The evidence supports that the sudden prorogation was unexpected and exogenous to estate bills: parliament did not legislate on bills more quickly or introduce bills sooner in sessions that were suddenly prorogued. Estate bills were about 20 percentage points more likely to fail in sessions that were suddenly ended. The sudden closure of parliamentary meetings had several economic effects. The main effect was that bills entering in sessions that were suddenly prorogued had a significantly lower long-term success rate. Bills that were successful were delayed by about 8 months and there is some evidence to suggest new bills were displaced in sessions meeting after one that was suddenly prorogued.

Last, I document that and study why the monarchs no longer suddenly prorogued sessions of parliament after 1690. Three main political factors likely led the monarch to prorogue sessions of parliament to interfere with parliamentary proceedings unrelated to estate bills. The proceedings centered on the crown-parliament relationship: (1) conflict that delayed the passage of revenue bills, (2) conflict in parliament with a monarch‘s policies, and (3) the monarch‘s independence from parliament. The three political variables are positively correlated with sudden prorogations under Charles II and James II, but not under William and Mary and William III. Reduced form results show that estate bills were significantly less like to succeed if there were conflicts over supply under Charles II and James II. Consistent with recent work in the economic history literature, the evidence shows that parliament‘s intentionally designed revenue bills differently after 1688. The set of changes helped resolve this conflict, made the monarch more dependent on parliament, and improved the probability of estate bill success.

The changes in how parliament passed estate bills in 17th century England is important for several reasons. First, functioning parliaments, and legislatures and states more generally, are important for understanding economic development in historical and modern societies. This paper provides evidence on how parliament passed a legislation that helped solve market failures and coordinate economic activity. Second, it provides evidence and insight to why the Glorious Revolution was important for England‘s economic development. It shows that a set of procedural changes undertaken after 1688 improved the likelihood that estate bills passed. The evidence suggests that rather than making property rights more secure, the Glorious Revolution ushered in a new regime where parliament provided legislation that made property rights more adaptable in preindustrial England.

The Rise of New Corruption: British MPs during the Railway Mania of 1845

Rui Esteves

Gabriel Mesevage

Between the end of the Napoleonic wars and the Reform Bill of 1832, the British state underwent a profound transformation. Crown patronage was slashed and the size of government was reduced through the elimination of lucrative sinecures, a process referred to as the 'waning of Old Corruption'(Harling 1996, Rubinstein 1983). The reform process appears as a puzzle: how did the élite reform itself? While some opinion attributes the reform process to the political pressures arising from the French Revolution and the spread of a genuinely disinterested culture of public service, one would expect that reform would only be self-enforcing if the élite could be compensated for its lost rents.

Measured in sinecures, rent-seeking in Britain definitively waned in this period, but this way of studying the problem focuses only on the efficiency of the government apparatus, while ignoring the policy choices made by the government. We believe an answer to the question of where the British élite found alternative sources of revenue may lie in studying how policy was made at the time. In particular, by elucidating the types of rent-seeking that arose as the British state grappled with regulating the market in the mid-19th century. In this paper, we focus on one particular case: the process whereby British politicians picked the winners in the market for one of the leading technologies of the steam age - the railway. Moreover, we concentrate on a particular subset of political behaviour: vote-trading amongst politicians to ensure their preferred projects won Parliamentary approval. This study therefore offers a way into the larger transformations in British political economy that occurred during the first half of the 19th century, and posits as an explanation for the surprising reform of 'Old Corruption' the emergence of a 'New Corruption'.

The context for our study is the wave of railway company promotion that occurred in Britain in the 1840s. Over 1,200 railway projects were registered in 1845 alone and this mania resulted in an unprecedented expansion of the British railway network. Even though incorporation had been liberalised by the Joint Stock Companies Act of 1844, railway companies still had to petition Parliament for a Private Act that would allow them to begin construction of their intended lines. More than 700 did so at the height of the mania, between 1844 and 1845. Parliament screened the applications and approved fewer than half.

Why did Parliament pick the railway bills that it did? Given the importance of this selection process to understanding the British railway network, it is surprising that this question has received scant attention. It is particularly puzzling as the modern scholarly consensus tends towards the view that the British railway network involved wasteful duplication and that Parliament approved too many railways resulting in an inefficient network. Mark Casson estimates that "equivalent social benefits could have been obtained with only 13,000 miles of track" rather than the approximately 20,000 miles that were built (Casson_2009: 2). The only hypothesis advanced in the contemporary literature is that MPs voted for their vested interests - in particular, their interest in bringing railway projects to their constituents. The hypothesis that MPs were influenced by constituency pressure, or some other vested interest, is a particularly intriguing one in this context because Parliament amended its standing orders to ensure that no MP could directly influence the granting of a Private Act to a project in which he held a vested interest. This institutional set-up was devised to guarantee that railway projects were selected on the basis of their relative merits. However, the set-up did not completely exclude the possibilities for strategic voting as MPs could agree to vote for each others' interests.

In this paper, we investigate whether logrolling swayed the process of parliamentary approval of railway lines. The peculiarities of the institutional mechanisms created for the granting of Acts to railway companies enable us to evaluate the extent of legislative logrolling in this period. A common problem in estimating the impact of strategic voting is the fact that opportunities to logroll are not randomly allocated. Dealing with this endogeneity issue is easier in our case as MPs could not have foreseen their ability to trade votes strategically in advance of sinking in their interests in particular railway companies. This quasi-natural experiment setting, combined with direct information on MPs railways interests, offers a unique opportunity to observe which projects MPs were motivated to pass and whether they were able to logroll in order to obtain the approval of their preferred bills. Our methodological approach for the detection of logrolling rests on social network analysis and the econometrics of peer-effects.

We mapped MPs to railway projects through two networks: through their interests and through their role in selecting which lines would be allowed to be built. We model the networks of MP investments in railways, and the network of MP oversight of railway projects, and combine these two networks to identify opportunities to trade. We then infer whether trading occurred by testing for significant endogenous effects between the voting outcomes of individual MPs and the MPs they were connected to in the network of potential trades.

In addition to responding to an unanswered question in economic history, this study contributes to the study of legislative behaviour, and in particular the question of what determines a politician's vote on a bill. Formal political theory has long grappled with the question of the degree to which bargaining occurs between political actors, and what the ramifications of that bargaining might be (Buchanan 1965, Haefele 1971, Koford 1982, Riker1973, Uslaner1975). Empirically, logrolling is difficult to study systematically. This is because any given vote by a politician may well reflect their preferences and not a trade (Clinton 2004). In consequence, although legislative histories and qualitative studies are rich in examples, it is difficult to measure the prevalence of vote-trading. In addition, bills often embed multiple issues and concerns, making it difficult to disentangle what is being voted for, and legislators often have many political priorities making it difficult to ascertain in what manner they have been politically 'repaid.' Indeed, the tendency for a given piece of legislation to cover a variety of issue areas is itself often taken as an indication of logrolling, as winning voting coalitions are constructed by adding items to legislation in order to win over minority interests. This practice is sometimes labelled 'pork-barrel politics' in the US context, and has been the subject of several important studies (Ferejohn 1974, Evans 2004).

Despite the difficulties inherent in measuring logrolling, a small number of studies have nonetheless attempted to articulate a statistical framework within which one might test for evidence of logrolling (Stratmann 1992, Stratmann1995, Irwin 1996, Kardasheva2013, Aksoy 2012, Cohen 2014). The clearest framework has been laid out by Stratmann, who argues for using the predicted votes of a potential trading interest group to test for the presence of a trade within a linear vote model. The problem with this approach is that it completely depends on the correct specification of the voting model. In particular, it requires a valid method to pre-specify the set of possible vote trades. In contrast, our approach allows us to easily cope with trades across a very large number of bills simultaneously. Moreover, because we focus on a case in which opportunities to trade were not endogenous to MP characteristics, we can cleanly solve the statistical endogeneity problem that plagues attempts to separate preferences from strategic voting.

Finally, we shed some light on the question of whether logrolling is beneficial - by promoting gains from trade - or detrimental - by providing gains to the few while passing on the costs to the many. We offer a partial answer to this question by evaluating how the companies approved through logrolling fared in the stock-market in relation to their peers. Our results suggest that, at least in this case, logrolling was a private benefit to the politicians (or their constituents) who profited by it, but the companies involved were less valuable on average

A Land 'of Milk and Butter': The Role of Elites for the Economic Development of Denmark

Markus Lampe
Paul Sharp
Peter Sandholt Jensen
Christian Skovsgaard

A substantial literature in economics examines the impact of elites on the growth trajectories of societies across time and space. While this literature focuses on how elites shape economic and political institutions, their role for knowledge diffusion is not as well understood (Squicciarini and Voigtländer 2016). In this paper, we shed new light on how elites may foster growth through the knowledge diffusion channel. We focus on a specific example centered on the Kingdom of Denmark, and the emergence of a modern dairy industry based on a new technology, the automatic cream separator, and an institution, the cooperative creamery (for a brief account, see Henriksen 1993), the rise and spread of which is the paradigmatic case for success of peasant cooperation in economic development.

The speed of this spread is surprising: within one decade after the foundation of the first cooperative creamery in 1882 the whole country was covered. What made this possible? We argue it should be seen as the end result of a long period of agricultural enlightenment, propelled initially by a group of elites on traditional landed estates. The starting point for this was a change in the ownership and management of some of the landed estates through the adoption of a new crop rotation system developed in the adjacent German duchies of Holstein and Schleswig, Koppelwirtschaft, in connection with unprecedentedly large herds of milch cows and the invention of an innovative new centralized system of butter production, the hollænderi, with unparalleled standards of management and equipment. These innovations – collectively known as the 'Holstein System' when the crop-rotation was combined with the dairy unit – came to Denmark in the second part of the 18th Century and gradually transformed Danish agriculture, as old and new elites were taking advantage of easier access to landed estates.

The presence of new elites and the adoption of the Holstein System was unequal across the country, a common pattern for the diffusion of innovations in early modern societies, as highlighted by Mokyr (2009) for the British 'agricultural enlightenment'. The new system also had local spill-overs to the peasantry, which increasingly acquired full property of their farms, and with it freedom (and the need) to decide on how to manage their own farms. These local spillovers from adopting elites are what we test for in the present paper – we show that cooperatives emerged where professional estate dairy units, hollænderier, had existed 100 years before, controlling for a wide array of alternative explanations from geography and land suitability, market access, wider definitions of elite/estate presence, early presence of peasant dairying, and specific educational institutions for the new peasant-farmer class.

We also propose an instrument, the distance from the estate of a politically and economically influential figure, 'German' born Count Moltke, who is credited with bringing the Holstein System to Denmark in the historical literature (Rasmussen 2010), which also provides evidence on the early diffusion pattern of the new system. Our use of distance as an instrument follows studies on the spread of ideas such as Becker and Woessmann (2009) on the spread of religious practices that favor literacy, and Dittmar (2011) on the diffusion of the printing press. We also demonstrate that there were significantly higher densities of milch cows (beyond the estates with hollænderier) in areas that were more exposed to the Holstein System early on. Milch cow densities have been shown in previous research (Henriksen 1999) to be the most important determinant of the presence of cooperatives.

At the same time, the main alternative use of the same resources within Koppelwirtschaft, cattle-fattening, was still seen as viable by parts of the landowning elite and continued to be discussed by the nascent agricultural science in Denmark up to the time of the spread of dairy cooperatives, which indicates that until relatively late there was some uncertainty regarding a specialization in dairying for Danish agriculture. These discussions were part of a bigger picture of the spread of 'scientific agriculture' in Denmark, which we portray elsewhere in greater detail (Lampe and Sharp forthcoming): Applied scientific debates covered advances in the managing of cattle, including accurate bookkeeping, better breeds of cows, and better feed. Agricultural societies, schools, and journals were established. Marketing channels were opened for estate butter that led to merchants subsequently to turn also to the potentially much larger supply from peasant producers, and how consistent quality and continuous supply could be obtained from them, a challenge only to be met by centralizing production, which became viable only with the introduction of the cream separator from around 1880.

While we cannot test all elements of this wider story of the development of a specialization in dairying at the local level, we do demonstrate and quantify in a formal econometric framework what we have previously only suggested qualitatively: that the adoption of innovations by early 'progressive' elite producers made a substantive difference to the rapid spread of cooperative creameries in Denmark between 1882 and 1890. We thus argue that peasant farmers would have been much less prepared for the 'decisive moment' of Danish agriculture on the late 19th Century without them – with all potential problems in times of the first globalization and the accompanying 'grain invasion' of European markets.

The present paper is thus closely connected to recent studies of the impact of the adoption of agriculture and major productivity improving implements. It also complements the emerging literature on the effects of new crops and techniques on productivity, population and political stability, and it connects to findings on the role of immigration for technology and knowledge transfer, the significance of local knowledge spillovers from large to small firms, and to 'new new' trade theory, which suggests that more productive firms export more.

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Bias, Accuracy and Sample Size in the Systematic Linking of Historical Records

Luiza Antonie
Kris Inwood
Fraser Summerfield

Combining information from distinet histo-rieal sourees, or reeord linking, on an automated basis direets attention to the quality and representa-tiveness oflinked data. Linking with ftime-invariant personal eharacteristies arguably minimizes bias or departures from representativeness even though a wider set of features might generate more links. A eomplication is that there are many dimensions of bias. Even time-invariant eriteria typieally generate some bias. We illustrate the dilemma by eomparing reeords from Canadian eensuses that have been linked twiee - onee using time-invariant individual eharacteristies and then using family information. The latter produces a larger linked sampie, lower er-ror rate and different patterns of bias. Both methods understate the Quebee-born, Freneh-ethnieity, the unmarried and adolescents. Unexpectedly, the bias in favour of married people is larger using individual than family information. Family-based linking does over-represent young ehildren. These results sug-gest that neither method will be universally prefer-able. Rather, the ehoice ofreseareh question may affect the preferred balanee ofbiases and link rate. Researchers need to be aware of the potential for selection bias among linked reeords. Fortunately, the advanee of eomputational eapacity allows a re-searcher to select a method that generate links most appropriate for the problem at hand.

Managing Selection Bias in Sources Containing Anthropometric Measures of Children ` s Growth

Eric B. Schneider

While most of the focus of the recent debate over sampie selection bias in anthropometrie sourc-es has centred on adult heights from military and prison records, anthropometrie sources of children' s growth also present some unique sampie selection issues that need to be managed in order to correctly analyse the sources. This article will focus on two of the main sources of children' s anthropometrie data available: cross-sectional growth profiles, i.e. mean heights and weights of children at different ages and individual-level data where children have been selected based on a minimum height reqnire-ment. Selection bias in cross-sectional growth pro-files arises from two main mechanisms. First, many ofthese profiles were constructed by measuring children attending local schools. This means that as the children become older, more children drop out of school and the sampie becomes more elite. This is especially problematic because the shift from pri-mary to secondary school often occurs around the pubertal growth spurt and can therefore accentu-ate the pubertal growth spurt observed. Second, since the children at different ages are measured contemporaneously, they actually reflect a number of birth cohorts that may have experienced a differ-ent health conditions around birth. Thus, cross-sec-tional growth profiles may hide cohort improvements in health conditions. In addition, scholars studying child growth need to be particularly careful when dealing with sources with minimum height require-ments. The standard truncated maximum likelihood estimation methods need to be applied with care since children's heights are not always normally dis-tributed, especially during puberty. Imposing anor-mal distribution of heights, therefore, may add to bias rather than removing it. It is also unclear how selection on one anthropometrie measure, such as height would influence the other measures such as weight or ehest circumference. Selection on height would also leave ambiguous results for studying 10ngitudina1 growth. The article will develop these ideas using historical datasets from the UK, Japan and US to provide examples ofthe potential issues involved.

Tim
Rudnicki

The Use of Quarter Session Recognizances as a Source for Male Occupational Information

To explore the macro-development of a region‘s economy, a large sampie of soeially representative data is required. However, in the English ease (as in most), such data are hard to eome by before the eensuses of the 19th eentury. Recent progress has been made in utilizing parish and probate reeords to reeonstruct the broad oeeupational history of 17th and 18th eentury England. However, these reeords are limited in both their volume and geographie seope, yielding an ineomplete pieture of regional and loeal eeonomie development. In this paper, I explore the eomposition of 18,000 male individuals named in Quarter Session recognizanees (calls to appear before a loeal eourt as part of a petty erime triaI) from 18th and 19th eentury northwest England. At a variety of geographie and oeeupatioual levels, I eompare these observations with data from parish registers that has previously been established as representative of English society at large. U sing this comparison, I argue that a much larger sampie of individuals (88,000), most drawn from periods that we do not have eomparable parish register data for, ean be used to reeonstruet the oeeupational structure of northwest England in greater oecupational and geographie detail than hitherto possible. In partieular, the volume of data collected at certain dates in the 17th and 18th centuries will enable fine-grained analysis of northwest England‘s occupational geography (i.e. through GIS mapping) and long-term development.

Notes

The Futility of Mercantilist Wars. A case study of France and Hamburg between 1713 and 1820

Guillaume Daudin

Elisa Maria Tirindelli

Is mercantilist warfare effective in its own terms, by crippling trade of defeated powers? Our paper explores the Anglo-French experience during the eighteenth century and contributes to understanding why that was not the case.

Jefferson famously noticed that European nations « were nations of eternal war» (1823). Indeed, from 1700 to 1825, 2 years out of 3 experienced conflict between major European powers (https://ourworldindata.org/war-and-peace/). Rivalry between Great-Britain and France was central, so much as the period between 1688 to 1815 was called the « 2nd Hundred Years War » 1688-1815. War has many causes. Yet, especially after the death of Louis XIV, mercantile rivalry was an important motivation of Anglo-French wars. (Crouzet 2008, Wallerstein 1980…). Each nation was jealous of the other's commercial success. The British believed war was a good way to curtail them. The French partly agreed and were more wary of wars because they did not have much naval success.

Here is the long list of wars between France and Britain after the death of Louis XIV : War of the Polish Succession (1733-1738), War of the Austrian Succession (1740 (naval hostilities started in 1744)–1748), Seven Years' War (1756–1763), War of American independence (1775 (French involvement started in 1778)–1783), French Revolutionary Wars (1792–1802) and Napoleonic Wars (1803–1815). Yet, all these wars were in vain before the 1790s, as French trade was resilient and was not moved out of its pre-1744 trend (Figure 1). Things changed after 1807.

How come the pre-1792 wars did not have a lasting effect on French trade? This is important to understand the effect of wars in general, the geopolitical history of the eighteenth and nineteenth century and the globalization/deglobalization cycle from the 1490s to the 1840s.

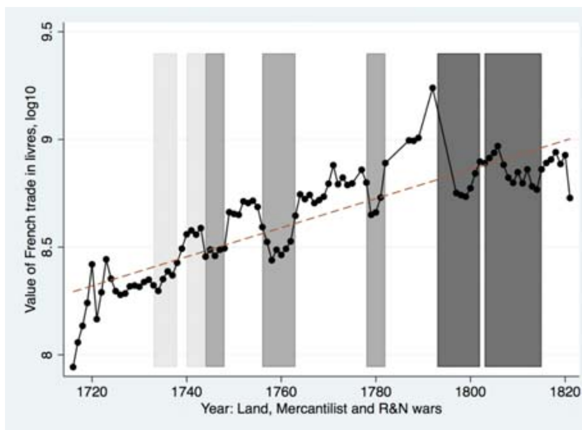


Figure 1: Total French trade and Anglo-French wars
Source: TOFLIT18 database. Note: inflation was low before 1792

The existing literature looking at the impact of wars on neutral trade comes to mixed results. Barbieri and Levy (1999) for example, analyse the impact of war from 1870 to 1992, and find that the general impact of conflict on trade is not particularly strong and mostly only temporary. Anderton and Carter (2001), on the other hand, look at the effect of wars on global trade, and find that when major world power are at war significant pre and post war effects are observed. Finally, Rahman (2007), using British trade data from eighteenth century, finds that it is warfare between naval powers that brings disruption to trade. In contrast, the resilience of French trade has long been remarked by historians (Riley (1984)).

We use a new database of French trade statistics to explore this question (http://toflit18.hypotheses.org) Our contribution is to distinguish trade with neutrals, allies and foes, (focusing on Hamburg, which was neutral during the period), and to look at sectoral level of trade. To our belief we are the first ones to look at the effect of wars on good-specific bilateral trade flows. We are looking in particular at coffee and sugar, which are the major colonial goods, and at wine and eau de vie, major European products. We focus, on the particular case of Hamburg, for two reasons. First, it offers import trade statistics that allow double checking the French data (Figure 2). Second, it was an important trade partner, a neutral gateway to Germany whose trade was mainly directly affected by war. We then repeat the experiment on all French trading partners as an aggregate. We also explore whether the effect of war depends on the identity of the victor and the belligerent status of trade partners.

Figure 2: French exports to Hamburg (or «Le Nord») measured by Hamburg (or French) statistics (1787=1 in both case)

Table 1: The effect of war on French exports to "Le Nord"

	goods FE and time-trends	goods FE and time-trends with break in 1795	goods FE and time-trends	goods FE and time-trends with break in 1795
War # Coffee	-3.35***	-1.51***		
War # Eau de vie	0.32	0.31		
War # Sugar	-1.65***	-1.05***		
War # Wine	-0.57	-0.49		
War # Other	-0.10	-0.10		
Land_war # Coffee			-4.16***	-2.34***
Land_war # Eau de vie			-0.27	-0.24
Land_war # Sugar			-0.03	0.20
Land_war # Wine			-1.10*	-1.08*
Land_war # Other			0.31	0.32
Mercantilist_war # Coffee			-1.90***	-1.88***
Mercantilist_war # Eau de vie			0.26	0.16
Mercantilist_war # Sugar			-0.92*	-1.80***
Mercantilist_war # Wine			-0.12	-0.21
Mercantilist_war # Other			-0.30	-0.33
R&N_war # Coffee			-5.12***	1.62
R&N_war # Eau de vie			0.90	1.22*
R&N_war # Sugar			-5.61***	-0.84
R&N_war # Wine			-0.73	-0.45
R&N_war # Other			-0.17	-0.08
Observations	409	409	409	409
R-squared	0.39	0.65	0.51	0.68

We find a general negative impact of war on French exports to Hamburg and all aggregate trading partners, yet, we observe big differences depending on the products. Wars have a very large and negative impact on colonial products, but a positive one on wine (and a very positive one on eau-de-vie). This suggests that trade of some specific products was benefitting from wars. Furthermore, we find little long-term effect of wars before 1793. It was not possible for the United Kingdom to cripple French trade before the ideological wars that started after the Revolution.

The Demand for Coffee in nineteenth-century Germany: A Quantitative Approach

Ulf Christian Ewert

Ulrich Pfister

Germany today can, without any doubt, be considered as a land of coffee drinkers. With a per capita consumption (as of 2015) of more than 7 kg raw coffee per annum Germany currently ranges among the top ten coffee consuming nations, and the habit of drinking coffee appears to be a key element of German culture. However, this has not always been the case. The spread of coffee consumption into larger groups of the population began only at about 200 years ago. With imports of coffee rising and its real price falling at the turn of the nineteenth century (see Figure 1), this new colonial good was apparently adopted fairly rapidly by an important segment of the population as a commodity of daily consumption.

In this paper we explore potential determinants that increased the Germans' demand of coffee – mainly in the nineteenth century, we address the economic characteristics of coffee, and we estimate the welfare gains of coffee consumption. The econometric analysis is based on annual data on imports of coffee, prices and real wage.

Was it the fall in real price alone that fostered the rapid diffusion of coffee in nineteenth-century Germany? Or was it instead the rising income of many people that made coffee part of the Germans' regular consumption? Within a demand equation framework we estimate both long-run and short-term elasticities of price, cross-price (with respect to the price of an aggregated subsistence good) and income. Estimates show that for Germans of the nineteenth century coffee already was a normal good, even though shifts in the demand due to price changes were less elastic than one might expect. As demand for coffee increased with upward shifts in real wage, at least in the period after around 1855, there is also empirical evidence for the perceived superiority of coffee (see Figure 2).

However, one finding is the negative value of the cross-price elasticity estimate. Hence, demand for coffee decreased significantly whenever foodstuffs like rye or meat, e.g., became more expensive. So, people seemingly accepted coffee also as a complement. Moreover, the fact that the demand for coffee remained at a high level even after prices of subsistence goods had fallen again points to a ratchet-effect: The crises that shook the German economy before and right after mid-century clearly paved the way to a more and more widespread adoption of coffee consumption.

Being a "new" good, coffee added to the variety of consumption as well. How much extra utility German consumers were gaining from this new consumption opportunity? Calculating the compensating variation for coffee we find that consumers would have accepted a loss of their income in compensation for maintaining coffee consumption that was much higher than the budget share they usually spent for buying coffee. Within a short period of time, coffee developed from a typical colonial luxury to an everyday necessity, with economic crisis having a catalysing effect on both the increase in demand and the spread of consumption.

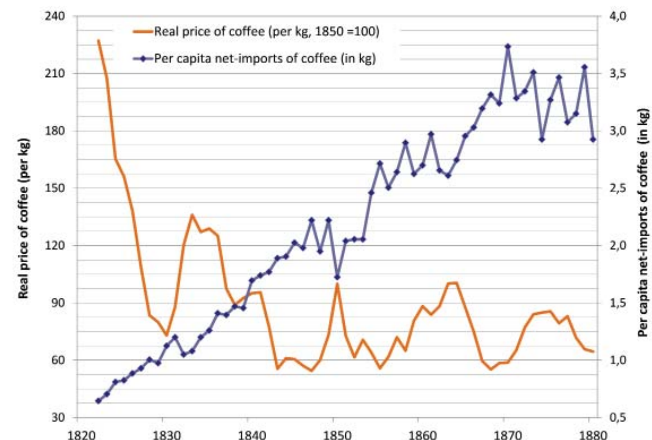


Figure 1: Annual German per capita net-imports of raw coffee of different origins and qualities (1822-1880, in kg, corrected for re-exports and the age composition of the population) and the real price of coffee (per kg, 1850 = 100). The real price is derived by dividing a synthetic wholesale price of coffee by the German consumer price index established in Ulrich PFISTER, The Timing and Pattern of Real Wage Divergence in Pre-industrial Europe: Evidence from Germany, c. 1500-1850, in: Economic History Review 70 (2017), pp. 701-729.

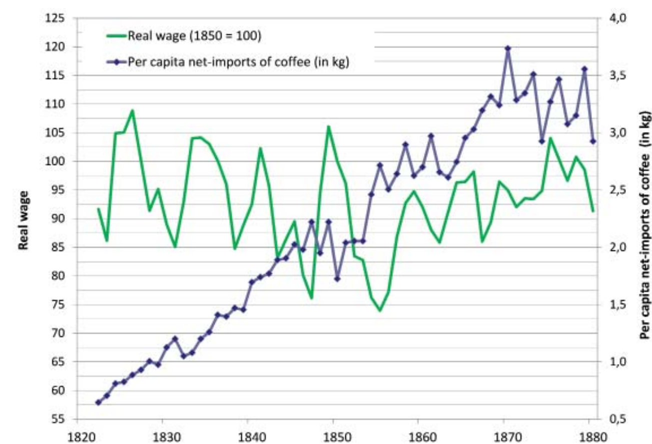


Figure 2: Annual German per capita net-imports of coffee and real wage developments (1850 = 100). Real wage calculations use the German consumer price index and information from 18 towns on nominal wages of unskilled day labourers (cf. PFISTER 2017).

The globalisation in the long run: Gains from trade and openness 1800-2014

Giovanni Federico

David Chilosi

Antonio Tena-Junguito

Terms of trade are a major issue in international development economics. An alleged worsening in terms of trade has been considered a major hindrance to economic growth of peripheral countries since the 1950s. In recent times the focus has shifted on the negative consequences of de-industrialization and volatility. Historical data have widely been used in the debate, but the results have been inconclusive, as they are obtained with a motley collection of relative prices rather than with actual terms of trade. This work sets the record straight by using a newly compiled set of actual terms of trade for all polities from 1830 to 1913. We find significant variations in trends across core and peripheral areas, small and inconsistent differences in the level of volatility between core and periphery and widespread and significant, albeit discontinuous, falls in volatility. These patterns match into falling prices of both primary products and manufactures, small differences in their levels of volatility and significant falls in volatility for both groups of goods. The next task is to examine how terms of tradeâ€™s trends and volatility relate to the composition of trade. So far the results suggest that a re-evaluation of the role of terms of trade in the great divergence is in order.

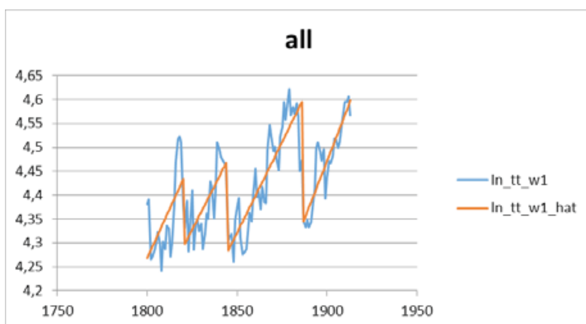


Figure 1. World openness, 1830-2014
Sources: Federico and Tena-Junguito (2016b)

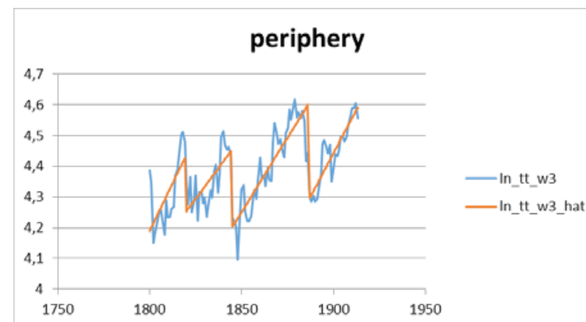


Figure 2. Gains from trade 1830-2007, GDP weighed
Source: Federico and Tena-Junguito (2016b)

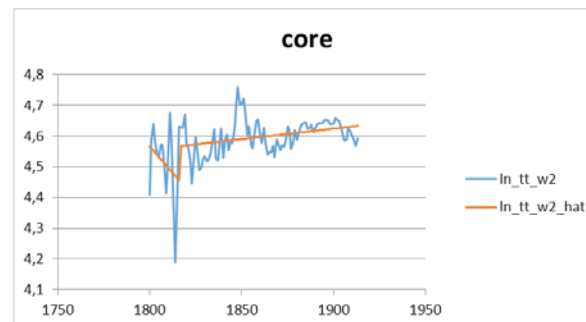
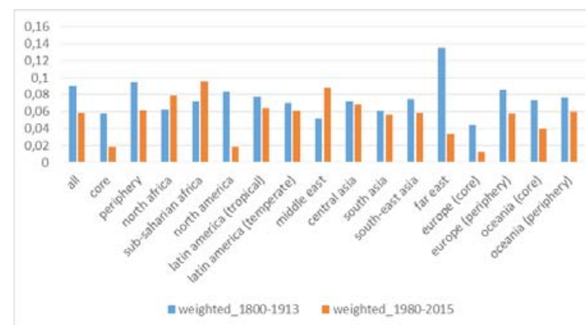


Figure 3. Gains from trade 1870-2007, different weighing
Source: Federico and Tena-Junguito (2016a)

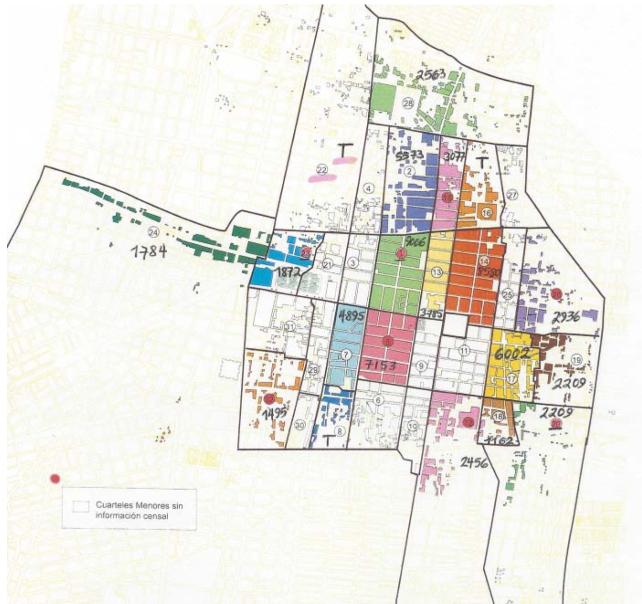


Numeracy, Heights, and Inequality in Late Eighteenth-Century Mexico

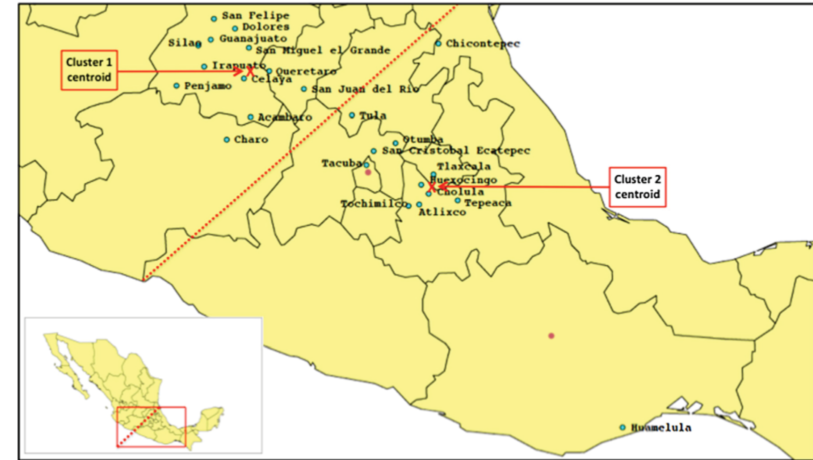
Rafael Dobado González | Andrés Calderón-Fernández | Alfredo García-Hiernaux

In a recent paper (Dobado and García-Hiernaux, 2017, Economics and Human Biology), the determinant of the heights of nearly 20,000 non-Indian individuals resident in 24 localities scattered across central regions in late eighteenth-century New Spain (Mexico) were examined. Among other results, it was found that spatial differences in biological welfare were more important than the dissimilarities existing ac- ross ethnicities and socioeconomic groups. This finding is at odds with mainstream view on inequality in Spanish America, according to which large differences in biological living standards between españoles and other ethnicities (castizos, mestizos, and mulatos) should be found. Differences in biological living standards would respond to an uneven distribution of income and wealth, colonialism and high density of population being the causes of high inequality. Or so the well-known story written by Sokoloff and Engerman, Acemoglu et al., and Milanovic, goes. Surprisingly enough, no empirical evidence in favour of a particularly high inequality in pre-independent Spanish America has ever been shown so far. In this respect, the last paper by Milanovic does not fill the empirical vacuum.

Therefore, following previous work by Baten, Crayen, Manzel and Mumme, we use numeracy, estimated by means of age heaping, for studying inequality in human capital. We analyse different dimensions of inequality (regional, ethnic –including Indians–, sexual and socioeconomic) in human capital formation in late viceregal Mexico City. Our main contribution to the existing literature on numeracy in Spanish America consists of expanding our initial data base by adding nearly 30,000 residents in Mexico City (covering one cuartel menor belonging to each of the eight cuarteles mayores in which the city was divided) as well as some 19,000 inhabitants of the city of Oaxaca –that had a very larg Indian population–. This additional samples are richer than the one used by Dobado and García-Hiernaux since it also includes Indian males and females, as well as all ethnic categories. Thus, this unusually wide cross-sectional sample permits an exhaustive and rigorous empirical analysis of all significant dimensions of inequality in human capital. It is also possible –and relevant– to compare our data with European and African standards at the national and regional levels (Baten, Campestrini, Crayen, Hippe, and Szoltysek).



Map 1 Mexico City in 1790, with analysed areas



Map 2 Overview of localities with heights data (blue) and census data (red)

The hypothesis leading this ongoing research is that not every dimension of inequality was as extremely high as conventional wisdom claims. A preliminary exploration of the sample yields interesting results. For instance, numeracy among Indians from Mexico City towards 1790 was rather low (ABCC = 52, females included), albeit higher than in some peripheral parts of Europe in 1820. Difference between males and females was surprisingly small (ABCCs of 52 and 51, respectively). At the top of the distribution by ethnicities, numeracy among Spaniards born in the metropolis was higher (ABCC = 70). Difference between males and females was also higher (ABCCs of 71 and 63, respectively). Another interesting provisional finding is that "blacks" show a low level of numeracy (ABCC = 50) and a higher variance between sexes ((ABCCs of 65 for men and 41 for women). The ABCC index of a sample of nearly 7,000 individuals residing in cuarteles menores 1, 20, and 23 is 63. These results, if confirmed when the whole sample is examined, are consistent with those previously obtained by Baten from a smaller sample.

New Spain appears so far as a society that was not at the top of numeracy in the West but that neither was an outlier given its level of GDP per capita. As to inequality, it does not seem to be as especially high as it has generally been assumed so far.

Unreal Wages? A New Empirical Foundation for the Study of Living Standards and Economic Growth in England, 1260-1860

Jacob Weisdorf

Jane Humphries

Historical estimates of workers' earnings are seriously out of tune with trends in GDP per capita. This inconsistency raises doubts about core theories that build on existing income estimates to answer one ¬¬¬of the key questions in economic history: when and how did Western Europe grow rich? The issue is best understood in the light of two conflicting views about long-run economic development. The traditional 'Malthusian' view, articulated in Clark (2007) and Galor (2011), sees all societies worldwide as being characterised by wide swings in real earnings linked to rising and falling populations, but with no sustained income growth until the latter half of the 19th century. The competing 'Revisionist' view, expressed in De Vries (2008) and supported by recent estimates of per capita GDP presented in Broadberry et al (2015), argues that it is possible to discern incremental but compounded gains in real earnings long before this time, notably in England. These conflicting views are illustrated by Figure 1, which shows how real annual incomes inferred from day rates (grey squares) rise sharply in response to the demographic disaster of the Black Death, then fall as the population recovers, and eventually stagnate during the classic years of the industrial revolution. Figure 1 also shows how per capita GDP (white circles) follows a very different pattern, with modest economic growth in the aftermath of the Black Death gathering momentum after c. 1650.

As is made clear in previous work, the discrepancy between trends in real incomes and per capita GDP, and hence the conflict between the Malthusian and Revisionist views, can be reconciled by variations in annual earnings caused by hypothetical changes in labour supply per head. The problem lies in giving such hypotheses empirical substance. Hitherto, annual incomes have been constructed using day rates paid to casual workers. To gross these up on an annual basis requires knowledge of the number of days worked, which is rarely provided in the surviving records. As a result, current estimates of workers' annual incomes, as show in Figure 1, are subject to measurement error pertaining to scholarly ignorance about casual workers' annual labour input.

In trying to side-step the issue, previous research has relied on a simple but crude assumption: workers always and everywhere worked for 250 (or sometimes 260) days per year (e.g. Allen 2001). This assumption underpins the standard account of the evolution of workers' incomes depicted in Figure 1 (grey squares). Equal to a 5-day working week plus two weeks' holiday, such an assumption is perhaps not unreasonable in today's world; but in the historical context, as Hatcher (2011) has emphasised, it involves two controversial suppositions about the days that casual workers were able, needed, or wished to work. The first supposition is that day work was always available 250 days per year, which Hatcher claims is out of touch with reality, not least because 250 annual working days would have made casual workers better-off than many of their land-owning counterparts. The second supposition is that casual workers always supplied 250 days of labour, which Hatcher points out not only involves an entirely inelastic labour supply, but also contradicts evidence that medieval workers set themselves goals in terms of cash and ceased to work once these were achieved.

The historical record provides occasional indications of the length of the working year (Allen and Weisdorf 2011). These suggest that labour input varied widely. For example, numbers provided by Blanchard (1978) indicate that the medieval working year was sometimes as short as 165 days, while Voth's estimates suggest that the industrial-revolution working year was as long as 330 days (Voth 2000; 2001). If these numbers are even roughly correct, then existing proxies for annual income, which are based on 250 days of work, overestimate medieval incomes as much as they underestimate early industrial incomes, by some 30 per cent. The discipline's best guesses about annual incomes could well be way off target. Such margins of error challenge the discipline, raising important questions about the reliability of existing series of real incomes with ramifications for core theories of long-run growth, which build on these series, including the Malthusian model (e.g. Clark 2007), unified growth theory (Galor 2011), and the so-called 'little divergence' and 'great divergence' hypotheses (e.g. Allen 2001).

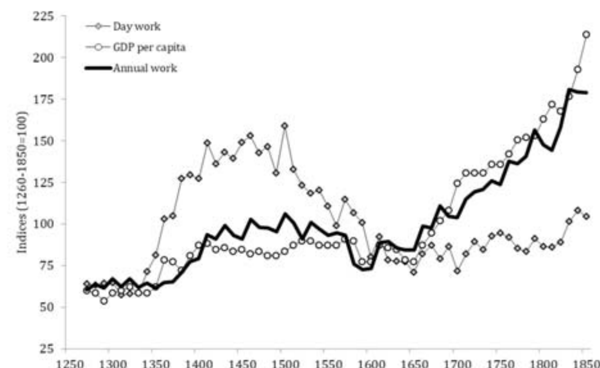


Figure 1 Indices of GDP/capita and real annual income inferred from day and annual rates, 1260-1850

This paper tackles the issue in a new way by constructing an income series for unskilled English male workers employed on annual contracts between 1260 and 1850. The use of payments for yearly employment circumvents the central problem related to estimating annual incomes from day wages in the absence of information about days worked. Previous studies have largely ignored annual payments in the construction of historical incomes, because workers by the year usually received board and lodging in addition to any cash payment, so complete estimates require the valuation of such perquisites. In this paper, as explained subsequently, we impute values for annual workers' board and lodging from the historical consumption basket proposed in Allen (2009), and so construct a new and arguably more plausible long-run series of workers' annual earnings.

Three major findings emerge. First, our real annual incomes (solid black line) fit markedly better with trends in per capita GDP (see Figure 1) than do those inferred from day wages under the assumption that the working year was 250 days long (grey squares). If day workers earned roughly the same as their annual counterparts, then the post-Black Death working year was as short as 110-120 days, whereas the industrial-revolution working year was as long as 325 days. With far smaller annual inputs of labour than previously assumed, the post-plague 'Golden Age' glittered much less brightly than estimates of yearly income grossed up arbitrarily from day wages suggest, a finding that agrees with John Hatcher's reference to previous estimates of day workers' annual incomes as 'unreal wages' (Hatcher 2011). The subsequent gradual rise in the number of days worked, reaching well over 300 days per year after 1750, lends empirical support to Jan de Vries' idea of an Industrious Revolution (De Vries 1994; 2004) and to Allen's allusion to Britain's industrial revolution as '1% inspiration and 99% perspiration' (Allen 2011). Our last and perhaps most striking finding is that our real annual earnings grow continuously after c. 1580. This not only challenges any lingering attachment to the Malthusian model as a relevant interpretive frame for economic development in pre-industrial societies, it also suggests that early modern growth began at the end of the 16th century or more than two centuries earlier than in the conventional periodization.

Origins of Modern Economic Growth in Germany, 16th to 19th Centuries

Ulrich Pfister
Jana Riedel
Martin Uebele

This study analyses Germany's long run growth trajectory using newly compiled data of annual real wages and population in the period 1500–1870, with data quality allowing for exploratory research from 1500 and time series analysis from 1690 on. We derive a labour demand function from an aggregate production function of the Malthusian type with land as fixed production factor. It is formulated as a structural time-series model whose parameters are then estimated with a maximum likelihood estimator using the Kalman filter approach.

The two factors of production, one being labour L_t and the other constituting a time-invariant resource X (e. g., land) are combined in a Cobb-Douglas function $Y_t = A_t X^{\lambda} L_t^{1-\lambda}$ with A_t representing a demand shifter due for example to agricultural technology or Smithian growth through market integration. Using the fact that in competitive equilibrium factors of production are paid their marginal product, we can derive the following labour demand schedule: $W_t = A_t X^{\lambda} L_t^{-\lambda} (1 - \lambda)$, where W_t is the real wage and L_t is proxied with population. After linearization we model it in structural time-series form whose appropriate formulation depends on the empirically determined integration properties of its variables. We conduct a battery of tests on our novel datasets and find that in 1690–1870 population is integrated of order 2 and real wage of order 1. This makes it possible to estimate the parameters A_t and λ using the Kalman filter. The empirical model also allows for a second order autoregressive error process capturing short-term shocks.

The main finding are three labour demand regimes signifying Germany's growth trajectory since the 16th century: Until the middle of the seventeenth century, there was a strong negative relationship between population and the real wage. The dramatic rise of material welfare during the Thirty Years' War was thus entirely due to the war-related population loss. After the Thirty Years' War, the relationship between the real wage and population size was weaker than in the sixteenth century; the fall of the marginal product of labour was less pronounced, and the second half of the seventeenth and the first decades of the eighteenth centuries saw a strong outward shift of labour demand. Finally, during the late 1810s and 1820s, labour demand rose strongly, and continued to expand at a weaker pace during the following decades. Growth was only temporarily interrupted by negative shocks during the late 1840s and early 1850s. Regimes two and three suggest the onset of sustained economic growth well before the beginnings of rapid industrialization, which set in during the 1840s. Consequently, our study highlights the growth potential of pre-industrial economies resulting from agricultural intensification and market integration.

Notes

GROWTH, INEQUALITY, AND SHOCKS. INCOME INEQUALITY IN FINLAND, 1865-1966

Petri
Roikonen

The new research on the long term developments of income inequalities has led to vivid discussion about inequality and economic history. However, because of the lacking data much of the research has focused on the 20th century or even the latter half of it. Although there are studies using different sources for long run inequality measures (e. g. Milanovic 2016; Milanovic, Lindert & Williamson 2011), the shortage of homogenous long-run series remains a problem. This study aims to contribute to this discussion by exploring the case of Finland in 1865-1966. Finland is an interesting case study, since it was a poor country (measured in 1990 GK$) but, relative to that, introduced an income tax quite early. Since, most of the existing long-term studies focuses on the countries, which had passed the Finnish 1860s income level already centuries ago, the Finnish tax data from the 1860s onwards carries empirical historical interest beyond the study of national development. Furthermore, the theories of the determinants of inequality are discussed in the light of the relatively modern tax data of a poor developing country. Thus, the Finnish case offers an interesting contribution to the discussions on Kuznets curve (Kuznets 1955), the role of economic and political shocks (e. g. Piketty 2014) and the inequality possibility frontier (Milanovic et al. 2011; Milanovic 2016).

Finnish research on income inequality has so far focused on the period from the 1960s to the present. There are, however, few studies on the pre-1960s development: Jäntti et al. 2006 and 2010 describe the development of Finnish income inequality starting from 1920, and Hjerppe and Lefgren (1974) have in their pioneering historical study examined income inequality from as far as 1881. In addition, there are rough estimates of Roine and Waldenström (2015) on the top income shares in 1865, 1871, 1876 and 1880. In addition, there are studies on income inequality in rural areas (e. g. Nummela 1990) and some cities (Renvall 1900, Nummela 1987). However, the big picture of income inequality in 1865-1966 is not clear, because these studies are not comparable with each other and do not cover the whole period and the whole country. In this study, building on the first estimates of Roikonen (2015), we construct consistent series on inequality following common methodology used already by Kuznets (1953) and reactivated and elaborated in recent decades by Piketty (2001, 2003), Piketty and Saez (2003), Atkinson (2005), and Blanchet, Fournier and Piketty (2017).

This study presents the new homogenous income inequality series for Finland in 1865–1966 on the basis of income tax data. The starting point of the period, dictated by the existence of tax data, is the decade of the great famine of (1867–68) (Häkkinen & Peltola 2005). It is followed by the early decades of economic growth accelerating from the 1890s onwards and ending in the economic and political shock of WWI and the Finnish Civil War (1918). Finland recovered from these shocks until the early 1930's but the following decades were turbulent times (e. g. depression, WWII). The end point of the study is set in 1966, when the shock of WWII had waned and the first modern income survey was made.

In this study, the comparison was made between the phases of Finnish history: 1) agrarian society with a stagnant mean incomes, -1870's, 2) a poor society with a rising mean incomes (1870-1914), 3) the time of crises (1914-24), 4) the recovery (1924-38), 5) the time of crises II (1939-47), and the establishing of the welfare state (1947-66). We describe economic inequality using several different indicators: top income shares, Gini coefficients and Williamson indexes and discuss on the basis of them to the drivers of inequality. We compare the Finnish time series of the top income shares and the Gini coefficients with the data from Sweden, Norway, Denmark, the United States, Great Britain, France, Germany and Netherlands. In these countries, long and reasonably reliable time series have also been made, although the data is rare in the 19th century. Since the recent development of the income inequality differs greatly in these countries, it is interesting to compare the supposedly "equalitarian" Finland with other Nordic, Anglo-Saxon and Central European countries.

The results show that the income inequality was relatively low in a poor agrarian Finland in 1865-80 compared with other countries, and the famine (1868-68) decreased it further. After this, during the late 19th century, income inequality increased substantially reaching a higher level than in many other countries, and then declined drastically in 1914-24. In overall, the income inequality decreased until 1966, which was mainly due to the shocks. The rising inequality during the early phase of modern economic growth (from the 1870s to WWI) fits well in the scheme of Kuznets curve, but the declining phase cannot be interpreted as a result of normal economic progress, since it was caused by economic and political shocks, the importance of which especially Piketty (2014, 2015, 2017) has emphasized.

Stefan
Nikolic

The dissolution of Empires following the end of the First World War had a profound impact on European economic integration. The creation of new nation states disrupted established trade networks and in many ways created new barriers to international trade (Feinstein et al., 2008, pp. 31-34). Overall the interwar period witnessed international economic disintegration (Federico and Persson, 2007). On the other hand, there is evidence of improving domestic market integration, for example in interwar Germany (Wolf, 2009). Was this development at the core of Europe mirrored in the newly established states at the periphery?

The present paper aims to answer this question using the example of Yugoslavia. The paper contributes both to the literature on commodity market integration (e.g. Federico 2012, Schulze and Wolf 2012) and the discussion in political historiography on the long-term viability of the Yugoslav state (Lampe, 2000). The analysis is performed using a newly compiled data set of commodity prices and a set of trade costs observed over a number of cities during the interwar period. The relationship between market integration and economically, geographically, and culturally motivated trade costs is estimated using a regression framework.

The results provide evidence of internal integration at the European periphery as Yugoslavia set out on a process of economic integration. Institutional and infrastructural advancements brought markets closer together, while integration was not hampered by cultural diversity. The position often taken in political historiography is that diversity was incompatible with integration in Yugoslavia. The present paper shows that from an interwar point of view the break-up of Yugoslavia was hardly predictable.

Notes

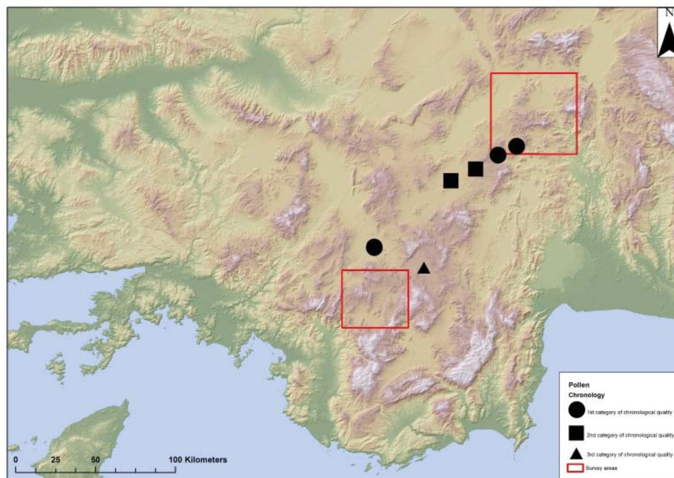
Settlement Dynamics, Agriculture and Regional Economies in Mainland Greece and Western Anatolia, 1000 BC–AD 600

Tymon Sloczynski
Anton Bonnier
Adam Izdebski
Grzegorz Koloch
Katerina Kouli

Evidence from Palynological and Archaeological Data

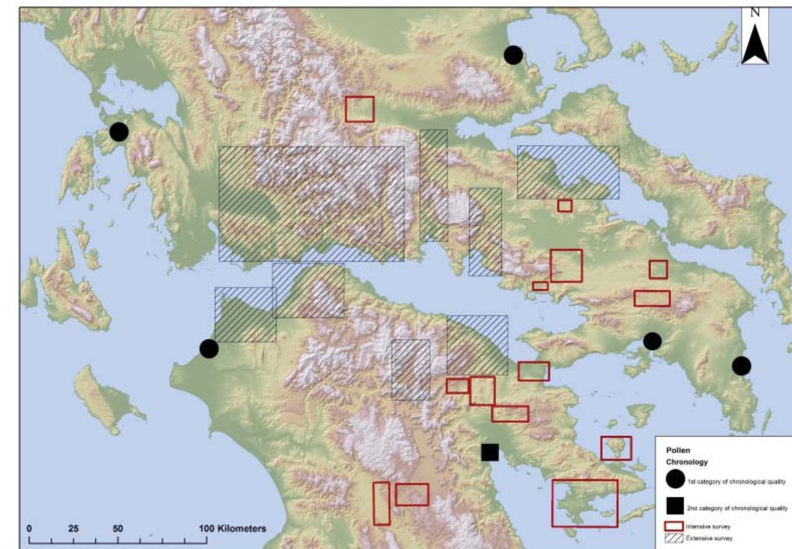
In this paper we use the methodology of Izdebski et al. (EEH 2016) to analyze regional landscape and vegetation change in Southern Greece and South-Western Turkey during Graeco-Roman Antiquity. We create a dataset containing all the available palaeoecological data from both regions of interest. Our dataset collects unique quantitative information on the impact of ancient economy on the natural world, based on decades of palynological research (study of fossil pollen contained in lake and peat bog sediments) that has been carried out for more than half a century in these two countries. Our method of analyzing this data allows us to recover trends in vegetation change – and agricultural expansion or contraction – in our study regions from 1000 BC until AD 600.

At the same time, we collect information from local archaeological survey projects on the changes in patterns of rural and urban settlement, probable population density and material wealth, which we analyze for common regional trends and then compare with our pollen-based reconstructions of regional trends in agricultural and environmental change. In this way, we are able to validate our approach to using palaeoecological data as a source for economic history, and we achieve deeper understanding of the Classical, Hellenistic and imperial Roman provincial economies.



We discover that patterns of agricultural and settlement expansion did not necessarily follow each other closely, although in general there is good correspondence between both datasets – which validates our method of analyzing the palaeoecological data. The primary difficulties of correlating the archaeological datasets and the palynological evidence lie in the chronological resolution of the datasets and the spatial coverage of the pollen signals. Regional pollen trends for forest trees can be most closely matched with the results of survey archaeology and follow the regional curves of settlement dynamics, provided by archaeological survey datasets. The trends seen in the anthropogenic and secondary anthropogenic indicators nevertheless need to be addressed in regards to archaeological and textual evidence.

Our analysis reveals a reduction in vine and olive pollen in Southern Greece from the 5th century and onwards, which reflects an increasing reliance on imported oil and wine, as well as an expansion of cereal cultivation onto more marginal soils, suggesting further a higher population pressure in the region compared to preceding and later periods. The increase in cereal cultivation that we discovered for the Roman period in the same region can potentially be linked to a higher output linked to focused lowland cereal production and new land ownership structures involving larger estates/villas. There is, however, no clear evidence in the anthropogenic indicators of increased cash cropping during the Roman period, as has been stipulated in previous studies. The apparent increase in cereal cultivation and pastoral production may however be linked to estate



based market production tied to wider imperial distribution networks, rather than subsistence farming. In South-Western Anatolia, on the other hand, an agricultural boom occurred in the 4th–3rd century BC, just at the beginning of the Hellenistic period, when large-scale mixed agriculture expanded across the region. Our data show that as the time progressed, local economies in Pisidia increasingly adapted themselves to the region's ecological conditions, as the agricultural regime modelled on more lowland types of agricultural economies took account of the local, mountainous conditions of Pisidia.

In conclusion, in this paper we are able to both demonstrate the methodological potential of our approach and revise the current understanding of the changes in macro-economic trends in ancient Greece and Anatolia. We also show that substantial agricultural growth of similar character can occur in completely different socio-economic settings, such as Classical or Roman Greece and Hellenistic Pisidia.

Long Run Trails of Global Poverty, 1925-2010

Michail
Moatsos

The literature of last 40 years has investigated global poverty, both in its historical and contemporary dimensions, strictly via the assumption of purchasing power parity (PPP) equivalence. This translates to the use of{one size ts all{global poverty lines (henceforth PL) expressed in a number of PPP adjusted dollars per day. However, the methodology applied to derive these poverty lines has received extensive criticism by scholars for{among other{requiring the application of PPP exchange rates and consumption price indexes (CPI) that are not constructed to capture the consumption habits of those who live in poverty. Those methodological objections cast reasonable doubts over the available estimates for the evolution of global poverty in recent years, and even more so when those same methods are applied historically. In any case though, what use has a poverty line when we don't know what it measures and what it allows for, such as what the dollar-a-day approach entails?

The effect of these strong assumptions can be large on the aggregate, both for the level and the trend of poverty. Dierences in size depend on the welfare level of the denition of poverty that is operationalized as a benchmark for comparison. The key issue here is that no denition of poverty, by other international organizations such as the United Nations, actually requires those assumptions. Those problems emerge as merely the result of reverse engineering the issue of poverty measurement. Instead of operationalizing the poverty denitions deriving from various key treatise, such as the Universal Declaration of Human Rights, the dollar-a-day method delegates the burden of specifying explicitly what type of poverty traces to national governments, by providing a metric based on (essentially averaging conditionally) available national poverty lines (NPL). Even if those NPLs themselves have not been qualied for meeting any set of specic or common standards.

In light of these{and several other {shortcomings the Commission on Global Poverty has issued another recommendation, calling for a „basic needs-based estimate of extreme poverty". I thus exploit the weaknesses of the seriously contested methodology behind the dollar-a-day approach to motivate a consistent alternative in global poverty measurement. Poverty lines targeting well dened welfare levels are constructed here as consumption baskets. Those baskets are priced locally and separately for each year, and account for basic nutrition, heating, housing, health, education and other expenses. This approach falls well within the letter and the spirit of the aforementioned recommendation.

Following the spirit of Reddy and Pogge (2010), any two poverty lines are taken as equivalent if they both just suce to the same end, or „telos". This teleological approach comes with the advantage of clarity in what type of poverty is being monitored by the measurements. It also removes the relative component introduced in any poverty measure simply by the change in the perception of what constitutes poverty. This can be seen as a virtue or as a disadvantage depending on the research question at hand. The results presented here should be interpreted bearing in mind that the social inclusion dimension of poverty is not explicitly considered.

To paint the evolution of poverty for most of the twentieth and the beginning of the twenty-rst century three welfare levels are considered (named Red, Green, and Blue in increasing welfare order). To pinpoint those welfare levels the two most fundamental nutrients, calories and proteins, are used. Thus it is required that each PL allows the consumption of the minimum dietary energy requirement (MDER) as dened by the Food and Agriculture Organization (FAO) which is an agency of the United Nations. For the calculation of the MDER a number of anthropometric and demographic data are required by the FAO procedure. These include the distribution of the population in age-groups and per gender, the average height of the population, the body mass index (BMI), and the physical activity level (PAL) for each age group.

The most basic poverty line (Red) is in close alignment with the requirements set by Unesco, according to which: „[a]bsolute poverty measures poverty in relation to the amount of money necessary to meet basic needs such as food, clothing, and shelter.". And considers only the cheapest way of doing so.

Green PL relaxes one step this assumption by taking the average of the two cheapest bundles. It also doubles the relative allowance of housing, compared to the Red PL, and adds explicit expenses for health, education, and water. The Green PL is compatible with the denition found in the Universal Declaration of Human Rights as a person not having the means to achieve „a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care."

Blue PL builds upon the Green, uses the average of the three cheapest combinations, and doubles again the allowance for meat (or fish), butter, sugar, while including a 50% increase in the housing allowance. Finally, an explicit percentage is added an all-purpose surplus indicating additional implicit choices made possible on this welfare level. This PL is following closely the denition of absolute poverty found in the Copenhagen Declaration by the United Nations: „[a]bsolute poverty is a condition characterized by severe deprivation of basic human needs, including food, safe drinking water, sanitation facilities, health, shelter, education and information. It depends not only on income but also on access to social services."

The method, despite its global applicability, it is applied here on a few countries scattered around the globe to demonstrate the feasibility of the method in research beyond strictly contemporary times. Among this small group of countries, the Netherlands appear to be the champions in ghting absolute poverty with all 3 types of poverty measured here becoming zero since 1987.

Furthermore, according to the World Bank the most important recommendation of the Report of the Commission on Global Poverty concerns the estimation of the error in the poverty estimates. So far the World Bank disclosed only the point estimates in its global poverty counts and rates. As any measurement has to be accompanied with a condence interval. Thus no meaningful statistics can be performed with those gures. For example one cannot say when and if the goal for halving poverty between 1990 and 2015 (MDG 1) has been fullled with any specic level of statistical certainty. Thus, a notable contribution is the error accounting approach using Monte Carlo technique for pseudo-experiments. In those terms, statistical analysis of global poverty, beyond the usual point estimates, becomes possible.

Overall, this research demonstrates the feasibility to construct standardized poverty lines for historical research implemented in such a way that basic statistical comparisons (e.g. statistical signicance) can be performed. Moreover, the identied trajectories in poverty levels provide an in depth glance at the development stages at well dened welfare levels within a country, that are{with certain data and conceptual limitations{comparable globally. Expanding the set of countries, and the time period covered, as well as improving methodological operations, are next in this project.

Inequality and Conflict Intensification in Mandate Palestine

Laura Panza

Eik Swee

We document the effect of income inequality on Arab-Jew conflict intensification in Mandate Palestine. Using archival, primary, and secondary sources, we construct a novel panel dataset, which enables us to exploit variation in district-level characteristics and conflict intensity across 18 districts over 22 years (1926-1947). We instrument income inequality by combining annual variation in rainfall with cross-sectional variation in pre-Mandate Arab crop intensity, thus exploiting the relationship between crop harvests and agricultural income. Our findings point to a substantial effect of between-group (Jew to Arab) inequality on conflict intensification. This effect is driven by Arab-initiated attacks, which also resulted in more Arab casualties.

Notes

Rural exodus and fertility at the time of industrialization

Robert Stelter

Thomas Baudin

In line with the tradition instigated by Galor and Weil (2000), we propose a unified theory capturing the interrelations between urbanization, the demographic transition, and the take-off to modern economic growth. This theory emphasizes the role of the rural exodus for the economic and demographic dynamics and considers some regularities shown by historical demographers and economic historians for Western Europe:

1. Before and during the demographic transition, urban mortality was significantly higher than its rural counterpart.
2. Fertility in cities exceeded that in the countryside.
3. Despite cities "killed" more people and "produced" less newborns than the countryside, urbanization, an increase in the proportion of individuals living in cities, took place. Since neither international immigration nor emigration were able to sustain it in European countries at that time, urbanization was only possible because of a massive and sustained rural exodus.
4. As cities were the natural ecosystem of industries, increasing shares of workers living in cities may have been a pre-requirement for industrialization.

Motivated by these stylized facts, we develop our theory and estimate this latter quantitatively in order to assess the role of the mortality decline and rural exodus for the economic and demographic revolutions. Considering Denmark as a benchmark example, we have first collected data between 1840 and 1940. Evaluating fertility by Coale`s Index and mortality by infant mortality rates (IMR), we evidence that the demographic transition was initiated in the Danish countryside. IMRs decreased as soon as 1840 while fertility remained rather constant. The fertility decline took off with a lag, around 1880. In cities, reductions of IMRs and fertility appeared at the same time and started around 1890.

Until 1850, the share of individuals in cities was quite stable and, hence, no urbanization was observable. Around 20% of all individuals lived in cities. This proportion increased to around 55% in 1940. Both agricultural and industrial output experienced rather constant growth rates since 1818. As growth was higher in industries, it dominated agricultural output as soon as 1930. Finally, educational data indicate that enrollment rates to primary education were rather low at the beginning of the 19th century. This changed radically after the school reform in 1814. We evidence an s-shaped pattern for enrollment rates in primary school.

Linking differential fertility and mortality to sector specific productivity and freedom of movements, our theory provides a salient role to the rural exodus in the interactions between the industrial revolution, urbanization and the demographic transition. We construct an overlapping generations model that distinguishes explicitly between cities and the countryside. Modern industries settle in cities and agrarian production in the countryside. Additionally, mortality is area specific. At the beginning of adulthood, individuals decide either to stay in their area of birth or to move to the alternative one. Once they have settled down, they decide on their number of births, children's education and how much they consume from the two alternative goods: the agricultural and the industrial good. However, we only allow all these choices if individuals are sufficiently rich. Otherwise, they only consume a subsistence level of the agricultural good.

In early stages of our economy, both the share of individuals in cities and the contribution of industrial production to GDP are low. Most parents are too poor to invest in human capital. As a result, the vast majority of parents do not face any tradeoff between the quality (education) and the quantity of children such that average fertility increases with income. The economy is trapped in a Malthusian regime. Once the overall workforce reaches a threshold, our economy experiences an exogenous technological progress. The technological level starts to increase in cities and countryside. More and more parents are able to educate. Nevertheless, it is not sufficient that investing in human capital becomes economically desirable to enter in the process of industrialization; living in cities and so leaving the countryside has to be desirable, too. What can prevent this? The existing mortality penalty in cities: urban mortality crises that push people out of urban areas or refrain people from the countryside to move. Mortality peaks in cities could significantly lower urbanization and industrialization and require a more intense rural exodus while this latter is less desirable. The economic cost of the exodus to cities may also be crucial. If this cost is high, the prevailing technological progress may not allow development, simply because it is not high enough to attract peasants to urban areas. This is the main mechanism we quantify in this paper.

To assess the quantitative accuracy of our theory, we calibrate our model to match the observed urban and rural Danish trends between 1840 and 1940. Even if not perfectly, our theory replicates the main characteristics we try to match: the dynamics of output in the agricultural and industrial sector, the dynamics of fertility in urban and rural areas, the dynamics of education as well as of the share of persons in each area. Moreover, we propose two historical experiments: a first counterfactual experiment evaluates the role of the rural exodus by alternatively making the exodus impossible or changing its costs substantially. Second, we simulate the dynamics of the model without reductions of IMRs anywhere and in the case where it occurred only in the countryside.

Excluding any form of rural exodus would have changed Denmark's economic and demographic development completely. While cities' fertility transition would have accelerated dramatically, the countryside would have been trapped in the Malthusian regime until 1940; a regime of increasing fertility. Total population size would have grown much faster, but cities would have vanished over time. Simultaneously, total GDP would have accelerated in the agricultural sector but shrunk in the industrial one. Nevertheless, at the individual level, due to population dynamics, welfare in cities would have increased tremendously, while rural populations would have impoverished. The transition to mass education would not have happened. Only the very low share of individuals in cities would have educated their children more and more. Thus, the rural exodus appears as a mechanism that may prevent inequality as it allows populations from the countryside to benefit from industrial opportunities.

Compared to limitations in the exodus, changing the dynamics of IMRs has rather limited effects. Since fertility would have been almost unchanged, higher IMRs would have reduced population growth. Additionally, the lower number of surviving children would have decreased costs to educate children and mass education would have inserted earlier. GDP per worker would have slightly increased and thus compensated individuals for the higher mortality. By contrast, if only cities would have suffered from a stagnation in IMRs, GDP per worker would have increased in cities (by 5% in 1940) but shrunk in the countryside (by only 2%). Still, even if the higher income differential would have compensated for the lower share of surviving children and intensified the rural exodus, urbanization would have diminished.

[1] Galor and Weil (2000): Population, technology, and growth: From malthusian stagnation to the demographic transition and beyond. American economic review, pp. 806–828.

Rise and Fall in the Third Reich: Social Mobility and Nazi Membership

Alan de Bromhead
Mathias Blum

The benefits of membership of political parties are often thought to include higher social capital, career advancement, or both. Parties can reward their supporters directly with jobs in public administration, or may use their influence to ensure that members are given preferential treatment in appointments or promotions (Appleton et al., 2009). In short, membership can bring economic gains. Equally, highly driven or capable individuals may be attracted to, or recruited by, political parties. As such, individuals with characteristics advantageous to social mobility may be more likely to become members, introducing the problem of selection bias (Li et al., 2007). This paper explores the relationship between political affiliation and occupational advancement with respect to one of the most notorious political regimes in history - the Nazis - using a unique and highly-detailed dataset of individual conscripts and volunteers into the German armed forces during the Third Reich.

The dataset comprises detailed personal information on each individual soldier, such as date of medical examination, information about family history, year of death of parents, place and date of birth, religious denomination, as well as relatively detailed information about an individual's socioeconomic background and education as recorded on the date of enlistment. From the information contained in the sample, we can determine the occupation an individual is trained for, the occupation actually practiced at the time of medical examination, and the occupation of an individual's father. These rich data allow us to investigate the link between socioeconomic background and the membership of an NS organization, as well as the relationship between membership and career advancement.

Our analysis is divided into two parts. In a first step we run a set of logistic regressions to assess correlates of membership in an NS organisation. The data provide information on an individual's membership in the following Nazi organisations: the Nazi party (NSDAP), the Schutzstaffel (SS) the Sturmabteilung (SA) and the Hitler-Jugend (HJ). This allows us to assess the socioeconomic composition of supporters of the NS regime in great detail. We then undertake something more novel, exploring the relationship between membership of NS organisations and socioeconomic mobility. To determine this relationship, we firstly construct a measure of social mobility by comparing the occupation of an individual's father to that practiced by the son at the time of medical examination. Specifically, we take the Armstrong category of the son's occupation and subtract the corresponding value for the father. For example, if an individual is in a category 4 (semi-professional) occupation and their father had a category 2 occupation (semi-skilled worker), then they would be assigned a social mobility score of two. As such, social mobility scores have a possible range of between -4 and +4. A histogram of the calculated social mobility scores for the sample can be seen in figure 1.

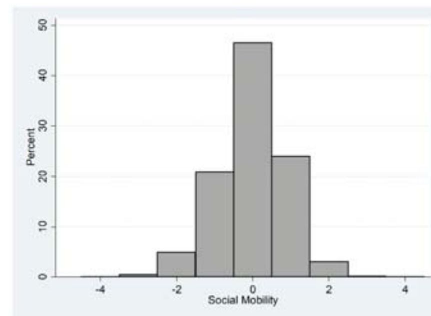


Figure 1. Social Mobility Histogram, Nazi Germany

Next we examine the determinants of intergenerational mobility. We begin by estimating a model using OLS with our measure of social mobility as the dependent variable. On the right-hand-side we include our variable of interest: whether the individual was a member of a particular NS organisation, as well as a number of important control variables such as religion, age, year of medical examination, education and urbanisation. Our initial results indicate that membership of an NS organisation is positively associated with socioeconomic advancement.

However an obvious issue with this analysis is that the causal link running from NS organization membership to occupational advancement is not established. We know that Nazi party members advanced more that non-members, all else equal, but this could be due to some unobserved characteristic that influences both party membership and social/occupational advancement, such as „drive" or „ambition". Fortunately, as we have an intermediate observation point on occupation - namely the occupation that the individual was trained for - we can start to look beneath the surface of our measure of overall intergenerational occupational mobility. As trained occupation would have been defined early in an individual's career, and would generally have preceded NS membership, we can examine to what extent intergenerational mobility was driven by early advances by those with advantageous unobserved characteristics. By doing so we can get a clearer picture of whether the observed upward mobility of NS members occurred before or after membership. After rerunning our previous analysis with a new measure of occupational mobility on the right-hand side - the difference in occupation between what the individual was trained for and the father's occupation, or „early mobility" - the original relationship between social mobility and NS membership is no longer apparent.

Overall the findings of our study suggest that higher-educated individuals and those from higher socioeconomic backgrounds were more likely to be members of not just the NSDAP, but all NS organisations: the Nazi party (NSDAP), the Schutzstaffel (SS) the Sturmabteilung (SA) and the Hitler-Jugend (HJ). We also find a positive relationship between NS membership and intergenerational occupational advancement. Indeed we find that this relationship is stronger for the more ‚elite' NS organisations, the NSDAP and the SS. However, we then uncover that NS members were more likely to have achieved social advancement at an early stage, suggesting that these individuals self-selected into membership. Although we cannot say whether members benefitted in other ways, such as direct financial rewards or non-monetary benefits, our findings suggest that the observed positive relationship between social mobility and NS membership was driven mainly by those unobserved characteristics. We find little evidence in our analysis of a direct „reward" effect for members once we control for this „early mobility". Additionally we find that both early and late NSDAP joiners demonstrated higher „early mobility". Even among early joiners of the party our analysis uncovers little evidence of direct patronage.

Family Background, Labour Market Entry, and the Inheritance of Opportunity in 19th Century Canada

Chris Minns
Kris Inwood
Fraser Summerfield

The connections between the labour market outcomes of parents and children are at the heart of a large literature in economics and sociology. Evaluation of the intergenerational correlations in status and/or earnings have drawn the attention of the current generation of economic historians, with a major point of debate being whether intergenerational correlations are persistently high (Clark 2014; Clark and Cummins 2015), or whether there have been large changes in the extent of economic mobility over the last two centuries (Ferrie and Long 2013). An alternative approach to evaluating the inheritance of opportunity is to focus on entry into the labour market. Consistent with the literature on earnings correlations, the evidence suggests that many young men today depend on their parents for early career positions. For Canada, Corak and Pirano (2011) find that almost 40 percent of young men have worked in their father's firm, a figure that rises to 70 percent at the top of the income distribution.

In this paper, we examine parental influences on labour market entry using two nineteenth-century cohorts of Canadian children. The first cohort is observed as children in the 1871 census and then again as young adults in in 1881; the second is observed in 1881 and then 1891. The data are obtained through application of an SVM classification system to 1871, 1881 and 1891 census data. These are the first large-scale linked data available for 19th century Canada, and have the unique advantage of including linked information for both men and women.

Our paper focuses mostly on the importance of parental occupation for the early career choices of young men and women in 19th century Canada. Did what fathers (and mothers) do matter as much for first jobs as today, or, in keeping with findings for intergenerational correlations more broadly, was there greater mobility in the late 19th century than the late 20th? We also examine the influences of parental location, ethnicity, family size and birth order on the timing of labour market entry and choice of entry level jobs. In doing so we can speak to additional issues of importance to economic historians, including the transition from farm to industrial employment, differences in intergeneration transmission of opportunity between Anglophones and Francophones, and the impact of differences in economic conditions at entry between the two cohorts on early career employment outcomes.

Notes

Jørgen
Modalsli

Recent research has uncovered an inverse relationship between income inequality and income mobility: countries with higher inequality has lower intergenerational income mobility (Corak, 2013). However, little is known about how this relationship has developed over time. For data reasons, historical studies of intergenerational mobility mostly concerns itself with occupations (e.g. Long and Ferrie 2013, Modalsli 2017) or income imputed from occupation mean incomes (e.g. Olivetti and Paserman, 2015).

The present paper will contribute to the knowledge of the development of income mobility over time by constructing and analyzing a data set of intra- and intergenerational income mobility in Norway in the late nineteenth century. This is based on transcribed information from a set of six published Norwegian income and tax lists (N=78,572) from the period 1871-1888 that lists individuals with their occupation, income and wealth. This data can be complemented with individual record data containing full names, occupations, ages, household relationships and places of residence from the 1875 and 1885 censuses.

In this way, the paper will increase our understanding of how „fluid“ Norwegian society was in terms of income in the late nineteenth century, and to what extent the high income mobility observed in Scandinavian countries today emerged during the twentieth century or was a feature of the economy also before large-scale industrialization. This will complement existing studies (such as Aaberge, Atkinson and Modalsli, 2016) that show that income inequality was much higher in the nineteenth century (and up until circa 1940) than it is today.

13

Betlesen, H. J.	700	"	13	"
Brager, S., Kaptein	600	1000	6	"
Wagle, C. L.	1200	3000	23	"
Wagle, C. T.	1200	8000	21	1
Wagle, Lorentz	800	"	7	"
Wennesland, Snedker	900	2000	13	1
Westergaard, A. D.	3200	15000	84	3
Westergaard, Carl	850	10600	25	2
Westergaard, Enkefru	600	12000	17	2
Westergaard, Joh.	9000	160000	355	20
Westergaard, Lars	2800 500	22000 5000	112	4
Winther, J. E.	500	"	7	"
Winther, Thomas	800	4000	14	1
Wølner, P.	6000	55000	190	11
Ødegaard, Guldsmed	800	1000	8	"
Ørum, Carl	700	3000	15	1

Bodø.

Skatteligningen for 1876 viser en Næring af tilsammen 109,100 Spd. og en Formue af 145,500 Spd.

	Næring Spd.	Formue Spd.
Apothekeren	900	"
Arntzen, Distriktslæge	1200	4000
Asp, Tømmermand	400	1000
Aspaas, Kjøbmand	800	1000
Berbom, Forstmester	750	"
Bernhoft, Albert, Skipper	900	8000
Bjørnsen, P., Skomager	400	"
Bodø Sparepank	2200	15000
Breien, Toldinspektør	820	"
Falch, A., Kjøbmand	450	1000
Fischer, Kjøbmand	1200	2000
Gjertsen, Joh., Kjøbmand	400	"
Gotaas, W. C., Skipper	400	"
Hansen, Bruun, Kabelmester	400	"
Heiberg, Foged	1200	4000
Henningsvær Guanofabrik	3000	"

In addition, this paper will provide a methodological contribution, in that the tax data covers mainly the top of the income distribution and a relationship with studies based on modern full-count registry data has to be established both with respect to an estimate of income inequality and income mobility. For income inequality, estimation of Pareto-Lorenz coefficients give promising preliminary results. For income mobility, a hybrid of matrix measures (using whether or not one is in the top tail) and conventional income mobility measures will have to be utilized. The relationship to between this methodology and more conventional measures can be explored using full-count digitized income records available from the 1960s onwards. Moreover, the linkage of the micro data (tax lists to censuses) presents new and interesting challenges in that the tax lists frequently contain only last name, municipality of residence and occupation string. Work is still ongoing to improve the match rate between the tax list data and the Census data.

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Government-made Bank Distress: Industrialization Policies and the 1899-1902 Russian Financial Crisis

Nikita
Lychakov

Can real economy policy mistakes lead to bank distress? In the 1890s, the Russian Empire was undergoing rapid state-led industrialization. Growth was propelled by foreign capital inflow and government procurement of private sector industrial output. Concurrently, state policies stimulated industrialists to expand their operations and incentivized, although not compelled, commercial banks to finance industry. In 1899, the inflow of foreign capital fell sharply, initiating a financial and industrial crisis. Based on archival data, I find that banks that experienced greater distress in the crisis had more personal connections to government officials who were close to the epicenter of policymaking. Moreover, banks that suffered more acute distress had more personal ties to companies that were highly stimulated by state policies to expand production, namely heavy industrial companies. Taken together, these two perspectives point to a destabilizing impact of national development policies on bank performance and ultimately on the country's economic and political outcomes.

In the mid to late-1890s, the Russian Empire was undergoing exceptional industrial growth. The value of manufactured output rose at an annual rate of nearly 10 percent between 1893 and 1900 (Borodkin, 2011). The state acted as a catalyst for the country's economic development by procuring industrial products and incentivizing industrial companies to expand operations to match state and private sector demand. Simultaneously, industrialization policies induced joint-stock commercial banks to increase financing to industry. In 1899, the well-tuned triangular relationship between the government, the banking sector, and industry started to come apart due to a sudden decrease in the inflow of European capital to Russian government bonds and industrial enterprises. This resulted in a rapid stock market decline, a reduction in heavy industry output, and widespread corporate bankruptcies – together culminating in overwhelming losses among banks. Because banks supplied over half of all financing received by the industrial sector, banking distress put the successes of the 1890s at stake.

What caused such a swift reversal in industrial growth? Among a myriad of possible causes, one reason offered was state industrialization policies of the 1890s, which had unduly stimulated heavy industry, leading to its overbuilding and eventual contraction (Gindin, 1996). The purpose of this paper is to uncover whether, and to what extent government policies contributed to bank losses in this crisis. The importance of this enquiry comes from the fact that the influence of the state on a banking system is often immense and can be negative. When it is negative, banking distress and failure might follow, which, in turn, are likely to lead to the fall in the money supply to the economy (Friedman & Schwartz, 1963) along with other non-monetary effects (Bernanke, 1983), together weakening aggregate economic activity.

This study identifies three channels through which the Russian government affected banks' inclination to finance industry and, consequently, banks' financial outcomes. The first channel was information about the future course of industrialization policies and state procurement decisions, such as what factory would receive a lucrative procurement contract, that banks gathered via personal connections with government officials and corporate board members. Second was the development policy of the State Bank, a quasi-central bank of Russia, by means of which the State Bank provided credit to banks on a regular basis. Third was the government's expectation of banks to finance industrialization. The focus of this paper is on the information channel, because the other two channels contributed little to the increase of bank financing of industry, as is argued, based on historical evidence, in later parts of the paper.

In order to trace the passage of information from the state to the banking sector, this study captures personal connections, or more formally interlocking directorates, between banks, government entities, and non-financial companies. Specifically, a well-informed political interlock is recorded when a bank board member or his brother is part of a group of top government officials who were well-informed – due to their social proximity to the Finance Minister Sergei Witte – about state procurement decisions and the expected trajectory of the industrialization policies. Sergei Witte was at the epicenter of industrial policy-making. He was the designer and implementer of the national economic strategy of the 1890s and the final decision-maker on state procurement contracts, subsidies, and other development measures (Shepelev, 1981; Gindin, 1996; Solovyov, 2003). Separately, a heavy industry interlock is recorded when a bank board member is also a board member of a heavy industrial firm, or when the banker's brother serves in that role. This type of interlock presents an alternative way of tracing the effect of government policies on bank performance. This is because heavy industrial firms were strongly incentivized by state policies to expand their operations and were highly reliant on state procurement, which fell with respect to some products during the crisis, leading to industry losses. On top of this, I register three additional types of interlocks: to capture bankers' connections with a wider range of government officials and non-financial companies, and to trace connections with competitor banks.

Next I determine how the presence of government, industrial, and banking connections at each bank affected bank performance in the crisis. Bank distress is measured in the form of (1) net losses banks sustained on their investment portfolios over the entire crisis period, and (2) in the form of the drop of bank share price over the first year of the crisis, which was the only period throughout the crisis that was chiefly free from direct government intervention in the stock market.

My statistical results demonstrate that banks that experienced greater distress during the crisis had more connections to government officials who were well-informed about the industrialization policies and/or state procurement contracts. The conclusion is that banks that had been influenced most by the industrialization policies exposed themselves financially to heavy industrial companies and, as a result, experienced greater losses during the crisis.

Moreover, banks that experienced more acute distress in the crisis had more personal connections to heavy industrial companies. The interpretation is that banks that suffered greater losses had greater exposure, either via direct loan financing or securities underwriting, to companies most stimulated by state policies. Put together, these two complementary findings indicate a negative effect of national industrialization policies on bank performance during Russia's the state-led development.

Aside from this, I find that banks did not experience greater distress when they had more personal ties to competitor banks. This suggests that personal ties among banks did not lead banks without political and corporate connections to adopt a corporate strategy of banks with such ties.

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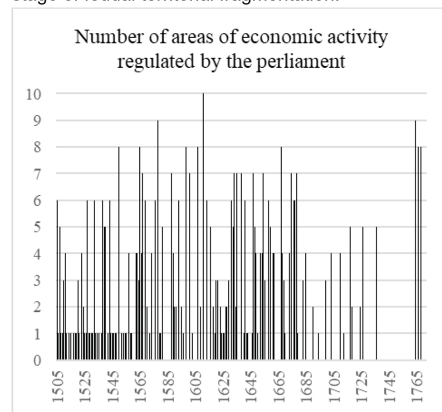
Towards a Domestic Market: Legal state capacity and market integration in early modern Poland

Mikołaj
Malinowski

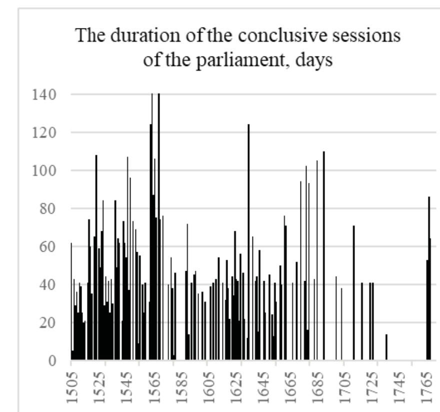
What factors allowed certain regions of Europe to develop their market economies early and what were the reasons for the relative stagnation of the less successful areas? Specifically, what was the role of the early modern transition from feudalism to centralised territorial states in 'setting the stage' for modern economic growth? Political institutions are critical determinants of prosperity. States can either stimulate or inhibit economic performance. Proponents of the free-market see the coercive nature of states as a factor contributing to economic stagnation. However, states can also provide the institutional framework necessary for sustained economic growth. According to Johnson and Koyama, the link between greater state capacity and sustained economic growth is contingent on whether state policies complement markets and market-supporting institutions. According to Besley and Persson, there are two broad types of capabilities that allow the state to act and improve operation of markets, namely, fiscal capacity representing the ability to provide public goods, and legal capacity denoting contract enforcement, protection of property rights, creation of rules, and enforcement of laws.

This article conducts an empirical study of the impact parliamentary activity had on market development in the First Republic of Poland between the formation of the country's political system in the 16th century to the first partition of the state by its neighbours in 1772. The Polish case is uniquely suited to study the impact preindustrial states had on markets. The Polish king could not raise any funds nor create laws without the approval of the Senate and the House of Delegates that together formed the Polish parliament, Seym. At the same time, rulers of many Western European countries retained the power to perform legal action independently of a parliament, which in some cases led to absolutism. In these societies, parliamentary activity relates to the bargaining between the ruler and his subjects and leaves out the regulatory action of the ruler. However, in the Polish context where the King, Senate, and House of Delegates were complementaries, parliamentary activity captures all taxation and law creation on the central level of the state, protection of the rules and property rights, and enforcement of the law by the parliamentary court and commissions.

I analyse the legal action of the Polish parliament by counting how many days a year it was in session, and how many of ten specific areas of economic activity, ranging from taxation to transportation, were regulated in the acts of the parliament each year. Poland experienced a golden age of parliamentarism and political centralization in the 16th century that was followed by a parliamentary paralysis in the 17th and 18th century caused by a right of a single delegate to abort its session, liberum veto. When the parliament was inactive, the state had almost no ability to take legal action and influence the markets. The decision-making power was divided between the traditional regional assemblies, Seymiks, that were often dominated by powerful local magnates. This effectively returned Poland to the stage of feudal territorial fragmentation.



With use of regression analysis, I demonstrate that parliamentary action influenced transaction costs on the domestic market measured by the annual rye price gaps between seven Polish cities. The period of centralisation and top-down regulation was associated with progressing market integration. Conversely, anarchy and re-feudalisation resulted in market fragmentation. As most of Western European courtiers managed to develop centralised nation states in the early modern period, the struggle to build efficient political institutions may be one of the root causes of the economic difficulties in Eastern Europe.



„After Empire comes Home“: Economic Experiences of Japanese Civilian Repatriates, 1945-56

Sumiyo
Nishizaki

The economic impact of large influxes of population is a complex topic. This research contributes to this field by examining one of the most significant, but least researched, examples of postwar migration – the repatriation of more than six million (including three million civilians and demobilized soldiers each) to Japan after the Second World War. One pervasive image of Japanese civilian repatriates is that of the immigrant farmer of Manchuria (Manshū kaitakumin) who settled as a part of Japan's Manchurian policies and had difficult repatriation experiences under the hostility of local people. However, many returned from other regions as well, including Korea and Sakhalin, and repatriates consisted of not only farmers but also colonial government officials, employees of public and private corporations, and small business owners, amongst others. This research uses an analysis of statistical data, which is a unique approach to study Japanese repatriation and focuses on the integration of the civilian repatriates into the postwar economy. A core source material is a national survey into civilian repatriates' postwar lives (Zaigai jijitsu chōsahyō) conducted by the Ministry of Health and Welfare in 1956, in which more than 800,000 repatriate households participated. The questions for each family member included name, sex, date of birth, the dates of emigration and repatriation, and whether s/he received public aid or not in 1956. In addition, the household head was required to include the length of his/her overseas residence, wartime and postwar addresses, as well as wartime occupations and employers. Based on this information, I created databases and analyzed the occupational transition of the repatriates, such as sectoral breakdown of repatriates' employment, employers who hired a large number of repatriates both in the wartime and in the postwar period, and percentage figures for repatriates who managed to find employment in the same or similar sector (by using technical skills or experiences) as that of their wartime occupation.

The most unexpected finding in my research was that roughly half of civilian repatriates had worked in the public or semi-public sectors, or major Japanese firms' overseas branches in the Japanese empire. Repatriate farmers, who have become a symbol of the Japanese repatriate, were a minority, and made up only 5-10 % of overall Japanese civilian repatriates. The data presented in the research shows that, in contrast to prevailing notions, repatriates' postwar settlement was facilitated by a) skilled employment, b) employment in the public or semi-public sectors, and c) family farming or employment in small businesses in the tertiary sector. As a result, despite the scale of the repatriation, the settlement was broadly successful.

This finding has two important implications which are related to war memory creation and Japan's postwar economic structure. Firstly, regarding the memory creation, in postwar Japan, the majority of repatriates who had been associated with wartime public corporations or the wartime public sector appear not to have openly spoken of their experiences, fearing being labeled as the empire's agents. On the contrary, the experiences of repatriate farmers have caught the general public's attention. The gap between the silence of the former group, and the often-heard stories of victims might have led to the recreation of images of 'the repatriates' which significantly emphasize the tragic experiences of the latter group. Consequently, although details of the repatriation problems have been largely forgotten, the imagery of the repatriates as victims of the war have been recreated and perpetuated among the Japanese general public.

Secondly, there is an issue of the trade-off between the Japanese economy's capacity to absorb excess population, and generally low productivity levels, specifically in agriculture, as well as in the public, semi-public and the tertiary sectors. The presence of these sectors allowed Japan to regain stability by settling repatriates, which became a foundation of Japan's postwar growth. However, inefficient allocation of workers and redundant labor forces in these sectors persisted, and has cast a shadow in the Japanese economy, even during the high-speed growth period.

More than 70 years have passed since the end of the war. By examining the repatriates' transitions, my paper highlights postwar adjustment processes which have usually been overlooked. After their initial struggle, the majority of repatriates did manage to settle. This settlement pattern offers a reasonable explanation as to why a large number of repatriates were able to be absorbed into postwar Japan and why the memories of the Japanese repatriation were largely forgotten, aside from selected images of the repatriates as victims of the war.

Note: A part of this title is taken from Dr. Lori Watt's book, When Empire Comes Home. I am grateful to Dr Watt for allowing to use a phrase from her book title.

Equity Investment in an Age of Turbulence: Spain, 1900-1950

Stefano Battilossi

Stefan O. Houpt

Miguel Artola Blanco

This paper studies the impact of political and macroeconomic instability on real returns on equity investment in Spain over the first half of the 20th century. This was an age of extreme political and institutional turbulence, characterized by fragile cabinets, permanent threats of military coupes, revolutionary attempts, widespread political violence and abrupt changes in political regimes, culminated in a Civil War between 1936 and 1939 (during which trading in securities markets was suspended). Political instability led also to acute macroeconomic instability, with volatile growth and repeated inflationary and deflationary shocks.

Based on a unique and original dataset of bond and equity prices, as well as dividends paid and shares issued by the largest companies quoted in the Madrid Stock Exchange, we reconstruct price and total return stock market indices at monthly frequency for the period 1900-1950. The indices are calculated on the base of the Paasche formula, weighted by stock market capitalization, adjusted for capital changes and other corporate actions in the index constituents, and rebalanced at annual frequency to take into account addition and deletions of new constituents.We also calculate the Historical (ex post) Equity Premium (HEP) over different time horizons and provide estimates of changes in the Implied (ex ante) Equity Premium (IEP) over time. Our aim is to quantify the consequences of political and macroeconomic instability in terms of losses for Spanish investors and increased cost of capital for Spanish firms.

The paper connects to different strands of literature. One focuses on the comparative performance of investment in different financial assets, especially equities, both in specific historical periods and in a long-run perspective. This has led to the construction of new stock market indices for leading exchanges such as New York (Goetzmann et al 2001), London (Acheson et al 2009; Campbell and Rogers 2017; Grossman 2002), Paris (Le Bris 2012a and 2012b; Le Bris and Hautcoeur 2010) and Brussels (Annaert et al. 2011, 2012a and 2012b). A different stream of research deals with the Historical Equity Premium Puzzle, i.e. the high positive return differential of equities relative to fixed income securities (Ibbotson and Sinquefield 1976, Siegel 1992 and 1994) —an empirical regularity hard to explain on the base of conventional asset pricing models (Mehra and Prescott 1985 and 2003). Dimson, Marsh and Staunton summarize the results of this literature in their ‘Triumph of the Optimists’ (2002) and subsequent updates. They find an average Equity Premium of 3.0-3.5% over the 20th century, ranging between 1.8% and 7.0% across countries, and highly variable over the decades examined. They also find that investors in US, UK, Canadian and Australian equities enjoyed a significantly higher return than European investors (with the exception of Sweden), which reflects the negative impact of high inflation, wars and nationalizations on equity performance.

Our results improve significantly over the existing body of knowledge. Our stock market index, based on the same methodology used for the modern Ibex 35 Index, is applied consistently throughout the whole period 1900-1950. Thus we avoid the problem of splicing historical indices constructed with different methodologies and different constituents for different periods, which is typical of existing historical studies on the Spanish equity market (Bolsa 1994; Rivas Sandez and Garcia Benavides 2000). We also improve the quality of data currently used in the calculation of the Spanish HEP. E.g. Dimson et al find a real equity total return of 1.7% and an equity premium of 0.1% over the period 1900-1950. However their results are based on the assembling of different series from a variety of sources, as well as on the assumption of zero change in nominal prices and zero dividend payments over the period of trading suspension 1936-40. We show that these assumptions are unwarranted.

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Playing the Rules of the Game: Counterparty Risk at the Berlin Bourse, ca. 1860-1914

Michael
Buchner

In recent years, a growing body of literature has shown the overall importance of market microstructures for the expansion of financial markets throughout the 19th century. Although the pre-1914 world witnessed an ever increasing financial globalization, this literature also demonstrates the great variety in the institutional design of markets in the different financial centres of that time. We add another piece to this field of research by providing the first in-depth account, based on new archival evidence, on the microstructures of the Berlin Bourse which has rather been neglected by financial historians so far. The case of the Berlin Bourse, in turn, offers new insights on the role and functioning of market microstructures as its institutional features largely differed from what we know from other historical stock exchanges. This is particularly true for the management of so called counterparty risk. So, for example, brokers in Berlin were neither bound to specific capital requirements, like their counterparts in Paris or London, nor was there any mutual fund to cover potential losses and prevent contagion.

How then was counterparty risk mitigated among the brokers of the Berlin Bourse? To address this question we first have to distinguish between the official and the so called 'free' market. On the former, which basically corresponded to a pure spot market, only 'sworn brokers' intermediated. In theory, these official brokers should not have been exposed to any counterparty risk whatsoever as German commercial law prohibited them to trade on their own accounts. However, in practice, sworn brokers were forced by market participants to not only take over orders that could not be fulfilled otherwise into their own books, but also to accept orders from any regular visitor to the stock exchange. Nevertheless, according to the remaining evidence the actual number of defaults among this particular group of intermediaries was quite modest. This is all the more surprising as the Berlin Bourse lacked any formal mechanism to prevent defaults among sworn brokers. To solve this puzzle, we argue that counterparty risk on the official market of the Berlin stock exchange was managed mainly via an informal set of rules which had two major implications. On the one hand, these informal rules of the game prevented sworn brokers from engaging excessively in speculative business. This was achieved by tight disciplinary control exercised by the supervisory board of the Berlin Bourse, which can be interpreted as a specific form of 'paternalism', a regulatory regime prevailing in many business enterprises in pre-1914 Germany. Consequently, sworn brokers, for example, were only allowed to deal in securities which were explicitly allocated to them for that purpose by the supervisory board. On the other hand, there also existed additional informal mechanisms that allowed brokers to diversify their risks. So, it was quite common for brokers to maintain close relationships with particular banks which overtook some of their speculative engagements.

Apart from the official market a separate 'free market' existed in which the much riskier futures trading was carried out. Here, a very heterogeneous group of so called 'free brokers' intermediated business. Although these free brokers were explicitly supposed to trade on their own accounts, they did not have to provide any capital requirements either. Consequently, differences among this group of intermediaries were quite substantial, with many small brokers who always tried to leave the trading floor with their books being 'even' on the one hand, but also some specialised agents who acted as market makers in particular securities on the other. Some available statistics suggest that default risk on this free market, indeed, was substantially higher than on the official market of the Berlin Bourse, but also decreased significantly over time. The latter phenomenon, at least to some extent, was due to some sort of learning processes of a still 'young' financial market. Thus, for example, many of the so called 'brokerage banks' (Maklerbanken) founded originally in the 1870s in order to diversify risks of the free brokers they employed went bankrupt throughout the following years, mainly as a consequence of very weak governance structures. But, what really stands out in the counterparty risk management on the free market is the large influence of Berlin's leading private and commercial banks which enjoyed direct access to the trading floor. Hence, whereas the entrance to the stock exchange was more or less open to any merchant in Berlin, only a small fraction of visitors to the exchange, for example, also participated in the clearing mechanisms of the Berlin Bourse. As the clearinghouse was run primarily by representatives of the large Berlin banks and members of the clearinghouse had to accept each other as counterparties, we suppose that members of the haute finance carefully selected potential candidates.

In summary, this paper contributes to the historical literature on market microstructures both by confirming existing narratives but also by adding a new perspective based on archival research which tries to grasp the actual functioning of the financial market rather than focusing exclusively on formal rules and regulations. Thus, relationships between the official and the free market on the Berlin Bourse can be compared to the well-known division of labour between 'Parquet' and 'Coulisse' prevailing at the Paris Bourse. At the same time, the Berlin stock exchange was characterised by many peculiar institutions which substantially distinguish it from other trading places. Among the most important features in this respect, we highlight the large influence of banks on the very practices of securities trading as well as a strong reliance on informal social hierarchies as a regulatory regime. What is even more: these informal 'codes of conduct' turn out to be all the more important as the legal framework governing the Berlin financial markets in the pre-1914 period was rather weak.

Competition among French Exchanges in Troubled Times

Jérémy
Ducros

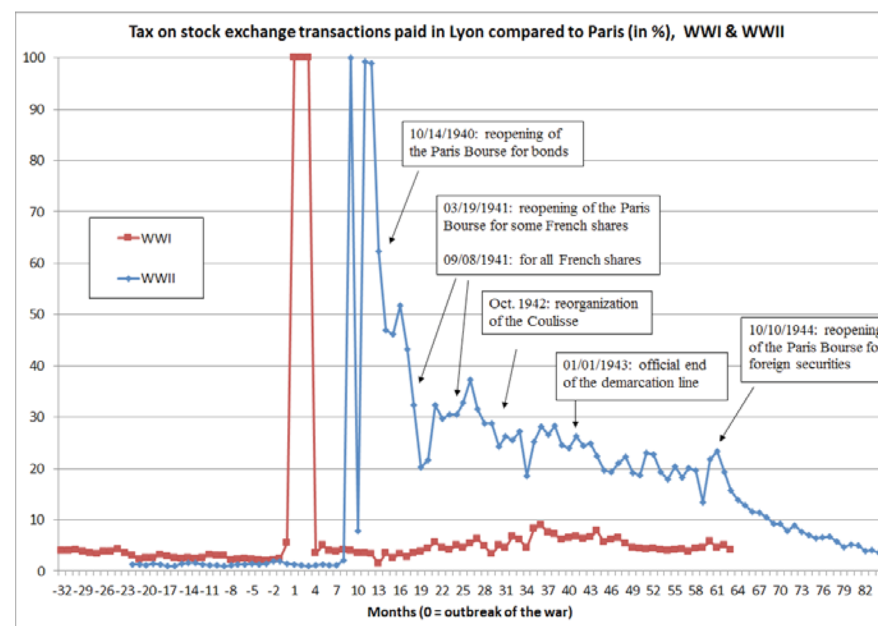
At the eve of World War I, the Paris financial centre was playing a key role in the financial market and accounted for more than 90% of the trading volume in France. The situation remained the same in the 1930s, notably because the regional exchanges suffered more from the financial crises and scandals than the two Parisian markets. The survival of the regional exchanges was then questioned. Within this context and the exchanges competitive framework, we study the impact of the two World Wars on the stock exchange industry in France.

Did the Wars, treated as exogenous shocks, lead to changes in the hierarchy of the French stock exchange industry? Did regional exchanges take advantage of the shutdown of the Paris Bourse? Indeed, both the Parquet, the official market, and the Coulisse, the non-official market, closed indeed shortly after the outbreak of the World Wars, and reopened several months after. In the meantime, the main regional exchanges, located in the south of France, and so not directly under the German threat or occupation, remained open.

Our analysis relies on an original dataset of the tax on stock exchange transactions. More precisely, we used exchanges' general ledgers to collect the bi-monthly amount of taxes paid by the stockbrokers in Paris and in Lyon, the biggest regional market, from 1913 to 1919 and from 1938 to 1946. The tax is proportional to the trading volume and thus provides a good proxy for it. The figure below provides the Lyon market share compared to Paris.

The WWI situation was very different from the WWII situation. During WWI, the regional exchanges, which suffered from the freezing of the forward market and of the monetary system, were very imperfect substitute markets and represented less than 10% of the total activity. As soon as the Paris Bourse reopened in December 1914, the vast majority of transactions was executed there. The stock market industry was then back to the pre-war situation: the Paris Bourse took advantage of lower fees and a greater liquidity to attract most orders. Regional stock exchanges managed to survive only thanks to drastic decrease in their expenses.

On the contrary, during WWII, the Lyon Stock Exchange temporarily became the biggest market in France. This can be explained by three main reasons. First of all, most securities have been moved from the northern part of France, the so-called "occupied zone", to the southern part, the so-called "free zone" (or "non-occupied zone"), during the exodus of May and June 1940. Trade conditions between the two zones prevented the return of securities until March 1941. Thus, most securities could only be traded in the free zone that is in Lyon or in Marseille. Second, the Paris Bourse, which closed shortly after the armistice of 22 June 1940, reopened in August 1941 for all French shares and only in October 1944 for foreign securities. In the meantime, the Lyon stock market had a de facto monopoly on the trading of these securities. Third, the Coulisse, the non-official market located in Paris before the outbreak of the war, closed after June 1940 and many brokers of the Coulisse left to Lyon. Between June 1940 and October 1942, the trading sessions of the Coulisse took place in Lyon.



Land Reclamation and Trade in the First Modern Economy

Lisbeth La Cour

Battista Severgnini

Historian considers the Netherlands the first example of Modern Economy (de Vries and van der Woude (1997)): since the 15th century and especially during the so-called period of "Golden Age" in 17th century, Dutch society experienced positive economic growth rates boosted by a predominant role of technological change and the first signs of the end of Malthusian mechanisms. Trade played a relevan role in explaining the success of this industrious country.

This paper investigates in a quantitative way how land reclamation shaped the Dutch economy in two ways. First, we build up a theoretical trade partial equilibrium model where technological change allows a larger amount of land for cultivation: this increase in natural resources relocates the input of production and thus trade and growth trajectories. Second, we empirically test our predictions combining the information on land reclamation with the FAO dataset on the quality of agricultural areas and the detailed data on rye trade between Danzig and Amsterdam in the period 1670 to 1794 provided by the Sound tolls accounts.

Our results, based on econometric tests of a modified version of the law of one price, show a causal link between land reclamation and trade and a complementarity with other drivers of growth, such as natural resources and institutions.

Notes

Of Mice and Merchants: Trade and Growth in the Iron Age

Stephan Maurer   Jörn Steffen Pischke   Ferdinand Rauch

We investigate to what degree trading opportunities affected economic development at an early juncture of human history. In addition to factor accumulation and technical change, Smithian growth due to exchange and specialization is one of the fundamental sources of growth. An emerging literature on the topic is beginning to provide compelling empirical evidence for a causal link from trade to growth. We contribute to this literature and focus on one of the earliest trade expansions in pre-history: the systematic crossing of open seas in the Mediterranean at the time of the Phoenicians from about 900 BC. We relate trading opportunities, which we capture through the connectedness of points along the coast, to early development as measured by the presence of archaeological sites. We find that locational advantages for sea trade matter for the foundation of Iron Age cities and settlements, and thus helped shape the development of the Mediterranean region, and the world.

A location with more potential trading partners should have an advantage if trade is important for development. The particular shape of a coast has little influence over how many neighboring points can be reached from a starting location within a certain distance as long as ships sail mainly close to the coast. However, once sailors begin to cross open seas, coastal geography becomes more important: Some coastal points are in the reach of many neighbors while other can reach only few. The general shape of the coast and the location of islands matters for this. We capture these geographic differences by dividing the Mediterranean coast into grid cells, and calculating how many other cells can be reached within a certain distance. Parts of the Mediterranean are highly advantaged by their geography, e.g. the island-dotted Aegean and the "waist of the Mediterranean" at southern Italy, Sicily, and modern Tunisia. Other areas are less well connected, like most of the North African coast, parts of Iberia and southern France, and the Levantine coast.

We relate our measure of connectivity to the number of archaeological sites found near any particular coastal grid point. This is our proxy for economic development. It is based on the assumption that more human economic activity leads to more settlements and particularly towns and cities. While these expand and multiply, there are more traces in the archaeological record. We find a pronounced relationship between connectivity and development in our data set for the Iron Age around 750 BC, when the Phoenicians had begun to systematically traverse the open sea, using various different data sources for sites. We find a weaker and less consistent relationship between connectivity and sites for earlier periods. This is consistent with the idea that earlier voyages occurred, maybe at intermediate distances, at some frequency already during the Bronze Age. Our interpretation of the results suggests that the relationship between coastal geography and settlement density, once established in the Iron Age, persists through the classical period. This is consistent with a large literature in economic geography on the persistence of city locations. While our main results pertain to the Mediterranean, where we have good information on archaeological sites, we also corroborate our findings at a world scale using population data for 1 AD from McEvedy and Jones (1978) as outcome.

Humans have obtained goods from far away locations for many millennia. While some of the early trade involved materials useful for tools (like the obsidian trade studied by Dixon, Cann, and Renfrew 1968), as soon as societies became more differentiated a large part of this early trade involved luxury goods doubtlessly consumed by the elites. Such trade might have raised the utility of the beneficiaries but it is much less clear whether it affected productivity as well. Although we are unable to measure trade directly, our work sheds some light on this question. Since trade seems to have affected the growth of settlements even at an early juncture this suggests that it was productivity enhancing. The view that trade played an important role in early development has recently been gaining ground among economic historians; see e.g. Temin (2006) for the Iron Age Mediterranean, Algaze (2008) for Mesopotamia, and Temin (2013) for Ancient Rome.

Our approach avoids issues of reverse causality and many confounders by using a geography based instrument for trade. In fact, we do not observe trade itself but effectively estimate a reduced form relationship, relating opportunities for trade directly to economic development. This means that we do not necessarily isolate the effect of the exchange of goods per se. Our results could be driven by migration or the spread of ideas as well, and when we talk about "trade" we interpret it in this broad sense. We do believe that coastal connectivity captures effects due to maritime connections. It is difficult to imagine any other channel why geography would matter in this particular manner, and we show that our results are not driven by a variety of other geographic conditions.

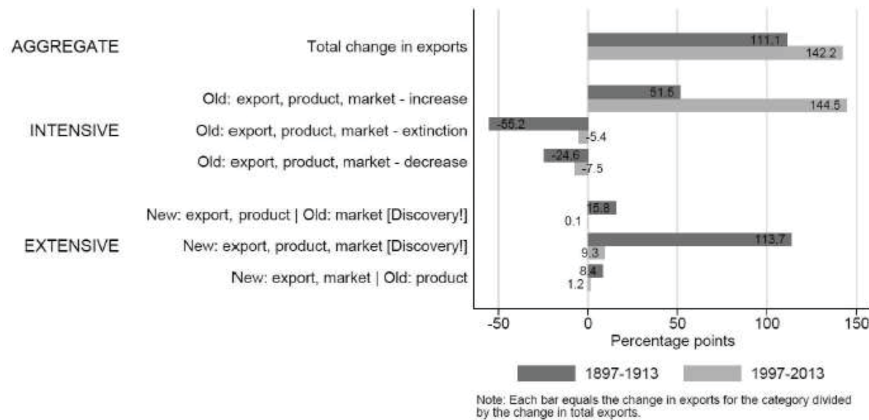
Since we do not use any trade data we avoid many of the measurement issues related to trade. We measure trading opportunities and development at a fine geographic scale, hence avoiding issues of aggregation to a coarse country level. Both our measure of connectedness and our outcome variable are doubtlessly extremely crude proxies of both trading opportunities and of economic development. This will likely bias us against finding any relationship and hence makes our results only more remarkable.

While our paper speaks to the nexus between trade and growth we are unable to link connectedness directly to trade in goods or other channels of sea based transport like migrations or the spread of ideas. Some of the issues we hope to explore in future work are the interactions between maritime connections and other locational advantages, like access to minerals. Finally, we hope to probe the persistence of these effects more by linking the results to data on more modern city locations.

Nikolaus Wolf

Wolf-Fabian Hungerland

We compare the growth of German export trade in two periods of globalization, 1897-1913 and 1997-2013. We do this based on a new data-set for Germany's foreign trade before 1913, which is complete at the five-digit SITC level, covering all existing products and trade partners at the time. This is the first data-set that allows for the two periods a meaningful decomposition of export growth into growth of the intensive margin (changes to existing bilateral flows) and growth of the extensive margin (new exports, either of products not formerly exported or existing products to new markets or both). A comparison of export growth between the two periods leads to three surprising results: first, while the extent of export growth was similar during the two periods, growth along the extensive margin was much larger than growth along the intensive margin during the first globalization. The opposite holds for the second globalization. Second, trade growth along the intensive margin was much more volatile 100 years ago than in modern times. Third, before 1913 most of the growth along the extensive margin was in terms of new products to new markets – in contrast to findings that highlight the role of existing products to new markets today. Our evidence suggests that we need trade models that allow for both margins to understand long-run trade growth, but especially to analyze the first globalization. We need to reconsider the driving forces behind the two waves of globalization. Existing estimates of the long-run evolution of trade costs and the welfare effects of trade are likely to be seriously biased.



Note: Each bar equals the change in exports for the category divided by the change in total exports.

Notes

The People, Not the Place. The Decline of the North of England 1918-2017: A Surname Investigation

Notes

Neil Cummins

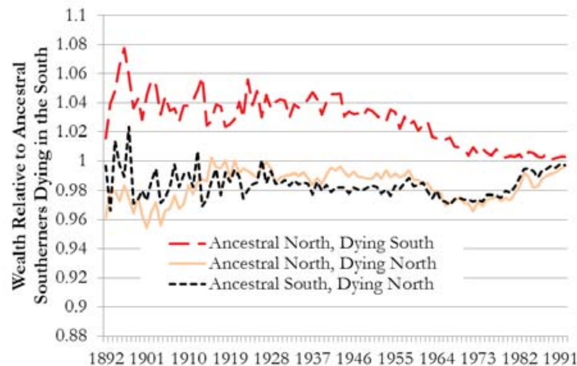
Gregory Clark

The north of England in recent years has been poorer, less healthy, less educated and slower growing than the South. For example, the chance of an 18 year old matriculating in Oxford or Cambridge was only about half that for the north as in the South in 2013. This paper uses a 100% sample of the English dead and a 100% sample of their probate records. Using surnames that had a different regional distribution in England in 1840 we show that the decline of the north is mainly explained by selective outmigration of the educated and talented. Surnames associated with the north in 1840 show no disadvantage relative to those associated with the south in terms of educational attainment, and political status in 2016 in England as a whole. For wealth there is a very modestly lower level for northern surnames. This implies that policies designed to aid the population in the north in the form of regional investments, or encouragement of migration south, are likely to be ineffective in boosting outcomes for the remaining northern population.

The decline of the north has two possible sources. The first is that demand declined for the staple industries of the north in the twentieth century, leading to a downward economic spiral in the region that disadvantaged people inhabiting the north and their descendants. The second is that when growth declined in the north, there was outmigration of the most able inhabitants, so that the outcome differences in the north reflect mainly lower economic abilities among the remaining northern population.

We test those two competing hypotheses using the fact that many surnames in England were regionally located in the 1837 when general registration of births, deaths and marriages began. If the first hypothesis is correct we will see a general decline in the status of these surnames accompanying the decline of the north. If the second hypotheses is correct the decline of the north will not be associated with any general decline in the status of these surnames. We find the evidence is strongly in favor of the second hypothesis. The north declined mainly as a product of selective outmigration of talent from the region.

The outcomes of interest we observe are lifespan (from a 100% sample of the English dead), wealth at death 1892-1992 (from a 100% sample of English probate records which we were able to digitize from image files), educational attainment, 1800-2016, measured by enrollment rates at Oxford and Cambridge, lifespan 1866-1983, and house values circa 2016. The clear conclusion so far is that the decline of the north was mainly caused by the outmigration of talent from the region, and not by blight attached to the place itself.



Social and spatial patterns of adult mortality in early 20th century Sweden: Evidence from Full-Count Micro Census Data

Björn Eriksson
Martin Dribe

One of the best-documented facts in demography is the socioeconomic status (SES) inequality in health and mortality in contemporary developed countries. Whether measured by income, education or social class, SES is positively associated with health and negatively associated with (all-cause) mortality (see, e.g., Elo 2009; Mackenbach et al. 2003; Smith 1999, 2004; Torssander and Eriksson 2010). Michael Marmot calls this phenomenon "the Status Syndrome" (Marmot 2004). To the question where we find a social gradient in health, he answers: "pretty well everywhere" (Marmot 2004:16). Looking at the last 30 to 40 years there is also strong evidence that the SES differences in health have widened (Bronnum-Hansen and Baadsgaard 2007; Shkolnikov et al. 2012; Mackenbach et al. 2003; Kunst et al. 2004; Burström et al. 2005; Hederos Eriksson et al. 2017; Steingrimsdottir et al. 2012; Statistics Sweden 2016). This development appears to be connected to a faster mortality decline in higher SES groups compared to lower SES groups, especially in a range of preventable diseases, for example different forms of smoking-related cancers and cardiovascular diseases (Mackenbach et al. 2015; Hederos Eriksson et al. 2017).

We know much less about mortality differentials further back in time, i.e. before the 1960s. It is often assumed that differences were as large, or even larger, in the past, before universal health care and modern medical technology when communicable diseases were more important for mortality and when nutrition and inadequate sanitation affected mortality to a much greater extent than today (e.g. Antonovsky 1967; Smith 2009). While the specific mechanisms varied over time as different diseases came to dominate mortality, the higher SES groups were always able to avoid premature deaths since they had better access to resources, according to one influential model (Link and Phelan 1996). Similarly, in a recent review, Elo (2009) argues that mortality and health vary by SES in all societies where it has been systematically studied. The empirical support for these claims are rather weak, however (see Bengtsson and Van Poppel 2011).

Several historical demographers, however, have argued that mortality differences by SES diverged over the past 150 years (e.g. Smith 1983), and some recent studies, based on regional population samples, suggest that the mortality differentials as we know them today are of a very recent origin, developing in the post-WWII period (Bengtsson and Dribe 2011; Bengtsson, Dribe and Helgertz 2017). Moreover, spatial differences in mortality were often more important in the past, partly as a result of the high mortality in urban areas (the urban penalty), and party due to regional differences within rural areas.

The aim of this paper is to contribute to our understanding of the emergence of socioeconomic mortality differentials by studying an entire national population before the expansion of modern medical technology and organization and before the development of modern welfare societies. Our analysis is based on individual-level data covering the entire population of Sweden born 1841-1880 and followed from age 60 until death. Full-count micro-level census data for 1880, 1890, 1900, and 1910 provide us with information about individual SES based on occupation and also with place of residence at the time of the census. The census data are linked to individual-level mortality data from the Swedish Death Index (2014) containing information about all deaths in Sweden between 1901 and 2013. We link individuals in the censuses and the mortality register together using probabilistic linking methods. Because both the censuses and the mortality register contain information on name, year of birth and parish of birth we are able to link the majority of the population between the two sources. The resulting sample constitutes a unique historical source of micro level information on occupations and mortality around the turn of the twentieth century.

Using data on occupation we measure social class by HISCLASS (Van Leeuwen and Maas 2011). Spatial differences are analyzed at parish level (about 2,400 units in Sweden at the time), which enables us both to study SES differentials at low levels of geography using fixed-effects estimations and to analyze spatial patterns in the SES differentials. We estimate remaining life expectancy at age 60 by cohort and SES and also study the interaction between place and SES to assess the role of spatial factors for the observed SES differentials in mortality. Our main results are summarized by figure 1.

Our findings show that life expectancy at age 60 differed between SES groups. The pattern is however the opposite of that observed in modern populations. The results show that the white collar group had shorter life expectancy at age 60 than the working class groups, and that farmers had the longest life expectancy of all groups. Some of the differences can be explained by marital status, migrant status and urban residence, and even more by unobserved parish-level factors. Still, about half of the crude difference in life expectancy by SES remains after fully controlling for these factors. There was some convergence across SES groups in the youngest cohorts, but apart from that the differentials were quite constant over time in absolute terms. These results suggest that today's pattern of mortality inequality by SES is of a recent origin coinciding with the development of modern medicine and welfare society.

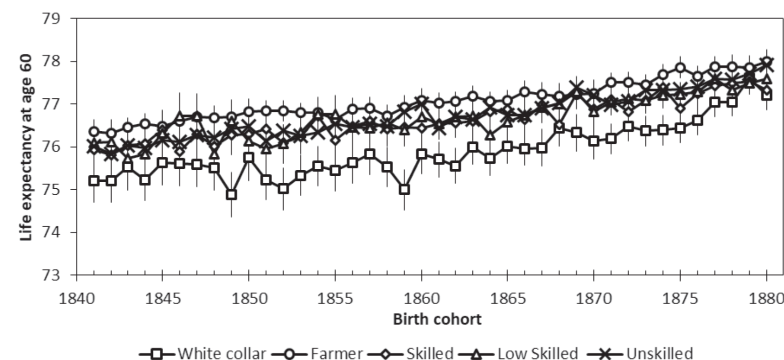


Figure 1. Predicted life expectancies across cohorts from OLS estimations (n = 548,318)
Notes: The vertical lines indicate 95% confidence intervals. Model controls for migrants status, marital status, urban residency and is estimated using parish fixed effects.
Sources: The Swedish Death Index, 1901-2013, published by the Federation of Swedish Genealogical Societies. The Swedish 1880, 1890, 1900 and 1910 censuses, published by the North Atlantic Population Project (NAPP, www.nappdata.org).

Infant Mortality and The Repeal of Federal Prohibition

David S. Jacks
Krishna Pendakur
Hitoshi Shigeoka

Exploiting county-level variation in prohibition status, this paper asks two related questions: what were the effects of the repeal of federal prohibition on infant mortality? And perhaps more importantly, were there any significant externalities from the individual policy choices of counties and states on their neighbors? We find that dry counties with at least one wet neighbor saw baseline infant mortality increase by roughly 3%. Treating this as a conservative estimate and cumulating across the six years from 1934 to 1939 would suggest that a substantial number of excess infant deaths could be attributed to the repeal of federal prohibition in 1933. We argue that such cross-border policy externalities should be a key consideration in the contemporary policy debate on the prohibition of illicit substances.

Notes

Life Expectancy and the Diffusion of Medical Knowledge in the Long Twentieth Century

Daniel Gallardo Albarran

Joost Veenstra

The twentieth century has witnessed improvements in health without parallel in human history. Average global life expectancy at birth increased from 32 years in 1900 to 70 years today (Riley, 2005). Yet the rate at which health improved varied considerably across countries and time. This cross-country variation is typically ascribed to two factors. First, to differences in the pace of economic development and, second, to the diffusion of medical knowledge across countries (Deaton, 2013). In this paper, we analyze the endogenous relationship between these two elements by tracing the diffusion of medical knowledge from high to low income countries during the twentieth century.

Using Data Envelopment Analysis (DEA) we estimate health functions (or 'Preston curves') that relate life expectancy to income levels for a set of both rich and poor countries between 1900 and 2000. In contrast to Preston's (1975) seminal work and subsequent research, we provide for the first time health functions that can measure 'local' gains in medical knowledge; advances in health technology that are realized predominantly in high income countries and that do not immediately spill over to poor countries (e.g. treatments of respiratory and cardiovascular diseases as opposed to hygienic medical practices based on the germ theory of disease).

To analyze the diffusion pattern of medical knowledge across countries and time during the twentieth century, we will provide a two-step analysis using a balanced sample of 29 countries with data on life expectancy at birth and income per capita. First, we use DEA with a subsample of 14 Western countries where most substantial medical breakthroughs have taken place. Using this sample, Figure 1 presents health possibility frontiers (HPF) in selected benchmark years during the analyzed period. To interpret them, consider the following example. In 1910, countries with an income level of 1,000 US dollars (PPP-adjusted and in 2011 constant prices) had the potential to attain a life expectancy of about 42 years. This potential increases as countries get access to more economic resources, resulting in higher consumption levels, better housing, etcetera. However, these income-driven gains in life expectancy become increasingly difficult - as captured by the diminishing marginal returns of the health frontier - and stop after reaching a maximum life expectancy of about 55 at an income level of roughly 2,000 US dollar. By 1910 countries such as Britain or the Netherlands already enjoyed income levels well beyond that point. Yet this extra income had no effect on life expectancy because they battled diseases like tuberculosis, for which there simply was no cure available at the time, regardless of a country's level of economic development.

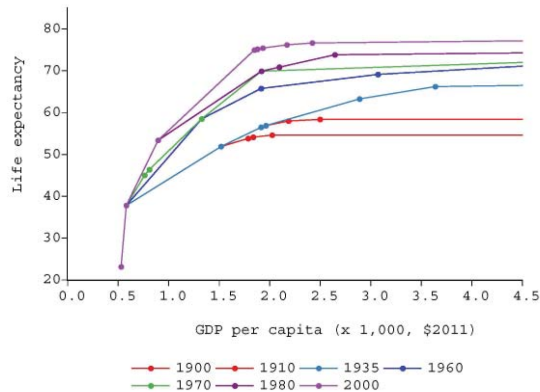


Figure 1. Health Possibility Frontiers in the 'West', 1900-2000

Over the twentieth century, the emergence of new methods of disease prevention and treatment (e.g. vaccines, antibiotics, etcetera) has dramatically increased the potential to achieve high levels of health. Whereas an income level of 3,000 US dollars could achieve a life expectancy of around 55 years in 1900, by 1960 this figure had increased to almost 70 years. After mid-century, the HPF no longer shifts upwards at this level of income, but it still does at higher income levels. This suggests that within Europe new medical knowledge was applied only locally, at increasingly high income levels.

What explains this shift? Before WWII, most of the increase in life expectancy at birth is the outcome of relatively cheap investments that reduced the incidence of infectious diseases (especially among infants and children), such as clean water supply, efficient systems of waste disposal or improved habits in the domain of private hygiene. In the second half of the twentieth century, health-improving technologies implied invasive medical treatments, made possible only through substantial investment in R&D, that were much more intensive in human and physical capital (and therefore income dependent) than those of the pre-1950 period.

To analyze whether the described pattern holds at the global level, in Figure 2 we present the results of the same analysis, but now including all countries in our sample. A comparison between Figures 1 and 2 shows that the HPFs in 1900, 1910 and 1935 were almost identical between the two samples, but differed substantially afterward. This implies that from 1900 until 1935 western countries determined the global frontier by developing and applying cutting-edge medical knowledge and that this knowledge was not yet applied in other places. By 1960 the global HPF has shifted upward considerably, also in the range of economic development levels well below that of the rich European countries. We do not interpret this as new knowledge being created in developing countries, but rather as delayed knowledge spillovers from developed countries. Medical knowledge could be adopted at levels of economic development much lower than those at which this knowledge was created in the first place.

As between 1935 and 1980 the largest shifts of the frontier take place at relatively low income levels, it appears that the diffusion of medical knowledge to developing countries had a much more substantial impact on global health improvements than the creation of new knowledge in developed countries. Afterward, however, between 1980 and 2000, the frontier moves out equally fast at high and low income levels, from which we can infer that both mechanisms were simultaneously at play. This is important, because without further medical innovation, there would be no possibilities left to improve health once the existing stock of knowledge has fully diffused throughout the world.

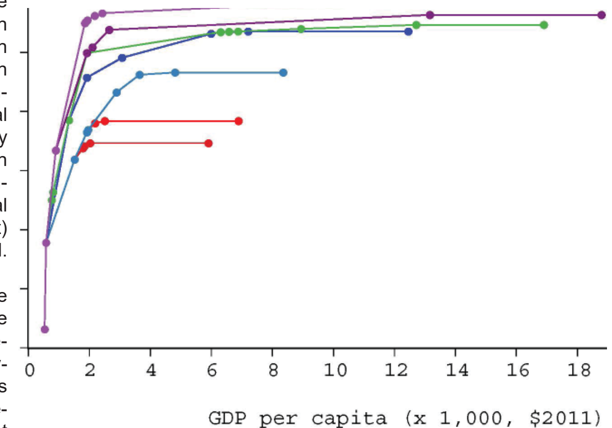


Figure 2. Health Possibility Frontiers in the 'West and the rest', 1900-2000

Health Responses and Social Returns to Sanitary Investments in Finnish Cities, 1880s-1960s

Sakari Saaritsa

Jarmo Peltola

The paper uses longitudinal data on 45 Finnish cities to estimate the effects of water improvement on urban morbidity and mortality from the 1880s to the 1960s, and their potential social returns. Available data enables the construction of city-level time series on various outcome variables, such as the crude death rate, the infant mortality rate, mortality from waterborne vs. other illnesses, and non-lethal morbidity by disease. Local data on exact timing of initiation and improvement of water services (piped water, sewers, filtration, chlorination) makes it possible to conduct time and entity fixed effects analysis on key interventions, simultaneously including various city-level controls (population, public services, etc.). This produces estimates on the share of mortality/morbidity change brought about by the initiation and upgrade of water services in cities. As a late industrializer and a late urbanizer, Finland is potentially an interesting addition to the discussion on the factors behind the great Western mortality decline. Following the growing literature on social returns to the health improvement caused by sanitary investment (e.g., Beach, Ferrie et al., Typhoid Fever, Water Quality, and Human Capital Formation, JEH 2016; Kesztenbaum & Rosenthal, Income versus Sanitation: Mortality Decline in Paris, 1880-1914, PSE Working Paper 2014) it will be possible to extend to the effects on, and interactions with, other dimensions of human development, such as income (tax revenue) and education (school enrolment).

Long-Run Consequences of Exposure to Influenza at Birth: Zurich 1889/1890

Ulrich Woitek

Joël Floris

Giacomin Favre

Sonja Glaab-Seuken

An increasing number of studies shows negative long-run effects of adverse early life conditions on educational achievement, labor market outcomes, morbidity or mortality later in life. A unique data set for Zurich recruits examined before the outbreak of the First World War allows us to look at channels for these effects in a historical context: in addition to individual information on body measurements, we also have data on physical and intellectual fitness at age of recruitment, measured by the performance at a sports test and the pedagogical examination. The literature on the long-run effects of influenza shows that pregant women are especially vulnerable and that the channel through which the fetus is affected is not a direct viral effect but the inflammatory response of the mother. This has potentially long-run effects on the individual. There is a body of research on the consequences of the Spanish Flu 1918/19, which we cannot study, given that the recruits in the date set were born in the 19th Century. But some of the recruits were exposed to an influenza pandemic at birth, the so called Asiatic or Russian Flu 1889-1890.

The largest 19th Century pandemic broke out in the winter of 1889/1890 and was characterized by wavelike recurrences in the succeeding years. Similarly to the Spanish Flu, 1890 saw an increase in the proportion of deaths in the age group 20-40 years. Other than in the rest of Europe, where the epidemic spread from the Northeast to the Southwest, it arrived in Switzerland in the West in November 1889 and spread quickly across the cantons First cases for the city of Zurich were reported at the end of November/beginning of December. The overall peak of the number of dead was January 1890, followed by outbreaks in April/May 1893 and January 1894. For Zurich, estimates for the number of infected persons range between %20 and %70. We find that the recruits potentially affected in utero by these waves were about 0.5cm smaller than the others, and showed a reduced performance in the pedagogical examinations, especially with respect to reading and essay writing. On the other hand, physical abilities did not react to the exposure.

Indonesian Regional Development under Suharto: A Comparative Perspective on Key Socio-Economic Differences and their Impact on Manufacturing SME Development, 1966-2006

Greta
Seibel

Indonesia is counted as one of the Southeast Asian Tigers for having followed similar industrialisation strategies as the East Asian Tiger economies, yet the history of its economic development and with that similarities and distinguishing characteristics remain understudied. The East Asian industrialisation model is characterised by state-led industrialisation that moves from import substitution towards export oriented growth, employing several policy tools, most prominently the promotion of selected industries through infant industry protection. Rapid economic growth was said to be accompanied by increased income equality as well as building a business-friendly environment. According to the World Bank's East Asian Miracle report, one of the features of the East Asian growth model was the 'principle of shared growth'. Wealth was shared with the middle and poor classes through land or other agricultural reforms, but also by encouraging SME development through targeted support-policies. In the case of Indonesia, Suharto and his New Order government began to restructure the economy when he came to power in 1966. The government's development objectives were published in a series of five-year economic development plans since 1969, which included setting out economic growth targets and industrial policy goals. While the rise of business conglomerates, similar to Korea, and the strength of state-owned enterprises, similar to Taiwan, have both become key features of the Indonesian business landscape, it is less clear how these changes have affected the overall business landscape.

The history of Indonesian SME development and the role of government policy therein remains an understudied issue. There is an extensive debate about whether SMEs contribute to increased income equality or poverty alleviation. Proponents of SMEs argue for their labour-intensity and hence employment creation. It is difficult to imagine increased (regional) income equality without a stronger role for SMEs in the case of Indonesia given the geographically dispersed population and remoteness of a large part of the country. Of the few studies that have worked on SMEs in the whole of Indonesia, only few have systematically analysed differences at the regional level. Tulus Tambunan has worked extensively on Indonesian SMEs, but focuses largely on developments since the 1990s and on cottage and small scale industries. Most work on SMEs by economic historians and anthropologists has focused on regional case studies (e.g. Sarah Turner's work on small entrepreneurship in Makassar, South Sulawesi) and/or specific industries (e.g. various works on furniture manufacturing SMEs in Jepara, Central Java, William Cole's study of the Balinese garment export industry). This paper fills the gap in the literature by expanding the scope to the entire New Order period (1966-1998), to account for the policy shifts that made Indonesia a Southeast Asian Tiger, and to the entire country to account for differences in regional development.

The main hypothesis is that investments into socio-economic factors such as education and health should lead to human capital improvements, meaning healthier and stronger workers as well as better educated entrepreneurs, which in turn should improve worker productivity and production efficiency. The main methodology to test this hypothesis is regional differentiation, by looking at how socio-economic differences link to differences in SME development between provinces. Indonesia being a Southeast Asian Tiger, the economy moved from import-substitution towards export orientation during the New Order period. However, it is less clear which other traits of the Asian model it shares. According to the East Asian development model, we would expect increased income equality and therefore, arguably, a stronger role of SMEs. A core question behind this research is whether Indonesia shares these features of the model.

When Suharto resigned in 1998, unable to resolve growing dissent and control anti-government protests, the widespread view among the population was that the government's economic policies and practices had led to great income inequalities. However, Suharto's government was the first in Indonesia to prioritise regional development, driven by the objectives of improving welfare distribution and income equality, and with that achieve greater political and economic stability. Some of these regional differences can be explained by differential policy treatment by Indonesian governments; vice versa some of these differences explain why some policies are more effective in some areas than in others. Part of this links to factor endowments – policies can change factor endowments (e.g. educational investments in selected regions will lead to differences in human capital), while differences in factor endowment in turn mean that the same policy may have different effects in different regions (e.g. policies strengthening local entrepreneurship can be expected to have stronger effects in regions with higher education levels and where people have more business experience). This paper compares key socio-economic factors which have affected the role of SMEs in the regional economy and their development. Addressing the questions of how these socio-economic factors link to changes in firm size distribution, how the role of SMEs developed and the role government policies played in these processes helps us to understand the wider structural changes that the Indonesian economy underwent during the New Order period and its interventionist policies.

The socio-economic factors this paper explores in relation to SME development are education, health and gross regional domestic product (GRDP). Suharto aimed to achieve universal primary education and improve basic healthcare for all. Therefore, this paper looks at the number of primary schools built by the government and analyses the changes in highest educational attainment and average years of schooling. For health, I track the number of community health centres and hospitals, and analyse the change in infant mortality rate. To assess general regional economic development, I have constructed a provincial GRDP database in 2000 constant prices for the entire New Order period using Pierre van der Eng's recalculation of Indonesian GDP. Finally, these socio-economic developments are linked to changes in the SME sector. With growing economic development, I would expect to find growth in the average firm-size. With increases in health and literacy, the growth in human capital can be expected to lead to increased labour-productivity, as workers become healthier and better educated and firms become more efficient. These changes are measured here in number of manufacturing enterprises and workers as well as value added per worker by firm-size category. For this exercise, I constructed a database on value added per employee according to firm-size category for 1974/75 to 2006 by province. This is the first database that constructs a provincial or even regional comparison of manufacturing value added over the New Order period. This regional component allows for an analysis of the variety in Indonesian industrial development and business landscapes, and the great regional differences in the role SMEs play.

Why had illegitimate children a lower life expectancy? Central Europe before World War I

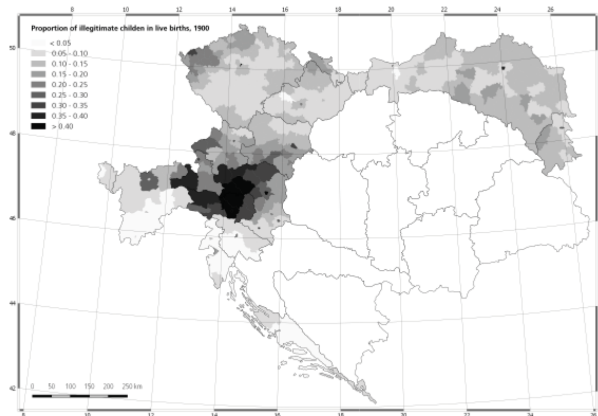
Michael
Pammer

The paper examines the mortality risks of children born out of wedlock in Cisleithania between 1880 and 1914. Illegitimate children generally had a higher mortality rate than legitimate children. The paper distinguishes between factors that worked for illegitimate children and part of legitimate children similarly, and factors that worked for illegitimate children exclusively.

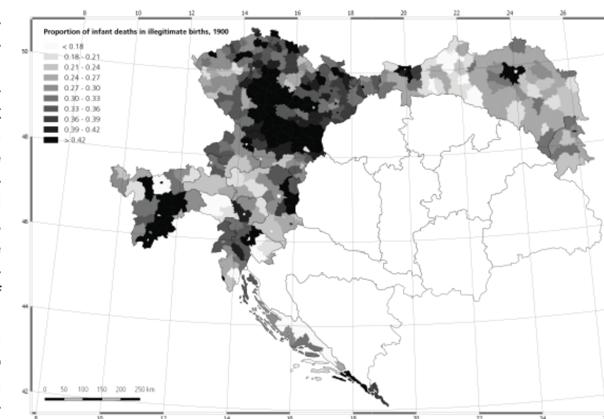
Illegitimacy rates reached from little above zero in some lands to 45 percent in other lands, and to 60 percent in single districts. They were particularly high in the eastern parts of the Alpine lands (Carinthia, Upper Styria, and parts of Salzburg) (Map 1). Illegitimacy rates were closely connected with the income status and a number of other factors such the size of farms and the resulting proportion of farm servants (typically not related to the farm owners) in the labour force, inheritance patterns, marriage patterns and lifelong celibacy, urbanisation, religion, ethnicity and other factors. Generally, illegitimacy was much more frequent in a lower class environment due to lower incomes and restricted opportunities of marriage, and it was more frequent in an urban environment due to the lower degree of social control prevailing there. Some regions developed a specific profile apart from economic factors; it seems that a high degree of illegitimacy, once established, changed mentalities and the acceptance of illegitimacy subsequently.

Some of the factors for illegitimacy such as income, urbanisation and medical infrastructure, are directly connected to mortality; they work similarly for illegitimate children and those legitimate children who lived under similar economic conditions. In order to take these factors into account, mortality rates of legitimate children are used as (correlative) factors in the models. As expected, the correlation between mortality rates of legitimate and illegitimate children is highly significant. The rates of stillbirths, on the other hand, show no such correlation with either mortality numbers.

Factors working directly and almost exclusively for illegitimate children include family structures and working conditions of parents, the necessity to put children into foster families, and mentalities concerning illegitimacy and the marginalisation of those children. In regions where illegitimacy was more common, the care for illegitimate children was relatively easy to organise because a major number of families took foster children and cared for them adequately. In areas where illegitimacy was less frequent, the marginalisation of those children and their mothers was stronger, the necessary infrastructure for foster care was underdeveloped, and, consequently, the care for the children was bad. Therefore, generally mortality rates among illegitimate children were higher in regions where illegitimacy rates were lower (Map 2). One major exception is the north-east of the country (Galicia, Bukovina) where both illegitimacy numbers and mortality numbers are relatively low.



A major methodological problem arises from the migration of illegitimate children. Many of them were translocated to foster families in different areas soon after birth, which results in a distortion in the mortality numbers. The problem is less relevant in rural settings where foster families were often chosen in the same locality or nearby, and the children stayed in their districts of birth. In some cities, however, many children were born in foundling hospitals and put to care in the countryside, which means that they left their district of birth indeed. Therefore cities may display large numbers of illegitimate births, but relatively low numbers of deaths of those children simply because the children lived and died elsewhere. The problem is discussed using the data from the Viennese foundling hospital, the largest in the country, which allows a crude estimate of the possible distortions arising from this particular factor.



The analysis is conducted for Imperial Austria, covering a population of close to 30 million inhabitants. Data are available on the district level, for about 400 districts. For birth numbers (live births and stillbirths, by legitimacy status and sex), mortality (by age, sex, and legitimacy status or causes of death), and a number of other variables (marriages, medical supply, climate conditions), annual data from 1881 to 1913 are available. Other relevant data come from the decennial censuses and from the income tax statistics. Sources are official statistics collected by the Central Statistical Office.

The Old Men in the Census

Chris Vickers

José-Antonio Espín-Sánchez

Salvador Gil-Guirado

Inequality and social mobility are fundamental economic issues, yet population-level statistics about these variables in the pre-modern era are difficult to construct. The contribution of this paper is twofold. First, we measure and analyze inequality and social mobility in Murcia (Spain) during the 18th century, a period that covers the pre-industrial world as well as the very early stages of industrialization in Europe. The records we use allow us to study social mobility with a focus on women and their relation to their children and spouses. As a methodological contribution, we propose a new estimation method using the information in these family trees to independently identify three parameters: the effect of the father on the child, the effect of the mother on the child and the degree of assortative mating.

The voluminous literature on intergenerational mobility has generally relied on father-son links, largely for reasons of data availability. More recently, economists have extended the analysis to more complex family dynamics. For example, Long and Ferrie (2015) construct links between fathers and grandfathers, while Olivetti and Paserman (2015) construct pseudo-links based on names between fathers and daughters, in addition to sons. Olivetti et al. (2016) extend this to method to multiple generations. Other recent work, most prominently Clark (2014), has used these surname-based pseudo links to study social mobility in different countries, often over long time spans. That is, because our baptismal records contain information about the names of the baptized individual, the parents, as well as all four grandparents, we can construct four male links from the baptism records to the censuses: the son, the father, as well as both grandfathers. Importantly, linking the maternal grandfather allows us to construct an estimate of the transmission of status from the mother to the son without actually linking her to any census records. The economic status of the mother can be particularly important in societies with dowries (Botticini and Siow, 2003). In particular, the size of the dowry can shape intra-household bargaining power (Anderson and Bidner, 2015). If women have different preferences than men, whether the household wealth was inherited mostly through the father or the mother can have important consequences for social mobility, even when the father earns a greater share of the household income (Chadwick and Solon, 2002). With the constructed family trees, we can study status transmission from both the father and the mother to all children in the household.

There are two main results. The first is that we can get a consistent estimate of the direct effect of the father on the son by using the characteristics of the paternal grandfather as a non-linear instrument. The second is that we can consistently estimate all three parameters of interest (the direct effect of the father, the direct effect of the mother and the degree of assortative mating), by using the characteristics of both grandfathers (paternal and maternal) as non-linear instruments. This result is surprising since we can get all three parameters without observing the characteristics, such as the income, of any female in the population. An important channel which can affect the degree of social mobility is assortative mating. With the emancipation of women and their increased access to higher education, women now are as likely as men to have university degrees, and these changes have increased assortative mating. We know very little about how assortative was the mating in the pre-industrial era. Goñi (2015) shows how assortative mating among the high classes of England increased inequality, but we are not aware of any study of mating among the low classes. Our empirical method generates an estimate of the degree of assortative mating, characterized by the correlation between the incomes of the families of the bride and the groom.

In addition to studying social mobility, we examine inequality and how that changes over time using the full population data. Recent work by Piketty and co-authors, most prominently in Piketty (2014), has brought renewed attention to the increase in inequality in recent decades. Moreover, they compare current levels with the high level of inequality observed during the 19th century and the Victorian era. Their results show lower levels of inequality during the period immediately after WWII, and a steady increase during the second half of the 20th century. Based on that, they predict that inequality will increase in the near future to levels as high as those observed in the past. Inequality is higher than today during the 18th century in Murcia. We observe no change in inequality from 1734 to 1756. We observe a small increase in inequality from 1756 to 1786 due to a relative decrease in income in the third and fourth quintiles. The effect is consistent with the Kuznets hypothesis that the early stages of industrialization increases inequality by reducing the number of artisan jobs while increasing the number of laborers and the income of capitalists. 1786 is still early for industrialization in Murcia and the effect is still small by 1786.

There is an ongoing debate on whether inequality will increase in the near future, or whether the recent increase in inequality is due to industrialization and is thus inevitable. Although these questions are interesting and deserving of debate, a more fundamental question is whether inequality is actually high today by historical standards. Has industrialization increased living standards all around the world at the expense of increasing inequality, or has it actually also reduced inequality? Without data from before the Industrial Revolution, we can only get partial answer to that question by looking at events such as the reduction in world inequality due to the increases in incomes in China and India, but not whether China and India are more unequal than 300 years ago. Piketty (2014: p 26) claims that when the rate of return on capital is greater than the growth of the economy inequality will increase: "People with inherited wealth need save only a portion of their income from capital to see that capital grow more quickly than the economy as a whole." Although this statement might be true in the 21st century when income is not positively correlated with the number of children, it may not hold in the pre-industrial era. If, as we show, wealthier households have more children and they have to divide their wealth among them, "people with inherited wealth" may not see that capital grow so quickly. In other words, the return on capital per would have to be modified downwards to account for the greater number of children. This is particularly important in Castile, where partial inheritance has been the norm since the time of the Visigoths.

With the data we have collected already, we can see in how inequality stayed constant in Murcia in 1734-1756 but increased slightly in 1756-1786, as the Gini index increased from 0.54 to 0578, especially for the 3rd and 4th quintile. This increase in inequality over the last third of the 18th century could be due to the beginning of the Industrial Revolution. The groups of artisans would be the most affected. We do see indeed a reduction in the number of artisans and an increase in the number of day laborers in 1756-1786. Inequality may have increased even more during the 19th century. This increase in inequality would be reversed following the Kuznets (1955) hypothesis as Spain industrializes, until reaching current levels of about 0.3-0.35. However, we do not have available data for the 19th century yet. The inequality results presented here are purely descriptive and do not require matching. Nonetheless, they are interesting on their own right and reinforce the idea that studying inequality and mobility in the pre-modern era is important.

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Credit Risk and Default Rates in Medieval London, 1285-1363

Tony Moore

Miriam Marra

Perhaps the most basic question facing any would-be lender is simply: will I get paid back? If the expected risk of default was high, then the lender would either have to compensate by increasing the interest rate charged or else not extend credit at all. Indeed, the scattered evidence suggests that, during the Middle Ages, private interest rates were in the order of 15-25% per annum. This has been attributed to the cost of capital, the usury prohibition, the illiquidity of thin credit markets and the difficulties in enforcing debt agreements. It is more difficult to assess the role played by default or credit risk, in part because of the lack of data suitable for quantitative analysis.

One exception is the Statute Merchant debt registration system introduced by Edward I in 1283. Edward I recognised the link between defaults, availability of credit and economic growth when he promulgated the Statute of Acton Burnel in 1283 and of Merchants in 1285 (later augmented by Edward III's Statute of the Staple in 1353). The prologue to Merchants bemoaned that:

Forasmuch as Merchants, which heretofore have lent their Goods to divers persons, be fallen in poverty, because there is no speedy remedy provided, whereby they may shortly recover their debt at the day of payment; and for this cause, many merchants do refrain to come into the realm with their merchandise, to the damage of such merchants and of all the realm.

The Statute system introduced official debt registries in important trading centres and an expedited debt collection process. For a small fee, credit transactions could be registered and recorded locally in a recognisance roll. In case of default, the creditor could apply for a certificate testifying to the details of the debt, which would be sent to the appropriate royal official instructing them to seize the debtor's goods or property. Some 35,000 such certificates, dating from 1283 to 1639, still survive in the National Archives and have been used to study both local credit networks as well as broader trends in the medieval English credit market.

Unfortunately, almost all of the original recognisance rolls have been lost. This raises two important questions. First, what proportion of the original transactions went into default? Previous research has assumed a default rate of roughly 20% and that this remained constant throughout the period. Second, are the certificates representative of the full sample of original transactions? If certain types of debtors were more likely to default (or creditors more likely to prosecute) then they may be overrepresented in the sample of certificates compared to the full universe of credit transactions.

This paper presents a quantitatively-rigorous assessment of the characteristics of the private credit market in medieval England, drawing on ten surviving recognisance rolls from the city of London, covering thirteen years during the period from 1285 to 1363. These rolls record a total of 2,791 initial credit transactions. Summary statistics are shown on table 1 below. The statutes were largely used for short-term credit (62.7% had a maturity of less than six months and 85.4% less than one year) of moderate value (the median value is between £10 and £20). Analysis of the parties suggests that it was linked to trade credit.

Second, by matching the original London recognisances against the 5,824 certificates issued by the London registry over the same timeframe, we can identify at least 649 recognisances that defaulted (and were then prosecuted). This allows us to calculate a (minimum) default rate of 23.3% for these loans, which is not far from the 20% assumed by the historiography. However, there were significant variations from year to year, with a minimum of 13.1% in 1363 and a maximum of 29.9% in 1298/9.

Finally, by comparing the characteristics of the full sample of recognised loans with the subsample of defaulted loans, we can suggest whether there were any particular factors that may have increased credit risk. We created a dummy variable with a value of 0 if no certificate was issued or 1 if a certificate was issued concerning that recognisance, thus a positive coefficient indicates an increase in the chance of a certificate being issued, and a negative coefficient a decrease. Some significant risk factors are shown on table 2 below. In short, the probability that the debt is executed increases if the debt has longer maturity or a higher face value; if it involves at least one debtor from outside London or if the creditor is from Italy or the Low Countries. In addition, the probability of a certificate being issued increases if the creditor is of 'high status' (aristocratic, religious, or urban) and decreases if the debtor is of 'high status'. The gender of the debtor does not seem to influence the probability of execution. However, if the creditor is a femme sole (a woman appearing as unique creditor, not alongside a man), then the probability of execution increases but if a woman appears as creditor jointly with a man then the gender of the creditor becomes insignificant. Over time, the default rate decreases, especially after 1348. Note that there is an ambiguity in these figures – the proportion of certificates issued may reflect an increased risk of default, or that certain types of creditors were more likely to resort to legal process.

Overall, our analysis suggests that the certificates are a useful source for broad trends in medieval credit, but that they need to be used with care. In particular, default rates did vary from year to year and decreased over time, so using the certificates alone to reconstruct long-run changes in the volume of credit is questionable. In cross-section, the certificate data will tend to overstate the size of the debt, the proportion of foreign creditors and of country debtors relative to Londoners.

Table 1: Descriptive statistics

Roll	DateStart	DateEnd	No Rec	Debt Sum	Debt Mean*	Debt Median*	No Cert	Default Rate
1	08/01/1285	29/11/1285	235	£3,470	£14.89	£7.57	41	17.4%
2	27/02/1291	06/02/1292	275	£6,385	£25.04	£11.09	77	28.0%
3	16/02/1293	22/02/1294	218	£6,545	£31.77	£15.00	57	26.1%
4	23/11/1295	16/11/1296	144	£3,475	£25.18	£13.33	32	22.2%
5	29/11/1298	19/11/1299	177	£7,179	£43.25	£20.00	53	29.9%
6	08/07/1309	27/10/1310	862	£30,502	£36.75	£16.00	212	24.6%
8	13/11/1313	20/10/1315	160	£4,292	£28.05	£13.00	43	26.9%
9	05/11/1315	14/10/1317	139	£3,971	£28.78	£13.00	28	20.1%
10	26/01/1345	24/01/1346	436	£21,283	£51.41	£26.67	87	20.0%
11	30/05/1363	27/05/1363	145	£11,625	£88.07	£40.00	19	13.1%

* The mean and median refer to a 'trimmed' sample excluding a small number of very high value debts (over £1,000).

Table 2: Credit risk factors

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	-1.0634	0.0923	-11.5156	0.0000
DEBT_MATURITY_YEARS	0.0411	0.0186	2.2099	0.0271
LOG_DEBT_VALUE	0.1094	0.0243	4.4953	0.0000
CREDITOR_ITALY	0.4355	0.1515	2.8742	0.0041
CREDITOR_LOW_COUNTRIES	1.1023	0.4659	2.3661	0.0180
DEBTOR_GREATER_LONDON	-0.3468	0.0784	-4.4222	0.0000
DEBTOR_SOUTHEAST_ENGLAND	0.1882	0.0746	2.5223	0.0117
DEBTOR_EAST_ENGLAND	0.2350	0.0721	3.2600	0.0011
CREDITOR_HIGH_STATUS	0.1000	0.0601	1.6657	0.0958
DEBTOR_HIGH_STATUS	-0.1350	0.0679	-1.9883	0.0468
CREDITOR_FEMME_SOLE	0.3634	0.2028	1.7914	0.0732
POST_GREAT_FAMINE_1317	-0.2350	0.0835	-2.8153	0.0049
POST_BLACK_DEATH_1348	-0.2694	0.1557	-1.7300	0.0836

Should Monetary Policy lean against the Wind? New Quasi-Experimental Evidence from the U.S. Phelan Act of 1920

Kilian
Rieder

I exploit a quasi-experimental setting to provide an empirical contribution to the long-standing debate whether central banks should use conventional monetary policy tools to “lean against the wind” (henceforth LAW). Here, I refer to “conventional” LAW to describe the monetary policy actions of a central bank which implements changes in its policy rate explicitly in order to address specific financial stability concerns, for example to halt an ongoing credit boom. Thus, LAW policies are different from more targeted macro- and microprudential tools, such as e.g. LTV ratios, countercyclical buffers and liquidity regulation.

The extant literature points to possible benefits of LAW in the form of a lower probability or smaller dimension of future financial crises (BIS 2016). Recent work on the role of credit growth in predicting crises and crisis severity appears to back these conclusions (Schularick and Taylor 2012). Among the costs of LAW, authors highlight a weaker economy if no crisis occurs and the possibility that the cost of a crisis, once it occurs, could be higher because the economy enters the crisis weakened as a consequence of LAW (Svensson 2017).

Almost all recent work on the question of the costs and benefits of LAW is theoretical and the few existing empirical contributions take a macro or survey perspective (e.g. Brunnermeier and Schnabel 2016). This lack of rigorous empirical studies using micro data is surprising given the ongoing debate about which instruments – from the range of possible conventional, macroprudential and microprudential tools – central banks should resort to in order to adequately fulfill their financial stability mandates newly gained in the aftermath of 2008.

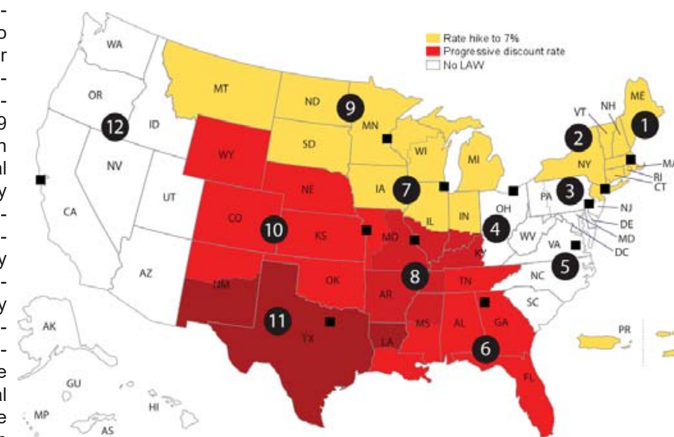
In this project, I draw on microdata to assess the effectiveness and macroeconomic consequences of LAW policies explicitly designed to halt a credit boom gone bad in the U.S. banking sector following World War I. My empirical strategy relies on policy differences across Federal Reserve districts that derived from the decentralized way the Federal Reserve System implemented monetary policy in the 1920s (Meltzer 2014). At this time, the Board did not centralize decision-making, and each Federal Reserve district decided upon and enforced its own interest rate policy. In an explicit attempt to contain the post-war boom and to curb the expansion of central bank credit to the banking sector, some Federal Reserve Banks (FRB) implemented LAW policies in spring 1920, whereas others did not. While the individual response of regional FRBs was certainly endogenous to the strength of the preceding local credit boom, the geographic variation in policies generates a unique setting to test the effect of LAW directly around the district borders (c.f. Richardson and Troost (2009) for a seminal article on using Federal Reserve border discontinuities).

The project employs regression discontinuity design (RDD) to tease out the effect of LAW policies on bank-level leverage using individual national bank balance sheets from OCC reports, Randy McNally’s and Polk’s bankers directory. Since LAW policies varied in interesting ways from district to district, I am also able to analyze whether the specific design of LAW mattered. Moreover, in late 1920, the United States experienced a severe recession driven by an exogenous collapse in agricultural commodity prices (Rajan and Ramcharan 2015). My empirical set-up therefore allows for a test how LAW policies implemented in spring 1920, i.e. before the downturn hit, affected financial and economic outcomes during the subsequent recession. In other words, I can employ the RDD methodology to shed light on the relative costs and benefits of LAW in general (versus the control group of non-LAW districts), and the various LAW designs more specifically. For this purpose, I use a novel data set on county-level transfers of farm real estate published by the Bureau of Agricultural Economics, county-level data on bank suspension rates compiled by the FDIC and county-level data on tax returns from the US Bureau of Internal Revenue.

Why go back as far as 1920 to investigate the impact of LAW policies? I argue there are several cogent reasons, in addition to the unique empirical setting explained above, why this episode in U.S. history constitutes an enticing environment for an empirical assessment of LAW. First, official Federal Reserve monetary policy during the 1920s was very much concerned with the volume and quality of bank lending, the System’s aim being to “support high-quality bank lending, but not speculative lending” (Rotemberg 2013). The early Federal Reserve’s particular focus on the quality and quantity of loans granted by the banking system, which resurfaced this prominently only after 2007, is not well known and perhaps surprising from a modern perspective. More importantly, it explains why the reference to LAW in the context of the early 1920s in the United States is much less exotic and anachronistic than it appears at first sight.

Second, until the mid-1920s, no “stigma” was yet attached to the use of the System’s standard standing facilities (the discount window and advances, then the System’s only source of income yielding assets), and commercial banks thus had - and were even encouraged to have - extensive recourse to the System as an additional source of funding (Gorton and Metrick 2013). Member banks borrowed heavily from the Federal Reserve System to pass on loans at higher costs to the wider financial sector and economy. Between July 1919 and May 1920, the loan portfolios of national banks increased by 22% on average (Annual Report of the Comptroller of the Currency 1919-1920). The origins of the boom partly lay in an overly accommodative monetary policy, reminiscent of more recent episodes. Fiscal dominance during the Great War led to an environment of low interest rates that catered to the need of government finance (Romer 1988).

Third, the LAW policies pursued in Federal Reserve districts varied in their specific design. Whereas some FRBs implemented general policy rate hikes from 5 to 7%, others drew on a newly gained power to enact so-called progressive discount rates (PDR) in their district. The Phelan Act of 1920 enabled districts to establish a PDR on all lending in excess of each member banks’ basic line (Goldenweiser 1925). Even the design of the PDR scheme varied across the four adopting districts: whereas Kansas City and Atlanta adopted a plan that calculated the basic line on the basis of actual reserve balances with the FRB, the St. Louis district focused on required reserves and the Dallas FRB drew on capital and surplus of member banks to compute the basic line (Wallace 1956). In all districts borrowing until the basic line was extended for the standard rate of 6%. On all additional borrowing the member bank paid an extra 0.5% for every 25% by which its borrowing exceeded its basic line. On top of the geographic variation between LAW and non-LAW districts, the variation in LAW design thus allows for a nuanced analysis of whether the details of its implementation mattered for policy effectiveness and triggered differential financial and real effects. The figure below visualizes the borders along districts and the split states that can be exploited by this study (the different shades of red indicate different PDR designs).



How (not) to deal with a Large Banking Sector: A History of Swiss Banking Crises (1906-2015)

Tobias Straumann

Dirk Drechsel

In October 2008, the Swiss federal government and the Swiss National Bank (SNB) stepped in to provide capital and liquidity to UBS, the largest bank of Switzerland and one of the most important financial institutions of the world. This historical incident has raised many questions about the Swiss banking sector, the role of regulation and supervision, and the costs of banking crises. The aim of the paper is to discuss central issues of this current debate by taking a long-run view and to add new insights to the literature (Reinhart and Rogoff 2009, Grossman 2010). Specifically, we try to clarify three questions:

1. In what respect were the causes of the 2008 UBS crisis special relative to earlier banking crises?
2. How do the costs of the 2008 crisis compare with the costs of earlier crises in terms of taxpayer money?
3. Why has Switzerland had such a large banking sector?

1. The first contribution of the paper, the identification of episodes of banking distress, is the empirical pivot of our paper. We propose an indicator measuring the output gap between the potential return on equity and actually achieved return on equity. The output gap is determined by applying Bayesian Dynamic Stochastic Frontier Analysis. This method leads us to identify eight episodes of considerable output gaps. In a second step we classify and discuss these episodes in depth in order to get a better understanding of the dynamics of Swiss banking crises. We distinguish and discuss three groups of banking distress: international shocks (1931-37, 2001-03, and 2007-09), domestic crises (1910-13, 1991-97) and near-crises (1921-22, 1945, 1970s).

2. The burden for the taxpayer varied considerably over the last hundred years. Intuitively, we would expect that the large international crises of the early 1930s and of 2008 were particularly costly, but this is not the case. The most costly incident was the domestic mortgage and banking crisis of the 1990s. Our calculations suggest that taxpayers had to pay roughly 3.5 billion Swiss francs corresponding to about one percent of Swiss GDP. The banking crisis of the 1930s was the second most costly one in terms of taxpayer money. By contrast, the 2008 crisis was profitable for both the Confederation and the SNB. We explain these differences by the decentralized structure of the Swiss regulatory and supervisory system.

3. In the final section, we address the question why Switzerland has had such a large banking sector relative to its GDP. The process went through three stages. We also show that the Swiss authorities never put a break on this excessive growth, even though the public was discussing the issue. The Confederation had been weak, the banking sector had been well organized since the beginning of the 20th century, and the regulatory authorities (Federal Banking Commission and SNB) had no instruments to rein in the ambitious expansion in London and the United States.

Activated history – The case of the Turkish sieges of Vienna

Christian Ochsner

Felix Roesel

Our study shows that the long-gone but arguably irrelevant past is able the shape political behavior if triggered by political campaigning. We exploit a unique historical setting where a local collective memory of long-gone experienced atrocities at the hands of foreign forces meet political campaigning that employs ethnic and religious stereotypes of the former enemy.

After the conquest of Constantinople in 1453, the Turkish (Ottoman) Empire expanded its sphere of influence towards Central Europe. During the 16th and 17th centuries, Turkish troops marched against the Habsburg capital of Vienna several times. There were two major sieges of Vienna in 1529 (Siege I), and 1683 (Siege II). Prior to and during the sieges of Vienna, however, Turkish troops undertook forays in the surrounding areas. They pillaged and plundered individual villages and raped, killed and kidnapped local residents. As a result of these Turkish atrocities, whole regions were razed and substantially depopulated. "Visual history" (for example, historical buildings, memorials, and coats of arms), rituals and the school curriculum transfer these brutal events to the present day.

We link records of Turkish atrocities during the sieges to vote shares in national elections for the right-wing populist Freedom Party of Austria (Freiheitliche Partei Österreich, FPÖ). In 2005, the FPÖ started to campaign against Turks and Muslims and to refer explicitly to "their" vicious crimes during the Turkish sieges of Vienna. There was no campaigning of this kind prior to 2005. Anecdotal evidence implies that anti-Turkish and anti-Muslim campaigning was effective. For example, comments in various internet forums are an excellent case in point. In 2008, for example, one visitor reports on his change in mind towards the Austrian far-right:

"To be honest, I have never voted FPÖ in my lifetime before. Never. However, Strache [the FPÖ leader] is getting more and more attractive. […] Conditions as of 1683 … Okay! I will prepare my guns and move to the Löbelbastei! [Sic – the Löwelbastei was the main target of the Turkish attacks on Vienna in 1683.]"

We show that this kind of anecdotes of a shift in voting intention are particularly pronounced in municipalities with direct exposure to Turkish atrocities during the sieges of Vienna. To see this, we plot FPÖ vote share differences between pillaged and non-pillaged municipalities since the year 1949 to 2013 in Figure 1. Prior to the campaigning in 2005, there are no vote share differences between pillaged and non-pillaged units. After 2005 (election are shaded in Figure 1), the FPÖ starts to gain more electoral support in formerly pillaged municipalities compared to (adjacent) non-pillaged municipalities.

Anti-Turkish campaigning increases FPÖ vote shares by 1.1 to 1.7 percentage points in once pillaged municipalities, depending on the specification. This translates to a persuasion rate of approximately 7 to 11 percent when we compare pillaged to non-pillaged municipalities and account for pre-campaigning differences. This means that around 1 of 10 votes for the far right in a once pillaged municipality is caused by campaigning that activated local history. The persuasion rate is even larger when we account for potential measurement errors and spillovers between adjacent municipalities using a spatial fuzzy regression discontinuity (RDD) approach. Our results hold under various robustness tests. The vote shares of other Austrian far-right populist parties that do not employ anti-Turkish campaigns do not differ among pillaged and non-pillaged municipalities. Additionally, the exposure to pillages by foreign forces other than Turkish troops, e.g., Hussite, Hungarian, Swedish, or French forces, does not explain right-wing voting. Heterogeneity analyses indicate that activation effects are more pronounced in small and more rural municipalities. History thus seems to inhere a potential salience effect.

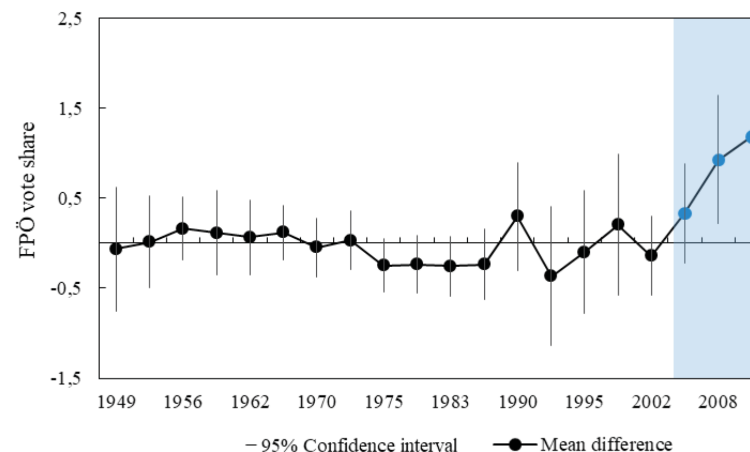


FIGURE 1: FPÖ VOTE SHARE MEAN DIFFERENCES (PILLAGED VS. NON-PILLAGED MUNICIPALITIES)
Notes: The figure shows the mean differences in FPÖ vote shares among pillaged and non-pillaged municipalities in East Austria (n=690). The shaded area indicates the period after the anti-Turkish/anti-Muslim campaign began in 2005. Means are conditional on district fixed effects to compare pillaged with adjacent non-pillaged municipalities. Vertical lines represent the 95% confidence interval (robust standard errors).

Empires Diverging: A Spatial Analysis of Habsburg and German Regional GDP, 1870-1910

Max-Stephan Schulze
Paul Caruana Galizia

This paper examines patterns of regional convergence and divergence in and across the late nineteenth-century Habsburg and German empires - two economies that were both characterized by profound regional differences in geography, resource endowments and incomes. Although displaying broadly similar levels of aggregate economic development in the early 19th century, in terms of per capita product the Habsburg Empire and its economically more advanced Austrian half fell well behind their German neighbour over the course of the century. However, it can be potentially misleading to think in terms of diverging national economies (countries) when sub-national (regional) inequalities mean that more similarities can be found inter-nationally than intra-nationally. Hence the focus here is on the regional dimensions of aggregate economy divergence. Drawing on new GDP estimates for 45 regions across Austria-Hungary and Germany, we, first, ask to what extent German and Habsburg regional GDP inequality levels differed. Second, we use basic spatial analysis to address the question of whether economic change across the regions of Central Europe was characterized by the formation of spatial clusters and whether these extended across national boundaries. The new evidence suggests cross-border clustering and significant income divergence both within such clusters and between them, pointing to the emergence of 'clubs'. Further, our findings point to persistent proximity effects – the farther away from centres of economic activity and technological and industrial advance, the less likely an area is to industrialize itself.

Misreporting in Financial Statements in a Centrally Planned Economy: A Case of Czechoslovak Companies in Late Socialism

Štěpán Mikula
Lucie Coufalová
Libor Žídek

Economies of communist countries of the former Eastern Bloc relied on the system of central planning. The economic plan allocated economic resources and expected outcomes to individual companies, which provided information necessary for plan creation. Failure to meet the plan was sanctioned by cuts of bonuses for employees and eventually by replacement of top managers. The system was allegedly designed to provide strong incentives to managers to meet the plan.

The aim of this paper is to determine whether there was a tendency by the managers to exploit information asymmetry, misreport production possibilities and real outcomes of companies in order to meet the plan. We investigate functioning of centrally planned economy in Czechoslovakia in the 1970s and 1980s. From a political point of view, it was a stable period with no disrupt changes. We use qualitative data from interviews with former managers and quantitative analysis of historical accounting records to achieve this goal.

According to the literature, the whole system worked on the basis of perverse incentives. Managers as well as their principals were motivated to meet the plans by means of performance bonuses and sanctions. The managers were motivated to achieve the planned outputs (or slightly better results) at any price. If the goal was not achieved, they were exposed (as well as their employees) to dangers of not receiving bonuses, an additional fine imposition or, on rare occasions, they could be replaced On the contrary, exceeding the plan increased the probability of hardening the following plans and for that reason it was similarly undesirable. Therefore an extraordinarily good performance was punished and hence the best companies were discouraged from being highly productive. The whole system thus de facto nudged the managers to manipulate the results. In practice, the plan was almost always formally met, which is not surprising.

With regards to the literature review and our expectations, the results of the research corroborated the hypothesis of the existence of plan results manipulation. This statement was proved by both of our methods. The respondents in our interviews admitted that the manipulation with economic results was not uncommon. And we achieved the same results by our statistical data analysis. We performed a set of statistical tests of conformity of outcomes reported by 19 companies which were directly involved in the production of goods and services, their development and retail and operated in South Moravia, Czech Republic (Czechoslovakia) with so-called Benford law. The results of statistical tests suggest probable widespread occurrence of real outcomes manipulation.

The Maturation and Dislocation of the UK Stock Market: Railway Shareholders, 1870 – 1922

Áine Gallagher
Graeme G. Acheson
Gareth Campbell
John D. Turner

The British capital market expanded substantially in the five decades after 1870 and share ownership became increasingly democratised. Although we know something about the extent of female ownership in certain companies during this period, we know very little about who was investing in railways, the largest companies on the stock market at the time.

As well as not knowing much about who invested in the largest companies, we know very little about investor behaviour in this era. How did the expanding number of passive investors in the UK equity market behave? Did their behaviour conform to that of standard asset pricing models? Did they have a local bias? To what extent did they diversify across assets? What were their investment horizons?

In order to address these questions, we use a unique data set which provides us with data on who invested in railways, their address and socio-occupational status. This data comes from the Railway Shareholder Address Books of the following: London and North Western (1915); Great Western (1893, 1920); North Eastern (1921); Caledonian (1897, 1922); North British (1870, 1889, 1902 and 1915); Glasgow and South Western (1921); London and Blackwall (1916). In terms of market capitalisation, these seven railways are ranked 1st, 4th, 5th, 19th, 27th, 46th and 119th in 1913 amongst all UK public companies. In total, we have data on over 423,000 individual shareholders.

The two largest constituents in the shareholder base comprise female investors and members of the rentier class, with the proportion of females growing throughout the period. Shareholder addresses indicate a significant proportion of individuals chose to invest in railways in their immediate vicinity (within 20 miles), but we also observe the emergence of a London-centric group of investors moving into the twentieth century.

Pair-wise comparisons of the shareholder address books reveal a significant number of individuals who held shares in at least two railways. We observe the highest levels of multiple ownership among railways in close proximity, which would have limited the extent of any benefits from diversification.

Our contribution to the historical narrative on investor behaviour builds upon insights observed in the earlier Victorian period, specifically in relation to the socio-economic status and investment horizons of railway shareholders. We note the growing importance of female investors, which adds to our understanding of gender and risk preferences influencing investment choice. We also consider the question of rationality and approaches to diversification in light of investor preferences for investing locally and incorporating multiple risk exposures to the railway sector in their portfolios.

Notes

A Horse Race of Dividend Theories: Long-run Evidence, 1838-2012

Leentje Moortgat
Jan Annaert
Marc Deloof

How do firms set their dividend policy? In a frictionless world, dividend policy is irrelevant for the value of the company (Miller & Modigliani, 1961). However, relaxing the assumptions underlying the irrelevance theorem, dividend policy clearly matters as different market frictions such as agency conflicts, information asymmetry and taxation dominate today's capital markets (Allen & Michaely (2003) for a literature review). Additionally, behavioral motivations are also found to drive dividend policy (Baker & Wurgler, 2004a, 2004b; Fuller & Goldstein, 2011). Empirical evidence on the determinants of dividend policy in contemporaneous capital markets is mixed and it is difficult to disentangle the effect of different dividend explanation. Braggion and Moore (2011) take advantage of the nearly tax-free environment in Britain between 1895 and 1905 to investigate how information asymmetry and agency conflicts determine dividend policy if taxes are unimportant. Their evidence points in the direction of information asymmetry explanation of dividends. Turner et al. (2013) extend the analysis of Braggion and Moore (2011) further back in time and additionally investigate the impact of liquidity and behavioral explanations on dividend policy. They also find information asymmetry drives dividend policy in Victorian Britain and find no evidence consistent with agency explanations, liquidity considerations or behavioral motivations.

However, the existing literature mainly focusses on a short time period and does not investigate the stability of dividend determinants. In this paper, we examine the determinants of dividend policy for Belgian listed firms between 1838 and 2012. Studying dividend policy over such a long time-period offers the unique advantage to investigate dividend policy in different institutional settings and allows us to examine the interaction between the institutional environment and the dividend determinants. Using a unique, high-quality database of the Studiecentrum voor Onderneming en Beurs (SCOB) at the University of Antwerp, we collected data for 1,785 Belgian firms listed on the Brussels Stock Exchange (BSE) between 1838 and 2012. Belgium provides an interesting laboratory to investigate the determinants of dividend policy over such a long period. First, Belgium was one of the leading economies in the world in the pre−World War I period. It was the first country on the European continent to industrialize and the BSE was the seventh largest stock exchange at the end of the 19th century (Dimson et al., 2015). Second, the institutional settings changed drastically during our time period (Moortgat et al., 2017). Pre−World War I, Belgium is characterized by the absence of dividend taxes, weak investor protection and prosperous stock markets. Whereas taxation can ex ante be ruled out as explanation for the existence of dividends in this era, agency conflicts and information asymmetry are likely to be important, given the weak investor protection. Additionally, liquidity is poor in historical capital markets and thus creating home-made dividends is expensive. Therefore, liquidity might also be an important determinant of dividend policy (Baskin & Miranti, 1997). Dividend taxation is introduced in 1920 (Gilson, 1921) and legal protection of investors improves over time (Moortgat et al., 2017). Therefore, taxation is likely to determine dividend policy post−World War I and the impact of agency conflicts and information asymmetries on dividends is likely to decrease.

Our contribution to the literature are twofold. We are the first to investigate the determinants of dividend policy over a very long period of time. The determinants of dividend policy are investigated in historical settings (e.g. Braggion & Moore, 2011; Campbell & Turner, 2011; Turner et al., 2013) and in contemporaneous capital markets (e.g. Brav et al., 2005; Denis & Osobov 2008) but none of these studies spans a period of almost two centuries. Moortgat et al. (2017) do investigate dividend policy of Belgian listed firms between 1838 and 2012, but they focus on the evolution of dividend policy and the effects of changing legislation on dividend policy rather than on the determinants of the decision to pay dividends. Second, our sample periods consists of a period with and without dividend taxation. Exploiting this unique feature, we are able to investigate how the introduction of taxation affects dividend policy and how the introduction of taxation affects the importance of other explanations (like information asymmetry and agency conflicts). This increases our understanding of how taxation is related to dividend policy.

We find evidence consistent with the agency theory of dividends: mature firms and firms with concentrated ownership are more likely to pay dividends throughout almost the entire sample period. Further, our results are not in line with expectations of signaling theory and home-made dividend proposition as we find firms with few problems of asymmetric information and liquid firms are more likely to pay. Our results further show that taxation and behavioral motivations do not drive dividend policy of Belgian listed firms.

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Asset Prices and the Functional Distribution of Income

Julius
Probst

The purpose of this paper is to examine to what extent rising asset prices, such as stocks and housing, can be a driving factor behind fluctuations in the functional distribution of income. Combining the macroeconomic database by Jorda, Schularick and Taylor (2016) as well the capital share database by Bengtsson and Waldenström (2015) gives me a unique panal dataset for 17 advanced economies going back until 1875. The data contains both gross and net capital shares, thus allowing us to net out the effect of fluctuating depreciation rates over time.

For a long time economists simply assumed that factor shares of income are more or less constant in the long-run. However, researchers have recently documented a quite significant increase in the capital share of GDP among advanced economies (Piketty, 2014). Several explanations have been put forward: Stockhammer (2013) argues that increasing financialization and globalization led to a decline in the bargaining power of labor. Grenestam and Probst (2014) find evidence for increasing monopolization and rising markups in U.S. industries. La Cava (2015) argues that rising housing prices contributed to an increase in the capital to income ratio, which then leads to a higher capital share. Rognlie (2015) questions whether the gross capital share is really the adequate measure to use if one is concerned about distribution since depreciation is not an income to any factor of production. Karabarbounis and Neiman (2014), however, note that net labor shares have also declined worldwide.

The main idea of the paper is to relate changes in the capital share of income to changes in asset prices, controlling for a set of other macroeconomic variables (X) that according to the academic literature might also affect the functional distribution of income. As is common with time series data, we use first differences to avoid problems related to spurious regressions:

$$\Delta capital\ share=\beta_1\ \Delta housing\ price+\beta_2\ \Delta stock\ price+\Delta X^{\prime}\ \beta_3+\varepsilon$$

One of the big challenges is to find an adequate variable to measure the stance of monetary policy over time. We use a Taylor rule approach, but it is well-known that Central Banks have only behaved in this way during the Great Moderation (Taylor, 1998). As such, we also run this regression not only for the entire time period, but also for the different monetary regimes: the classical gold standard, the interwar gold standard, Bretton Woods, and the time of flexible exchange rates.

Figure 1 depicts the average gross and net capital share for the 17 advanced economies in the dataset. The data mainly confirms the U-shaped pattern for the gross capital share during the 20th century, with high values in the beginning and the end of a century, a pattern that has also been found by Piketty for a smaller set of countries. It is noticeable that the net capital share has not risen by an equal amount, which implies that that higher economy-wide depreciation rates have played a role in depressing the labor share of income.

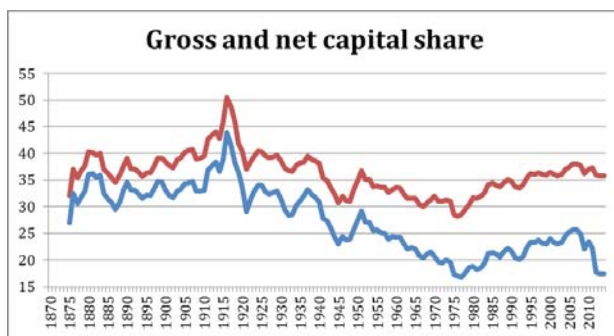


Figure 1: Average gross and net capital share, 17 advanced economies

Figure 2 depicts the average inflation-adjusted house price for the same countries. One can notice that real house prices have almost tripled, on average, since the 1960s. Some countries like Australia and the Scandinavian economies have seen even stronger appreciations. These housing booms have been supported by an enormous credit expansion with mortgage to GDP ratios also rising by a factor of more than 3 since the late 1960s.

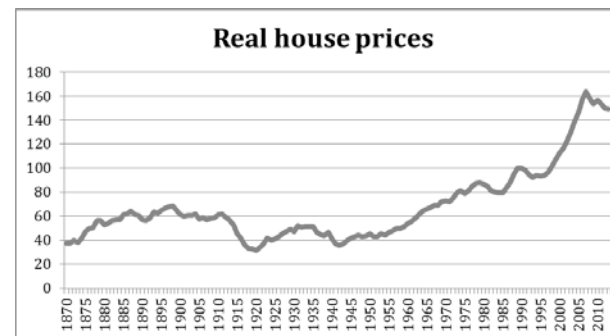


Figure 2: Average inflation-adjusted house prices, 17 advanced economies

The preliminary results of the regressiona anlysis suggest that real stock prices have a statistical significant effect on the capital share while real house prices are not significant. However, there might be an indirect channel via monetary policy and changes in interest rates, which requires further investigation. The business cycle and the current account are positively related to the capital share, which is in line with previous research. More interestingly, an increase in the mortgage share of GDP increases the capital share. Credit expansion related to housing thus also seems to have an effect in depressing the labor share.

To sum up, rising asset prices and increasing financialization, as measured by private credit growth, are an important contributor to the phenomenon of the falling labor share. This paper contributes to the debate by using a unique long-run macroeconomic dataset that did not exist previously.

Social Capital, Property Rights and the Market for Private Protection: An Empirical Analysis of the Rise of Sicilian Mafia

Filippo Boeri

Roger Vicquéry

A recent literature has investigated the emergence of leading criminal organizations as a result of dysfunctional institutions, social mistrust and natural resources (McCarty, 2011; Gambetta, 1996). The present paper is aimed at empirically accounting for the location of early Sicilian Mafia's activity within the island's municipalities. We argue that informal institutions played a key role in the spread of the Mafia. Throughout the 19th century, Sicily was characterized by a chronic institutional weakness. The failure to replace feudal customary rule, nominally abolished in 1812, with a functioning property right system, alongside continued political instability both under the Bourbon and the Savoy monarchies fuelled demand for private protection. The role of criminal organizations in fulfilling this demand has been traditionally emphasized by both the political science and economic literature (Gambetta, 1996, 2011; Bandiera, 2003). Empirical works on the rise of the Sicilian Mafia have so far largely focused on geographic and natural resources determinants. Dimico et al. (2017) and Buonanno et al. (2015) claim that the combination of weak law enforcement and a positive shock to the value of natural resources is likely to favor the emergence of mafia-type organizations. They argue their hypothesis to be confirmed in the case of the Sicilian Mafia, by respectively linking citrus cultivation and sulphur mining to Mafia intensity at the district and municipal level. We believe that, while important, this strand of the literature overlooks social and institutional factors and thus fails to fully account for the channels through which some Sicilian municipalities developed high Mafia activity at the end of the 19th century.

We argue that the ability of local elites to cooperate and autonomously resolve conflicts was the key differentiating factors between the municipalities which developed high Mafia activity and the ones which did not. Where lack of cooperation amongst elites was high, perhaps fuelled by property fragmentation brought about by the end of feudalism, demand for protection increased. Within a weak institutional setting, this demand happened to be privately met by the mafia.

Our empirical analysis is based on a novel dataset on socio-political and institutional features of 19th century Sicily at the municipal level, including data on local courts efficiency, wealth distribution and, importantly, voting patterns at the local elections as a proxy for the cohesion of local elites. The concentration of the votes for municipal candidate is a good indicator of the ability of the local elites to coordinate amongst themselves. We find that the level of social capital amongst the local Sicilian elite right after the Italian unification in 1865 strongly explains early Mafia spatial distribution at the turn of the 20th century.

Figure 1: Mafia Intensity at the Municipal Level in 1900 (Cutrera Enquiry)

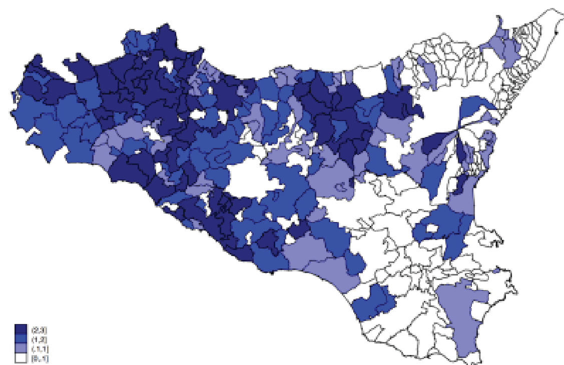
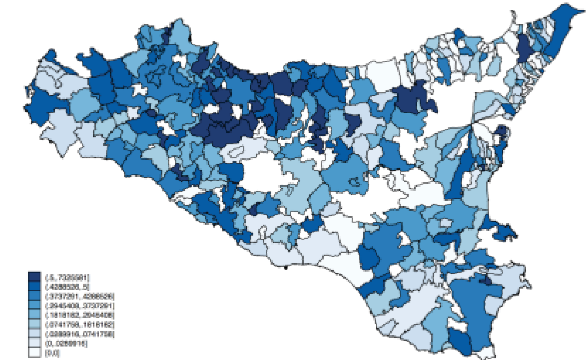


Figure 2: Vote Concentration at the 1865 Municipal Elections



While we believe our framework to be immune to reverse causality, as mafia organizations where still at the embryonic level in the 1860s, we implement IV specifications to address any potential endogeneity concern. We successfully instrument our proxy for elite's social capital using exogenous geographic and policy factors, including the intensity of changes in the property rights structure following the end of the feudal system. This is in line with previous studies (Bandiera, 2003) emphasizing the role of the failed agrarian reform in fuelling demand for mafia activities.

On the other hand, once controlling for local institutional factors, we find no clear effect of natural resources and local production on the location of mafia activity within the island. We provide some evidence that the natural resource effect identified by Buonanno et al. (2015) is in fact related to the dispersion of sulphur mines property rights, rather than to the intensity of mining carried out in each municipality.

Weather Shocks, Poverty and Crime in Eighteenth-Century Savoy

Cédric
Chambru

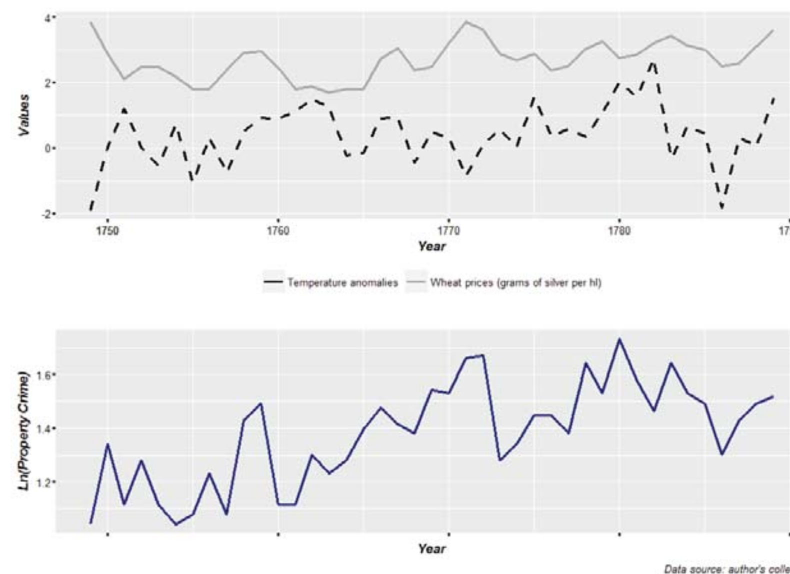
My work is informed by the literature on the impact of climate change and the onset of conflict. Previous research has shown that climatic shocks had a significant impact on the occurrence of crime. In nineteenth-century Bavaria, a one per cent increase of the average level of rainfall resulted in an additional eight per cent in the number of property crime in the following year. By contrast, the frequency of violent crime was reduced. Other poverty shocks sparked by epizootics and/or grape phylloxera had similar effects in nineteenth-century France.

In this paper, I propose to extend the scope of research by focusing on eighteenth-century Savoy. Located in the Western Alpine region, the duchy of Savoy was a land of great ecological and social variability, providing a natural laboratory for investigating the role agricultural and migration practices in the mitigation of weather shocks.

To investigate these questions, I gather various sets of quantitative data at the provincial level between 1749 and 1789. First, I collect information more than 2,200 episodes of property crimes and violent crimes from Procédures Criminelles in the judicial archives. Second, I gather high-resolution reconstructed seasonal temperature data derived from paleoclimatology research. I link and compare these data to instrumental temperature record from 1770s onwards as well as qualitative evidences (grape-harvest date) to estimate the effect of year-to-year variations in weather on the onset of property crimes and violent crimes. Third, I complement these data with seasonal series of crops, and annual wine prices, and use it to estimate the effect of temperature anomalies on living standards.

I use regression analyses to show that, in the context of eighteenth-century Savoy, temperature anomalies increased the incidence of property crimes and reduced the incidence of violent crimes. These effects are driven by relative decline in standards of living. Higher wheat prices and wine prices ignificantly increased property crimes, in particular those in which food was stolen, and reduced the occurrence of violent crimes. Additionally, I provide evidence suggesting that institutions (public assistance) were well functioning in Savoy, and managed to mitigate the effects of major negative economic shocks.

I also take advantage from provincial differences in migration patterns and agricultural practices to study their mitigating effects on crime. The bulk of temporary migrants was composed of workers in the building industry, metal workers, agricultural workers, servants and other unskilled occupations. During the second half of the eighteenth century, total temporary migration represented between 20,000 and 30,000 individuals, i.e. about ten per cent of the total population, allowing for large flows of remittances. In addition, migratory movements and agricultural economies were complementary in Savoy as absences were mostly concentrated during the late autumn and the winter. I show that temporary migration mitigated the negative effects of weather anomalies.



Besides, recent findings suggest that mixed crop–livestock systems may help farmers to adapt to climate change and greater weather variability, in particular by allowing consumption smoothing. In Savoy, there was on average 0.62 cattle per inhabitant, but up to two times more in places like Saint-Jean-de-Sixt and Grand-Bornan in the province of Faucigny. In comparison, England and France had much lower livestock portfolios in 1750, be there were about 0.14 and 0.32 cattle per capita respectively. Disparities in agricultural practices, however, existed between lowlands and uplands where extensive grazing was more readily available. For instance, 73 per cent of the cattle were herded up to Alpine pastures in summer in the province of Tarentaise, but only 29 per cent in the province of Savoie. Overall, I find no significant relationship between livestock breeding and the incidence of crimes in Savoy.

Finally, I present another set of results documenting the relationship between weather shocks and civil conflicts in Savoy between 1661 and 1789. In contrast to recent scholarship, I find only weak evidence of a significant relationship between weather anomalies and the onset of civil conflicts.

Long Run Determinants of European Violence, A.D. 500 – 1900.

Thomas Keywood

Jörg Baten

Violent conflict has fashioned the world not only into the shapes constrained by the international borders that we now see in an atlas, but has also defined aspects of culture and institutions by which we live on a daily basis. It has drastically affected development and contributed to the current global distribution of wealth and disparities in today's living standards. As a consequence, the absence of violence can be seen as a precondition for the development of social capital and hence, economic growth. Norbert Elias (1939) observed a centuries' long decline in violence that he termed humankind's ‚civilising process'; a process which many scholars have declared decisive in raising living standards towards those of the Modern Era. Consequently, this paper investigates social, environmental and organisational factors as potential determinants in bringing about the 'civilising process' and the subsequent decline in long run violence.

Interpersonal violence is a challenging topic to study over the long run, particularly as homicide rates have become its measurement standard among economic historians. Homicide data does not usually extend further back in time than a few hundred years, even in countries with the most rigorous traditions of record-keeping. However, in this paper we follow the work of Eisner (2011) and make use of regicide – the killing of kings – in order to act as a proxy for interpersonal violence. We argue that using regicide as a proxy is possible due to the close relationship that homicide, regicide and other indicators of interpersonal violence appear to share, and because of the theoretical links between the two measurements that both evolutionary psychology and North, Wallis and Weingast's (2009) framework of 'violence and social orders' allow us to construct. Regicide data is also relatively easy to obtain due to the eagerness of chroniclers to independently document the lives of their rulers throughout the course of history. Because their lives and causes of death have been well documented, we also have access to reliable bases with which to construct regicide rates, unlike homicide (Eisner, 2011). Additionally, this habit of recording the lives and deaths of rulers allows for an analysis that begins far earlier than other indicators of interpersonal violence have traditionally allowed. Though our analysis begins in the 5th century, using regicide potentially allows for an analysis from long before the inception of the Common Era.

Throughout our analysis we use two definitions of regicide, narrow and broad. The narrow definition is made up of cases where the ruler was clearly assassinated while the broader definition includes dubious deaths – such as those by poisoning – as well as death in battle. We wish to treat dubious and battle deaths differently in order to not overstate our results and because while we argue that civil war contributes to interpersonal violence, battles with foreign rulers may not.

After justifying the use of regicide as a proxy for interpersonal violence, we discuss questions such as; at what point in history did previously high levels of interpersonal violence begin to decline? What was this timing like in Eastern and Western Europe respectively? Did the ‚Second Serfdom' matter and what were the reasons behind this observable decline in violence?

It appears that levels of violence began to decline during the Early Middle Ages, or perhaps even before our analysis begins. However, this decline was neither smooth nor linear. We observe a sharp increase in regicide during the High Middle Ages as well as a spike during the fourteenth century, possibly as a result of factors that followed from the Black Plague. We also detect a distinct divergence in regicide rates between Eastern and Western Europe – though Scandinavia is the most violent region in our analysis – which coincides with the Second Serfdom, suggesting a link between inequality and interpersonal violence.

In order to investigate potential causes for the trends in regicide that we observe, we employ probability models with both time and country fixed-effects; concluding that education, nutrition and urbanisation all seem to have been important factors in determining regicidal propensity. Education is measured by an elite human capital index that we construct, and could provide outside options to violence through Pinker's (2009) negotiation and poverty alleviation channels. Likewise, the abundance of food and access to nutrition would likely reduce conflict over property. In the context of Europe's relatively cold climates and the 'Little Ice Age', nutritional output is measured by temperature. Lastly, urbanisation is used to proxy income and agricultural productivity which seem to reduce interpersonal violence in much the same way.

Inter-generational Trajectories of Occupation and Stature for Prisoners and Soldiers

Kris Inwood
Rebecca Kippen
Hamish Maxwell-Stewart
Richard Steckel

Over the last four decades historians and social scientists increasingly have become interested in using information about stature to explore the impact of environmental factors on the physical growth and well-being of past populations. For most societies the only systematic sources of historical height data are the military and prisons. Unfortunately, soldiers and prisoners typically represent very different selections of the population. This complicates inference from the sampie to the experience of a population. A comparison of Austra1ian military and prison records for the same cohort and birthplace demonstrates just how different were the soldiers and prisoners. For most analytical purposes, however, we are interested in change over time. We trace soldiers and prisoners born between 1871 and 1900 in Tasmania to theirbirth records and thence to the marriages of their parents. This allows us to compare occupation, birthplace within Tasmania, statore and other characteristics across soldiers, prisoners, fathers of soldiers and fathers of prisoners. We also compare intergenerational trajectories for the men who ended up as prisoners and those who ended up as soldiers. This evidence permits a more nuanced understanding than hitherto possible of the use of selected sampies to represent the experience of a population.

Notes

Was there an urban premium in the late 19th century? Evidence from male heights in Catalonia

Ramon Ramon-Muñoz Josep-Maria Ramon-Muñoz

This paper aims to explore whether and to what extent there was a gap in biological living standards between rural and urban areas. It takes as a case study the north-eastern Iberian region of Catalonia; and it focuses on the cohort of males born in the year 1890. Catalonia underwent industrialisation unusually early as compared to other regions of the European periphery. By the 1890s, Catalonia had become "Spain's factory", and one of the Iberian regions where the physical stature of young males, a proxy for standards of living, was higher. In 1910, it had also the highest GDP per capita of all the Spanish communities.

The emergence of an urban-rural gap in living standards has attracted the attention of many scholars. There is an extensive body of historical research showing that in the first stages of modern economic growth the combination of industrialisation and rapid population growth worsened the living conditions of urban residents, which resulted into an "urban penalty" and, therefore, a "rural premium" in terms of nutrition and health. This situation did not last forever. The same body of historical research also shows that the second half of the nineteenth century witnessed remarkable advances in urban water supply and sanitation. In addition, important transport improvements allowed the supply of food products to increase in urban areas. As a final result, between the late nineteenth and early twentieth centuries urban residents became taller than their rural counterparts.

This general picture is, however, more complex than sometimes suggested. Examples of this complexity can be found in Iberia. In Portugal, the existing literature on this subject suggests that the biological standard of living in nineteenth-century Lisbon – a large city by European standards – was not lower than in the rest of the country. An absence of "urban penalty" was also found in several Spanish regions before the outbreak of World War I, whereas the opposite was true in some other Iberian territories; in these latter cases, one identifies a pattern characterised by the emergence of an urban height penalty in the decades around 1850 that progressively turned into an urban height premium.

While the available evidence on Iberia shows a remarkable diversity, it also makes it clear that the understanding of the urban-rural gap is still far from comprehensive, at least in this southern European region. Firstly, most of the existing studies are generally based on samples with a low number of localities. Secondly, these studies tend to divide the sample localities into two groups, i.e. rural and urban, instead of considering the variety of settlement hierarchies that characterises Iberia and many other regions. Finally, the bulk of published works do not take into account height data from large cities, which might be an important shortcoming when assessing the role of urbanisation and population size on health.

By using new evidence for Catalonia, we search for the existence of an "urban premium" in the late nineteenth century. We use a new dataset consisting of more than 16,000 observations. This dataset is based on information from military records for the cohort of males born in 1890; and it has been designed to provide height evidence at individual level for each of the almost 950 municipalities in current Catalonia, including the city of Barcelona, which had more than 500.000 inhabitants by the late nineteenth century. This wide geographic coverage represents a novelty when we compare this paper with previous Iberian studies. It also means a clear advantage relative to other approaches: rather than following the current binary strategy according to which localities are simply classified as urban or rural, our dataset allows to test for linear (and non-linear) relationships between height and the population size of villages, towns and cities.

The paper is organised as follows. After an introduction section, the second section provides a brief overview of the evolution of the biological standards of living in nineteenth-century Catalonia. Based mainly on secondary sources, it suggests that an "early-industrial growth puzzle" emerged in the country between the 1830s and the 1860s, a period in which the mean male height dropped, particularly in urban areas, and industrial production boomed. A new cycle in the evolution of the biological standards of living took place from the 1860s onwards. The mean male height increased by around 3 cm between the decades of 1860-70 and 1901-10. Probably, the physical stature of males grew more in urban than in rural areas and an urban height premium seems to have emerged during the course of this period. The remainder of the paper sheds new light on the urban-rural height gap in nineteenth-century Catalonia using the new dataset we have constructed.

Section 3 presents this new dataset and provides some preliminary results based on descriptive statistics. These results suggest a positive and linear relationship between height and population size and, therefore, an urban height premium for the cohorts born in 1890: young males residing in cities and towns of over 20,000 inhabitants were taller than those living in localities of between 10,001 and 20,000 inhabitants. In turn, these latter were taller than the residents in towns of between 5,001 and 10,000 inhabitants. The same positive relationship between height and population size applies when we compare the physical stature of the young males residing in localities of between 5,001 and 10,000, between 2,001 and 5,000, and less than 2,001 inhabitants, respectively.

Section 4 tests for the relationship between population size and biological living standards. In this section, we apply a model that uses cross sectional data and is based on ordinary least squares (OLS). In this model, the dependent variable is the height of conscript *j*, born in 1890 and called up for military inspection in the 1911 draft (year *t*). The main independent variable of interest is the population size of the municipality of residence of conscript *j* in year *t*. Finally, the model includes three control variables in order to capture specific conditions at municipal level: first, the population density of the municipality of residence of conscript *j* in year *t*; second, a dummy variable that states whether or not conscript *j* was living in year *t* in a municipality with railroad station (1 and 0, respectively); and third, the altitude of the municipality where conscript *j* was residing in year *t*.

Section 5 concludes by pointing out the existence of a qualified urban premium in late nineteenth-century Catalonia. It argues that, once controlled for population density, railways station, and altitude, the conscripts living in municipalities up to 5,000 inhabitants were statistically significantly shorter than those residing in municipalities of more than 20,000 inhabitants, which is the reference group in the model. Interestingly, the results of the regressions also show that the height of the conscripts living in municipalities of between 5,001 and 10,000 inhabitants or between 10,001 and 20,000 inhabitants was not statistically different from the height of those living in larger urban agglomerations. Finally, the section also suggests that the relationship between height and population size may vary by provinces and, therefore, depends on the geographical area under study. Of course, this is still a work in progress and the results we are presenting must be considered as provisional, awaiting further analysis.

Long-Term Environmental Change and Food Riots: A Disaggregated Historical Analysis of England

Alexander de Juan
Tim Wegenast

Does long-term environmental change influence the risk of social unrest? A large body of research has investigated this question, focusing on a variety of manifestations of violence, ranging from riots to full-fledged civil wars. Most of these studies are based on the assumption that adverse environmental conditions negatively impact on agricultural production, increasing scarcity and food prices, thereby threatening people's livelihoods and eventually triggering violent mobilization. Taken together, this previous quantitative work on the climate-conflict nexus has produced mixed empirical evidence. While some studies conclude that long-term environmental change can increase the risk of violence, others identify pacifying or no effect of changing temperatures and precipitation patterns.

We maintain that this literature suffers from three main shortcomings: it relies on very short time series, focus on large-scale violence and often operates on a rather aggregated level of analysis. Apart from few exceptions, previous studies employ very narrow time frames to estimate climate's impact on conflict, thereby on, extrapolating effects of year-to-year weather variations to assess potential repercussions of long-term environmental change. This approach neglects processes of adaptation that are likely to mediate associations between climate change and social unrest: effects of adverse weather conditions may change over time depending on weather histories. In particular, people may change agricultural practices, make use of technological innovations or adapt livelihood patterns altogether. In light of this adaptation capacity, linear interpolations of observable short-term associations between weather conditions and unrest appear not particular convincing.

Those few studies that do investigate long-term effects of environmental conditions commonly focus on large-scale violence like inter-state or civil wars as their main outcome variables. However, associations between changing environmental conditions and such organized forms of violent conflict are not theoretically evident. Contrary to decentralized forms of violence like food riots, actual wars involve a higher degree of centralized planning, mobilization and coordination and can hardly be interpreted as immediate consequences of changing agricultural production and livelihood conditions. Thus, making sense of observable correlations between environmental change and armed conflict requires more elaborate auxiliary theories that can hardly be investigated empirically.

Thirdly, long-term studies mainly rely on geographically aggregated units of analysis and investigate vast regions including a variety of different environmental baseline conditions, livelihood systems, and potential processes of adaptation. While this approach has contributed greatly to persuasively establishing truly long-term associations between environmental change and violence, it is less suited when it comes to plausibly identifying the effects of processes of adaptation that are commonly highly context-specific and vary greatly across geographical regions.

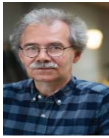
We address these shortcomings by focusing on an extended time series of more than 300 years, by focusing on decentralized incidents of food riots and by investigating processes of adaptation based on context-specific observable implications derived from qualitative historical analyses. England serves as our empirical case. We combine geo-referenced food riots that took place between 1500 and 1817 with gridded information on seasonal temperature data. This data has been reconstructed based on directly measured temperatures, sea-ice and temperature indices, documentary records as well as proxy temperature reconstructions from Greenland ice cores and tree ring series from Scandinavia and Siberia.

Our analysis proceeds in three main steps: first, we establish the validity of our operationalization of the explanatory variable as well as of the posited causal link between weather conditions and food riots. If the reconstructed temperature data accurately reflects historical weather conditions and if adverse weather conditions negatively affect local agricultural production, we should be able to observe associations between historical temperatures and prices of agricultural products. We therefore estimate correlations between our explanatory variable and wheat prices in three English towns (Exeter 1500-1816, Winchester 1630-1816, Eton 1594-1816). In line with previous studies, we find a negative correlation between temperatures in summer and winter on the one hand and local wheat prices on the other hand.

Second, we estimate the effects of temperatures on the probability of food riot occurrence. Therefore, we create a grid-net with each cell measuring 50 by 50 km and use the grid-year as our unit of analysis. Our main models include two-way fixed effects controlling for variation across geographical units as well as for aggregate time trends. We find consistent evidence that colder years saw more unrest than years with more favorable weather conditions. In line with our investigations into associations between weather condition and food prices, effects are strongest for summer and winter temperatures. This correlation is robust to a series of robustness checks, limiting our analysis to specific time periods, changing specifications of our outcome measure and using other proxies of adverse climate.

Finally, going forward, we will use our long-term time-series dataset to assess mediating effects of past weather conditions. In particular, we assess how the past exposure to very cold summer and winter periods affects the correlations between current weather conditions and riot occurrence. In order to trace mediating effects reflecting actual processes of adaptation, we test observable implications related to variation in motivations and capacities for adaptation. Historical works suggest that agricultural adaptation was fostered by specific soil types (i.e. light soils as compared to heavy ones) and agricultural systems (private land ownership as compared to common fields). We use information on soils and parliamentary land enclosures to test these observables.

Peasant Farmer Parliamentarians in Sweden, c. 1770–1900



Erik Bengtsson
Mats Olsson

Sweden was unique in Europe in the early modern period, in that its parliament included a peasant farmer estate. The political representation of the peasantry and the lack of serfdom have been seen as keys to understand Swedish later development. It is commonplace in Swedish and international research to consider the peasant farmer politicians as the guarantee of a supposedly liberal and egalitarian path of development; one international observer (Castles 1973) claims that in Sweden "the farmers held the line until industrialism produced a liberal middle class capable of asserting its own rights".

On the other hand, in the Swedish-language political history literature, the peasant politicians are often seen as reactionary followers of the king, lazy, and mostly an obstacle to the progress suggested and implemented by nobles and bourgeoisie. According to this view, their common political program was limited to the issue of keeping (their own) taxes as low as possible, routinely rejecting everything that possibly could increase the state's need for new revenues – from public schooling to railways. Some of these views on the peasant politicians originate from contemporary debates and class disregard, but it is certainly possibly to find examples of this type of behaviour from the peasant estate in the parliament protocols. However, there has been no systematic study of the peasant farmer politicians over time: who they were, whom they represented, and what kind of issues they actually pursued politically.

This paper presents a dataset of the peasant politicians from 1770 to 1900, from the four estates Diet to the two-chamber Parliament after 1866. With emphases on benchmark years in 1770, 1809, 1865 and 1895, we analyze their activities in parliament – motions, participation in debates, suggestions, how they voted. We also present a new dataset of their personal wealth, compared to the peasant farmer class in general.

Preliminary results indicate that the peasant parliamentarians often were recruited among the upper strata of their class – economically and socially. But at the same time many of them were active in general issues concerning common people's interest, and, at least in the eighteenth and early nineteenth centuries, strongly opposed the privileges of the nobility and the priests.

The guiding research questions are: Where the peasant parliamentarians egalitarian and guarantees of a specific Swedish way to modernity? Were they in the parlance of Acemoglu and Robinson (2012) guarantees for "inclusive institutions"? The paper thus contributes to the debate on determinants of long-run inequality, as well as to the institutional literature.

Market Policy and Economic Growth: The Impact of Market Policy Regulations on Pre-Modern City Growth in the Holy Roman Empire

Lars Boerner

Samad Sarferaz

This paper is motivated by recent insights in the market design literature which concludes that the optimal design of allocation mechanisms is critical for an efficient allocation of products and services in societies. However, despite these findings, very little has been done so far to link the analysis of allocation mechanisms to studies on long run growth in societies. This is even more surprising since a large body of literature exists which investigates the nexus between (market) institutions and economic growth.

This paper intends to fill this gap by analyzing the inter-temporal link between historically observed deliberately implemented allocation mechanisms and resulting economic development. In particularly, we study this link between market policy proxied by brokerage regulations and subsequent pre-modern town growth in the Holy Roman Empire. Pre-modern brokers were official matchmakers facilitating trade between the demand and supply side on wholesale markets and towns incentivized brokers to optimally match both sides of the market by an appropriate set of rules.

We raise the question if such a dynamic relationship between the implementation of regulations and later economic growth indeed can be identified and measured, and ask how important is the institutional and geographical context in which this process happens. Especially, we scrutinize, in conjunction with the existing literature, the impact of political and cultural institutions, and the trade-geographic context. Finally, following the questions raised by previous research agendas, we analyze this set of questions in reverse order and study if economic growth had an effect on the implementation of allocation mechanisms. However, it is not the main goal of this empirical analysis to exclude any form of causality. Both causal directions are reasonable and based on historical narratives observable and plausible. Rather this paper identifies the different statistical significances of these dynamic correlations between economic growth, market policy and various inter-relating institutions.

We find that the use of market policy in form of brokerage regulations can indeed be linked to later economic growth. However, these positive effects are embedded in the institutional and geographical context of the towns where market policy was put into practice. Market policy has a positive effect on growth in cities with strong local governments. Such governments can have an authoritative or more participative form. However, the likelihood of implementing market regulations increases when a participative government is in charge and this does not hold for more authoritative political governments. Thus, participative political institutions work as catalysts in this growth process. On the contrary, cities which are governed from outside the town walls by territorial dukes less likely implement market regulations in the first place. Furthermore, we find negative effects on growth when regulations were implemented. Educational institutions in turn work as catalysts for economic growth. The hosting of a university in a town increases the likelihood of implementing regulations and also has a positive effect on economic growth, once the regulations are in use. Geography matters for the implementation of regulations and subsequent growth, but only from the early modern period onwards in sea port cities. Looking into the reverse question, we only find weak evidence for the hypothesis that growth creates a later link to the implementation of allocation mechanisms. Only university towns clearly react on growth with the implementation of regulations. This makes university towns very versatile in the interaction with its environment.

To empirically investigate these inter-temporal relationships, we develop a Bayesian interacted panel vector autoregressive model that allows to include binary dependent variables and to compute impulse responses at different geographical and institutional units but also across different points in time. Market policy together with economic growth are treated as endogenous in our dynamic system. This way we can investigate if unexpected changes in the market policy variable have an effect on economic growth on the current and the ensuing periods. To distinguish between the effects of changes in market policy on economic growth in different geographical and institutional settings we introduce interaction terms between those control variables and our brokerage variable for the current period. In a similar vein, we also look at the effects of unexpected changes in economic growth on brokerage by adjusting the identification scheme accordingly and by changing to interaction terms between the control variables and population growth. Finally, to express the static relationships between the existence of brokerage regulations and the institutional and geographical variables, we look into average partial effects of each of the covariates that are included in our panel VAR model.

Our findings contribute to the literature in the following way: We extend the empirical investigation of market design to long run growth studies. In addition, we disentangle open questions in the literature which deal with underlying mechanisms linking institutions to economic growth. We show how market policy matters and interacts with political and cultural institutions, and finally illuminate how the geographic context affects this process. Last but not least, we contribute to the panel VAR literature by developing a random coefficient panel VAR model that incorporates a dependent binary variable and at the same time also incorporates interaction terms that allow for impulse responses functions that differ across geographical, institutional and time units.

Steam democracy up! Industrialization-led opposition in Napoleonic plebiscites

Jean
Lacroix

Which dimension of economic development did boost the support to democracy? This study focuses on industrialization as the dimension triggering opposition to an autocratic regime and thus the broad process of "modernization". It uses a new dataset on Napoleonic plebiscites under the second French Empire (1852-1870). Universal male suffrage was already in place. The results in those plebiscites therefore provide a detailed cross-départements (French main administrative units) measure of opposition to autocracy. At that time France experienced massive modernization, albeit uneven across départements. Taking advantage of these differences, this study disentangles the effect of industrialization on opposition to autocracy from the ones of other dimensions of economic development (wealth, urbanization, human capital).

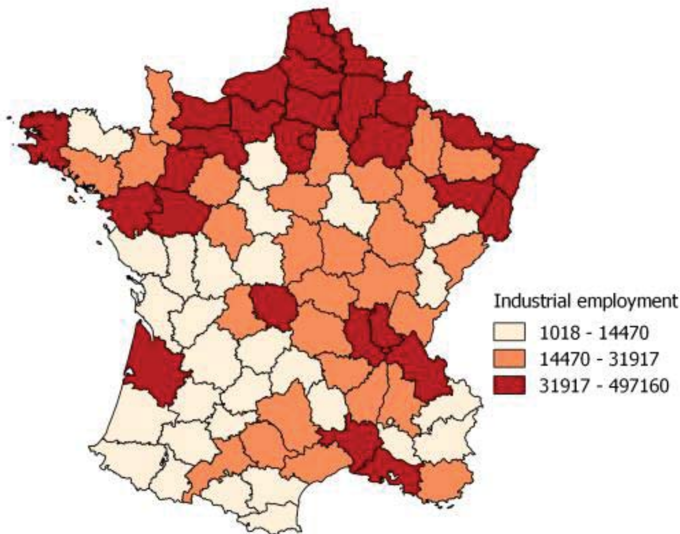


Figure 1: Industrial Employment 1866

The results show that an increase in industrialization by ten percent reduced the share of "Yes" ballots by 0.4 to 0.7 percentage points. Industrialization explains a difference of 2.3 to 5.5 percentage points in support to autocracy between a mildly industrialized département and a top-industrialized département. An IV strategy using distance to the first city having adopted steam engines, access to coal and waterpower as instruments confirms causality. The baseline results are robust to controlling for other dimensions of modernization and pre-industrial covariates. They are robust to using alternative measures of industrialization and of preference for democracy. Other estimation methods, such as the use of spatially auto-correlated errors or jackknife estimations, lead to the same conclusions: industrialization prompted the formation of an opposition to Napoléon III's autocratic regime.

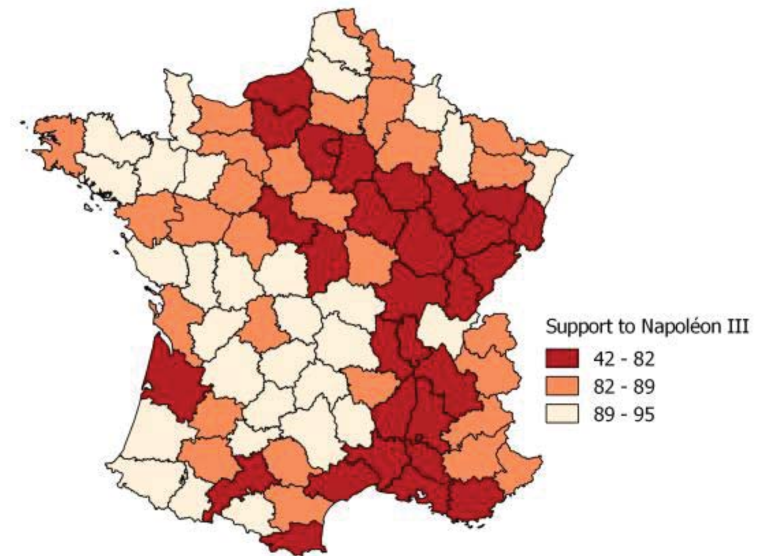


Figure 2: Yes Ballots / Votes cast at the 1870 plebiscite

A late Escape? Malthusian Pressures in the late 19th century Moscow

Ekaterina Khaustova
Vadim Kufenko
Vincent Geloso

The map and the timeline of demographic transitions across the world as in Reher (2004) has provided insights about the time frames, during which different countries escaped the Malthusian trap. Yet, taking into account regional heterogeneity within countries, pinpointing the dissolution of the Malthusian effects may be problematic, especially in cases of frontier economies with different levels of regional development. Imperial Russia in the 19th century in this sense is an interesting candidate. Instead of considering Russia on aggregate, we focus on a particular region: the city of Moscow, one of the leading industrial regions at that time. Finding a positive or a preventive check as in Nicolini (2007) would be a sufficient evidence for existing of population pressures: for these purposes we use a novel data set of monthly series for Moscow city from 1871-1910. This allows us to capture on of the most interesting periods in the Russian history: the industrialisation, which took place after the emancipation of labour. The main question to be asked is whether the Malthusian checks were present in Moscow during this period. In order to approach this question we use newly collected data on monthly birth, death, marriage and infant mortality rates from 1871-1910 in Moscow city. The data source is Statistical Survey of Russian Empire. In addition we used recently collected data set (Allen and Khaustova, 2017) for Russian prices and wages 1824-1917. As for the methods, we perform outlier and seasonal adjustment with the help of ARIMA and X-13ARIMA-SEATS procedures and appeal to the well-established VAR framework involving growth rates of real wages of the unskilled workers, birth rates (or nuptiality, depending on specification) and death rates. The generalized form of our test equations can be seen below:

$$x_{1,t} = \beta_{11}x_{1,t-1} + \beta_{12}x_{1,t-1} + \beta_{13}x_{3,t-1} + e_{1,t}$$
$$x_{2,t} = \beta_{21}x_{1,t-1} + \beta_{22}x_{1,t-1} + \beta_{23}x_{3,t-1} + e_{2,t}$$
$$x_{3,t} = \beta_{31}x_{1,t-1} + \beta_{32}x_{1,t-1} + \beta_{33}x_{3,t-1} + e_{3,t}$$

In the given setup $x_{1,t}$ are growth rates of real wages; $x_{2,t}$ is the birth rate per 1000 or nuptiality per 1000 (depending on the specification); $x_{3,t}$ is the death rate per 1000; β s are the coefficients and e are shocks. The death rates were corrected for infant mortality. We performed additional robustness checks correcting for deaths of migrant population. The optimal lag length according to information criteria is two lags for the whole sample length. Concerning the price index we should note that it covers rye and wheat flower equally weighted: this choice is reasonable, since these items constituted up to a half of the consumption of workers in late 19th century (see Mironov, 2012, pp. 346-353).

To	Direction: from the real wage		
	1871-1881	1882-1892	1893-1903
Specification with birth rates			
Death rates	0.0109	0.3105	0.6853
Birth rates	0.2245	0.6301	0.241
Specification with nuptiality			
Death rates	0.0331	0.2578	0.487
Nuptiality	0	0.9909	0.888

Table: Results of Granger causality tests

We perform analysis for the whole sample and also divide the series in decade sub-samples: 1871-1881; 1882-1892 and 1893-1903. It follows, that for the overall period there were no Malthusian effects discovered; however, in one sub-sample both, the positive and the preventive checks were present. For the first sub-sample, 1871-1881, two incidents of Granger-causality were found for growth rates of real wages of the unskilled workers and nuptiality and death rates. Both effects vanish in the next decades, 1882-1892 and 1893-1903. Therefore during the late stages of industrialization none of the Malthusian effects were found. We have additionally performed rolling Granger causality tests with a smaller 5 year window with 60 months and a forward step of one month: we detected periods of significant Granger causality test results prior to 1885, which to a large extent validates the results using larger samples with a decade window.

These results concord with the work of Dennison and Nafziger (2011), who analyse Jaroslavl and Vladimir provinces, as well as with the work of Hoch (1994), with an exception to the first sub-sample shortly after abolishment of serfdom: it appears, that there is empirical evidence in favour of existence of positive and preventive checks. The findings suggest that these effects existed just in the second decade after abolishment of serfdom in 1861, namely during 1871-1881, and vanished afterwards.

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Great Divergence or Great Resemblance? The Real Wages of Roman Workers in a European Perspective

Mauro Rota

Jacob Weisdorf

Allen's seminal comparison of cross-European real wages contends that North-West Europe pulled away from Southern Europe after c. 1500 (Allen 2001). We provide new evidence to question this view, presenting hitherto unused wages of unskilled construction workers hired by the Papal state in Rome to build and maintain the St Peter's Church. A legacy of the Roman Empire, the Papal state placed strong emphasis on keeping food prices stable using a system known as the Annona. The Annona kept basic consumption costs down and hence real wages high. We compare our novel Roman wages to Stephenson's profit-adjusted wages of unskilled construction workers in London (Stephenson 2017). Our comparison disputes the hypothesis about an early-modern great divergence between the north and south of Europe, and thus about the high-wage-economy motive for England's early industrialisation.

Our wage data come from the archive of the Fabbrica of Saint Peter. The Fabbrica was an autonomous building institution that in 1506 initiated the construction of a new cathedral in Vatican State of Rome on the behalf of Pope Julius II. The previous cathedral, today known as the Old Saint Peter's Church and built in the 4th century, had long been neglected and by the 15th century had fallen into disrepair. The New Saint Peter's Church, designed by famous Italian artists such as Michelangelo, is one of the largest churches in the world and one of the most renowned architectural works of the Renaissance. The Fabbrica organised and supervised the building of the cathedral and its later maintenance. Its wage registries cover the years 1542 to 1810, recording the names of its workers, their professions, their days of work, and their daily wages. Our current analysis focuses on unskilled work, but future work will also consider the size of skill premia.

Our wage data overcome recent criticisms and shortcomings concerning historical wages pointed out in Stephenson (2017). Stephenson found that wages paid to construction workers in famous London building sites, such as St Paul Cathedral and Westminster Bridges, included a profit rate earned by sub-contractors. Her analysis shows that the actual payments of unskilled building workers' were 20 to 30 per cent lower than previous estimates. Our Roman workers were paid directly by Fabbrica without any intermediation or profit margins, meaning that our wage data are comparable to the revised London wages provided by Stephenson. Stephenson's study also pointed to problems with identifying truly unskilled work. She asserts that the upper tail of the wage distribution of unskilled workers included a premium for aptness and competence not captured by the occupational title (i.e. 'labourer'). We deal with this issue using a simple two-step procedure, which discards the highest 75 per cent of the wage distribution and then compute the most frequent wage rate, weighted by the number of worked days at each wage level. Figure 1 shows the evolution of unweighted and weighted nominal wages.

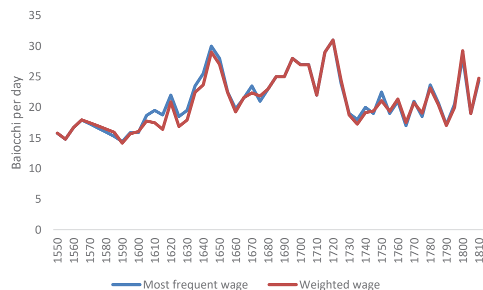


Figure 1. Nominal wages of unskilled workers in Rome, 1550-1810 (5-year averages)

Our wage comparison with London workers is conducted by deflating the nominal wages by a cost-of-living index. At this stage of our study, we use Allen's so-called barebone consumption basket (Allen 2001, 2007). The cost of the London basket is provided by Allen for the relevant years. For Rome, we collected consumption prices from various secondary sources. As is standard (Malanima 2013), we replaced butter by oil and beer by wine; but otherwise the London and Roman baskets are identical, not least terms of calories. Unlike Allen, who inferred his London bread price from the costs of wheat and labour using a so-called bread equation, our Roman cost-of-living index has retail-market bread prices. Figure 2 shows how the (sliver) costs of consumption evolved in London and Rome between 1562 and 1796. The graph clearly illustrates the role of the Annona in keeping food prices down and stable.

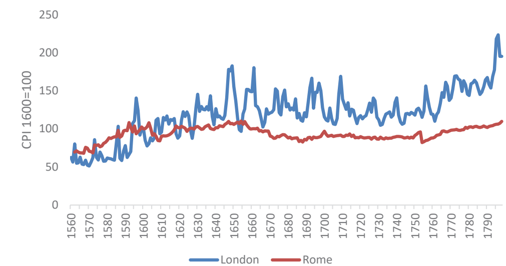


Figure 2. Barebone indices of CPI in London and Rome, 1560-1790

Figure 3 below shows Stephenson's revised London wages for unskilled construction work against our unskilled Roman wages, both of which have been deflated by the local costs of living. The time coverage (1665-1770) is limited by the available London wages, but the message is clear: unskilled construction workers in Rome were significantly better paid in real terms compared to their London counterparts. Rather than a great divergence between the north and south of Europe, Figure 3 portrays a convergence in real earnings beginning in the 18th century as Roman real wages drop to the level of those in London. One of the key arguments made for why the Industrial Revolution was British is that the English high-wage economy prompted capitalist to replace expensive workers with machines. If this thesis is correct, then the real-wage comparison in Figure 3 begs the question: why was the Industrial Revolution not Roman?

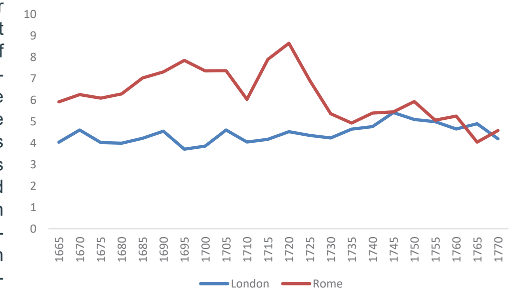
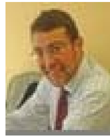


Figure 3. Barebone real wages in London and Rome, 1665-1770 (5-year averages)

ASSESSING CLIMATE EFFECTS ON BRITISH ECONOMIC GROWTH (1645-1740): STRENGTHS AND WEAKNESSES



José Luis Martínez-González

Jordi Suriñach

It has been highly discussed whether, until the 19th century Great Britain had been under a Malthusian trap or if, on the contrary, the income per head increased thanks to a growing division and intensification of labour, a more "industrious" consumption or a combination of factors (Smith 1776, Boserup 1965, 1981, De Vries 1994, Persson 2010). In order to validate the Malthusian version, historians and economists have used the daily real wages as indicators of the standards of living (Phelps Brown and Hopkins 1955, 1956; Allen 2001; Clark 2004, 2005, 2007, 2010). However, more critical authors have questioned the validity of this method because the days of work increased or because they considered the wages to be scarcely representative. This has led to the construction of a new GDP per head to analyse this question (De Vries 1994, Hatcher 2011, Broadberry et al. 2015).

In our opinion, this debate might be incomplete, since it omits other variables such as the weather and the adaptations to it. Undoubtedly, the economic development was related to the evolution of the population, as Malthus claimed. However, the existence of the climatic factor can also be considered; it might have affected – in a direct or indirect way – the agriculture, labour, the energy consumption, the real wages or the GDP. In that sense, we wonder whether the no-consideration of the weather could have overvalued the importance of other variables, more traditional.

During the second half of the 17th century there was a significant rise of the income per head and an improvement of the real wages (Allen 2001, Clark 2005, Broadberry et al. 2015, Crafts and Mills 2017). At the same time, the climate of the island worsened and became more unstable and humid, coinciding with a long period of solar activity, called the Maunder Minimum. The average annual temperatures fell, making the variability between years and seasons increase. All this generated more instability in a period of important political and institutional change. Moreover, there was a demographic crisis and an increase in the household energy consumption (Malanima 2015, pp. 7, 11), and the process of urbanization continued, becoming more general, not exclusively in London (Wrigley 1985, p. 690, 724).

In this context, is worth considering whether the climate was an impact factor, although up to which extent is still unknown. We wonder if it contributed to some agricultural improvements which, at the same time, maintained the rural labour demand. We also wonder if it might have helped to reduce the labour-energy offer and spur on an increase in the caloric demand, generating tension on the labour and energy "markets". Furthermore, under a series of biophysical factors (the insularity of the territory, its agroecological features, its demographic and family structure, its access to coal) as well as institutional factors (wage restrictions in the country, the social rural economy, the transfer of agrarian knowledge, the distribution of the income), we wonder about the direction of these changes and how the search for alternative income all over the economic system of the country could spread.

A second contribution of this article emphasizes the value of the adaptations and certain institutional factors such as the coercion over the agricultural labour force, the resilience of the rural communities or the urban dynamism. The institutions are determinant to evaluate the vulnerability of the economic growth under the climate effects (Stern 2007, pp. 105-109). Given a fall in the average annual temperatures of two degrees, an increase in the summer rainfalls and a higher climatic variability between years and between seasons, everything might have depended on the adaptation/s and/or reallocation of factors (social capital, land, labour, energy). If the GDP had fallen under bad weather, these reallocations might have been null or insufficient. On the other hand, they could have been strong enough to reverse the expected statistical relationship between the climatic variables and the GDP (this way, the cold, the humidity and higher climatic fluctuation would benefit the country). All this would also indicate another basic peculiarity in the study of the climate influence: it is highly important to analyse not only its impact on the GDP, but also what happened "inside" the system. In other words, it is crucial to consider the intermediate variables and the historical adaptive processes. An analyst might think that, since there is no statistical relationship between temperatures and the GDP or the signs of the coefficients of the explanatory variables are the opposite to the expected, the climate had no importance. However, and surprisingly, these results could have been the most logical in a society with certain adaptive capacity. Therefore, one of the keys would be to consider the existence of impacts. If the answer were positive, it should be analysed if they led to behavioural changes and/or adaptations.

This article will first revise the related literature; second, the methodology and the related data are exposed. Third, the results are presented; that is, the impacts of the climate on the agriculture, demography, labour, energy and the GDP. After that, the question of the adaptations is tackled and some hypotheses are exposed. Finally, we conclude and suggest possible future research lines.

Active versus Speculative Monitoring: Evidence from pre-WWI Paris-Listed Firms

Emilie Bonhoure
Laurent Germain
David Le Bris

Agency relationships imply the delegation of some rights by the principal to the agent, and thus create a conflict of interests between them. Tirole (2006) splits the different types of the resulting agency costs into the incentivizing and monitoring ones. Among the latter, he distinguishes active and speculative costs. In this study, we empirically test both types of monitoring costs to determine which one has the greatest impact on dividend payouts and, more broadly, to bring more support to the agency explanation of dividends.

Active monitoring implies collection of information to influence business and managerial decisions. In particular, it is related to access of shareholders to information to act on the decision-making process before the decision is implemented. Conversely, speculative monitoring is only about collecting information to measure firm value and to evaluate managerial efficiency. In particular, this information is collected and used after the decision-making process and after decisions are implemented.

The main solution identified in the literature for dealing with all types of agency costs is the payment of dividends. They allow shareholders to minimize the cash available to management by preventing it from misusing it and/or increase the firm need for external funding, and thus manager monitoring by capital markets. Alternative explanations for the payment of dividends have also been proposed (see a summary in Allen and Michaely, 1995): signaling effect, fiscal issues, and investors' preferences.

But our experimental field offers the unique opportunity to exclude any potential effect of the signaling theory to explain dividends, and allows us to focus on specific types of agency costs. We studied, between 1905 and 1909, the approximately 500 firms listed on the unofficial Paris stock exchange. We focus on the unofficial market because investors in such a market do not enjoy any legal protection; thus agency issues can arise freely. In particular, in our period, a fixed rule of distribution of profits excludes the signaling effect (the second main explanation of dividends); this rule is set at the creation of each company in our dataset and does not change during the company lifespan. Managers are thus not free to set the amount of paid dividends.

Empirical studies of the agency explanation of dividends are numerous and provide mixed evidence (Lang and Litzenberger, 1989; Smith and Watts, 1992; Yoon and Starks, 1995; Fama and French, 2001; Denis and Osobov, 2008, John et al., 2011, Braggion and Moore, 2011; Campbell and Turner, 2011). However, empirical examinations that distinguish the impact of incentivizing and monitoring costs on dividends are less common, and to our best knowledge no study has distinguished the impact of active versus speculative monitoring costs on dividends.

In our study, we assess the different types of agency costs and consider that they are included at different levels of the dividend process. Incentivizing costs are internalized and paid by the company itself: dividends paid to shareholders already include them. On the contrary, monitoring costs are borne by shareholders who should thus require a higher dividend yield to balance this type of agency cost. We focus on the latter and examine whether dividends are affected by an increase in monitoring costs measured by a distance variable.

Our key contribution is to make the distinction between active and speculative monitoring costs, proxying them by the distance between Paris and respectively the firm's head office or location of activities. The rationale is that asymmetry of information (that we measure by the distance) increases agency costs; in particular, asymmetry of information between investors (assumed to be located in Paris) and decisional managers (located at the head office) should increase active monitoring costs, while asymmetry between investors and main corporate activities should increase speculative monitoring ones. Due to the increase in these types of agency costs, according to agency theory, investors should require a higher dividend yield.

Speculative monitoring is thus assumed to be related to the distance between Paris and the firm activities location. Indeed, if investors look at firm-activity level, they can only measure performance ex post; the decision-making process being already completed, they can only observe the results. Speculative monitoring costs should then increase as the distance between Paris and firm's activities increases. Conversely, active monitoring should be related to the distance between Paris and the firm's head office: when shareholders work with head office managers in the framework of their monitoring, they can influence the decision-making process and thus monitor decisions ex ante. Then, active monitoring costs should increase with the distance between Paris and the head office.

The purpose of our paper is to test the agency explanation of dividends by focusing on the types of monitoring costs. First of all, to assess the importance of the distance effect on the profit level as revealing a first type of agency relationship (between decisional managers at the head office and operational managers working in the main activities location), we examine the relationship between the ratio of profits over the total size of the balance sheet and the distance between the head office and activities location. Consistently, we find that our profit variable is negatively affected by the distance between firm's head office and activities, confirming that monitoring problems arise from distance.

We then turn to the agency relationship between investors and managers, testing the respective importance of active and speculative monitoring costs. We find that they have a different and significant effect on dividends: the effect of the distance between Paris and the firm's activities location is positive, while the impact of the distance between Paris and the firm's head office is much less robust. We thus provide further support for the agency explanation of dividends, and refine it by showing that within agency costs, speculative monitoring carries the most weight in explaining dividend payments.

Finally, we explore whether corporate governance was designed to compensate initial investors for agency costs. We examine the relationship between both distance variables and the theoretical payout ratio calculated from the fixed rule of distribution of profits (as we hypothesize that this rule has been set to compensate for monitoring costs borne by investors); we expect the same results as in the previous tests. However, evidence is more mixed and sometimes even contrary to our hypotheses: we find a negative relationship between the theoretical payout ratio and the distance between Paris and the firm's head office or activities.

Our contribution is then two-fold. First, we provide further evidence of the agency explanation of dividends and even refine it. Second, we provide empirical support for the importance of speculative monitoring costs.

Banking regulation, central banking and monetary policy outside the Gold Standard: Spain in the 1920s and 30s

Enrique
Jorge-Sotelo

Introduction

Changes in regulation in financial markets usually come after severe crises. Both following the Great Depression and in more recent episodes, regulators have been criticised for failing to identify the causes of the crisis that motivates the change in regulation. This is sometimes the result of the inherent political economy that comes attached to regulatory changes (Calomiris, 2011). In this paper, I show how the regulatory reaction to the 1920 banking crisis in Spain—in the form of the Banking Law of 1921—did not address the main problem of its financial system: the lack of a developed money market in which the central bank was removed from competition and operated only to conduct monetary policy effectively. This prevented the central bank, the Banco de España (BdE) from conducting the effective monetary policy that inconvertibility ought to have granted. Moreover, the findings of this paper suggest that even if Spain would have joined the Gold Standard after the First World War it would have not been able to remain on it. The main monetary policy tools required for playing by the "rules of the game"—the interest rates of the BdE—were deemed completely ineffective by the regulation changes of 1921.

The paper has two parts. In the first part I describe the changes in banking legislation that were introduced in 1921, following the 1920 banking crisis. In the second part of the paper I exploit a newly collected and previously unused database which includes all banks in the system. The data consists of quarterly banks' balance sheets from 1923q4 until 1934q4. I estimate a dynamic panel model to show that the BdE was unable to affect the evolution of banks' lending by raising interest rates. I also find asymmetries in the reaction to monetary policy changes which are due to the differential access to the discount window by different banks.

Regulatory changes: the Banco de España as 'bank of banks'

In December 1920, the Banc de Barcelona suspended payments. After years of increased mismanagement, following the post-War deflation, the bank collapsed, putting an end to 75 years of history (Blasco and Sudria, 2017). Legislators interpreted that the crisis happened because the system lacked a lender of last resort (Ministerio de Hacienda, 1921).

Impressed by the creation of the Fed, the government created the Supreme Banking Council (CSB). Banks would be able to join the CSB if they agreed to comply with (rather lax) liquidity and capital ratios. The board of the CSB, however, would decide over a bank's membership once it had applied for it. Decisions over membership were not always clear, and political factors sometimes played important roles (Artola-Blanco, 2016). More importantly, the law granted CSB-members access to the discount window of the BdE with two privileges. First, they would be charged 1.0% less for the rediscount of bills (compared to other clients of the BdE) and 1.0% less for advances or Lombard credits. Second, they would be able to use public debt as collateral for Lombard operations, and the BdE would be forced to accept it.

The key point (and the caveat) of this decision was that the Lombard rate for banks was below the yield of the debt, so during non-crisis times it was profitable for banks to acquire low risk short term public debt, pledge it at the BdE, grant new loans and keep receiving a net positive yield from public debt. Moreover, the rediscount rate for bills of exchange at the discount window of the BdE was also below banks' discount rate in the market (Jorge-Sotelo, 2015), so the BdE rate was a floor, rather than a ceiling, and the central bank acted as a competitor in the bill market in a number of provinces.

Asymmetry in monetary policy transmission

When the peseta started to depreciate in 1928, the BdE started tightening monetary policy by raising both the rediscount and the Lombard rate, despite it had no formal responsibility over the exchange rate. Both the government and the BdE were clearly against the depreciation from the very onset. The government also tried, unsuccessfully, to stop the depreciation by different alternative means (Martinez-Ruiz and Nogues-Marco, 2014), which only ended when Britain left gold in September 1931. More importantly, changes in the BdE rates had no effect on CSB banks' lending.

That interest rate changes had no effect on CSB banks' lending does not mean they had no effects on any bank. Not all banks are expected to react equally to monetary policy shocks. Banks' characteristics can generate asymmetries in the way monetary policy is transmitted (Ehrmann et al. 2003, inter alia). So far, the vast majority of the literature on the asymmetry of monetary policy transmission has focused on the role of size, capitalisation and liquidity. Apart from these characteristics, this paper looks at another determinant of transmission of monetary policy: access to the discount window of the central bank. So far, this has only been tested in Calomiris et al. (2016) for the case of the United States in the post-Fed period. After controlling for all traditional characteristics and a number of other variables, I find that the effect of the BdE's rate changes on CSB banks' lending activity was negligible. However, I find that rate changes by the BdE had a sizeable effect on non-member banks' lending, which can't be attributed to size, capitalisation or liquidity, but to their inability to access the (cheap) discount window of the central bank. The results are similar to those find by Calomiris et al. (2016). These findings also provide evidence to the recent debate on the effects of restrictive monetary policy on financial intermediaries that are not eligible at the discount window (Nelson et al. 2015).

Conclusion

The BdE had no control over banks' lending because they had incentives to keep borrowing from the discount window as long as public debt was riskless, its yield was stable and above the Lombard rate and there were lending opportunities. This was the consequence of the regulatory change that the 1920 crisis brought about. The change in regulation did well to increase banks' interaction with—and in some cases reliance on—the central bank but prevented the development of a money market in which the central bank could implement effective monetary policy. The 1921 Law institutionalized a system that was convenient for CSB banks (cheap liquidity during non-crisis times), for the BdE (its rate continued to be a floor, so it preserved market shares in some provinces) and for the government (it could issue debt which banks had an incentive to subscribe).

This paper provides more evidence that changes in regulation that take place shortly after banking crises can find difficulties in solving the fundamental problems of the market they are trying to regulate. Moreover, the findings presented here suggest that any serious attempt by Spain to join the Gold Standard would have required—among other things—a complete overhaul of the monetary policy framework to be able to play by the "rules of the game". Finally the findings of this paper suggest that the political economy of financial development curtailed peripheral countries' ability to join the gold standard, despite governments' repeated rhetoric about the benefits of it.

Banks and Industrialization. Evidence from Savings Banks in 19th Century Prussia

Fabian Wahl

Sibylle Lehmann-Hasemeyer

Did the emergence of savings banks (Sparkassen) in 19th century Germany foster Industrialization and regional development? To investigate this question the paper empirically studies the effects of the foundation of saving banks on the development of cities and districts 19th century Prussia. The analysis is based on a newly collected data set on the foundation year, type and location of the Prussian savings banks. The results provide evidence for a significant role of the savings banks for the process of Industrialization in Prussia. Employing different empirical techniques like Propensity Score Matching or Event Study Methodology, we found that the savings banks are fostering population growth and urbanization in the cities and regions they were founded. We are also able to show that the impact of the saving banks on economic development and industrialization can be attributed to the fact that they financed public infrastructure like railways and provided funding for the construction of new factories by private firms. Therefore, our paper contributes to understand the role of banking for Industrialization in Germany by showing that savings banks also crucially contributed to industrial development.

Notes

The Rain in Spain Stays Mainly when you Pray

Jose Antonio Espin Sanchez

Salvador Gil-Guirado

Human societies have tried to reduce uncertainty regarding the yield of their crops since immemorial times. Droughts have played a key role in determining the legitimacy of institutions in most societies. Recent work has shown that, throughout the last 10 millennia, droughts have increased the risk of conflict (Hsiang et al., 2013). The effect of weather in pre-industrial societies in particular was so important that the leaders could see their status in danger if they did not take the matter seriously or if their measures were seen as ineffective (Chaney, 2013). Leaders of pre-industrial societies have usually carried two types of strategies with the aim of reducing conflict and maintaining the status quo:

- Public works such as dams, canals and aqueducts, and political institutions such as public granaries and farmers‘ guilds.
- Superstitions relating certain rituals with the goal of increasing rain and having a good harvest.

The implementation of public works and, to a lesser extent, political institutions is restricted by the technological knowledge of a society while the use of superstitions is not. Therefore, it is not that surprising that some of these practices have persisted until today, even after the advance of Science. We can see in Figure 1 how the existence of rituals and religious ceremonies that consist of asking a deity for rain is common in most, if not all, known societies.

The existence of rituals used to modify the weather has been instrumental to introduce and deepen other non-related religious beliefs (Ager and Ciccone, 2014). For example, peasants in regions with an endowment of geographical characteristics may be more superstitious and consequently, more religious than peasants in otherwise similar regions.

Within the Christian faith, prayers to ask for rain (pro-pluvia rogations) are performed mainly by Catholics. Such ceremonies are particularly important in the territories of the former Spanish Empire. These territories have maintained consistency in the Catholic religious cults and a common language since their colonization beginning at the end of the 15th century. Thus, there exist long and spatially diverse sources for over 500 years, documenting such ceremonies. As Parry (1990) noted, the former Spanish Empire grew under a rigid Catholic faith and a strict bureaucracy. This situation offers a unique possibility to undertake studies across countries using similar historical sources relating to more than five centuries in climate, economic and cultural research fields (Garza and Barriendos, 1998).

Until recently, pro-pluvia rogations sources have been used only in paleoclimatology (Barriendos and Martín-Vide, 1995). The intention of this paper is different, we use the pro-pluvia rogations sources to discuss the relation between beliefs, institutions and economic activity. We use daily data from the city of Murcia to understand the relationship between rainfall and rituals over the long run (Figure 2). This city has some characteristics that make it ideal for the study of the interaction between religious beliefs and institutions. It is located in southeastern Spain, which is the dryer region in Europe. The official religion has been Catholic for the last seven centuries, which make it suitable to study the persistence of institutions over the very long run.

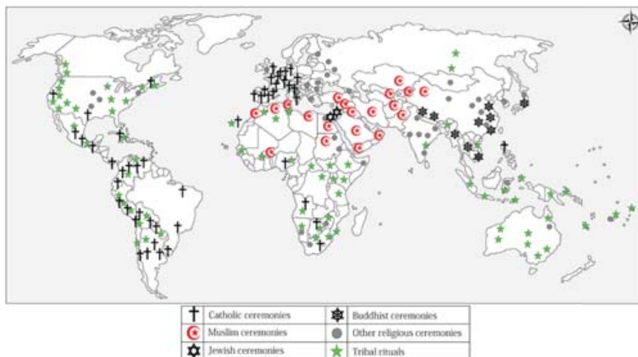


Figure 1: Cases of rituals asking for rain worldwide
Source: Gil-Gurado & Espín-Sanchez (2017)

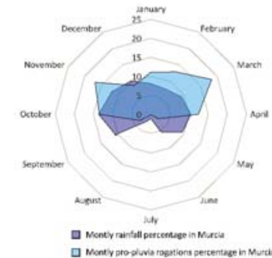


Figure 2: Praygram of the city of Murcia
Source: own elaboration

Our results show that the dry weather in Mediterranean Spain facilitated the high correlation between praying and rain, which then caused the creation and persistence of strong religious beliefs. We argue that the seasonal timing of the ritual created artificial correlation between praying and rain (Figure 3). In wet regions, this correlation is low because of the higher occurrence of rain, which also makes it less useful to control it with religious rituals. In dry regions, rain is so rare that it would be unlikely that the coincided with the ritual. In regions with Mediterranean weather, the religious leaders could chose when to pray and thus increased the correlation between the ritual (prayer) and the rain, thus effectively modifying the beliefs of the peasants regarding the legitimacy of the priest as intermediaries between God and humans (Kamenica and Gentzkow, 2011). The argument is similar to the one in Leeson (2013), who argues that priests from France, Italy and Switzerland tried vermin for their destruction of crops and time the end of the trials to coincide with the likely end of the plague.

We want to understand why people believe in super natural beings, and that some people can act as intermediaries between them and humans. In particular, we are interested in the effect that rituals performed to change the weather have in those beliefs. Therefore, it is of first order importance to know whether the rituals were “successful.” In the application here, the first test would be to see if the unconditional correlation between praying and rain is positive and significant. We show this relation in Figure 3. This result is robust to aggregating the data at the seasonal or decadal level, and to using lagged or contemporaneous prayers.

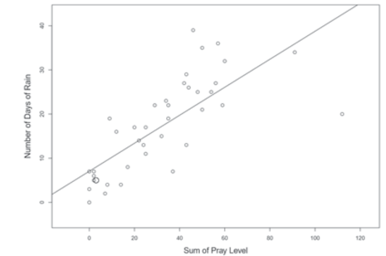


Figure 3: Sum of Pray Level and Rain by Decade
Source: Own elaboration

This result suggests that priests have good information about the weather or that they timed the prayers to coincide with the rain. This relies on two assumptions. First, that the priest had some information about the rain, or that the institutions in place produced prayers in a particular timing. Second, that the weather follow some pattern that could be exploited. We argue that both are important.

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Industrialization and the Spread of Nationalism in Prussia

Felix
Kersting

In the decades preceding World War I, industrialization and nationalism were two of the most apparent developments in Germany. While Germany experienced its belated and rapid industrialization, nationalism became more and more popular and radical. The literature in economic history has addressed only parts of this development, mainly taking protectionism as an indicator (Lehmann 2010). Right at this point, I will start this paper by asking the following question: To what extent was the rise in nationalism a response to industrialization in Prussia? For answering this question, I rely on data on the "Kriegervereine", the biggest civil organization during that time as a proxy for nationalism. In 1913, it comprised more than 3 million members in Imperial Germany. In comparison, all trade unions combined had 2.6 million members before World War I. The rise in membership of the "Kriegervereine" is a good indicator for a nationalist turn of the population since they displayed a strong militaristic orientation and extensively used typical nationalist symbols (e.g. monuments, flags and parades). In contrast to other nationalist organizations (e.g. "Alldeutscher Verein" and "Ostmarkenverein"), the "Kriegervereine" were much larger in membership and rooted in the everyday life of the German people. Therefore, they can be seen as an indicator of nationalism from below. With this analysis, I can contribute to the growing literature in economics and economic history on nationalism and political radicalism by analyzing the regional spread of industrialization as a driver of political radicalization in the every-day life of Imperial Germany.

My dataset is based on the reports published by the "Kriegervereine". It includes the number of members at district level between 1903 and 1913. In this period, the average growth of the organization was 40 % and led to 500.000 new members within this decade in Prussia. Thus, nationalism became more and more a mass phenomenon during the decade before World War I. Complementary to this, this decade was one of the most dynamic phases for the German economy, which abruptly ended with WW I. For these reasons, this historical period is a good setting to research the sources of radicalization in a society. With a detailed examination of Prussia before World War I, I am able to examine the role of economic development for the mass radicalization. To pinpoint the influence of industrialization, I use data on employment in industry sectors for every district. There might be, however, issues of omitted variables and reverse causation or both. To address these concerns, I calculate coal potential as an instrumental variable for every district. This instrumental variable is based on information on the area from the late carboniferous age and contemporary knowledge on the availability of coal resources from 1913. This approach is similar to the approach the one used by Fernihough and O'Rourke (2014).

My results show strong evidence for a causal relationship between industrialization and the spread of nationalism in the beginning of the 20th century. A declining share of industrial employment by one percentage point leads to higher growth of the "Kriegervereine" by 0.1 percentage points. As potential explanations, I discuss the political economy of the first globalization in terms of winners and losers, the role of migration and the relationship to other social identities such as trade unions. First, I find no evidence that the results are driven by the big agricultural enterprises who were the main losers of the first wave of globalization as shown by Lehmann (2010). Second, there is strong evidence that migration patterns within Germany are a crucial mechanism for the effect of industry employment on the "Kriegervereine". In a three-stage IV regression, I can show that the instrumented industry employment is a good predictor for migration and that instrument migration itself has a strong effect on the "Kriegervereine". Thus, regions where people out-migrate due to economic conditions face a higher growth of the "Kriegervereine". This is in line with contemporary thinking: For instance, Max Weber famously called for a nationalist reaction in those regions in the East of Prussia with a substantial Polish minority and facing out-migration of German people to the Western parts of Prussia in his inaugural lecture in Freiburg in 1895. Third, there seems to be a rural-urban divide in membership of trade unions and the "Kriegervereine". Where in rural areas the "Kriegervereine" were stronger, in urban areas trade unions dominated. This is in line with theoretical work by Shayo (2009) on the formation of social identities. Shayo's hypothesis states that a "nationalist" equilibrium emerges if the perceived distance to other social identities increases. This exactly was the case in rural areas. The formation of trade unions was forbidden in the agricultural sector and thereby, the perceived distance to other social identities, especially trade unions, increased. By including membership in trade unions before 1900 in my regression analysis, I can confirm this hypothesis. Regions with a higher share of membership in trade unions reveal a smaller share of membership in the "Kriegervereine".

Concluding, five main results present themselves: First, the "Kriegervereine" are a new and valid indicator for measuring nationalism. Second, an IV regression framework can be employed to show strong evidence for a causal relationship between the share of industrial employment and membership of the "Kriegervereine" in the decade preceding WWI. Third, can eliminate the possibility that the results are driven by a high share of big agricultural enterprises. Fourth, inter-regional migration seems to be an important link between industrialization and radicalization. Fifth, there is an urban-rural divide in terms of mass social identities: Urban areas increasingly became socialist, while rural areas showed a stronger nationalist orientation.

The Economics of Missionary Expansion and the Compression of History

Felix Meier zu Selhausen　Alexander Moradi　Remi Jedwab

One of the most powerful cultural transformations in Africa's modern history has been the rapid growth of Christianity from the mid-19th century onwards. A recent, yet extensive, literature uses missions established during the colonial period as a source of exogenous variation to study the local effects of human capital and religion on long-term economic development. Most of these studies claim to provide strong evidence in favour of the path dependence hypothesis. However, the same studies often underestimate the endogeneity of missionary expansion. Using a new panel dataset on the location of missions in Ghana from 1832 to 1932 (Figure 1 and 2), we show that: (i) an adverse health environment may not have influenced Christianisation after the widespread use of quinine after 1850s (Figure 3) and the Africanization of the mission lifted the constraint of European survival; (ii) locational decisions were driven by economic factors (i.e. cash crop areas, population densities, urbanisation, and transport infrastructure), thus invalidating the hypothesis that missions were randomly located. While the earlier missions were located in more pacified and non-malarial areas, the later missions were created in more developed areas; (iii) these factors may spuriously explain why the locations with missions in the past are more developed today, a result which we also confirm using replication data from two major studies. We also show that previously created datasets of the geographical location of missions in Africa use either European residence stations or on the number of European missionaries. This may lead to overly optimistic accounts of missionary influences on long-term African development and fails to acknowledge the fundamental importance of African agency in the Christian diffusion process. More generally, our paper highlights the risks of "compression of history" arising from the use of historical shocks as sources of identification.

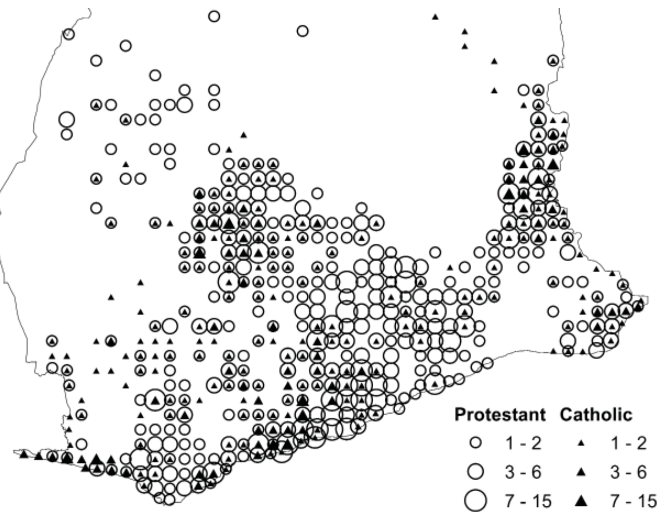

Figure 1: Geogrpahical expansion of Christian missions in southern Gold Coast, 1932

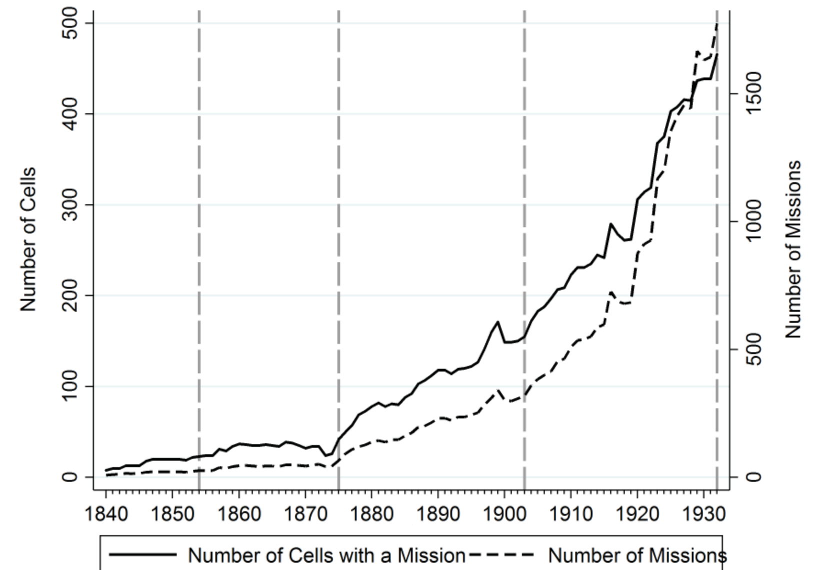

Figure 2: Number of missions in the Gold Coast, 1840-1932

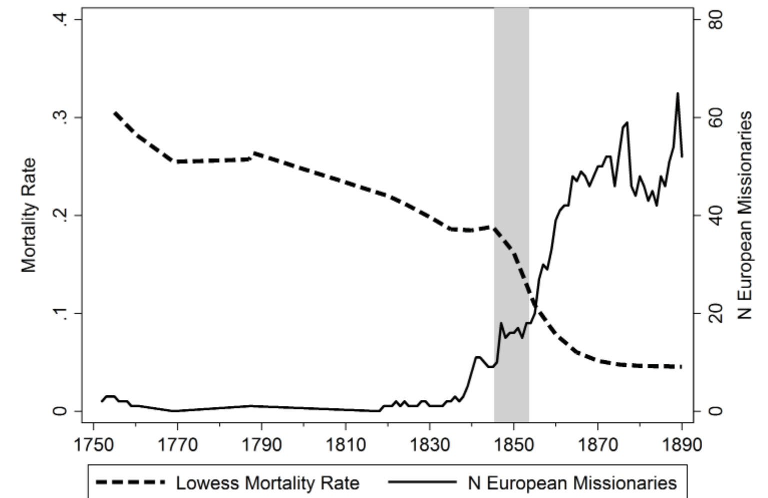

Figure 3: European missionary mortality rate in the Gold Coast, 1750-1890

International stock market integration during the Gold Standard

Rebecca
Stuart

This paper examines the co-movement of stock returns in 6 countries during the classical gold standard, 1878-1914, using monthly data. While it is well-accepted that this period represented the 'first era of globalisation' (Bordo and Meissner (2015)), papers examining the co-movement of indices tend focus on a small number (often two) of markets (Campbell and Rogers (2017), Hoag (2006)). Those that study a number of markets generally use very long samples in which periods, such as the gold standard and the long interwar period thereafter, are compared with each other (Voth and Quinn (2010)).

However, as noted in Goetzmann et al., (2005), the classical gold standard was not characterised by a constant level of co-movement. In this paper, I show that co-movements varied across countries and through time during the classical gold standard. To do so, I use monthly data on six countries' stock markets for the period 1879 to 1914. Simple correlations indicate the level of co-movement between the markets. However, tests for the equality of two correlation matrices proposed by Jennrich (1970) and Steiger (1980) show that the null that the correlation matrix is the same at the start and end of the sample period can be rejected.

Since the correlation of the returns, and therefore their variance-covariance matrix, changes during the sample period, this must be taken into account in the analysis. I therefore conduct a 5-year rolling principal component analysis, focussing on the first principal component. The first principal component is a linear transformation of the data which captures the maximum possible amount of variance of the series. Following Pukthuanthong and Roll (2009), I consider the first principal component a 'global shock'. This shock moves all series in the same direction, with the exception of the Irish series in the late 1800s. Since the Irish market was a small provincial market within Great Britain at this time (Campbell et al., (2016)), it appears that it was not integrated in the same fashion as other markets at that time.

The rolling 5-year window, which moves ahead one month at a time, results in 59 estimates of the first principal component for each month. I take the range of these, and focus on periods of crisis in Europe and the US. Panics and crises are evident in the data. For instance, the crisis in France in 1882, in the UK in 1890-91, and panics in the US in 1896, 1901 and the crisis of 1907 are apparent in the first principal component. This suggests that these shocks spilled over from the country of origin to other countries, constituting a global shock. On the other hand, some other crises, such as that in France in 1889, do not affect the first principal component, and thus did not move the other markets.

The principal component analysis provides several different pieces of information which can be exploited in understanding the changing nature of the variance-covariance matrix. Aside from the principal components themselves, the loadings of this principal component onto each of the series and the share of total variance accounted for by each principal component can provide information on the co-movements of the series with the global shock.

To consider the changing correlation between the series over the sample period, I first calculate the share of the total variance accounted for by the first principal component, or global shock, for each rolling window. The rolling window analysis indicates that this share of the variance changes dramatically over the course of the gold standard era. At the start of the sample period, almost 40% of the variance is explained by the first principal component. This declines sharply during the early 1880s, to just 25%, before rising above 45% in the late 1890s. By the end of the sample approximately 40% of the variance of the series is explained by the first principal component.

To further investigate this, I turn to the factor loadings. These capture how strongly a particular series moves with each principal component. The rolling window shows that the first principal component loads onto the series more heavily at various points in the sample. For instance, the loading of the first principal component on the UK series is declining over the sample period, while that on the US appears to be increasing. Moreover, the loading is on average lower for the French series than the US or UK series over the sample period.

Finally, I consider how the first principal component, or global shock, affected the series over time. To do so, I estimate a Vector Autoregression model of the six returns series using one lag of the data and the same 5-year windows as before. I then follow Stock and Watson (2005), and use the factor loadings to identify the impact of the global shock on the series. Taking four non-overlapping 5-year periods, the impact of the shocks can be assessed through time. The impulse responses indicate that both the impact and the significance of the shocks changes over the sample period, and across countries.

Dividend Growth Predictability Revisited: Evidence from the Brussels Stock Exchange (1832-2008)

Gertjan Verdickt   Jan Annaert   Marc Deloof

An elementary question in asset pricing is whether stock prices move because of news related to cash-flows or because of news related to returns. Among all variables proposed as predictors, dividend yields have the most theoretical appeal. The aggregate dividend yield is the expected value of future cash flows discounted at the required rate of return of the market. Time-varying dividend yields are interpreted as changing expectations in returns, changing expectations in dividend growth, or both. A natural inquiry is "how much of each?". Several papers have shown the forecasting ability of dividend yields for returns. Due to this evidence, dividend growth predictability is largely overlooked. Further, the majority of the empirical work underpinning the return predictability evidence uses US data going back to 1926. The prevailing view has become that long-horizon return predictability is significantly stronger compared to short-term predictability. The use of relative recent data raises questions on how representative conclusions are for stock markets in general. In this research, we analyze whether dividend yields predict returns or dividend growth with more than 160 years of data of the Brussels Stock Exchange (BSE). We assess whether findings that hold for US are generalizable to other periods and places. The long-time horizon we use provides insights about modern financial markets and helps us to understand the driving forces of return predictability in the US.

This paper provides two contributions to this subject. First, we use a new, independent database with more than 160 years of first-rate data on the BSE. The considered database comprises the 1850-2015 period for the aggregated Belgian stock market. To the best of our knowledge, this is the first paper that investigates return and dividend growth predictability on a dataset of such length and quality. Being able to use such a long-term dataset puts us in a truly advantageous position relative to other research. We are able to better establish the impact of institutional and economic environments on return and dividend growth predictability. The period features multiple recessions, which allows us to establish the importance of business cycle variation for time-varying expected returns and expected dividend growth. Given its length, the data presents an opportunity to perform out-of-sample tests.

Second, compared to other countries, we possess exceptional dividend data, which is unique in the literature before World War I. More importantly, information on US dividends is noisy and incomplete for the nineteenth century. This can have influential implications for the calculation of total return series. The SCOB database is not subject to these data flaws because of the availability of reliable first-hand data, complemented with various secondary sources that allow cross-checking to enhance the internal consistency. We have the advantage of having all the stocks that were listed on the BSE in our sample, and use the aggregate market. This excludes survivorship bias from our sample.

In this paper, we study the ability of the dividend yield to predict returns and dividend growth rates. We capture the time-varying character of the return and dividend growth regression coefficients in rolling regressions. In addition, we report evidence on long-run regressions to check the robustness of the evidence. Second, we run several out-of-sample regressions. Finally, we specify a null hypothesis with restrictions on the joint dynamics of returns, dividend growth. This better captures the underlying relation in the data. We perform regressions in nominal and real terms to check the ability of dividend yield to predict future inflation.

The focus of this paper is on the 1850-2015 period, with the exclusion of the years 1914-1923 and 1940-1949 (referred to as 'war years'). The exclusion of the war years is warranted by the fact that firms did not pay (or hardly paid any) dividends, while paying accumulated dividends shortly after both wars. This has a significant impact on dividend growth. To increase comparability with other research, we report the results for different subperiods, namely pre-World War I period (1832-1913), the middle years (1914-1949) and post-World War II period (1950-2015).

Our main findings are summarized as follows. First, dividend yield is significant in predicting dividend growth when we exclude the war years. Almost all variation of expected dividend growth is explained by variation of dividend yields. Moreover, the signs of coefficients are in the right direction. When we omit these war years, the statistical significance of the predictive relation increases while its economic significance remains stable. The evidence is robust when we control for a risk-free rate, inflation and business cycle variation. Moreover, the reinvestment assumption does not influence the results.

Second, when we look at the different subperiods, dividend yield without reinvestment has predictive power over future dividend growth rates. These results are robust over all considered time periods. We conclude that the lack of dividend smoothing explains the difference with US evidence. When we control for different economic regimes, we provide evidence of cyclical and time-varying dividend growth predictability. The evidence disappears when considering reinvested dividends, which strengthens the result that dividend growth rates with reinvestment is clouded with a return component. The intuition is that return predictability is a countercyclical phenomenon.

In conclusion, we reestablish the importance of dividend growth predictability in the asset pricing literature for the Brussels Stock Exchange. We conclude that there is evidence, both theoretically and empirically, for the cyclical and time-varying nature of dividend growth predictability, in particular without reinvestment. We reinforce that the dominance of return predictability is a recent US phenomenon.

News Media and Stock Market Returns over the Long Run

Clive Walker

Alan Hanna

John D. Turner

The important role of the press in shaping behaviour in financial markets was highlighted by Bagehot (1873) in his famous Lombard Street. Economists, implicitly accepting this fact, have thus used the press to understand the news that moves financial markets (Niederhoffer, 1971; Cutler et al., 1989; and Elmendorf et al., 1996). More recently, economists have begun to examine how the press itself, rather than the news it reports, influences financial markets. Shiller (2000, 2017) argues that the press play an important role in propagating stock market booms and market sentiment through their narratives and hype. Tetlock (2007) formally tests this role of the press and finds that the negativity of reporting in a Wall Street Journal market column predicts daily stock returns. Similarly, García (2013) finds that the negativity and positivity of reporting in the New York Times over a century predicts daily stock returns, but that the effect is concentrated in recessions.

This paper contributes to this literature on the role of the press by studying a broad range of financial and non-financial reporting in the Financial Times (FT) from 1899 to 2010. Because we examine a range of types of press reporting, including explicit opinion or commentary pieces, we are able to see whether particular types of reporting affect markets more and whether sentiment-laden but information-light reporting affects markets. We find that sentiment-laden and information-light commentary predicts stock returns and the number of trades on the market, which is strong evidence to suggest that pure newspaper hype is moving markets. In addition, because we study such a long period of time, we are able to see whether the effect of press reporting on returns is associated with the prevailing state of the stock market, i.e., whether it is a bull or bear state. We find that the effect of negative reporting on returns does not differ across market states, but that the effect of positive reporting on returns is twice as large during bear markets. We also find that, the effect of reporting on returns tends to be non-reversing in both bull and bear markets, which is evidence consistent with Shiller's press-as-propagators hypothesis.

We use four principal sections from the FT—Editorials and Leaders, Lex, News in Brief, and Market news columns—and count the number of positive and negative words used in each newspaper to generate a daily proxy of investor sentiment. The sections we include are broader than those used in previous studies in that they cover more than stock-market news. They include explicit commentary and opinion pieces, which are almost perfect measures of market sentiment. In addition, the columns we include are unlikely to contain new information on individual companies; this is particularly the case for the FT's two commentary/opinion sections.

In order to test the effect of investor sentiment, as proxied by the FT's reporting, on stock returns, we create a daily blue-chip index for the UK market. From 1930 onwards, we use blue-chip indices which already exist. Prior to 1930, we collect the relevant data to construct a daily index of the largest stocks in the UK in an attempt to imitate the post-1930 daily blue-chip index. Consequently, this paper presents the first daily stock-market index for the UK dating back to 1900. We also collect data on trading activity for our blue-chip index as far back as 1930.

Investor sentiment is highly correlated with the prevailing state of the stock market (Baker and Wurgler, 2007). Thus, the effect of investor sentiment on the market may vary with the market's prevailing state. If the stock market is in a bullish/bearish mood, positive/negative reporting by the press may exacerbate or dampen the overall mood of the market. We, therefore, test whether the overall state of the stock market affects investor sentiment as well as testing Shiller's (2000) press-as-propagators hypothesis and García's (2013) hypothesis, based on the personality and psychology literature, that newspaper sentiment has a greater effect during periods of hardship. To identify whether the market is in a bull or bear state, we develop algorithms based firstly on the performance of our blue-chip index and secondly on the FT's use of 'bull' and 'bear' words.

Our findings suggest that there is some evidence to support Shiller's hypothesis. First, positive sentiment neither reverses in bull or bear states. Second, for the overall period, the initial effect of negative sentiment and pessimism is reversed over subsequent days. However, when we analyze the media effect by market state, we find that negative sentiment and pessimism do not reverse in bear markets, suggesting that the media are propagating this market state. Third, we find that extreme positive sentiment during bull markets shifts trading activity, which is consistent with noise traders driving trade during speculative booms (Baker and Stein, 2004). However, we discover limited evidence to support García's hypothesis. There is only a statistically significant difference for positive sentiment across market states.

Our analysis of the different sections of the FT reveals several interesting findings. First, the more narrowly focussed the section is on financial markets, the greater its influence on returns. Second, the words used to report on financial markets and the commentary therein are just as sentiment-laden as the pure commentary sections of the FT. Third, the sentiment of the pure commentary sections of the FT affect returns, suggesting that the sentiment in our media content measures are uncontaminated by information.

As well as using the various sections of the FT to ascertain whether our sentiment measures are contaminated by information, we test for the presence of information in our sentiment measures by testing whether the effect of sentiment differs between consecutive and non-consecutive trading days. The premise of doing this indirect test is that information accumulates over non-consecutive trading days or, alternatively, information production is concentrated on consecutive trading days. Our results suggest that the effect of sentiment on returns between consecutive and non-consecutive trading days does not differ. However, the effect on non-consecutive days does not reverse, which may suggest that our sentiment measure on Mondays may be contaminated with some information.

We also examine whether or not the effect of our sentiment measures on the market reversed over subsequent days. If our sentiment measures contain information, then we would anticipate that the initial effect on returns would not be reversed because new information has been impounded into the market. However, if our measure is sentiment, then we would expect the initial impact upon returns to be reversed because after the sentiment shocks prompts noise traders to sell or buy stocks, rational traders will subsequently drive prices back to their fundamental value unless there are limits to arbitrage which prevent them from doing this. On the whole, our evidence points in the direction of a reversal of negative sentiment shocks, which suggests that our negative sentiment measure is uncontaminated by information. However, positive sentiment shocks are not reversed, which could point to information in positive sentiment or limits to arbitrage with upward stock movements.

Economic consequences of the Napoleonic Wars: Evidence from market integration in Central Europe, c. 1780–1830

Hakon Albers

Ulrich Pfister

Martin Uebele

We analyse the period of Germany's transition to the post-Malthusian era in c. 1820. Two channels linked to the Napoleonic Wars (1792–1815) are investigated: state formation and the change in trade regimes. Regarding the former, 150 major territories and many tiny dominions existed in the German lands before the wars. By 1815, the number of political units had shrunk to ca. 40; and 60% of the German population were now citizens of either Prussia or Bavaria. Regarding the change in trade regimes, possibly 1900 internal customs stations existed in ca. 1800. By 1818, all major states had introduced unified systems of external tariffs.
The hypothesis is that the shift to unified tariff regimes and state formation lead to integration of regional grain markets—with important consequences for economic development. In ca. 1820, slow but sustained economic growth began (Pfister et al. 2012). Regional grain market integration could have relieved food constraints and contributed to a deepening of the division of labour. Furthermore, we contribute to the debate about the role of French presence on 19th century economic development (Acemoglu et al. 2011; Keller and Shiue 2016; Kopsidis and Bromley 2016).

Data and Methodology
Our sample consists of rye prices in 29 towns observed in the period 1780-1830. We study bilateral gaps of prices which we converted to grams silver per litre (a detailed description of currency and volume conversion for most series is part of an unpublished companion paper; Albers et al. 2017). The period of the Napoleonic Wars 1792-1815 is considered as the 'treatment period'. We exclude the data of the treatment period due to war related shocks and data problems resulting from war finance caused inflation, which is not correctly accounted for by currency conversion. In 1818 the Prussian Customs Law was enacted but the effects of Prussian territorial gains during the wars and those of the new law can hardly be disentangled. As a consequence, the year 1816 is considered as the first year of the post-treatment period. The estimates are insensitive to inclusion of an additional treatment indicator for Prussia from 1819. As a further alternative, we considered starting the post-treatment period with 1819; this does not alter the main results.

The empirical model applies a difference-in-differences strategy. We specify seven treatment groups. We also test other controls such as British demand effects (i.e. the respective Corn Law regimes) or distance to early coal extraction (interacted with the treatment).

Robust negative effect of Bavarian state formation on price gaps
Two main results obtain: the first is on Bavaria, the second on the role of French presence. First, we find a large and significant reduction of price gaps between city pairs in the new state of Bavaria. The magnitude of the effect is a reduction of roughly 7 percentage points, corresponding to ca. 40% with regard to the pre-war level. This result is robust across many specifications, also to inclusion of treatment-group-specific time trends (Angrist and Pischke 2009).

The effect found for Bavaria is robust to various definitions of "French Presence" (i.e. the implementation of treatment intensity; see Keller and Shiue 2016) and several specifications of the British demand effect. The latter refers to the alterations of the British Corn Laws which became more liberal over time and could have led to integration of coastal towns (e.g., Gdansk) with a third market, Great Britain (Sharp 2010). In addition, distance to the Ruhr area, where early coal extraction and coal trade might have had positive effects on grain market integration, does not affect the result; neither does varying the sample such as dropping influential observations, including all 51 years (full sample 1780-1830) or using only a balanced sample. Distance to coal is the most important control variable. City pairs close to coal experienced a large reduction of price gaps.

Bavaria was the first German state to institute a regime with unified external tariffs in the 1760s. This conflicted with Imperial law, and the government was involved in long court procedures concerning this issue; but obstacles disappeared after 1806. As Napoleon's ally, Bavaria increased its territory during the war. Until 1794 Munich is the only Bavarian market in our sample; after the war there are six Bavarian markets.

Additionally, areas with French presence show a small reduction of price gaps. The parameter indicates a reduction of ca. 4 percentage points (21% with regard to the pre-war level). The parameter for French presence, however, is not stable across all specifications. Moreover, we observe opposite signs when allowing heterogeneous effects depending on how close a region's relations were with the French Empire. For example, advanced commercial law (*Code de commerce*), which should have reduced transaction costs of trade, may have reduced price gaps on the left bank of the Rhine. However, we find increasing price gaps. Furthermore, French-ruled Hanover had already low price gaps before the Napoleonic Wars and shows no further integration.

Concluding remarks
In summary, we find regional grain market integration for Bavaria analysing rye price gaps in a difference-in-differences framework. A limitation of our current work is the French presence puzzle: Heterogeneous effects of the Napoleonic Wars on price gaps in French-ruled territories, which are difficult to reconcile with French-induced institutional change. Possibly, there is another factor which can explain why price gaps were reduced in some formerly French-ruled territories. A likely candidate is trade liberalization on the river Rhine. Nevertheless, both better food provision and division of labour due to market integration in Bavaria are likely to be at least a small part of the explanation for the transition to sustained growth in Germany.

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Post WWI relief credits provided to Poland by Scandinavian countries (1919-1955)

Robert Andrzejczyk
Mirosław Kłusek

Hunger and poverty remained acute thorough most of Europe during first immediate post-Great War years. Eastern Europe as a whole was touched in a very bad way. Clearly there was an urgent need for foreign relief. Assistance was extended by Western countries including Scandinavian countries. 20 European countries were recipients of supplies, mainly on a credit basis. Most of the relief consisted of food provisions and some clothing. Poland was one of the most severely devastated countries after World War I. In case of Poland Scandinavian countries were key suppliers of relief credits during crucial years of 1919-1921. This paper highlights not only genesis of the relief credits, payment difficulties and debt treatments during interwar period but also cancelation of debt remaining after WWII.

The paper is mostly based on archival materials kept in the Archives of Modern Records in Warsaw as well as in National Archives of Sweden, Denmark and Norway.

Can school centralization foster human capital accumulation? A quasi-experiment from early-20th-century Italy

Gabriele Cappelli
Michelangelo Vasta

This article shows that a shift towards a more centralized school system can benefit low-income countries characterized by poor levels of human capital and large regional disparities in education. In 1911, Italy shifted from a fully decentralized primary-school system towards centralization through the Daneo-Credaro Reform. The Reform design allows us to compare treated municipalities with the provincial and district capitals, which retained school autonomy. Treated municipalities were characterized by a +0.42 percent premium on the annual growth of literacy. Our quasi-natural experiment, based on Propensity Score Matching (PSM), shows that this link was significant, and we discuss some of the channels through which the new legislation affected primary schooling and literacy.

Irish exchange rates 1760-1826

Daniel Cassidy

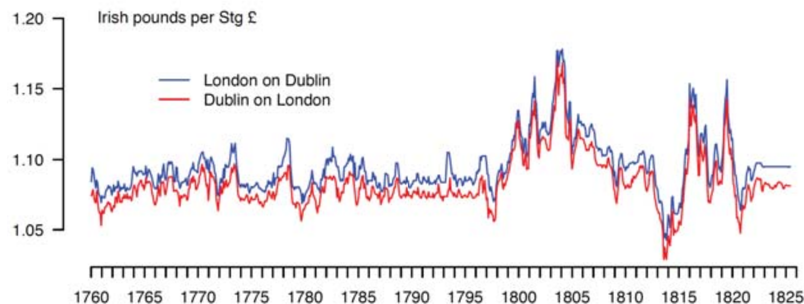
Aidan Kane

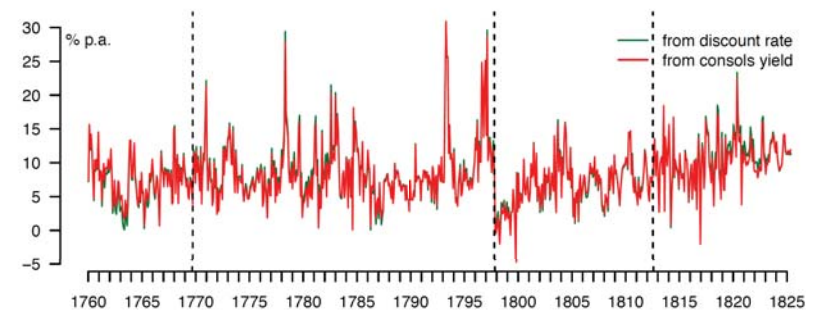
We exploit distinctive features of early modern foreign currency transactions to help identify (otherwise obscure) periods of high interest rates in Ireland 1760-1826. We present and analyse quotations data for bills of exchange drawn in Dublin on London, as well as for bills in London on Dublin, for 1760-1826, data which have not heretofore been examined systematically. The periods of elevated (implicit) interest rates in Ireland which emerge from the analysis are suggestive of credit crises around 1770, 1778, 1783, 1797, 1813 and 1820.

Our sources for exchange rate quotations consist mainly of contemporary Irish newspapers. Data was generally available at bi-weekly frequency in line with the pattern of newspaper publications. Sources include the Dublin Courier, Dublin Gazette (an official source), Finn's Leinster Journal, Faulkner's Dublin Journal, Saunder's Newsletter, Hibernian Journal, Dublin Evening Post, Lloyd's List and the Belfast Newsletter. For the years 1794-1804 we collected exchange rate quotations from parliamentary papers, which were recorded at similar frequency.

Early modern foreign exchange transactions were typically carried out via cross border bills of exchange. These transactions involved a time delay which was known as a usance period and therefore early modern exchange rates are better referred to as usance rates, which consist of both an exchange and credit element. We apply a simply methodology (see Kohn 1999) to disentangle these elements from quoted exchange rates from 1760-1825. It can be shown that a usance rate is a combination of a notional spot exchange rate and an implicit/shadow interest rate. We use a London discount rate, and as a cross-check the Consols bond yield (Bank of England 2017), to solve for an implicit/shadow Dublin interest rate.

Our results are consistent with the literature on financial/credit crises in Ireland. The Bai-Perron (1998) test for structural change within the implicit/shadow interest rate series is indicative of breakpoints in 1769(9), 1797(11) and 1812(8). The high implicit rates in 1769/1770 and 1797 (notably when the Irish pound, as well as sterling, exited a de facto gold standard) correspond to commercial crises as documented by Cullen (1968).





Big Industry in a small Southern Italian region: the Fiat factory in Molise (1970-1992)

Maddalena
Chimisso

Objective
This proposal intends to elaborate the relationship between the city and the work places in the Contemporary age, examining the theme of big industry in the South of Italy and the territorial and socioeconomic results of industry without "industrialism". In certain geographic realities, notwithstanding major environmental transformations carried out to create a favourable context for industrialisation, the results were disappointing with a limited or inexistent turnover.

The expansion of the territorial transformations and the socioeconomic effects brought on by the establishment of the Fiat factory in Termoli (Molise) in the area of the Consortium of industrial development of the Biferno valley (Cosib) favours a historical analysis of the relationship between big industry (Fiat) and the territory (Cosib area) and an investigation into the relationship city-industry, which took on a notable centrality for Termoli. Termoli represents an optimal case study to better understand the expansion strategy elaborated by Fiat at the beginning of the 1970s: the company had planned on investing in the South also thanks to the economic incentives made available by the State to favour industrialisation in Southern Italy (Pastore Law n. 634/1957). The investment plan included the opening of a new factory even in Termoli where, still today, the image of the Industrial Nucleus continues to be identified solely in the Fiat factory. The factory bears witness to the changes in the spacial and social dimensions of Termoli and the entire area brought on by big industry.

Methodologies and sources
Despite the notable quantity of contributions regarding the historical, industrial, economic and social events of Fiat, the complex in Termoli has been characterised by a historiographic void and has thus legitimised the need to also consult archival sources.

1. *Factory model X. Aerial view (July 1973). Maire Tecnimont Historical Archives, box T641, Fiat Engineering s.p.a. Building and Plants - Fiat factory model X. Technical report (July 1973) folder*

The detailed focus on a specific episode, the construction of the Fiat factory in Termoli, would risk considering this territory an isolated case decontextualised by multiple relations which have historically connected it to the outside. The study of a territorial reality requires a research approach which takes into consideration the existent hierarchical-spacial relationship created between the outskirts and the centres.

Thus the documentation preserved in the local archives (State Archive of Campobasso, The historical Archive of the municipality of Termoli, Cosib Archive) was integrated with that of the archives considered "central" to this particular hierarchical-spacial relationship (Archive of the Centre for studies and economic plans, Fiat Historical Archive, Maire Tecnimont Archive). This integration, favouring a global vision of the events affecting the coastal area of Molise, would allow a in-depth study of a case that still today has little historical perspective.

Reflecting on the Fiat factory in Termoli means taking into consideration the urban-territorial and socioeconomic dimensions as well as the dualisms deriving from the presence of the big industry in finite territorial areas, which underwent important changes, and a swift development particularly in the initial phases.

2. *Fiat Factory of Termoli -Molise region- under construction (July-August 1972). Fiat Historical Archives, no box or folder.*

3. *Fiat Factory of Termoli -Molise region-. General Plan with agglomerate infrastructures (04.07.1975). Maire Tecinmont Historical Archives, box D7170, Fiat Engineering Building and Plants - Termoli Factory folder.*

Did Greece genuinely introduce either the Gold Standard or the Gold Exchange Standard in 1910?

Olga
Christodoulaki

These days, 1910 is usually cited by contemporary economic historians and economists as the year that Greece adopted either the gold standard or the gold exchange standard, depending on their view. By contrast, before the 1980s it was generally believed that the Greek currency had remained inconvertible throughout the period from September 1885 when the gold standard was suspended until May 1928 when the gold exchange standard was *de jure* introduced.

What was the monetary arrangement in Greece in 1910 that has prompted scholars to argue more recently that Greece adopted a clearly defined monetary rule during that year, even though there is no agreement amongst them on which rule Greece in fact introduced? Furthermore, why is there a discrepancy between the way that monetary change in Greece in 1910 is seen in recent economic history literature and the way it was considered by scholars and policy makers at the time?

Article 30 of the Law of Control which was enacted in 1898, encouraged monetary discipline in Greece as it strictly prohibited the National Bank from using the printing press to support lending to the government without the consent of the International Financial Commission, until the debt in banknotes from the forced circulation had been fully paid off. Article 30, however, incorporated an escape clause which allowed for an increase in the number of banknotes in circulation under the condition that this was for the 'needs of trade'. This escape clause was used in 1910 to introduce article eight of the ΓΧΜΒ Law which outlined the prerequisites for an increase in the money supply without the Law of Control being violated.

On 19 March 1910 (Julian calendar), two laws were enacted by the Greek government: the ΓΧΜΑ Law which dealt with coinage and the ΓΧΜΒ Law (or the Law), the primary purpose of which was to authorise the flotation of a loan on the international financial markets. The ΓΧΜΒ Law, however, is remembered and still discussed for its article eight, which introduced the most important monetary reform in Greece between the suspension of convertibility in 1885 and *de jure* stabilisation of the drachma in 1928. Article eight of the ΓΧΜΒ Law authorised the National Bank to increase for its own account, the banknotes in circulation beyond the limit that its issuing privilege allowed on condition that these freshly printed notes were used to buy gold and foreign exchange at a price that was not above par. The National Bank was then obliged to sell the gold at par plus one per thousand as a commission. Foreign exchange was to be sold at the equivalent of the parity of the drachma with the French franc, this time with half a percent added as profit. When gold or foreign exchange was sold, then the equivalent value in banknotes had to be withdrawn from circulation. The Law also provided that an agreement between the National Bank and the government validated by a royal decree, was necessary to determine the limit up to which banknotes could be issued by the National Bank whilst still abiding by the principles of this Law.

The parity that the ΓΧΜΒ Law refers to was the parity of the drachma set in 1868 when Greece joined the Latin Monetary Union, that is to say that one paper drachma equalled one gold drachma, which in turn was equal to one French franc. This parity had been reached towards the end of 1909, after a long period where the Greek currency had at first depreciated severely between 1886 and 1901 and then appreciated again.

It should be noted that the Law did not restrict the buying and selling of foreign exchange to the foreign exchange of countries on the gold standard, as has been argued. The Law refers only to foreign exchange in general – a practice followed in all the subsequent agreements between the government and the National Bank authorising the latter to increase the banknotes in circulation under the principles of article eight of the ΓΧΜΒ Law. This monetary development in 1910 was not a conscious act on the part of the Greek monetary policy authorities to adopt for the country a monetary standard, let alone the gold exchange standard. Its aim was to curb the appreciation of the drachma and at the same time to increase liquidity, in particular during the period of the harvest.

By the end of 1912, Greece was embroiled in the First Balkan War and policy makers had become complacent over the monetary arrangement in Greece. There was no talk of introducing *de jure* convertibility, which would most probably have entailed an arrangement of the government debt in forced circulation to the bank of issue. For its part the National Bank, a private institution, enjoyed the benefits of the ΓΧΜΒ Law without the 'golden fetters'.

In March 1910 there were in circulation banknotes from the two issuing banks, the National Bank and the Ionian Bank, as well as those of the forced circulation which were governed by the 1898 Law of Control. The Law gave the National Bank the right to issue banknotes up to a certain amount specified by a royal decree on condition that these freshly printed banknotes were fully covered by gold and foreign exchange. In September 1910 for the first time, the National Bank was authorised to issue banknotes of up to ten million drachmae. By the end of September 1910, nearly 6 percent of the banknotes in circulation were banknotes that had been issued in response to the ΓΧΜΒ Law whilst by the end of December of that same year this amount had risen to 17 percent.

The National Bank resorted to this right of issue repeatedly prior to the outbreak of the First World War. As a result, the banknotes issued following the passage of the ΓΧΜΒ Law as a percentage of those in circulation, increased considerably. This was even more the case since the National Bank kept banknotes issued out of its own privilege as cash reserves. For example, by the end of 1912 half of the banknotes in circulation were banknotes that had been issued under the Law. In January 1914, nearly 74 percent of the value of the banknotes in circulation owed their origin to the Law. This was the highest share of banknotes in circulation under the principles of the 1910 Law as a percentage of the total of the money supply prior to the outbreak of the First World War.

'From 1885 until [the late 1920s] the Greek monetary system had been based on forced circulation of the paper drachma.[1] From 1910 until 1919 the Greek paper drachma was at par with the gold drachma (equal to 0.29034 grams of pure gold), whilst at the same time it continued to be inconvertible by law. The operation of the ΓΧΜΒ Law helped to maintain real parity.[2] Thus begins a document entitled 'A treatise on the stabilisation of the drachma' possibly written in late 1926. The document goes on to say that since 1885 legal inconvertibility had been maintained, a measure not lifted even during the period from 1910 to 1919 when the drachma remained at par. This in a nutshell, is how the monetary conditions that prevailed in Greece between 1910 and 1919 are described in archival material as well as in literature published before the 1980s.

Before the 1980s, the stability of the exchange rate of the drachma between 1910 and 1914 was admired. In addition, the fact that the drachma had remained at par during the First World War was praised. The monetary developments in Greece in 1910 were not thought to be linked either to the gold standard or to the gold exchange standard.

Writing in the early 1920s, Andreades showed great perception when he observed that the fact that the parity of the drachma had been sustained between 1910 and 1919 could lead to the conclusion that inconvertibility had been suspended during that period. He further added that the enactment of the ΓΧΜΑ Law also in 1910, which dealt with coinage, could reinforce this view.[3] These observations from the 1920s pre-empted claims in recent economic history literature that focus on monetary changes in Greece in 1910.

At the time, certain characteristics defined the gold standard and the gold exchange standard and were prerequisites for a country to adopt either of these monetary systems. The idiosyncratic nature of examples like the monetary arrangement in Greece in 1910 will be lost to history if research does not take them into account. Acknowledging such discrepancies and examining them will increase our understanding of how the international financial system functioned at the time and how certain countries, in this case Greece, were incorporated into that system.

[1] At the time 'forced circulation' was often used as a term meaning 'inconvertibility'.
[2] Emmanuel Tsouderos Archive, Bank of Greece, File 107/3: A treatise on the stabilisation of the drachma (undated, unsigned), p. 1.
[3] A. Andreades (1939), Works, Vol. II, p. 526.

Inflation Expectations in the Recovery from the Great Depression in Germany

Volker
Daniel

Fueling inflation expectations has become a prevalent objective of monetary policy as central banks have increasingly operated at the zero lower bound since the financial meltdown in 2008. Central bankers frequently refer to the historical precedent for this policy prescription which stems from the case of the United States' and some other countries' experience in recovering from the Great Depression. In the U.S., president Roosevelt credibly committed to inflate the economy in Spring 1933, which is regarded as a regime change to start the recovery of the U.S. economy (e.g. Eggertson 2008). Also in other countries, inflation expectations played a crucial role in the recovery from the Great Depression (see Chouliarakis and Gwiazdowski (2016) for the case of Great Britain and Shibamoto and Shizume (2011) for Japan).

However, in one country policy makers could never speak of something as inflating the economy for ‚whatever it takes´: Germany. In Germany, no openly inflationary policies were possible for its historical experience with the hyperinflation only ten years away. Nonetheless, recovery in Germany starting in 1932 appears to have been at least as strong and fast as in the U.S.

Was this remarkable recovery possible without inflation expectations, or did German policymakers fuel inflation expectations despite the experience of the hyperinflation? In other words, were there truly no inflation expectations in Germany?

To answer this question, we estimate inflation expectations and explore its effects in Germany with methods that have been applied to the case of the United States during the Great Depression. We estimate inflation expectations from price series as in Cecchetti (1992) and from interest rate data in the spirit of Mishkin (1981, 1990). We then follow Jalil and Rua (2016) to track inflation expectations from news article counts and from a narrative study of media publications. We further consider the link between newspaper coverage and inflation expectations as discussed in Binder (2016).

Our result is that there were indeed no lasting inflation expectations in Germany at the start of the recovery from the Great Depression. Quantifying inflation expectations from time series of prices reveals no shift towards positive inflation expectations at the start of the recovery in mid-1932. We find enduring expected deflation (e.g. falling prices) before 1933. Computing expected inflation from estimated real interest rates points to negative inflation expectations well after the start of the recovery. For both series we, however, observe declining deflation after mid-1932 that requires further investigation. We therefore examine the narrative account for possible shocks on inflation expectations.

Newspaper article counts reveal one exceptional spike in the coverage about inflation, that could explain an inflation increasing shock: The debate about economic policy alternatives in autumn 1931 after Britain left the gold standard. According to the narrative record, in this period temporary fears of inflation occurred. That is, the possibility of a coming inflation was not ruled out in the days after the British decision. However, government committed to refrain from currency experiments and inflationary policies in this period.

The narrative approach reveals further events of temporary fears of inflation: During the German banking crisis in July 1931; Discussions about extensive expansionary policies in January and June 1932; Hitler's seizure of power in January 1933. In all cases the narrative record also points to a counter reaction. Whenever inflation came into the minds of the public, both government and Reichsbank denounced price increasing policies and emphasized the unconditional stability of the currency.

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Charting the diffusion of the "commercial revolution". A research project

Raffaele
Danna

During the late-medieval period the European economy experienced a significant development also thanks to the introduction of several economic innovations. Scholars generally refer to these developments using the historiographical concept of the "commercial revolution" of the late middle-ages (De Roover 1953). According to De Roover's definition (which has been successively expanded in its scope by Lopez 1976), the key change was a set of organizational innovations which allowed European economic agents to conduct their business in new and more effective ways. The most important of these innovations were: the introduction of double-entry bookkeeping, new business structures (such as the accomandita and the compagnia), new financial instruments (the most famous being bills of exchange), new forms of contracts (such as insurance contracts), new mathematical instruments (such as the Hindu-Arabic numeral system).

This "wave of institutional gadgets" (Van Zanden 2009) was introduced by Italian merchant-bankers before 1350. Together with geopolitical, institutional and demographic factors, the development of these innovations helps to explain the economic primacy of northern-central Italy in the European economic scene. Thanks to this technology, late-medieval Italian merchant-bankers were able to build the first international companies, to find ways around the prohibition of loans at interest imposed by the church, to cope with the persistent scarcity of liquid money (thanks to a systematic employment of cashless payments), to develop systematic practices of credit between companies as well as individuals (reducing transaction costs). These technologies have characterized the European economy throughout the early modern period. However, not much is known about the history of the diffusion of such techniques and competences within Italy and from Italy to the rest of Europe.

Interestingly, these innovations have almost entirely been an Italian monopoly until the end of the XV century. This is likely also due to a lack of theoretical business texts until that date. Although Italian merchant-bankers developed those-days cutting-edge economic expertise, they never made their knowledge explicit in a written theoretical work. Some mercantile manuals from this period have survived (the so-called pratiche di mercatura), but these works are not concerned with the know-how of these merchants: they provide practical information about weights, merchandise, measures in various commercial centres, but they do not explain how to master those techniques. It is only possible to speculate on the reasons why such works were not published until the late XV century. On the one hand, it seems that most of the stated innovations (double-entry bookkeeping, financial and credit practices) were learnt through a learning-by-doing process during the first stages of a typical mercantile career, making theoretical works unnecessary. On the other hand, the control of this technology was a strong competitive advantage, and this could have led to practices of secrecy. As a consequence, it is necessary to reconstruct the development and diffusion of this knowledge starting from indirect evidence. It will be argued that a good proxy to reconstruct and chart this phenomenon is the diffusion of the Hindu-Arabic numeral system in Europe.

Every Italian merchant attended a practical mathematics school before starting a commercial career. Such a background was necessary to pursue a career in the commercial world (be it as an artisan, as a local merchant or as an international merchant-banker). In these schools, children studied a tradition of mathematics which had been founded by a merchant-mathematician who happened to learn arithmetic in Maghreb from Arabic masters at the end of the XII century.

As he explicitly tells in his works, Leonardo Fibonacci travelled across the Mediterranean doing business and at the same time deepening the study of the Hindu-Arabic mathematic tradition. The results of this research were collected in his Liber abaci, first published in 1202. In this work Fibonacci presented the Hindu-Arabic numeral system and thoroughly showed how to use it to deliver quick and accurate calculations. Although Fibonacci was not the first to introduce Hindu-Arabic numbers in Latin Europe, this numeral system had a very limited diffusion in Europe, and the widely employed numeral system was still the cumbersome Roman one. Moreover, Fibonacci showed how useful this mathematical innovations could have been in dealing with commercial problems. Most of the examples of his work apply the new mathematical tools to the mercantile reality. Fibonacci's Liber abaci started a tradition of practical mathematical treatises (the so-called 'abacus treatises'), which were written and studied in commercial mathematical schools (the so-called 'abacus schools'). Thanks to this tradition the Hindu-Arabic numeral system made its way in Europe, and its diffusion is closely related to the presence of a flourishing commercial reality.

We know that by the end of the XV century, abacus schools were active in Arezzo, Bologna, Città di Castello, Colle Val d'Elsa, Florence, Fucecchio, Genoa, Lucca, Palermo, Perugia, Pisa, Pistoia, Prato, Savona, Siena, Venice, Verona, Volterra. Florence – the capital of international banking – was not surprisingly also the capital of abacus mathematics, with more than 20 active abacus schools (Ulivi 2008, 2013). Although they did not always learn directly double-entry bookkeeping (it seems that Venetian schools provided such a training), pupils who attended these schools acquired the mathematical tools required to become successful merchant-bankers (Grendler 1989). The tradition of abacus treatises was a phenomenon of considerable size. In his catalogue of Italian abacus treatises up to 1600, Van Egmond lists 453 documents, of which 154 are manuscripts previous to 1478, when the first printed abacus treatise was published in Treviso.

Although there had been a few examples of earlier practical mathematical manuscripts outside of Italy, it is with the introduction of the press that Hindu-Arabic numerals and the parallel commercial-mathematical skills spread outside of Italy. Moreover, at the end of the XV century the first bookkeeping manual was printed. This is a section of the Summa de Arithmetica by Luca Pacioli, published in Venice in 1494. After this first work, a tradition of accounting manuals developed which immediately spread to the Netherlands, France, Germany, Spain and England, together with a growing number of treatises concerned with practical mathematics. During the XVI century the technologies of the commercial revolution spread from Italy to the rest of Europe following the diffusion of Hindu Arabic numerals and involving characters such as Matthäus Schwarz, Jakob Fugger, Jan Ympyn and Thomas Gresham. At the time when the Italian economy was losing its momentum and the core of the European economy was progressively moving towards continental and northern Europe, the innovations of the commercial revolution spread to the rest of Europe, in a sort of "emulation" or "translation" (Reinert 2011).

Relying on a database which is currently under development, the aim of this research project is to chart through time and space the diffusion of the so-called "commercial revolution" within northern-central Italy until the XV century, and from Italy to Europe starting from the XVI century.

Size matters. Selectivity of recidivism in anthropometric prison data

Ewout
Depauw

While a sample of convicts is not representative for the population as a whole, historians can, because of the 'panoptic' powers of nineteenth-century criminal justice systems, reconstruct lives of criminals into in surprising detail. It is for this reason that historians are making increasing use of prison records (Inwood and Maxwell-Stewart 2015, 161). The representativeness of prisoners remains nevertheless a major concern for scholars using convict data in anthropometric studies (Komlos 2004). Three issues can be identified: (1) the composition of the prison population in relation to the underlying population, (2) the differential selection into the criminal class and (3) the high recidivism rates.

The first issue is a potential bias inherent in prison records. Prison samples may have been drawn from the lower layers of society and may contain a disproportionate number of the materially poorest individuals. The elite and higher and middle class groups are strongly underrepresented. Also farmers appear in general far less in criminal records. On the other hand, unskilled workers and other low-wage professions were found disproportionally often behind the prison walls. This complicates the ability to make statements on the evolution of the living standards of the broader population based upon a prison sample. The second issue was highlighted by Bodenhorn et al. (2013) and concerns whether there was a differential selection into crime and therefore into prison in response to changing economic conditions. They argue that prisons were mainly populated by short, relatively low-income people, but that under harsh economic conditions a selection mechanism on heights operates, generating counterintuitive results. During such bad economic times, labour market opportunities rapidly deteriorated, pushing more people towards criminal activities. If these people were on average taller than the existing prison population, the average height of the prison sample will increase. This could lead to the observation that when economic times are bad, the biological standard of living rises and vice-versa.

The third issue are the recidivism rates in nineteenth-century prisons. These rates are usually high, leading to multiple incarceration of the same individual (Fyson and Fenchel 2015, 172). Since most sentences were limited to a few days of imprisonment, repeated incarceration of individuals over a short time period was common. This last issue is often overlooked in anthropometric research, but may be problematic since a large part of the height trend might be influenced by a small but recurrent group of individuals. It is especially worrisome if those recidivists have specific characteristics.

In this paper, a sample of about 27,000 new entries at the prisons of Bruges and Ghent is used, ranging from 1832 to 1902. I offer an analysis of the dangers of the high numbers of recidivists in prison data. Over 40% of the imprisonments in the Belgian prison sample belonging to a repeated offender. Most likely, this is even an underestimation of the occurrence of the phenomenon, since this dataset is not a full transcription of all prisoners in the time period 1832-1902 but only a limited sample. Moreover, it is well possible that some of the individuals were incarcerated in another institution over their lifespan. The high number of repeated convicts is not surprising since in present populations recidivism rates up to 75% are not uncommon.

For the Belgian case, recidivists were a specific subset of the prison population with distinct characteristics. The comparison between recidivists and non-recidivist is helpful to understand the selection mechanisms inherent in prison data. The male recidivists in Bruges and Ghent are meeting the general prisoners' profile to a large extent. The overall characteristics of the prison sample were as expected more pronounced among them as they were dominated by low-wage workers that were incarcerated for minor acts of violence or misconduct classified as disturbances of the peace. The inclusion of male recidivists in a prison sample thus enlarges the existing bias towards the poorest groups of society. The profile of the female recidivists differed however more extensively from the overall prison population. Two groups were highly represented among women with at least five imprisonments in the dataset: poor low-skilled workers arrested for beggary and a significant number of prostitutes.

The differences between the recidivists and the overall prison population seem to translate into different average heights. So far the anthropometric literature devoted little attention to the possible bias that recidivist men and women may cause to the height samples. The studies that do assess the question of multiple incarcerations are however suggesting that those prisoners had indeed specific height characteristics, pointing towards a strong negative relationship between the number of imprisonments and stature for men, but indicating a positive relationship for women. The same result is found here. For men, the Belgian recidivists were indeed shorter than the average prisoner. The negative effect is more pronounced for those with a lot of incarcerations. In contrast, female recidivists were found to be taller than once-off offenders.

In sum, it is crucial to make sure that in a prison sample the height of a recidivist is counted just once per individual and not for each imprisonment, since this will bias the results heavily and this bias is moreover potentially operating in different directions for men and women. This can be obtained by including just once observation per individual or by weighting the observations by the number of imprisonments. The specific profile of recidivists may thus influence the comparison between male and female heights in prison population, which is the single most important contribution of prison records to the anthropometric field. If recidivists are biasing the average male height in the prison downwards, while biasing the average female height upwards, the inclusion of recidivists in an anthropometric study may minimize the actual difference between men and women. The anthropometric method has gone during the last decades from scepticism to a general establishment in economic history with abundant studies of the secular increase in adult height, but methodological concerns remain at the forefront. Not only is adult height in itself a rather imprecise measure of wellbeing, the sources that shed light on historical heights remain somewhat problematic due to selection in who was measured and the representativeness of the measured for the general population. When using prison records to reconstruct historical height patterns, recidivism is a potential, but often neglected, additional concern.

Social Mobility in the Long Run – Evidence from the City of Zurich

Giacomin Favre
Joël Floris
Ulrich Woitek

We analyse intergenerational mobility in Zurich over the course of the 19th and the beginning of the 20th century. Social mobility is closely related to the concept of fairness and economic inequality. Hence, studying the determinants of mobility is central to understanding inequality. In this paper, we focus on changes in the level of mobility, using several methods of measurement, and covariates of mobility.

Zurich was the most important city in the industrialising north-eastern part of Switzerland. The data available are unique and allow to study the issues raised above in detail. We use individual level data on citizens originating from the citizens' directories (Bürgerbuch) from 1794 to 1926. The directories list all male citizens over the course of the entire period with their occupation, year of birth, place of residence, military affiliations, public offices, and a detailed link to their family members. The link enables us to assign fathers directly to individuals. This is a major advantage when analysing social mobility, as one does not need any linking mechanism. We categorize all individuals according to their occupation at the age of 40 using the three-dimensional classification of Schüren (1989). These dimensions encompass the socio-economic position (SEP), the position (or employment type), and the sector of occupations. We combine this database with data on income and wealth from the municipality and state tax directories (Gemeindesteuerregister and Staatssteuerregister) available for several years between 1832 and 1929. The tax directories lists all taxable individuals living in the city of Zurich with their address, occupation, and taxes payable.

In addition to the entire dataset, we focus on two subsamples. First, we analyze the part of the citizens that lived most of the times within the city of Zurich itself, in order to understand social mobility in this labor market. Second, we analyze descendents of families that already held the citizenship before 1819, in order to have an even more homogenous sample. Nevertheless, the results for both subgroups and the entire sample are qualitatively very similar. Our data show that the overall distribution across SEPs, positions, and sectors changed strongly over time. We observe a concentration towards medium SEP, a shift towards the service sector (mainly banking, insurances, and transport), and an increase in the share of self-employed and higher employees. Mobility tables show that, even though the sysem was not entirely non-transparent, social mobility was comparatively low with respect to all of the three dimensions. The level of mobility fluctuated over the observed period. These fluctuations are reflected in different measures of mobility.

Finally, we regress the SEP of individuals in an ordered logit (ologit) model on the SEP and several socio-economic characteristics of their fathers and family structure. Paternal political networks (measured by public offices), and (on a much smaller scale) wealth correlated positively with social advancement of an individual. There is no evidence on a role of geographic mobility of fathers'. Interestingly, the firstborn sons were less likely to experience social advancement, even though the difference is not economically significant. Among all determinants we look at, SEP of the father had by far the largest effect on the economic status of an individual, reflecting the low level of social mobility.

Interpersonal violence in South Asia between 900 and 1950 – causes and effects

Sarah Gust
Jörg Baten

The great divergence debate is one of the core debates in economic history and it has important implications for growth economics in general. Why are some countries poorer than others, and when did this divergence occur? The "when-question" is important for understanding the causal mechanism, because if the great divergence took place after 1500, then colonial mechanisms plausibly had a greater share. In contrast, if the great divergence happened already during the early modern period, then idiosyncratic country characteristics probably played a strong role. We want to examine this question comparing violence rates between South Asia and the UK. A high level of violence implies multiple drawbacks for development as for example less trust and a lower investment in human capital. We will assess the hypothesis that South Asia entered a path of higher interpersonal violence already at an early point in time. This path could not be left easily, because violence tends to reproduce itself via revenge-taking mechanisms and indirect economic path dependency. We find that regicide rates in most South Asian regions were similar before 1300 A.D but considerably higher than Great Britain after 1300 A.D. While the regicide rate of Great Britain converges to zero after 1500, South Asia could not escape these high violence levels before 1900. This supports our conjecture that the divergence of South Asia and Great Britain must have happened at an early point in history, at least if we take violence rates as an indicator.

But what caused violence in South Asia? In a second step, we analyze correlates of violence within South Asia. In particular, we suspect that there is a decisive negative relation between human capital and interpersonal violence. These variables reinforce each other dynamically. Our data covers five different regions of South Asia and Myanmar from 900 to 1950 with a total of 109 observations. The time units for this panel are half centuries. We use a newly developed indicator, the regicide rate, which gauges the intensity of interpersonal violence in the elites of a society. Since for early decades typical indicators for human capital like enrolment rates and income are not available we develop a new indicator comprising numeric skills of bureaucratic elites. This "bureaucratic numeracy rate" is approximated by the relative number of kings for which a birth year is known. Documenting the birth year of the rulers is not possible without a certain degree of numeracy. In addition, we use a set of different control variables including soil suitability, urbanization, religion and the number of kingdoms in one area. For the regression analysis we apply Beck-Katz's (1995) "panel corrected standard errors" (PCSE) that uses Prais-Winston (1954) regression to solve panel-specific AR(1)-autocorrelation of the errors. The results indicate a significant negative relation between regicide rates and our human capital index which confirms our initial hypothesis, that bureaucratic human capital and elite violence rates are closely interlinked. We do not claim causality in this matter, because both direction of action are conceivable. One the one hand, high violence rates hinder investment into human capital. On the other hand, higher human capital might ease nonviolent conflict resolution.

Circle of Fortune: The Long Term Impact of Western Tax Regime in China

Gan
Jin

This paper investigates Western colonial legacies in China. To be specific, we study whether the new taxation institution introduced by the Westerners in 1902 made an economic impact on China today.

After 1840, the Qing government of China began to open treaty ports and trade with Western countries. Two parallel Chinese institutions took responsibility of collecting trade revenue: Chinese Maritime Customs Service (CMCS) and native customs. The former was installed by the British and regulated Western merchants. The latter was an original Chinese institution and levied taxes on Chinese merchants. CMCS had better institutions on taxation and personnel management compared with native customs. Thus, this paper figures out the long-term consequences of an institutional shock in China.

Our identification relies on an historical event. In 1902, CMCS expanded its tax regime so that each CMCS station took control over the native customs within 25km radius. The seizure captured around 40% of the native customs in China. The affected native customs also launched a serial of reforms under the supervision of CMCS. We believe that the reform stimulated business activities in the new tax regime due to stable rules, simplified taxation procedure and less corrupted staff. In the short run, the affected area would attract more investment and trade, which are conducive to urbanization. In the long run the positive effects stimulate development to a larger extent.

This paper tests this hypothesis. Our dataset (see Figure 1) focuses on Chinese counties in 13 provinces in Qing dynasty. We only include counties that 1) did not contain treaty ports in history, and 2) was a neighbor county of counties that contain CMCS stations. We constraint the sample to exclude the selection bias of treaty ports. The baseline regression equation is as follow:

$$Light_i = \beta_0 + \beta_1 CMCS_i + \beta_2 Town_i + \beta_3 Dis_port_i + \boldsymbol{X}_i\delta + \theta_i + \varepsilon_i \qquad (1)$$

where Lighti is the average nighttime light intensity of county i from 2000 to 2010. We measure CMCS institutional influence as follows. First, we generate circles with radius of 25km around each CMCS station. Then, for each county i we calculate the size of land covered by the circle (or circles), normalized by the total size of county i.

Towni is the proportion of historical towns in county i that were covered by the CMCS circles. Dis_porti measures the distance between county i and treaty ports. We control for these two variables to make sure that CMCSi captures institution on top of economic spillover of treaty ports. Xi controls for initial economic conditions, religion, locations, and climate. δi is the province fixed effect, and εi is the error term.

The empirical evidence confirms our story. Table 1 shows that a one-standard-deviation increase in CMCS coverage (15 percentage point increase) leads to about 41% (e2.828x0.15-1) more nighttime light intensity in the future (a 0.35 standard deviation change).

Dependent variable is the log level of nighttime light intensity from 2000 to 2010	(1)	(2)
CMCS (% of coverage)	1.823*	2.282**
	(1.005)	(0.942)
CMCS (Dummy variable)		
Observations	172	172
R-squared	0.788	0.873
Province Dummy	YES	YES
Basic Controls	YES	YES
Geography	No	YES

Notes: County level regressions with province fixed effects. Robust standard errors in parenthesis.
*** p<0.01, ** p<0.05, * p<0.1

Table 1 Baseline Regressions

One challenge is that CMCS deliberately seized the maximum amount of native customs from neighbor counties. If that were true, we might find development differences across the 25km border prior to the Western presence in China. Our evidence shows that areas that are 22-25 km away from the treaty ports were not better developed than areas that are 25-28 km away, prior to the Western penetration. The evidence suggests that deliberate setting of the 25km parameter was not an issue.

Still, the results from Table 1 may simply capture the general characteristics of treaty port, i.e., the same pattern may work for all treaty ports regardless of CMCS and its circle of influence. To address this problem, we utilize the fact that not all treaty port had CMCS establishment, so that we can generate placebo circles around treaty ports that had no CMCS stations. Consequently, the placebo sample contains neighbor counties of non-CMCS treaty ports. The empirics from our placebo test show insignificant coefficients for the placebo treatment. Thus, we believe that treaty ports without CMCS did not have such a far-reaching impact on their neighbor counties, and one major reason could be the lack of good institution.

This paper tries to identify the impact of exogenous institutional shock, and therefore discovers the source of long-term economic development. Besides, we follow Jia (2014) and contribute the literature on Western legacies in China. Other channels of the impact, like human capital, market integration, and culture, deserve further investigation. These potential channels could help us better understand the impact from the "circle of fortune", and more results will be uncovered in future analysis.

The innkeepers of provincial towns in 18th-century France

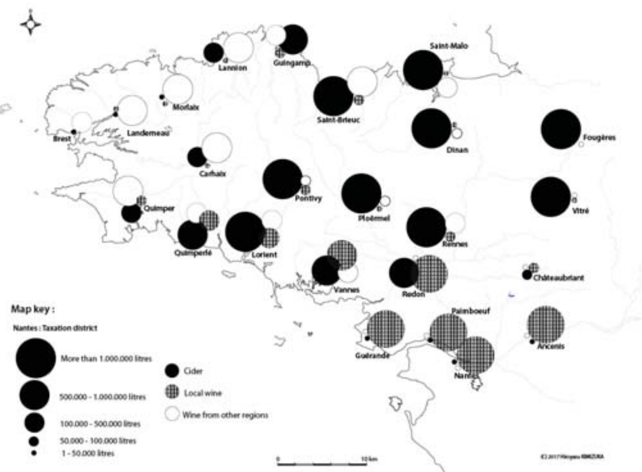
Kimizuka
Hiroyasu

Taverns and inns have been places of enjoyment since antiquity. Even Roman people frequented them to consume wine, beer, or other alcoholic drinks. In the Middle Ages, the number of taverns and inns in European cities expanded with the rise of intra-European commercial activities. Since the beginning of the 17th century, they spread not only in cities but also in the countryside. As a place for the consumption of alcoholic drinks and creation of social relationships, they penetrated the lives of early modern European people.

Scholars of economic history have recently paid particular attention to the rise of retailing activities in cities and the culture of goods consumption among the urban people in early modern France. Some scholars have documented the popular consumption of alcoholic beverages in taverns and inns of cities. On the other hand, there has been little discussion about the innkeepers serving the rural people in French provinces. Although some historical studies have revised our understanding of peasants' access to markets, scholars have rarely shown interest in the French rural society's retailing activities. The fact that in the early modern era, the majority of the French population lived in the countryside warrants an enquiry into their alcoholic drink consumption. The aim of the present investigation is to outline the retailing activities in the 18th-century countryside by studying the innkeepers in the historical province of Brittany.

This paper is divided into three parts. The first part describes the geographic disposition of innkeepers in the historical province of Brittany and enumerates them. The second part gives an account of the type of alcoholic beverages sold by innkeepers, while the third part focuses on the distribution networks of this merchandise between cities and bishopric small towns outside of cities.

Our reflection on the geographic disposition of innkeepers unveils the significant role bishopric small towns played in the commercial distribution of commodities in the countryside. As the majority of inns and taverns in the historical province of Brittany were in the countryside, many of them were opened in these towns. Studying tax records from 1788, we find two types of taverns and inns. Some inns and taverns were opened year round. They served as a distribution centre of alcoholic beverages as well as a place of sociability on the territory of the bishoprics of Brittany. Other inns were kept open only during certain busy periods and events, such as fairs. The number of inns open in the countryside thus varied by season, but it was relatively stable in big cities like Nantes. Nevertheless, taverns and inns in small bishopric towns in the countryside were frequented not only by the urban population but also by farmers who lived around these towns.



Map: Type of alcoholic drinks sold by innkeepers in 1788

As for the type of alcoholic beverages sold by innkeepers, wine, cider, and eau de vie (fruit brandy) were commonly drunk in the inns and taverns in 18th-century Brittany. Regarding the difference between the drinks consumed in cities and in the countryside, we first highlight three different regions in this province. The first region is the south-east region of Brittany where local farmers produced wine. The second region is the inland region where cider was produced. The third region corresponds to the rest of Brittany where wine and cider were not produced. While urban innkeepers sold alcoholic beverages from several regions, such as Charente, Aquitaine, and Languedoc, innkeepers in the countryside served mostly merchandise produced in the same bishopric or in a nearby area.

Next, we find that drinks consumed in the littoral regions significantly differ from the ones consumed in inland Brittany. As maritime transport was the major means for long-distance trade, innkeepers in the port cities and littoral rural towns had easy access to alcoholic beverages from outside of the province. Innkeepers in the inland regions, however, rarely sold excellent Bordeaux wine due to the underdevelopment of road networks between the ports and the inland.

Considering the supply chain of alcoholic drinks in the historical province of Brittany, we show that there were several commercial actors supplying alcoholic drinks to consumers. First, local growers and local merchants supplied cider or local wine to innkeepers in small bishopric towns. This type of supply chain generally did not extend beyond the bishopric's territory where these alcoholic beverages were produced. Second, wine sold from regions outside of Brittany tended to have a wider distribution network than local wine. Urban wine merchants of Brittany, who had widespread business networks, assessed the demand by innkeepers of small bishopric towns around their cities and ordered wine from the wine traders of Bordeaux. Then they transported the merchandise from the ports of Brittany to their towns. Innkeepers from villages themselves went to bishopric towns to purchase alcoholic drinks for resale.

Some individual consumers, such as the rural nobility, could directly purchase wine from traders or wine brokers. The rest of the Breton people could drink only in inns and taverns. When they purchased alcoholic beverages, they sometimes did so for their own consumption and sometimes for sharing with friends and neighbours. However, villagers rarely consumed alcohol in their homes in the 18th century.

German trade finance during the Second Industrial Revolution. La batalla de Buenos Aires - 1875-1913

Wilfried Kisling

Antonio Tena Junguito

By the end of the nineteenth century, the rising economies of the so called second industrial revolution, in particular Germany and the United States, started to challenge intensively British dominance in manufacture productivity and its leadership in the international trade markets. This Belle Époque trade boom was characterized by the emergence of new innovative market strategies based on the diversification and introduction of new technological products, supported by strategical international investment and trade finance. The emerging economies of the Latin American countries have been one of the principal destinations of German and British foreign trade in the late nineteenth and early twentieth centuries, with particular focus on the three largest, most economical developed and political stable republics; Argentina, Brazil and Chile.[1]

This article studies the effect of German bank entry in Argentina on the development of German exports to Argentina between 1875 and 1913. In particular we ask, if German industries that maintained a stretch relationship to the German banks in Argentina – measured as Interlock directories; that is the number of representatives a bank had on a company's supervisory board - exported comparatively more than those that did not and comparatively more after the entry of German banks in Argentina than before. In their ability to reduce transactions costs by providing financial and informational assistance abroad, banks may have had a positive impact on exports, and eventually those companies that maintained a stretch link to the banks in particular benefited from their support.

Therefore, we create two complete new data sets. The first set includes the Argentinian imports by product for all Argentinian trade partners for five benchmark years between 1875 and 1912.[2] We differentiate between imports of high skill intensity products – mostly second industrial revolution manufactures- and low skill intensity products – mostly textiles – to discuss and compare the market entry strategies of the new and old industrial powers. The second data set contains the connection – interlock directories - between the two German foreign banks established in Argentina between 1875 and 1913 – the Deutsche Überseeische and the Deutsche Südamerikanische Bank – and German export companies. To identify the effect of bank entry, we than classify the German exports by products exported by companies linked and not linked to the banks.

We first empirically examine and compare the determinants of the exports and the extensive intensive trade margin of Argentina's trade partners between 1875 and 1912, using an Augmented Gravity Model of trade based on a Poisson Maximum Likelihood (PPML) approach. Seen from the supply side, we test for the influence of the relative productivity of and the size of the economy of the exporting countries. On the demand side, we focus on trade costs in form of geographical distance, in the absence of freight costs, and tariff frictions – measured as product specific tariffs and the presence of financial institutions of the exporting countries in Argentina to account for the presumable influence of finance. We additionally differentiate between the effect of the explaining variables on the exports of each class of products, High-, and Low-skill manufactures. In a second stage, we use a Difference in Difference model, measuring the effect of bank entry on the exports of those German export industries linked to banks in comparison to those that are not linked. The model also accounts for the potential effects of the supply and demand factors used in our previously described Augmented Gravity Model.

The results show that although Great Britain dominates the Argentinian market, and France and Belgium shared some privileges there, at the turn of the century Germany and the US were particularly successful in intensifying and expanding their (high skill) manufacture exports in that market. The success of the new industrial emerging countries, especially Germany, seems to be in particular explained by a higher degree of productivity, relative to the productivity of other economies, and an increased intensification of exports. This becomes especially evident in the case of high skill products, as we find a significant higher influence of the explaining variables when looking at the export from the high skill sector. Finally, we find a positive effect of the German bank entry on exports. The results also confirm the idea that German companies that maintained a special network – Interlock Directories - with the German foreign banks in Argentina benefited relatively more from their financial support, as the exports of industries connected to German foreign banks experienced a comparative higher increase than those that are not linked.

[1] In 1860, together they were the destination of nearly 4 per cent of Great Britain`s worldwide exports, and accounted for more than a half of British exports to Latin America (Bulmer-Thomas, 1998 3, 8). In the entire period between 1884 and 1913 on average together they were origin and destination of more than 75% of the total trade between Germany and Latin America (authors calculations).

[2] The use of Argentinian import statistics instead of the individual export statistics of each trading country with Argentina has two major advantages. First, it allows to control for effects of demand and possible variations in it. Second, it assures the comparability between countries, as the information is homogenous and covers all the Argentinian trade partners.

In and Out of Gold: The Role of Economics & Politics

Bert S. Kramer

Petros Milionis

We revisit the tension between domestic democratic institutions and financial globalization in light of the classical gold standard (c. 1870-1914). Dani Rodrik has recently argued that there exists a globalization trilemma: this trilemma states that out of the three goals of democracy, national sovereignty, and global economic integration, at most two can be pursued simultaneously. Rodrik sees the classical gold standard as a textbook case of a system in which democratic decision making was sacrificed in favor of the other two goals.

In the literature comparing the classical and the interwar gold standards, this perceived incompatibility between a stable international gold standard and the extension of democratic institutions has also been a recurring theme. Various authors have demonstrated that the instability of the interwar gold standard was caused partly by the fact that, after World War One, governments and central bankers faced increased pressure from voters and labor unions for domestic economic stability. It has also been shown that more democratic countries left the interwar gold standard earlier than others.

However, the extension of male suffrage, as well as the spread of several other democratic institutions, was a process that in many countries took place to a large extent well before 1914. If the spread of democracy indeed undermined full credibility of adherence to the gold standard, one would expect this credibility to have partly eroded before the outbreak of World War One. We explore whether this is the case, by studying countries‘ decisions to adopt or suspend the gold standard pre-1914. Our hypothesis is that these decisions can be partly explained by the extent to which these countries can be considered democratic.

We study this relation between democratization and gold standard adherence empirically by modeling countries‘ monetary regime choices as a function of economic and political factors. We construct a database containing annual information for 26 sovereign countries between 1870 and 1914. This database includes economic factors such as GDP per capita, monetary aggregates, and levels of (bilateral and aggregate) trade, as well as different political variables that reflect each country‘s form of political organization and the extent of democratization. The countries in our database cover several continents and include all documented cases of pre-1914 suspension of the gold standard, as well as two countries that never adopted the gold standard in this period. We are therefore able to exploit the variation in the timing of both the adoption and the suspension of the gold standard between countries.

We test our hypothesis using a variety of econometric techniques. A dynamic logit model is used to test comprehensively for the determinants of gold standard adherence before 1914. We find evidence for our hypothesis that more democratic countries were, all other things equal, less likely to use the gold standard. Other significant determinants of gold standard adherence are economic factors like GDP per capita and the current account.

Using a set of duration models, we test separately for determinants of adoption and suspension of the gold standard. We find evidence for our hypothesis for both of these processes: democratization made adoption less likely, and suspension more likely. However, we find that more generally the determinants of gold standard adoption and suspension were not symmetric.

A deeper look at what drives our results then reveals that the negative relation between democratization is driven mostly by one element of democratization, which is the extent to which the executive faces institutional constraints. The extension of suffrage as such does not show up as a significant determinant. Our interpretation of this result is that adherence to the gold standard was not so much complicated by an increase of democratic pressures from wider electorates, but rather by the relative decrease of unrestricted powers of monarchs and other rulers.

We check for robustness of our results using a variety of different specifications. In addition, we extend the analysis by using a spatial probability model. Using this type of model, the interdependence between countries‘ monetary regime choices can be taken into account more formally. The diffusion of the gold standard is often attributed to a large extent to trade: countries were induced to adopt the gold standard when their major trading partners did so. However, when using the previously discussed methods, it is very hard to disentangle this effect from other sources of interdependence. These other sources of interdependence could be general equilibrium effects on the prices of gold and silver, global advances in monetary technology, or considerations regarding the prestige of a gold-based currency. Using a spatial probability model and a newly constructed database on bilateral trade flows, we revisit this hypothesis more formally. Preliminary results do not show convincingly that trade was indeed a major driver of the diffusion of the gold standard.

Betting against Jews? The Market Reaction to Jewish Firms in Nazi Germany

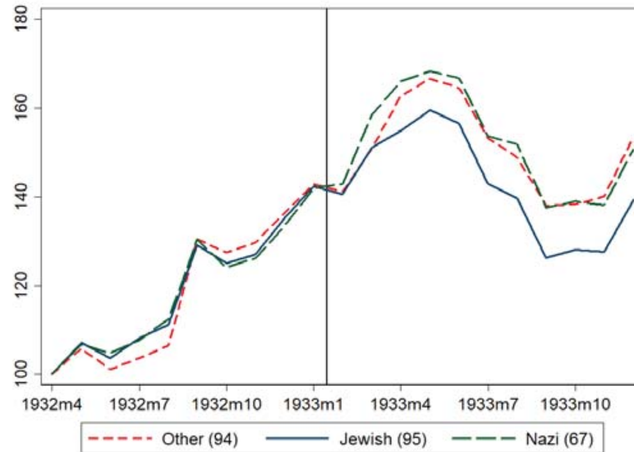
Volker
Lindenthal

Before seizing power in January 1933, Adolf Hitler agitated against the Jewish German population for more than a decade. One of his central campaign promises was to drive back the strong Jewish influence in the German business life as he claimed. Hitlers appointment on January 30, 1933 came unexpected due to a coalition arrangement and was not linked to an election. How did the Berlin stock exchange -- Germany's biggest bourse at the time -- react to his appointment? In particular, can we observe a systematic response of investors towards Jewish firms after Hitler became Chancellor?

By exploiting the board composition at the end of 1932, I ask whether the stock market performance of corporations with exposed Jewish board members – at least one Jewish executive board member or a Jewish chairman of the supervisory board -- differed from non-Jewish firms after Hitler became Chancellor.

The historical setting allows me to distinguish between a short two-month period of uncertainty about the severity of anti-Jewish threats and a subsequent realization of discriminatory measures, starting with the nation-wide boycott against Jewish businesses on April 1, 1933.

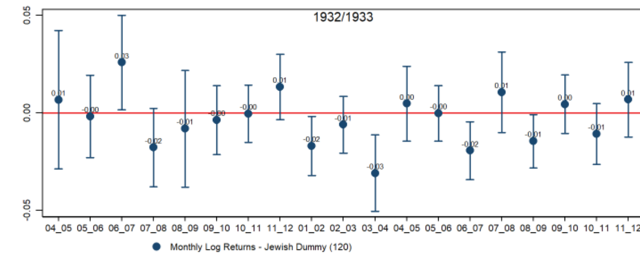
The findings of this event study reveal an under-performance of Jewish firms by about 2-3 percent in the short time window between January and March 1933. It indicates expectations on a discounted future performance of Jewish firms. The reaction to the anti-Jewish measures in April is estimated to be even stronger with a loss of additional 4 percent of value for Jewish firms. The latter results underline the identification of Jewish firms and show that investors did not fully expect the intensity of anti-Jewish threats when the Nazis seized power. Sadly they were proven wrong and had to adjust their beliefs.



Going a step further in the analysis I investigate the reaction of firms to the anti-Jewish discrimination. I find that most firms -- and in particular those that were hit hardest -- started to remove their Jewish board members. Between April and December 1933 more than one quarter of all Jewish board members had to give up their positions.

My findings are in stark contrast with the historical narrative of Barkai (1990) and Genschel (2001) which states that big businesses were not targeted and affected by the Nazis up to at least 1935. It is said that their crucial role for employment and foreign currency as well as the often argued, but doubtful protection by Reichsbank governor Hjalmar Schacht spared them during the first years of the Nazi reign.

The results are robust to estimations on log-returns as well as abnormal returns, the inclusion of sector controls, and alternative definitions of Jewish firms. The magnitude of the effect – although with opposite direction – is comparable to firms connected to the Nazi movement (Ferguson & Voth, 2008), which I control for as well and confirm. Firms with board members that supported the Nazis prior to their accession to power out-performed the stock market by about 5 percent in the first quarter of 1933.



Although I cannot test for a direct channel, I collected narrative evidence about the discrimination of Jewish board members that could impact the firm valuation. Many political connections were harshly cut off when Hitler got to power. Several reports state that public officials refused to meet with executives of corporations if they were Jewish. Furthermore, an exchange of letters documents that public procurement was related to removing Jewish board members. The Nazis directly threatened Jewish controlled firms to take away public contracts in case the firms were not abiding by the new order. In contrast, direct boycotts were rather targeted at medium size businesses and consumer products, which might explain the historical narrative described above. In general, the Nazis created an atmosphere of fear among business partners. Firms were afraid of being stigmatized as continuing to deal with Jews, the newly declared public enemies. This narrative evidence can explain why firms with Jewish executives were discounted by investors. Furthermore, the economic benefits that these firms had due to their executives being part of the economic elite with connections to the old, democratic system were devalued.

With the focus on firm valuations related to political events I follow a growing strand of literature that started with the seminal contribution of Fisman (2001). Fisman investigates the value of connections to President Suharto in Indonesia in the mid-1990s by exploiting his health condition. Closely related to my study, Ferguson & Voth (2008) find that firms connected to the Nazi movement out-performed the Berlin stock exchange shortly after Hitler got to power.

The study relates to the growing literature on Jewish economic history. Botticini and Eckstein (2012) argue that the changing role of education after the destruction of the second temple gave Jews a comparative advantage in skilled occupations. This educational advantage mainly triggered the transition from agricultural professions into crafts and trade and might even explain the dis-proportional share of Jewish board members among the Germen economic elite. Anderson, Johnson, and Koyama (2016) highlight the scapegoating of Jews. The authors show that negative economic shocks -- identified by changes in weather conditions -- increased the likelihood of persecutions against Jews. In addition to these purely exogenous factors Becker and Pascali (2016) and Grosfeld, Sakalli, and Zhuravskaya (2016) show that economic motives mattered as well. Persecutions and pogroms were more likely in places where the Jewish population competed with the local population, in particular in moneylending. Voigtländer and Voth (2012) find that anti-Jewish hatred is very persistent over time. Anti-Jewish riots and support of the Nazis in the 1930s was higher in those cities that persecuted Jews during the black death in 1348. Pascali (2014) investigates the Jewish impact on the development of banking institutions in medieval Italian cities. Closer related to my study, Akbulut-Yuksel and Yuksel (2015) and Waldinger (2010) find negative effects of the anti-Jewish policies of the Nazis. I add to this literature by highlighting the consequences of anti-Jewish hatred for firm valuation right after the Nazis seized power.

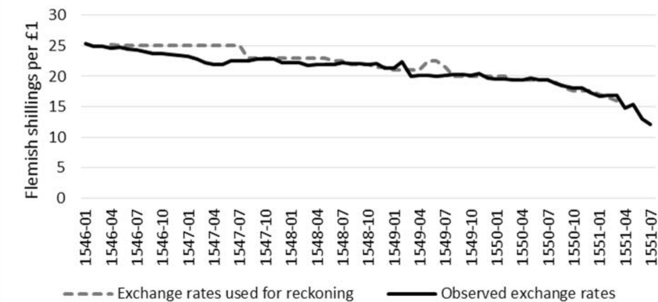
Li
Ling-Fan

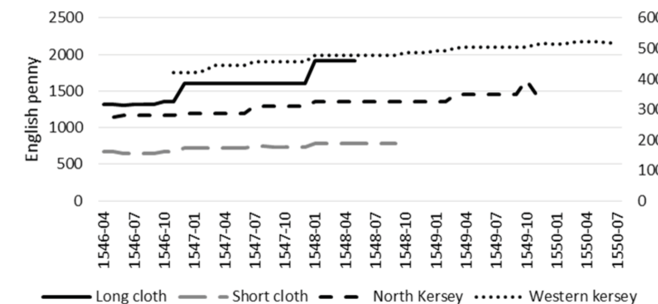
The Great Debasement of 1544-51 greatly reduced the precious metal content of English coins (by 80% in silver and 25% in gold), and resulted in the depreciation of England's pound sterling against her biggest trading partner, the Low Countries. The movement of Anglo-Flemish exchange rates is presented in Graph 1. This scale of monetary change would have had a significant impact on overseas trade in English wool and cloth. Currency depreciation could have been beneficial to exports by making the price more competitive. Before the collapse of the Antwerp market in 1551, wool and cloth accounted for about four-fifths of the total value of English foreign trade, and 88% of English cloth exports passed through London to the Continent. This paper intends to examine the repercussions of the Great Debasement on English exportation: to see how the two main exported commodities responded to the monetary alteration according to their different business organisations, regulations and nature of trade.

English overseas trade in the sixteenth century has been extensively discussed in the literature. One issue is the relationship between the coinage debasement and the development of cloth exports during the period. Bowden (1962) wrote "in its final stages, this boom [in cloth exports] was probably stimulated by exchange depreciation consequent upon currency debasement". Munro (1999) argues that the monetary changes of 1464-5 (the English crown devalued the silver coinage by 20% and gold by 26%) contributed to the explosion in English cloth exports: in the last forty years of the fifteenth century, London-based exports more than doubled. In his words, "the consequent drop in English cloth prices on the Antwerp market made these woolens an even more attractive return cargo for Rhenish and South German merchants". Based on exchange rates and the volume of cloth exports, Gould (1970) maintains that because exchange rates only slightly depreciated, the expansion of cloth exports driven by the currency depreciation only occurred in the years 1549-51. However, the quantitative evidence of cloth prices is absent from the existing discussion. Most commentators establish the relationship by applying the Marshall-Lerner model, and attribute the expanding cloth trade in the 1540s to the coinage debasement (and the ensuing currency depreciation), and the later collapse to the revaluation of English coins.

During his early career as a merchant, Sir Thomas Gresham was involved in the cloth trade between London and Antwerp. We are fortunate that he left detailed bookkeeping records from 1546 to 1552, ending at a time of crisis. Gresham's Daybook contains 371 folios and 6,572 journal entries. It represents first hand data with which to analyse the commodities Gresham imported and exported, identify his main trading partners at home and abroad, and to measure his success in foreign trade. Furthermore, based on these first-hand resources, the prices of commodities traded with the Low Countries can be pieced together. For exported cloths, five series of prices can be constructed: castilcome, long cloth, short cloth, north kersey and western kersey. For importation, there are three series for silk fabric: damask, velvet and satin. A selected sample of prices for exportation are illustrated in Graph 2. As a result of coinage debasement, the cost of obtaining clothes for exportation gradually increased over the years 1546-1550 as the exchange rate fell. On average, the purchasing price for long cloth increased by 45%, short cloth 16%, and kersey 25%. Meanwhile, the exchange rates used for reckoning fell by 24.5%, though most of the time, rates for reckoning were higher than actual exchange rates. As a result, any advantage conferred by falling exchange rates to English cloth abroad would have been immediately negated by rising prices at home.

On the other hand, merchants engaged in the wool trade would have better insulated themselves from rising prices by adopting a different price strategy. At the time, the wool trade was controlled by the Company of Merchants of the Staple, and the prices of wool were fixed according to the ordinance of 1536. The prices quoted in pound sterling were those the merchants would receive regardless of the current level of Anglo-Flemish exchange rates. Faced with the downward trend of exchange rates, wool merchants could have fully exploited the effect of coinage debasement on currency exchange. Leaving aside uncertainty produced by monetary confusion, these different price strategies gave wool merchants some advantage in the sale of their goods abroad compared to the merchants involved in the cloth trade.





The Reichsbank, commitment credibility and the rules of the game in 1876-90

Ousmène Jacques Mandeng

The paper studies the monetary policy reaction function of Germany's central banking system. The German Imperial Bank (Reichsbank) was one of the dominant central banks during the last quarter of the nineteenth century and beginning of the twentieth century. The Reichsbank's monetary policy behaviour therefore played an important role in supporting and consolidating the international gold standard. While there are multiple narrative accounts and statistical analyses of the operations of the Reichsbank, contemporary approaches to estimating a policy reaction function and reviews of period policy commitments have remained rare limiting understanding about the operation of the gold standard. The present paper offers new monthly data and uses advanced statistical estimation methods to analyse the Reichsbank's formulation of monetary policy during the first years of its operations in 1876-90 complemented by narrative accounts of the Reichsbank and newly located reports of the Reichsbank supervisory board (Reichsbankkuratorium) to substantiate policy concerns and intent. The results are more consistent with the gold standard as a commitment rule with reputational forces than the notion of automaticity under the rules of the game.

The paper finds that the Reichsbank's somewhat initially but not intermediately followed the rules of the game of the classical gold standard. It shifted from 1879-83 being dominated by Bank of England bank rate changes and money markets conditions to 1884-88 becoming more focused on domestic objectives and largely irresponsive to external interest rate shocks. Following Barro and Gordon (1983) on the notion of reputational forces as a substitute for a formal monetary policy rule and consistent with the need for credibility enhancement mechanism in policy to afford discretion à la Barro (1986), the findings are consistent with a Reichsbank that "masqueraded" to be perceived as "strict convertibility type" to gain room for policy discretion. Nineteenth century Germany may therefore offer valuable early lessons for commitment credibility in monetary policy under fixed exchange rates.

The operations of the Reichsbank have been reviewed comprehensively (Hellferich, 1898; Pohl, 1982; National Monetary Commission, 1910a; Seeger, 1968). The policy of the Reichsbank was studied with regard to the interplay between discount rate, market rates and unreserved bank note issuance and at times conflictive objectives between ensuring adequate reserve levels and profitability (National Monetary Commission, 1910b; Seeger, 1968; Wühle, 2011). The policy stance was especially analysed with focus on the adherence to the rules of the game of the classical gold standard. Giovannini (1986), McGouldrick (1984), Morys (2013) find that the Reichsbank adhered mostly to the rules of the game. However, Bloomfield (1959) early remarked that the rules may not offer an adequate framework of analysis. Deviations from the rules of the game were frequent as attested by studies of, for example, the Bank of England (Committee on Currency and Foreign Exchanges after the War, 1918; Dutton, 1984; Jeanne, 1995; Pippenger, 1984), the Bank of France (Bazot et al., 2016) and the Bank of Portugal (Reis, 2007). The study of the rules of the game form part of fundamental inquiries into the classical gold standard (Bordo, 1981; Bordo & Kydland, 1995; Eichengreen, 1995). It is also tied to the rules versus discretion debate in monetary policy (Clarida et al., 2000; Dwyer, 1993; Fischer, 1988; Simons, 1936; Taylor, 1999) and commitment, reputation and credibility in monetary policy (Barro & Gordon, 1983; Barro, 1986; Kydland & Prescott, 1977; Obstfeld & Taylor, 2002; Rogoff, 1987). The stability of the classical gold standard is attributed largely to commitment credibility and cooperation between central banks (Eichengreen, 1995).

The rules of the game are congruent with the trilemma debate and monetary policy autonomy in a contemporary context (Obstfeld et al., 2004, Rey, 2016). Obstfeld et al. (2005) argue that the gold standard did not offer extensive monetary policy independence while Bordo and MacDonald (1997) following Svensson (1994) find that the credibility commitment to gold convertibility allowed central banks to temporarily depart from following the rules consistent with a framework of exchange rate target bands and pursue domestic policy goals independent of the concern for convertibility.

The contribution of the paper is to offer fresh evidence about the Reichsbank's monetary policy conduct and interactions with the Privatnotenbanken using new data and a contemporary approach to estimating the policy reaction function. The paper links the Reichsbank policy to reputation in monetary policy to demonstrate that monetary policy formulation was significantly more nuanced and varied than conventional discussions about the rules of the game suggest in line with Bloomfield (1959) and following Barro (1986) on uncertainty about policy makers' preferences. The results of the paper are also supportive of the notion that some monetary policy autonomy can be preserved even under fixed exchange rate regimes (Bordo & Flandreau, 2001; Bordo & MacDonald, 1997; Krugman, 1991; Morys, 2013; Svensson, 1994). The paper uses narrative evidence by the Reichsbank and the Reichsbankkuratorium about its policy discussions, to identify shifts in policy focus.

The paper advances a new periodisation of the Reichsbank's policy formulation based on narrative accounts. The findings show important shifts in the policy reaction function between 1879-83 and 1883-88. In the latter period, the Reichsbank shifted increasingly emphasis towards national objectives while strengthening adjustment to adverse money market shocks. This also coincided with a weakening of the impact of the Bank of England bank rate for the Reichsbank's policy supportive of the view that the Bank of England did not play an overly dominant role under the classical gold standard (Morys, 2013). The analysis also affirms that central bank cooperation was indecisive (Flandreau, 1997). The paper also establishes that the Privatnotenbanken in contrast to their pledges did not back the Reichsbank in the event of gold outflows.

The paper uses monthly data to test the policy reaction function of the Reichsbank and the Privatnotenbanken based on a structural vector autoregression model. The statistical analysis follows a contemporary framework to test monetary policy reaction functions by Clarida and Gertler (1996) rather than maintain a narrow approach limited to monetary policy rate adjustment and external intertest rate transmission (Obstfeld et al., 2005). As such, the paper complements conventional statistical analyses on the rules of the game of the classical gold standard for Germany (McGouldrick, 1984; Morys, 2013; Sommariva & Tullio, 1986).

The paper focuses on the period 1876-90 covering initiation of the operations of the Reichsbank in January 1876 and the end of the scheduled life of the original bank act in December 1890.

Nicholas
Meinzer

The biological standard of living, proxied with average heights, tends to be correlated with the agricultural specialisation of a population. Analysing data from the early years of military conscription in nineteenth century southern Germany and France, Baten (e.g. 1999, 2000, 2009) demonstrated that young men in districts with higher per-capita milk production grew taller than those growing up in regions specialising in cereals or potatoes. The same basic pattern, that "proximity to protein production" has significant influence on average heights (cf. Meinzer and Baten 2015 for a brief review) has been found in other world regions (e.g. Moradi and Baten 2005, Baten and Blum 2014).

Can these historical regional patterns of average heights, of the biological living standard people enjoyed, be traced further back in time? Did children grow up into (on average) taller adults in the same regions of Central Europe during the Early Middle Ages as they did in the nineteenth century? The agricultural output that has been identified as driving the results for the nineteenth century was determined to some degree by environmental differences. For these, the 'first nature' of a place, i.e. the climate and geographical features, is likely to be more important than the 'second nature' of man-made improvements upon the first, such as roads and canals, than it is for the location of trading hubs and centres of manufacturing. While the latter gained importance with the development of rail roads and industrialisation in general in the nineteenth century, it probably also been influential in the Roman economy with its substantial scale of long-distance trade. Regarding the Early Middle Ages, however, archaeological finds suggest that food and many necessities were locally sourced in Merovingian southwestern Germany (Steuer 1997).

While the conscription data and the agricultural statistics from the nineteenth century cover most of the study region with administrative-district aggregates that can be linked to regional environmental characteristics, the early medieval data is more dispersed with no obviously best way of mapping it onto the administrative districts. Assessing the relationship between height outcomes and environmental characteristics of the districts for the conscript data or of small regions around the cemeteries for the early medieval data is a way to avoid further reducing the number of observations. Since the statistics of agricultural production from the early nineteenth century are among the first that were compiled for the study region and there are no comparable sources for the Early Middle Ages, the diachronic comparison is based on a number of proxy variables for agricultural suitability constructed from modern data, including the "caloric suitability index" proposed by Galor and Özak (2015, 2016). This allows using similar methods to construct the covariates for both time periods instead of somehow assigning values from the historical agricultural statistics to cemeteries or aggregating data from different cemeteries to conform to administrative district boundaries. Since it is not obvious - which of the proxies for the relative suitability for dairy farming that could be constructed in many ways from modern agro-environmental data are conceptually the best suited for analyses of biological living standards, the potential problem of "researcher degrees of freedom", which has been highlighted e.g. by Simmons et al. (2011) and Gelman and Loken (2013), should be considered. In this study, regressing height data from both time periods on very similarly constructed proxy variables and comparing the results may help to identify suitable candidates, assuming that the relationship between environment and biological outcomes did not change too much. Preliminary steps involve the historical agricultural statistics, replicating the results of Baten and others using the sample as constructed and prepared for the main analyses and assessing the relationship between the historical and the modern covariates.

The link between dairy farming and taller average heights in nineteenth century Germany is robust to changes in estimation strategies and slightly different approaches to data preparation. Following a brief section providing background information from the literature and another one discussing the various datasets, the main results regarding the share of young men rejected from military service for failing to meet the minimum height requirement and the number of cows per person on the level of administrative districts are replicated using multilevel mixed-effects models. In a next step, the historical relative population densities of cattle and pigs are regressed on a battery of indicators of suitability for various kinds of agricultural specialisation constructed using modern data. Following this 'training case,' the modern indicators are correlated with a sample of estimated heights of almost 2,200 individuals whose skeletal remains were excavated from 40 cemeteries from southwestern Germany dating to the early medieval Merovingian era (fifth to eighth centuries). This two-step approach yields at least qualitatively similar patterns for both the Early Middle Ages and the nineteenth century.

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Andreas
Neumayer

This paper aims at studying investors' expectations and investment decisions on the different stock exchanges in Imperial Germany. Investment decisions on stock markets are particularly interesting, because previous studies have identified a gap between types of investment behavior of individuals and what finance models predict for individual investment behavior.

Moreover, previous research has shown that socioeconomic characteristics of individual investors influence their expectations and investment decisions, which suggest a strong link between changes in socioeconomic characteristics of the investors and their stock market behavior.

In order to improve the interpretation of stock market behavior of investors it is necessary to learn more about how their characteristics changed and influenced their behavior. So far there is little information about individual investors and there are no analyses of investor characteristics in this period. Therefore, a central task of this paper is to reveal typical characteristics of investors. Furthermore, the aim is to investigate local investments biases. To do so, I use shareholder lists, which had to be handed to the admission board of the respective stock exchange, if e.g. the general assembly voted on increase or reduction of equity capital. Another important source are shareholder books, in which every single shareholder was listed with its name, full address and equity capital. Further sources are attendance lists of different meetings or protocols of the general assembly.

The empirical analysis shows that local investors were clearly important in Imperial Germany. I also found evidence that foreign investors held substantial parts of the share capital.

Dismantled once, diverged forever? A quasi-natural experiment of Red Army misdeeds in post-WWII Europe

Christian Ochsner

My paper shows that countries in Central and Eastern Europe would lag Western Europe in terms of population dynamics or labor productivity even in the absence of long-term Soviet domination or a planning economy in place for more than 40 years. After the liberation of Europe from Nazi Germany in 1945, the Red Army dismantled plants and infrastructure, and imposed mass exoduses in their liberated regions all over Eastern Europe. Red Army misdeeds, however, were most severe in regions of the former enemy.

I investigate the causal long-term effects of these Red Army misdeeds after WWII. To do this, I exploit the liberation treatment by the Red Army in South Austria. South Austria has been the only region in entire Europe from the Mediterranean to the Baltic Sea that was initially liberated, but not permanently occupied or dominated by the Soviet Union. At the day of the Nazi German surrender on May 8, 1945, the Red Army and the Western Allies overrun these last pieces of Europe under Nazi control from different directions within less than one day. The demarcation line between the Red Army and the Western Allies (US and British troops) was fully exogenous. Whether a municipality only just got overrun by the Red Army was – broadly speaking – a function of the respective velocity of the Allies' jeeps. In the Austrian state of Styria, the places where the Allies met became the 74 days lasting demarcation line. The intra-Styrian demarcation line between the Red Army and the Western Allies divided units that have neither been divided in the centuries before May 1945 nor after July 1945. In July 1945, the Red Army entirely withdraw from Styria towards its official assigned occupation zone in East Austria. The presence of the Red Army in some parts of Styria led to municipalities that were exposed to dismantling and pillages, but also (sexual) violence whereas adjacent Western Allies liberated municipalities were not.

I use this spatial discontinuity in the liberation treatment to investigate the long-run economic consequences of a short period of Red Army presence after WWII. I test for spatial discontinuities across the 74 day lasting demarcation line between the Red Army and the Western Allies in municipal population figures, measures of local labor productivity and various other economic variables. Prior to WWII, neither population growth rates nor sectoral shares differ across the (latter) demarcation line. After WWII, I find that regions that have been liberated by the Red Army get hurt in the long-run, even until present days. After the short presence of the Red Army, however, Red Army liberated municipalities immediately loose around 11 percent of municipal population compared to adjacent Western Allies liberated units. This pattern accelerates somewhat in the 1970s and 1980s and persists until today. Figure 1 (left graph) shows RDD plots of municipal population growth with respect to pre-WWII population figures. Red Army liberated municipalities face a relative decline in population from 1939 (last pre-WWII census) of around 26 to 31 percent until 2011 compared to adjacent Western Allies liberated municipalities. These results are remarkable given the only two and half months lasting difference in regional history across the demarcation line.

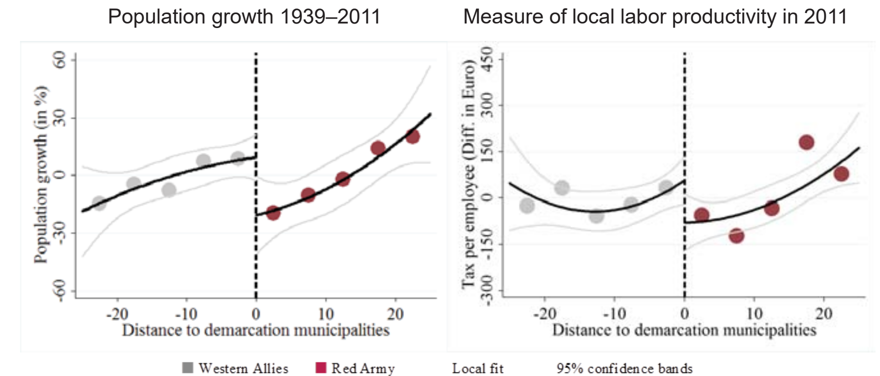


FIGURE 1: RDD PLOTS

Notes: The figures show quadratic-interacted RDD plots of municipal population growth (left graph) and for municipal tax revenue per local employee (in €) in 2011 as a measure for labor productivity. The black dashed vertical lines indicate the liberation demarcation line. Estimates include a border segments and geographic time-invariant controls. Negative (positive) values of the distance to demarcation line municipalities are for Western Allies (Red Army) liberated regions. The bins show local averages of 5 km bandwidths.

I inspect other economic variables, too. Figure 1 (right graph) depicts RDD plots measures of local labor productivity in 2011 (municipal tax revenue per local employee). The discontinuity in municipal tax revenue per employee across the long-gone demarcation line implies that Red Army liberated units lag Western Allies liberated units in terms of labor productivity, too.

My results are robust to different RD specifications and pseudo treatments. Difference-in-differences estimates further corroborate RD results. I show that the selective sorting of people across the demarcation line in the direct aftermath of WWII may explain persistence: Migration towards Western Allies liberated regions in the direct aftermath of WWII was somewhat occupation specific. Western Allies liberated regions get a boost in the share of semi-skilled laborers (industrial workers, craftsmen), whereas adjacent Red Army liberated municipalities become relatively more agricultural.

Do we really know how to manage the monetary policy? One century with the Federal Reserve and its good policies ... or good luck?

David
Pavon Prado

The Great Moderation brought us the conviction that our understanding of monetary policy was able to maintain output and inflation under control. However, the Great Recession revealed our mistake and the lack of knowledge about it. This paper looks at the Federal Reserve policies during the interwar period (1925-1939) and from 1958 to 2007, in order to draw and unveil possibly missing lessons from those so-called successful and failed periods. The aim is twofold; firstly, to get a better understanding of whether policies or luck have determined the history of the American economy, and who or what was the real responsible. Secondly, and being part of the first aim, to analyse the evolution and management of some of the main instruments of the Federal Reserve, namely, open market operations (OMOs) and the discount rate. Whereas the first aim will contribute to the debate of good luck or good policies, the second aim will be a new approach for the literature focused on the effects of the monetary policy. By now, this literature has measured how reactive the Fed was only by looking at the federal funds rate or other short-term rates. But being these rates potentially affected by factors from the demand side of the money market, apart from those from the supply side where the Federal Reserve actually plays the dominant role, some bias could be driving the results.

In order to address this problem and based on the narrative of the history of the Fed, I have developed a new variable which shows that the federal funds rate or other short-term rate of reference, possibly, should not be the only (mistakenly called) instrument of reference for the Fed, if it tries to control inflation. This new variable measures the difference between a short-term rate, depending on the period under analysis, and the discount rate. It intends to capture the moments in which the difference between these two rates is significantly large. The reason is that being that case, banks can take advantage of that differential and face the possibility of borrowing from the discount window at a rate much lower than the federal funds rate or other short-term rates, and then, lending at higher rates. In this case, even if the Fed tries to slow down the economy by increasing short-term rates, it will not be achieved because banks will still be borrowing and lending, in order to obtain profits.

Beside not using the federal funds rate as common measure of monetary policy stance, I use OMOs and the discount rate as the real instruments of the Fed (because the federal funds rate is an intermediate target) so as to isolate the supply forces from the demand forces of the money market, which affect the federal funds rate, and in this case, also the new variable created.

The model used in this paper is a time varying coefficients structural vector autoregression estimated with Bayesians methods. This model is able to capture non-linearities among the variables and the learning process of the members of the Fed about monetary policy, as well as the learning process of other agents of the economy. A comprehensive examination of the history of the Federal Reserve has been carried out, in order to impose the structural order of the VAR, acquire a clear picture of the ideas and knowledge of the members of the Fed through the entire period, how they were influenced by political and economical factors and to comprehend how and for which goal they used the instruments of the Fed. This analysis is helpful for the task of contrasting the results obtained with the facts narrated in the history of the Federal Reserve.

The main finding of this paper is that the effect that the level of the short-term rate of reference may have over inflation is going to depend relatively on how the levels of inflation and the discount rate are, with regard to the short-term rate. Thus, it seems that while the levels of inflation are above both, the discount rate and the short-term rate of reference, inflation will still grow. The same happens when despite having the short-term rate of reference above inflation, it is significantly above the discount rate. As commented before, this will allow banks to borrow and lend, obtaining profits from the spread between rates. However, if the short-term rate of reference is above inflation and near the discount rate, the probabilities of decreasing inflation are higher. Last, if the discount rate is above the short-term rate, it will help to decrease inflation, being more effective when both rates are above it.

Regarding the debate of good luck or good policies, the results for the interwar period, supported by the narrative, show how the lack of knowledge and improvised actions carried out by the Fed are represented in the continuous changes observed in the impulse response functions and the volatility of the residuals. They display how the Fed improvised continuously and was unable to set up the discount rate, in order to avoid the periods of deflation or even inflation.

For the second period, it is possible to observe how the Fed roughly maintains a constant behaviour over its policy. Even though the new variable indicates a change regarding inflation around 1984, after carrying out a counterfactual exercise comparing some of the years of Greenspan and Burns as chairmen of the Federal Reserve, it shows that there is no difference between the policies applied during both periods. This suggest that monetary policy is not the main responsible for the performance of the American economy, and it must be understood by luck that other agents participating in the economy are the ones driving these results. Given the volatility of the residuals, it is observed that they are higher when according to the narrative, the level of bank reserves plays an important role in the way that monetary policy was being managed. Hence, it could be that the banking sector, depending on its expectations and knowledge about monetary policy, is behaving differently throughout different periods, regardless of whether monetary policy is the same. Such factor may be driving the results.

The results are not completely robust given the limitations of the model. These limitations are due to the high dimensionality of parameters estimated. Thus, although the results related to the new variable and the discount rate hardly vary with al of the modifications applied to the model, variables such as OMOs and M1 offer different results once modifications are included.

Land inequality, Institutional Developement and Numeracy in Early Modern Andalucia, 1500-1800

Marie Del Carmen Pérez-Artés

Jörg Baten

Andalucía was the urban centre of the Spanish World Empire, in which the sun did not go down. Not Madrid, not the old cities of the Castilian North, not Toledo but Sevilla, Córdoba, Granada, Cádiz, Almería, and the other cities in the southern parts of the Iberian Peninsula were the largest urban agglomerations. This was the early urban heartland of the largest continental Empire during the early modern period. At the same time, the number of quantitative studies on early modern Andalucía is very limited, and the number of early modern human capital assessments is close to zero.

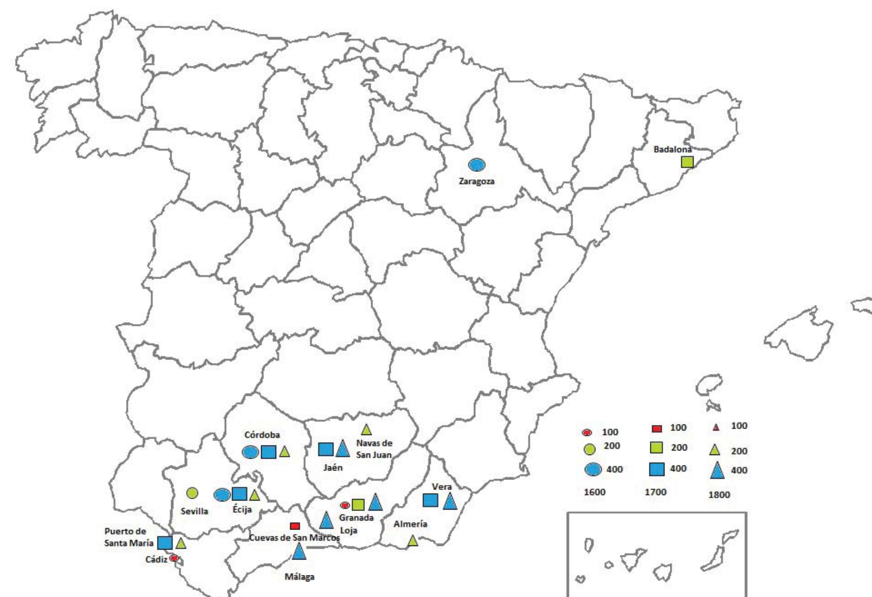
A fresh dataset that covers all archival collections of padrones (local censuses) and similar sources that survived to the present is analysed here. This evidence allows us to provide a diachronic perspective: We can cover the years around 1600, 1700, 1800. We restricted our sample to those sources which reported age statements. It covers not less than 11.900 observations of which, even better, 5.793 observations contain both occupations and age. We can document many different regions of the south of the Iberian Peninsula (Figure 1).

We focus on the determinants of numeracy, using this example of Southern Spain. One core debate focuses on the agricultural basis of the human capital development. Galor, Moav and Vollrath (2009) argued in their theoretical model that the size distribution of agricultural holdings plays an important role, because the political economy of large landowners made substantial investments into human capital less likely. Large landowners were not willing to pay taxes for primary schooling. In contrast, in industrialised countries, the willingness to invest in schooling was much higher. Acemoglu and Robinson argued, that inequality in general reduced the likelihood of setting up-grow conducive institutions (see also Easterly on Latinamerica (2003) and Easterly on current development countries (2016)).

Clark and Gray (2012) in contrast found for Grain Britain that land inequality apparently did not matter for literacy on the local level. Hippe and Baten (2017) consider the different results in a broader framework by arguing that it was the mostly agricultural South and East of Europe where large land ownership restricted human capital and investment, whereas in England, France as well as the most industrial part of the Habsburg Empire this effect was not visible.

However, until now no individual-level analysis on these issues for early-modern Europe. This is done in the present study for the first time. We find that the share of farmers, relative to the total agricultural population, had a significant positive effect even within Andalucia. The share of farmers thus defined is a proxy for a more equal distribution of land, which had positive effects on human capital formation. This result is robust controlling for a large number of potential confounding variables.

The wider implications of this finding are that agricultural basis was decisive for the human capital development. For Andalucia, we observe a decline of the farmer share in several localities. This might have contributed to the slower growth of Southern Spain during the subsequent period.



Disease and child growth in industrialising Japan: Assessing instantaneous changes in growth and changes in the growth pattern, 1911-39

Eric B. Schneider

Kota Ogasawara

Children's growth is an important measure of health and nutritional status that has been employed in the historical literature to track economic development and health (Schneider, 2016, 2017; Hatton, 2011). In addition, stunting rates (the percentage of children below a certain height for age) are also one of the most important indicators of malnutrition used to measure progress in the Millennium Development Goals and Sustainable Development Goals around the world today (de Onis and Blössner, 2003). Reducing stunting rates is in fact manufacturing a change in the growth pattern of children (adult height, the velocity of growth, timing of the pubertal growth spurt and age at which growth ceases). Thus, historical examples of how the growth pattern changed may reveal the kinds of policies and interventions that might help relieve malnutrition in the developing world today. Between the birth cohorts of the 1880s and 1980s, the average height of Japanese adult men increased by 13.9 cm, suggesting a radical change in the growth pattern and making Japan an ideal case for studying changes in children's growth (Baten and Blum, 2012). Thus, this paper uses Japan as a case study to analyse changes in children's instantaneous growth and in their growth pattern in the interwar period to determine how exposure to disease may have caused these changes controlling for a number of confounding factors.

Drawing on data from government reports, we have constructed a panel dataset containing average heights and weights of boys and girls for all 47 prefectures from 1929-39. The data list the heights of primary students and secondary students separately. The primary school averages reflect around 95 per cent of the population from ages 6 to 11 and 50-75 percent at ages 12-13 whereas the secondary school averages capture a much smaller group of children (around 10 per cent). We censor the dataset at certain ages where the small number of children in school creates very noticeable measurement error, especially during the period that children are growing most rapidly (Figure 1). There is clear evidence that the secondary students are an elite, selected subsection of the population, so we treat them separately than the primary students in the analysis.

To test the influence of disease on child growth, we implement two study designs: one intended to measure how environmental conditions affect instantaneous changes in growth from year to year and another that analyses effects on the growth pattern. We will discuss the method and results for each in turn before drawing some wider conclusions. To measure instantaneous effects on growth we analyse children's heights in primary school from ages 6 to 11, when the data is most representative. Instead of grouping the children in periods, children aged 6-11 measured in the same year, we group them in cohorts, children aged 6-11 from the same birth cohort measured across a number of years (see Figure 2). This allows us to look at how growth for the same set of children changed in relation to conditions that were affecting them at ages 6 to 11. We use a bilateral-specific fixed effects model, which includes fixed effects for prefecture interacted with birth year. Thus, we control for any differences in initial birth conditions of the children across prefectures and cohorts. We also include age fixed effects to capture the natural differences in growth as children age, a host of other potential controls (not discussed here) and analyse boys and girls separately. The bilateral-specific and age fixed effects (along with the fact that we are not dealing with individual-level data) explain the high R-squares in the regressions (Table 1).

The results presented in Table 1 show strong associations between the disease environment and the children's instantaneous growth. For instance, an increase in infant mortality, a general proxy for the disease environment, in the year that

the children were measured resulted in a statistically significant decrease in the children's heights. Likewise, increasing provision of clean water and the expansion of doctors in a prefecture led to improvements in height, highlighting that public health infrastructure could also be important. Higher temperatures also decreased heights, which may be related to the fact that water-borne diseases spread more rapidly in higher temperatures. We also included the diarrhoeal death rate Children's growth is an important measure of health and nutritional status that has been employed in the historical literature to track economic development and health (Schneider, 2016, 2017; Hatton, 2011). In addition, stunting rates (the percentage of children below a certain height for age) are also one of the most important indicators of malnutrition used to measure progress in the Millennium Development Goals and Sustainable Development Goals around the world today (de Onis and Blössner, 2003). Reducing stunting rates is in fact manufacturing a change in the growth pattern of children (adult height, the velocity of growth, timing of the pubertal growth spurt and age at which growth ceases). Thus, historical examples of how the growth pattern changed may reveal the kinds of policies and interventions that might help relieve malnutrition in the developing world today. Between the birth cohorts of the 1880s and 1980s, the average height of Japanese adult men increased by 13.9 cm, suggesting a radical change in the growth pattern and making Japan an ideal case for studying changes in children's growth (Baten and Blum, 2012). Thus, this paper uses Japan as a case study to analyse changes in children's instantaneous growth and in their growth pattern in the interwar period to determine how exposure to disease may have caused these changes controlling for a number of confounding factors.

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Tax Morale: the Moralization of Paying Taxes in the 20th Century as a Subject of Historical Research

Korinna Schönhärl

As defined in the German Encyclopedia Brockhaus, taxes are "the most important source of state revenue". "They flow into the state's budget and serve to finance expenses for common welfare." But what is common welfare? Of course this is a highly ideological question, and answers vary greatly from one political party to the other, from era to era and from region to region. How much inequality can be accepted in a society, what level may it reach before it has to be adjusted by the state? How much does each citizen have to contribute to common duties and by which measures can he or she be forced to contribute? Whatever certain actors may define as common welfare, the state is inescapably dependent on the tax payment of its citizens to be able to realize any notion of living fairly together in society.

The state must therefore have a vivid interest in understanding why people do or do not pay their taxes. Economic models of tax-paying behavior define it as a function of the evaded sum, the likelihood of being convicted and the impending punishment (Allingham and Sandmo, 1972). But such models do not depict reality properly: people pay their taxes much more honestly than they should, according to this model. There obviously are other factors influencing the tax-paying behavior of citizens.

Social science research on tax morale is interested precisely in these additional factors that influence tax-paying behavior. Such research has been carried out through analyses of international databanks like the World Values Survey (Körner and Strotmann 2006). This research compares the different levels of tax morale worldwide, measured as answers to the question: "Can it be justified to cheat on taxes if you have an opportunity?" and thus focuses not on payment behavior but on people's attitudes towards tax paying. Why can cheating on taxes not be justified for 80% of the Japanese, but only for 37% of the Greeks? Social-science investigations suggest that age, gender, education, the level of taxation, the frequency of amnesties, religious affiliations, the relationship between citizens and state, and political participation are among the factors that play a role (Torgler 2007). But some of the results make one skeptical: when in the years 1999/2000 tax morale in Germany (57.1%) and Uganda (58.0%) was nearly the same despite completely different social, economic, institutional and historical circumstances (Uganda having one of the highest rates of corruption worldwide), does cheating on taxes really mean the same in these different societies?

The historical circumstances of paying taxes have to be considered to find an answer to the question of why tax morale is so different in different cultural spaces. This is the aim of the intended project presented in this paper.

But how can a historian investigate tax morale? The innovative "moral history" approach can be used to find proper methodological access. Moral History is interested in phenomena where something is communicated as being moral in the sense of being associated with certain reciprocal, supra-individual obligations and, for the purpose of a value-based production of difference, is identified as being valid and superior (Knoch and Möckel, 2017). "Moral History" thus focuses on the process of moralization. The thesis is that, especially in the 19th and 20th century, this process of moralization no longer occurs by combining certain phenomena with a traditional system of norms, e.g. a religious one, but that moral systems appear in their own right.

In this sense the intended project investigates the process of moralizing tax-paying behavior in the 20th century. By whom, why and by what mechanisms is the payment of taxes moralized in different cultural spaces and at different times? Which socially constructed vocabulary is used, and which media? Additionally the project is also interested in the question of how tax morale became a subject of scientific research, why scientists started to analyze it and how their research was combined with political interests.

Example for the moralization of tax payment behavior: Letter from the German Minister of Finance Fritz Schäffer to German taxpayers, 1952. Schäffer explains in detail the purpose of taxes. He also argues that taxes are needed to help widows and orphans in post-war society with its severe social challenges.
(The copyright holder of the picture is unknown and is invited to contact the author to receive payment for the copyright; source: Archives of Social Democracy of the Friedrich-Ebert-Foundation).

As case studies, three types of tax states are selected, using the classification by Uwe Wagschal: Germany as a Christian democratic and continental European type, Spain as a peripheral-residual type and the USA as a liberal-conservative type (Wagschal 2006). In these three nations the process of moralizing tax payment behavior will be researched in the period between 1939/1945 and 1989, when the consequences of the neoliberal tax reforms of the 1980s became obvious. As historical sources the press (for example reporting on tax scandals) and parliamentary papers are used, including certain party programs. Scientific discourses can be drawn from economic and social scientific publications, including the intensive research on tax morale based on the World Value Survey since the early 1980s. The project focuses on the processes of moralization in national frames and compares them, but also pays attention to the interconnections and overlaps between the discourses in the sense of entangled history (as present e.g. in the records of the OECD concerning tax evasion from the 1960s onward). This approach enables common stereotypes of national tax-paying behavior to be avoided. The result will be a historically well-founded answer to the question as to why attitudes towards tax paying so differ between people in different cultures.

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The White Man's Relief - The Ecological Foundations of British Trade in the Nineteenth Century

Dimitrios
Theodoridis

In 1829 the British colonial promoter Edward Gibbon Wakefield expressed the following aspiration

"the mother country and the colony would become partners in a new trade; … one country furnishing the raw material-that is, the land … the other furnishing the machinery … In this honorable, and, … even glorious co-partnership, the interest of the mother country would be greater than that of the colony; and a rupture of their connection, would, therefore, be most injurious to the former". (Wakefield 1829, 196–97 A Letter from Sydney)

Expansion overseas was essential to Britain's growth in the nineteenth century. The existing debate has, however, been rather inconclusive as to the role and relative importance of the various trading partners and commodities. Conclusions of previous studies have varied significantly, from Paul Bairoch that regarded the role of colonialism and its contribution to the development of the "Western world" as a "myth", to Kenneth Pomeranz who highlighted its central role for Europe's distinct development after the 18th century. This paper presents a systematic account of the geography of land embodied in ten major imports- butter, cheese, wheat, coffee, cotton, wool, indigo, potash, tallow and wood. A methodology borrowed from ecological economics is employed in this study, which calculates the ecological footprint of these traded commodities. The current analysis aims to complement previous research that has been based on prices and monetary values of trade. A physical ecological indicator shifts the point of focus from the economy as such to the restricting ecological circumstances that governed Britain in the late eighteenth and nineteenth centuries. Analyzing trade in physical terms can thus provide an additional insight, which may otherwise be obscured by market values.

In contrast to previous research, it is found that the role of colonies is far from insignificant. Colonial trade did matter for Britain. Not only as an important outlet market as previous studies have argued, but also as an important source of raw material and other agricultural products. The British Empire was very much dependent on its established exploitative colonial system which extended its territory and acted as a source of raw material for an otherwise isolated island economy. Nevertheless, what is interesting is that the colonies which contributed the most in this process of territorial expansion through trade were not the extractive slave-based colonies, but rather the European settlements in British North America and Australia. Trade in potash and wool acted as the main contributors of colonial land expansion shifting ones attention from products such as cotton, wheat and wood that are traditionally in focus in economic history. Additionally, the potential of these commodities to be produced in non-colonial, possibly European, territory raises further interesting questions regarding the actual contribution of colonial institutions in Britain's industrialization.

Notes

Does Financial integration lead to institutional convergence? Housing Finance in France and the Netherlands

Tim
van der Valk

For European Union member states, finance is increasingly a European affair. This is reected in a variety of European institutions, including the Single European Act, the introduction of the Euro, and, more recently, the introduction of banking union. This resulted in decreased opportunities for protectionism, increased levels of competition, and a standardized legislative and supervisory framework.

This raises the question whether this move towards a more level playing field will also result in institutional convergence: will national financial systems display convergence in the way that they provide their services the the real economy?

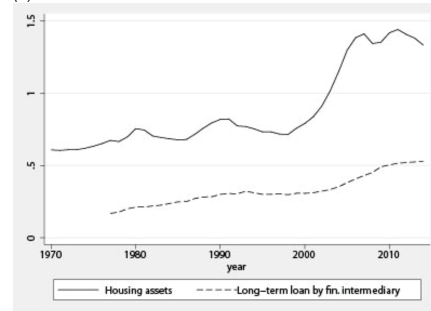
I approach this question by means of a case study of the national systems of housing finance in France and the Netherlands from 1970 until today. In particular, I seek to uncover the determinants of the particular set of financial products and intermediaries - and its development through time - that French and Dutch households use to finance the purchase of a house.

France and the Netherlands make a good case study because first, the French and Dutch government show a historically different attitude vis-a-vis their financial system and national economy- dirigism vs. market-led policies- and second, both countries are founding members of the European Union.

To explain the historical development of both systems of housing finance I adopt a functional approach after Merton and Bodie (1995). According to this functional approach, a financial system performs a number of financial functions for the real economy (transferring economic resources through time, risk management, etc.). The way in which national financial systems operationalize these financial functions depends on the limitations and incentives introduced by the institutional setting.
I therefore hypothesize that:

- Historical choices allow for path dependency to play an important role in institutional development.
- The institutional setup of a country is internally consistent

(a) France



(b) The Netherlands

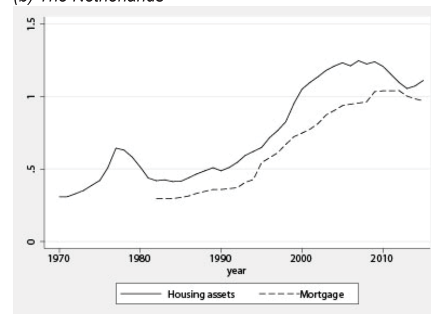


Figure 1: Housing assets and mortgage debt (%GDP)
Note: Housing assets are constructed as the product of average housing prices, fraction of owner-occupied housing, and the housing stock. Method inspired on Slacalec (2009). Long-term loans of French households are loans with a maturity of over one year.

Table 1: The function of housing wealth
Source: Portfolio Structure: Banque de France & CBS; Replacement rate OECD (2015). The net replacement rate is the ratio of individual net pension entitlements to pre-retirement earnings.

	FR	NL
Average Portfolio Structure 1983-2014:		
Housing assets	38.1%	27.1%
Pension and Insurance	15.9%	39.5%
Pension replacement rate:	67.7%	95.7%

Looking at the historical role of housing assets and debt on the household balance sheet (Figures 1a and 1b), two main differences stand out. First, the level of housing debt in France is considerably lower than in the Netherlands and second, the level of housing debt is highly correlated to housing assets in the Netherlands whereas in France this is not the case.

These differences are closely related to the function housing wealth plays within the French and Dutch household portfolio. Table 1 displays the main components of the French and the Dutch household portfolio since 1983. The French household portfolio is dominated by housing assets and characterized by limited pension and insurance assets, whereas in the Netherlands, the household portfolio has the inverse structure. This difference can be related to the organization of the pension system which was introduced in the aftermath of the Second World war in both France and the Netherlands. The French pension system is PAYG and relatively sober, whereas the Dutch pension system is capital funded and relatively generous. French households thereby have an incentive to build up wealth in alternative assets to smooth consumption over time, whereas in the Netherlands, the high levels of forced illiquid savings rather create a preference for increased indebtedness.

Many of the institutional developments since the late 1960s are consistent with this different setup of life-time consumption planning. French financial institutions allow for the repayment of housing debt through government-introduced savings products. Moreover, risk taking is low, which is reflected in low levels of indebtedness, strict usury laws (Loi Neiertz), the specificity of the French caution (as opposed to a mortgage) and the dominance of covered bonds (originate to hold).

Dutch institutions, on the other hand, allow for high levels of indebtedness through financial innovation exploiting mortgage interest deductibility, thereby complementing forced illiquid pension saving. Financial innovation and risk-taking is facilitated by the limited possibilities for personal bankruptcy, lax supervision and the predominance of securitisation (originate to distribute).

Concluding, the introduction of a variety of supranational institutions has not resulted in institutional convergence in housing finance. The main explanation for this lack of convergence is the dierential setup of both pension systems and related household preferences. Second, historical differences between the attitude of the French and the Dutch state vis-a-vis their national financial system also play an important role. Because changing a pension system is expensive and goes against household interests embedded in the system in place, convergence in the medium term is unlikely.

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Monetary Blocs, Optimum Currency Areas and European Monetary Integration: Evidence from the Pre-Gold Standard Era (1846-1870)

Roger
Vicquéry

The creation of the Euro Area, according to some the ”world’s largest economic policy experiment” (Baldwin, 2006), as well as the crisis the common currency has experienced since 2010 have inspired renewed research interest in international monetary integration and the optimum currency areas (OCA) framework.

Particularly, the issue of estimating the costs of monetary integration has been at the core of the policy debate, both prior to 1999 and more recently as the original choice to let Greece and other peripheral nations in the ”club” was pointed as the key reason for the currency’s existential crisis. The present paper wishes to contribute to the literature on OCAs by looking at past examples of international monetary integration. The first wave of European monetary integration occurring in the third quarter of the 19th century, between the 1848 revolution and the 1870 Franco-Prussian War, is particularly interesting in this respect. On the one hand, as the first globalisation was underway, this period witnessed to the attempt of the French Second Empire to harmonize the international monetary system around a French Franc bloc, as well as to the ultimate rise of the British gold standard in the 1870s. On the other hand, it saw the formation of national monetary unions lasting to this day, in Italy and Germany. The paper research question is twofold.

Firstly, it wishes to assess the ex-ante costs of monetary integration for the long lasting monetary arrangements that came into existence during the period at hand. I opt for an operational definition of those costs based on a anchor-client framework and the symmetry of nominal shocks, following early work by Alesina and Barro (2002) and Bayoumi and Eichengreen (1997). Comparing the measured ex-ante costs to the ex-post outcomes in terms of long run regional divergence provides evidence on the appropriateness of the OCA framework in assessing the ex-ante suitability of common currency membership. It also provides evidence on the relevance of the endogeneity hypothesis of OCA put forward by Frankel and Rose (1998) and Krugman (1993). From an historical point of view, the analysis sheds some lights on the role of the Italian monetary unification shock in the emergence of the Southern Question.

Secondly, the paper wishes to contribute to the literature on the origins of the international gold standard by looking at the pre-1870 relative influence of England and France on the European monetary system. The existence of a bi-polar monetary system - as opposed to one where “British dominance” would incentivize countries to join the British standard - would tend to confirm Flandreau (1996) view on the emergence of the international gold standard as an “accident of history”.

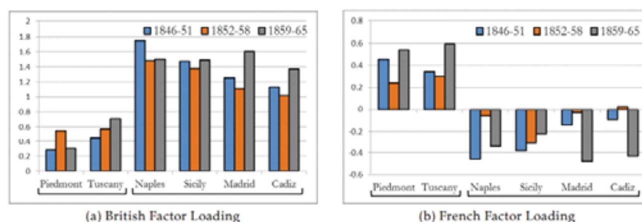


Figure 3: Italy: High Macroeconomic Costs of North-South Monetary Integration
* Estimate ends in 1861 for Tuscany and 1863 for the Southern places, when they start to be quoted in Italian Lire. Sicily represents the simple average of the factor loadings estimated for Palermo and Messina.

In order to investigate the above research questions, I exploit a newly compiled dataset of twice-weekly foreign exchange bills prices quoted in London on about twenty European cities between 1846 and 1869, including six Italian financial centers representing four pre-unitary monetary zones and three German pre-unitary financial centers. I employ a “Frankel-Wei” factor model to map the co-movements of bills prices within the European monetary system, focusing on the symmetry of nominal shocks between the core (London and Paris) and the periphery. This approach is in line with the “anchor-client” rationale for monetary integration put forward by Alesina and Barro (2002). My main findings indicate that the monetary union between Northern Italy and the Kingdom of the Two Sicilies was not an OCA. I therefore argue that the establishment of a centralized Italian monetary union, in the presence of differing trade specialization and asymmetric shocks, is likely to have played a role in the arising of the Italian “Southern Question”. On the other hand, shocks within German regions where largely symmetrical, suggesting substantially lower costs from monetary integration. It follows that the benign OCA endogeneity mechanism theorized by Frankel and Rose (1998), where monetary integration increases economic integration, decreasing asymmetric shocks, did not play an important role in the case of the Italian and German unifications. On the contrary, I provide tentative evidence that an adverse OCA endogeneity effect (Krugman, 1993), with increased regional specialization magnifying asymmetric shocks, was at play in the first decades of Italian unification.

Looking at the broader economic history of the European monetary system, I additionally find that the pre-gold standard European monetary system was largely bi-polar, with rising French monetary dominance from the 1850s onward. The absence of substantial British dominance on the European monetary system, particularly in Germany, points to the rise of an international British gold standard as not being inevitable, opposite to what a strand of the literature has argued (Eichengreen, 1998). This is also consistent with the economic rationale to the French project of a Latin Monetary Union put forward by Einaudi (2001).

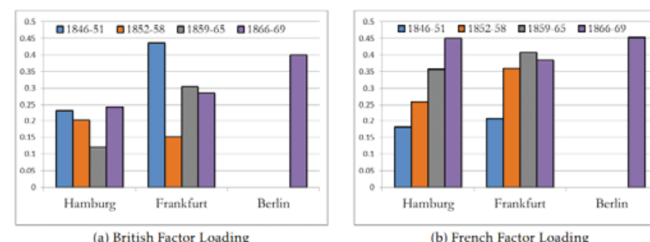


Figure 4: Germany: Low Macroeconomic Costs of Monetary Integration
Berlin's quote only available from 1866 onward.

Finnish population development, 1648-1850. A Bayesian state space approach

Miikka Voutilainen

Jouni Helske

Harri Högmander

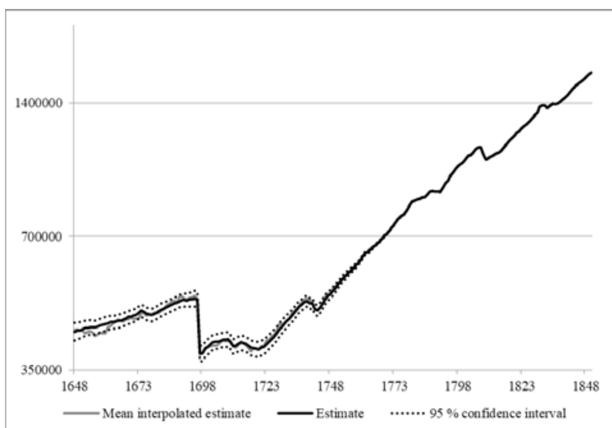
This study provides estimate of the Finnish population series extending from the mid-1600s until the first whole country census of 1815, and places Finland among the few countries where population series of this length are available.

The renowned Wrigley and Schofield (1981) population study leans against impressive English parish registering system, exceptional in its detail and coverage. In many other instances, the population reconstitutions have to be made with much coarser data and estimation procedures. E.g. Recent Swedish debate (i.e. Palm 2001, Edvinsson 2015) displays the many caveats resulting from sparse population data on one hand and aggregative methodological procedure on the other. When combined, these risk leaving many facets of the estimation uncertainty unaccounted for.

We propose a novel methodology to estimate population totals, including a method to correct the incompleteness of the underlying data by using a time-dependent multiplicative correction factor, reflecting the improving quality of data from the poor early years to the almost perfect in the end years.

Our time series model "borrows" information from neighbouring years based on the inherent temporal dependency in the population dynamics. This significantly improves the accuracy of the population size estimates for a single year compared to the aggregate estimation procedures of the present literature. The Bayesian approach applied in the modelling allows taking into account simultaneously several sources of information with varying levels of uncertainty. It furthermore enables including information from other studies as prior knowledge in the model and provides both point estimates and interval estimates reflecting the uncertainty involved in the results.

Our estimates suggest that the Finnish population grew on an average annual rate of 0.38 % during the latter half of the 1600s and experienced one of the worst famines in recorded history during the late-1690s (resulting in c. 25 % population loss over two year period). The Great Northern War (1700-1721) resulted in population stagnation, after which the population recovered with a substantial 1.22 % average annual growth rate during the remainder of the century.



Graph 1. Estimated population level and confidence interval, 1648-1850

The making of a growth-promoting autocracy: the role of merit-based bureaucracy and lessons from the mandarins (1776-1911)

Xun Yan

Colin L. Xu

"Modern governance first" (Fukuyama 2014) is an engaging idea for policymakers in many parts of the developing world and is regarded as more feasible than complex political reforms. A professional and effective civil service is a key to the modern governance. However, can a merit-based bureaucracy function well under a non-democratic environment, which by nature relies on political loyalty and encourages patronage? This paper seeks to answer the question by exploiting this new panel dataset of the Chinese imperial bureaucracy, which was constituted by a group of highly educated civil servants selected by an autocratic political body. The paper collects individual level information (of the career path, educational and personal background) of the Chinese imperial government officials from 1776 to 1911 and exploits this new panel dataset. Preliminary empirical exercises show that both educational attainment and personal connections have a positive impact on the official's performance, suggesting that under a context of an autocratic regime, a certain level of collusion among bureaucrats can be understood as information exchanging and benign cooperation, and therefore might facilitate an efficient administration.

The history of the meritocratic bureaucracy in China can be traced back to the 7th century. China had long eliminated aristocracy and abandoned the feudal political structure. The Chinese autocracy relied on a complex system of bureaucratic rule. The Chinese imperial bureaucracy is a merit-based system: most officials were selected through a series of competitive exams (the Civil Service Examination System, or keju). Towards the end of the imperial history, the merit-based bureaucracy was altered. Different from most previous dynasties which relied entirely on a civil service group (of mainly Han ethnicity), the rulers of the Qing Dynasty relied more on Manchus, an ethnic minority from Northern China. While maintaining the meritocratic civil service, the political institutions were modified in order to strengthen the Manchus' control. Institutional modifications included direct appointments of Manchu officials to key positions, and a shift of powers from ministries to the Emperor himself (and his Grand Council of the Royal Court). The Qing Dynasty, albeit a history of two centuries and a half, encountered countless political challenges in its later days and became the last dynasty in China. Many scholars consider that the demise of the dynasty was partly attributed to this institutional change and therefore a weakened governance capacity (Qian 1952).

The case of late imperial bureaucracy allows us to assess the merits and the faults of the combined bureaucratic institution with elements of meritocracy and patronage. The context of being a relatively closed economy permits a better measure the impact of domestic policies and institutional arrangements. Finally, the very long term data information guarantees an assessment of the impact of different bureaucratic features with the organisational change of the institution.

The long-run investigation also facilitates the observation of the true features underlying the effective governance by getting rid of the cyclical variation of macroeconomic factors, which is not feasible with data of the current times.

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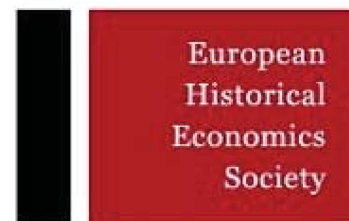

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Neue Schriftenreihe

Die Einheit der Gesellschaftswissenschaften im 21. Jahrhundert (EdG21)

Herausgegeben von Nils Goldschmidt, Jan-Otmar Hesse und Boris Holzer

Die Gesellschaftswissenschaften zerfallen heute in eine Vielzahl von Unterdisziplinen, von den Wirtschafts- und Sozialwissenschaften, über die Geschichts- und Kulturwissenschaften bis hin zur Rechtswissenschaft. Angesichts des sehr hohen methodischen Niveaus in den Einzeldisziplinen und der notwendigen Spezialisierung werden übergreifende Forschungen immer schwieriger und seltener. Die Schriftenreihe »Die Einheit der Gesellschaftswissenschaft im 21. Jahrhundert« versammelt Beiträge, die an dieser Synthese arbeiten. Publiziert werden Monographien und Sammelbände, in denen die methodische Vielfalt der heutigen Gesellschaftswissenschaften gezielt für innovative Einsichten oder Problembeschreibungen eingesetzt wird. Es soll keine neue Methodendebatte gesucht werden, sondern es sollen durch die multiperspektivische Betrachtungsweise aus unterschiedlichen disziplinären Kontexten Erkenntnismöglichkeiten eröffnet werden. Hiermit schließt die Reihe an die vor 55 Jahren begründete Reihe »Die Einheit der Gesellschaftswissenschaften« an, die in dieser Hinsicht sehr positiv gewirkt hat.
Alle Bände in der Reihe werden durch die Herausgeber sowie externe Gutachter begutachtet.

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Share Economy

Institutionelle Grundlagen und gesellschaftspolitische Rahmenbedingungen
Herausgegeben von Julian Dörr, Nils Goldschmidt und Frank Schorkopf

Die Digitalisierung und das Internet sind im Begriff, traditionelle Geschäftsmodelle und Konsumgewohnheiten grundlegend zu verändern. Insbesondere die gegenwärtig in den Medien und der Öffentlichkeit stark thematisierte Share Economy hat das Potenzial, erhebliche Wandlungsprozesse in Gang zu setzen. In diesem Band wird die Ökonomie des Teilens als (vermeintlich) neue Art des Wirtschaftens untersucht: Welche Chancen und Risiken birgt die Share Economy?
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