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# *Summaries of Doctoral Dissertations*

## *The Dissertations of Ellora Derenoncourt, Michael Poyker, and Hui Ren Tan: 2019 Allan Nevins Prize Competition of the Economic History Association*

### INTRODUCING THE 2019 NEVINS PRIZE FINALISTS, WITH THOUGHTS ON RESEARCH IN ECONOMIC HISTORY

It is my pleasure to introduce the finalists for the 2019 Nevins Prize, an award given to the best dissertation in United States or Canadian economic history that was completed during the previous year.

I see great opportunities for graduate students working in economic history. Perhaps the core question of our time is why some places and some people are rich while others are poor, which is closely related to why some places and people have become rich while others have remained poor. This is inherently an historical question, and our understanding of economics in general can benefit fundamentally from more historical perspective.

Research in economic history will naturally help us to better understand the past, but I see the most potential for economic history research in helping us understand the world more generally. Importantly, this is not to say that we study the past primarily to understand the world today, because the world as we see it today is just one example of how things can operate. The world today gives a particular perspective on how the economy works, and we can study the past to provide other perspectives and better understand how the economy works in general.

When graduate students are going on the job market, in particular, it is important that they not shy away from the historical aspects of their research. Framing research in economic history as economics research, which happens to be about the past, and emphasizing a connection to current issues, can make that research seem less relevant and less interesting than other research directly on the modern era. A less defensive and more pro-active motivation can emphasize how our understanding of some general economics question *needs* particular insights from the past, and it is precisely for this reason that the research draws on an historical context. This helps to frame the issue of external validity, which comes up for all applied economics research, by fundamentally organizing the research around how history can uniquely inform economics.

A closely related motivation for economic history research is that the world today is fundamentally shaped by the past, and it can be difficult to understand the world today without an understanding of how we arrived here. As Faulkner wrote: "The past is never dead. It's not even past." An important determinant of individuals' economic outcomes is those of their parents and grandparents, and so historical differences in economic opportunities are naturally linked to modern differences in economic outcomes. This issue, in particular, was the focus of the three finalists for the 2019 Nevins Prize.

The winner of the Nevins Prize, Ellora Derenoncourt, examines historical determinants of racial inequality. This research examines the Great Migration of African Americans from the Southern United States to the North, and how responses by Northerners and changes in Northern cities reduced economic mobility in those cities for later generations of African American children. This research highlights how the opportunities for upward economic mobility in particular areas is influenced by choices of people and politicians in those areas, especially as they relate to education, segregation, and policing. This research illustrates impediments faced by African Americans in continuing to overcome historical economic disadvantages.

One of the other finalists, Michael Poyker, examines the rise of prisons and convict labor in the United States. This research highlights the monetary incentives for expanding the use of convict labor, which was especially targeted toward the incarceration of African Americans and increasing the supply of coerced labor after the abolition of slavery. This research goes on to examine the local economic consequences of convict labor, and its impacts on intergenerational economic mobility in those areas.

The remaining finalist, Hui Ren Tan, examines historical changes in how local economic characteristics affect intergenerational economic mobility. This research finds that historical economic mobility in particular areas was largely related to adult labor market opportunities in those areas. This is in contrast to the more modern period, in which human capital has increased in importance and the childhood environment and education now have more influence in determining which areas foster greater intergenerational mobility.

For details on these dissertations, I defer to the authors' summaries and their research itself. There has been a resurgence of interest in examining spatial differences in intergenerational economic mobility, and this is an area in which economic history can make important and lasting contributions to our understanding of economics.

In providing my perspective on the framing of research in economic history, my main hope is that it might be useful to graduate students considering research topics and how to characterize their research. Whereas there was once a focus on doing history research using economics, and debating historians, I see the most potential now in doing economics research using history. Economists, and general economics journals, are increasingly open to economic history research when it uses economics methods and engages with the general economics literature. Economic history is rich with data, and interesting empirical contexts that can provide compelling empirical research designs, which are often better than modern empirical settings and modern data restricted to short time horizons. Economic history researchers can draw on the excellent work by generations of scholars, who have provided both quantitative and qualitative accounts of important historical contexts. All economics research benefits from detailed knowledge of the empirical context, and our field benefits substantially from a rich tradition of building on the work of those who have come before. Knowledge of history is not a fixed target; rather, as the world changes and the field of economics changes, these important historical contexts can provide new economic insights. Amidst the ongoing economics research across a variety of topics, there are opportunities for economic historians to distinguish themselves by bringing new historical perspectives to important economics questions.

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# *Long-Run Determinants of U.S. Racial Inequality: Evidence from the Great Migration and the Fair Labor Standards Act*

Racial economic divides seem a fixed feature of American society. Yet the past 80 years have witnessed important shifts in this dimension of inequality. This dissertation studies two key episodes in American economic history that have shaped current patterns of racial inequality: the 1940 to 1970 wave of the Great Migration of black Americans from the South to the North and the late-1960s extension of the federal minimum wage to sectors with a large share of black workers.

The northern United States long served as a land of opportunity for black families, but today the region's racial gap in intergenerational mobility rivals that of the South. Between 1940 and 1970, four million African Americans left the South and settled in urban areas in the north and west of the country. The first chapter of this dissertation examines whether the Great Migration ultimately reduced northern cities' ability to facilitate black intergenerational progress.

I do so by comparing commuting zones ("CZs") in the North that exogenously experienced larger or smaller increases in their urban black population. The empirical strategy makes use of the fact that black southern migrants settled in northern cities where earlier migrants from their communities had moved, giving rise to highly specific linkages between southern locations and northern destinations (Boustan 2010; Black et al. 2015; Stuart et al. 2018). I combine the location choices of the roughly 340,000 black southerners who left their county of residence between 1935 and 1940[1] with variation in subsequent county outmigration as predicted by southern push factors.[2] As the potential set of these factors is large, I use a machine learning technique, Least Absolute Shrinkage and Selection Operator ("LASSO"), to optimize the set of predictors of net-migration rates from the South.

Using this strategy, I show that children growing up in CZs that experienced a larger inflow of black migrants during the Great Migration have lower income as adults than those in less affected commuting zones. Two potential mechanisms underlie this effect: the characteristics of particular families living in Great Migration destinations today (selection effects); or changes in the destinations themselves—for example, in local public services or neighborhood quality—that eroded the gains to growing up in these particular locations (location effects). To disentangle these two channels, I use data on the childhood exposure effects of commuting zones from Chetty and Hendren (2018). The data contain estimates of the effect of one additional year of childhood exposure to a commuting zone, based on a large sample of families who moved across CZs in the

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[1] I observe these migrants in the complete count 1940 U.S. Census, Integrated Public Use Microdata Series ("IPUMS") version; see Ruggles et al. (2018).

[2] One example is variation in the share of agricultural land planted in cotton. Cotton mechanization accelerated after WWII, contributing to black outmigration from the South (Whatley 1985); variation in cotton acreage thus provides plausible variation in southern county migration rates.

late 1990s and early 2000s and whose children were different ages at the time of the moves. Using these data, I estimate a robust negative effect of spending one additional year of childhood in a Great Migration CZ. My estimates suggest that the cumulative effect of spending one's childhood in a Great Migration city accounts for all of the negative impact of the Migration on average upward mobility. In other words, location effects, not selection effects, drive the relationship between historical racial composition changes and lower upward mobility in the destinations today.

Using data on upward mobility outcomes by subgroup, I show that the largest negative effects manifest for black men, while growing up in Great Migration CZs has no effect on the long-run outcomes of white men and women. A counterfactual exercise suggests that without the changes induced by the Great Migration, the racial gap in upward mobility in the North would be roughly 27 percent smaller today.

I assess the extent to which alternative explanations may drive the findings. Many black southerners moved to manufacturing centers that subsequently underwent greater job loss than more economically diversified locations. In all specifications, I control for the share of the labor force in manufacturing in 1940, which largely accounts for variation in manufacturing shares in subsequent decades. Results are also robust to including a Bartik instrument for employment changes between 1940 and 1970. Finally, I find no effect of the Migration on the outcomes of white men from low income families, a group likely to have been affected if the findings were driven by deindustrialization alone.

To assess whether the results reflect responses to southern black migration specifically, I instrument for white southern inflows and show that these have no effect on black upward mobility or on the gains to growing up in specific commuting zones. Finally, to determine whether declines in upward mobility reflect fixed characteristics of the commuting zones analyzed, I show that the results are robust to using the long 1940–2015 difference in black men's upward mobility as the outcome, suggesting that changes in the racial composition, not simply the pre-existing differences between locations, help explain the findings.

In the second chapter of the dissertation, I explore the channels through which the Great Migration reduced upward mobility in the destinations. Digitizing and assembling data on nearly 100 years of local government spending, schooling patterns, crime and incarceration rates in northern commuting zones,[3] I use the empirical approach applied in the first chapter to estimate the impact of the Great Migration on these potential mechanisms. Pre-1940 outcomes serve as placebo checks. The analysis reveals significant and persistent responses starting in the 1960s.

The racial gap in private school enrollment increased as a result of the Migration, driven by higher white private school enrollment and greater concentration of black students in public schools. Consistent with Boustan (2010), I also find that the Migration led to substantial reductions in the urban white population share in northern commuting zones. These areas continue to be more racially and economically segregated today.

[3] Sources include the financial statistics of states and local governments, 1932; the City and County Data Books, 1944–1977; U.S. Census Bureau Annual Survey of Local Governments, 1967–2012; the Biennial Statistics of Education, 1920–1922; 1930–1940 Uniform Crime Reports ("UCR"), courtesy of Price Fishback; UCR 1931, 1936, 1943, and 1950; city crime rates from UCR 1958–1969, Inter-university Consortium for Political and Social Research ("ICPSR") version; Vera Institute of Justice In Our Backyards Database; IPUMS complete count 1920–1940 U.S. censuses; and Inmates of Institutions, U.S. Census 1960, Table 52.

Local governments began spending a larger share of public expenditures on police in Great Migration destinations, starting in the 1960s. This change may have been a response to higher crime rates, which characterized Great Migration CZs by the late 1960s. However, destination CZs also experienced more severe race riots, which may have led to changes in policing and criminal justice responses. By 1960, incarceration rates were higher in Great Migration CZs, and effects persisted well into the 1990s. In contrast with the increase in spending on police, I find no significant difference in aggregate CZ expenditures on education, fire-fighting, health and hospitals, sewage and sanitation, or recreation in response to the Great Migration. These null effects do not rule out a reallocation of public spending on these services within a commuting zone. However, increased black-white gaps in mobility within census tracts in destination CZs suggest that increased residential racial segregation cannot be the sole explanation for the long-run effects of the Great Migration.

The third chapter of my dissertation, coauthored with Claire Montialoux, examines the role that the federal minimum wage played in the dynamics of racial inequality during the Civil Rights Era. The white-black earnings gaps fell dramatically in the late 1960s. A large literature sought to understand this decline by studying the effects of federal anti-discrimination legislation (Freeman 1973) or improvements in relative schooling of black children (Card and Krueger 1992; Smith and Welch 1989). The timing and magnitude of the decline, however, remained a puzzle. In this chapter, we put forth a new explanation for falling racial earnings gaps during this period: the extension of the federal minimum wage to new sectors of the economy.

The 1938 Fair Labor Standards Act included provisions for a federal minimum wage in certain sectors of the economy, including manufacturing and transportation, but notably excluded agriculture, services, and retail from coverage. In 1966, amendments to the Fair Labor Standards Act rolled these sectors into coverage starting in 1967. Black workers were over-represented in the newly covered sectors, which included large farms, hotels, restaurants, schools, hospitals, nursing homes, entertainment, and other services.

To analyze the effect of the reform on wages, employment, and the racial earnings gap, we use a variety of data sources and research designs. We digitized data on hourly wages by industry, occupation, gender, and region from Bureau of Labor Statistics (BLS) industry wage reports containing information on the number of workers employed in 5- and 10-cent hourly wage bins. We also rely on micro-data files from the March Current Population Survey (CPS), which allow us to investigate how the impact of the reform varied with race and other socio-economic characteristics such as education.

First, using a cross-industry difference-in-differences design, we show that the reform increased earnings for workers in the newly covered industries and that the impact was twice as large for black workers as for white. The magnitude of the effects is extremely close to what we predict using the annual earnings distribution, hours, and weeks worked in the pre-reform CPS. We find similar effects on hourly wages using our BLS data.

In a second step, we study the effect of the 1967 minimum wage extension on employment. We implement a bunching estimator (following Harasztosi and Lindner forthcoming; Cengiz et al. 2018) with the BLS data. Within treated industries, we compare the number of workers paid strictly below the minimum wage and those paid at or slightly above the minimum wage in the observed 1967 wage distribution to those in a counterfactual distribution with no reform. Our results indicate low employment responses in treated industries in the United States as a whole. We confirm our core wage and employment results using a second research design that leverages the presence or absence of a

state-wide minimum wage law, which varied the bite of the reform across the United States. Comparing states without a state minimum wage law as of January 1966 (strongly treated) to states with a law (weakly treated), we estimate that the 1967 reform had a precise near-zero effect on employment and can rule out large employment elasticities.

The 1967 extension of the minimum wage can explain approximately 20 percent of unconditional black-white earnings convergence during the late 1960s and early 1970s. Most of the reduction in the gap can be explained by cross-race within-industry earnings compression in the newly covered sectors.[4] Because the reform did not cause significant adverse effects on black employment, the decline in the earnings gap translated into a similar decline in the income gap. Thus, the 1967 minimum wage reform played a heretofore unrecognized role in advancing black economic status during the Civil Rights Era.

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[4] The reform also sharply reduced the adjusted racial earnings gap (i.e., the difference in earnings between black and white workers conditional on observable characteristics) within the treated industries. Black workers were paid 25 log points less than white workers with similar observables (such as education, experience, number of hours worked, etc.) in the treated sectors prior to the introduction of the minimum wage; this difference falls to zero after the reform. We hypothesize that one possible explanation for small employment effects was white employer collusion to pay black workers' lower wages prior to the reform.

# *Essays on the Economic Effects of Convict Labor in Modern U.S. History*

While labor coercion in agricultural and preindustrial economies is well-studied, few papers address the effects of coercive institutions in an industrial setting (Naidu and Yuchtman 2013). The most common form of labor coercion in modern times is convict labor: it is still widespread, not only in developing countries but also among the world's most developed countries. This practice is potentially important to the economy because a large share of labor, working at significantly below the minimum wage, could impose externalities on the broader non-coerced segment of the labor market. In 2005, the U.S. convict-labor system employed nearly 1.4 million prisoners, of which 0.6 million worked in manufacturing (constituting 4.2 percent of total U.S. manufacturing employment).[1] Prisoners work for such companies as Wal-Mart, AT&T, Victoria's Secret, and Whole Foods, and their wages are substantially below the minimum wage, ranging from $0.20 to $5.15 per hour in state prisons.[2]

Convict labor creates a labor demand shock for competing firms through the product market competition. Prisoners employed in manufacturing production cannot be employed by any firm on the competitive market. Prison-made goods are relatively cheap because the cost of convict labor is lower than the reservation/minimum wages of free laborers. Thus, convict labor decreases labor demand and a prison can be described as a "firm" producing goods on the open market with access to (limited by prison capacity) labor with a cost lower than cost of free labor and acting like competitive fringe.

My dissertation contributes towards our understanding of the effects of convict labor on economic outcomes. It consists of three chapters. The first, "Economic Consequences of the U.S. Convict Labor System," provides empirical evidence on how convict labor affects local labor markets. Using a new dataset of U.S. prisons from 1886 to 1940, I calculate each county's exposure to competition with prison-made goods. I find that the 1870–1886 introduction of convict labor accounted for a 0.5 percentage-point slower annual growth rate in manufacturing wages from 1880 to 1900. At the same time, affected industries had to innovate away from the competition and thus had higher patenting rates and adopted new labor-saving technologies. In my second chapter, "U.S. Convict Labor System and Racial Discrimination," I show that counties exposed to a more severe exploitation of convict labor experienced higher rates of incarceration among minorities. Moreover, after the abolishment of the old convict labor system in 1941, the racial discrimination in policing remained: the same variation of convict labor

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[1] Sources: Census of State and Federal Adult Correctional Facilities, 2005, and FRED. Assuming the share of employed prisoners to be on the 2005 level, they constituted 10 percent of total U.S. manufacturing employment in 2017.

[2] For more information on wages and companies working with prisons, see Prisonpolicy.org .

camps predicted excessive arrests of Black and Hispanic for non-violent crimes.[3] In the third chapter, I study the long-run effect of convict labor on equality of opportunities. Convict labor negatively affected wages of low-skilled workers and had positive effects on firms in affected industries. I document that this reallocation of welfare from wage earners to capital owners had a long-lasting effect on equality of opportunities: intergenerational mobility of the bottom income quintile got worse, while it improved for the other quintiles.

Previous work has not been able to study this issue due to lack of data and due to a lack of exogenous variation in convict labor. U.S. prisons tend to be built in economically depressed counties under the assumption that they will provide jobs (e.g., guards and nurses) in the local labor market (Chirakijja 2018), so cross-sectional estimates comparing prison towns to others would have selection bias. Similarly, trends in recent convict-labor legislation may be correlated with trends in states' budgetary health, which is directly related to local labor market conditions.

This dissertation addresses both the lack of data and lack of exogenous variation. The empirical context is U.S. counties for the years 1886 through 1940. These data come from a newly digitized archive of the Bureau of Labor's reports on convict labor used in all U.S. prisons and labor camps. I construct county-level exposure to convict labor as the weighted average of industry-specific values of convict-made goods in all U.S. prisons, where the weights include the county's industry-labor share and the costs of trade between those prisons and the county.

In the baseline analysis, I estimate the effect of convict-labor exposure on manufacturing wages and employment using first-difference ordinary least squares (OLS) regressions. To address the concern that the location of prisons and the choice of industries by prisons might be endogenous, I employ an instrumental variable (IV) estimation. Exogenous variation in the use of convict labor comes from the fact that prisons built before the 1870s (when state laws introduced convict labor) did not have the facilities and infrastructure for factory production. The introduction of convict labor was unanticipated, both by firms and by prison wardens, who were suddenly in charge of employing prisoners within their institutions. Pre-existing prison capacities are correlated with the value of goods produced in prisons after convict-labor laws were enacted. Therefore, my instrument for exposure to convict labor is the exposure to pre-existing prison capacities, that is, I compare counties that were located closer to prisons built before convict-labor legislation to the ones located farther away from the pre-convict-labor-era prisons (hereafter, *old* prisons).

The validity of the instrument relies on the assumption that conditional on factors important to the location of the *old* prisons, it is uncorrelated with wardens' choices of industrial composition of convict labor, and possible strategic location of prisons constructed after convict-labor laws were enacted. To provide evidence consistent with the exogeneity of the instrument, I show that the exposure to old prison capacities was uncorrelated to pre-convict-labor changes in wage growth at the county and industry levels. The first-differences specification allows me to account for time- and county-invariant unobserved heterogeneity, and the pretreatment level and trends in dependent variables account for possible mean-reversal and trend-breaks.

I find that the 1870–1886 introduction of convict labor decreases manufacturing wages and employment. Comparing two counties, one at the 25th percentile and the

[3] The convict labor system was re-established in 1979.

other at the 75th percentile of exposure to convict labor, the more exposed county would on average experience a 0.4-percentage- point slower growth rate in manufacturing wages, a 0.3-percentage-point slower growth rate in manufacturing employment share, and a 0.12-percentage-point slower growth rate in labor-force participation annually. I also provide suggestive evidence that convict labor was more used in locations that had many strikes before 1870. However, after the introduction of convict labor, more affected locations had fewer strikes and these strikes were less successful.

The effect is different for men and women. While prison labor was used in many industries, most prisons produced clothes and shoes. The apparel and shoemaking industries employed mostly women, who were more affected than men by coerced labor. I find that women's wages decreased 3.8 times more than those of men.

I find that convict-labor shocks facilitated technology adoption. Comparing two counties, one at the 25th percentile and the other at the 75th percentile of exposure to convict labor, the more exposed county would be expected to experience double the mean annual number of registered patents (8.4) in industries where prisoners were employed (with no effect on patents in industries where prisoners were not employed), and a 0.18-standard-deviation increase in the capital-labor ratio.

The latter result is partially driven by adoption of new technologies (decreasing the costs, in- creasing the quality of goods, or substituting labor with capital) and these technological changes were capital-biased. I provide three pieces of evidence on potential mechanisms. First, using firm-level survey data from the Weeks Report (Meyer 2004), I show that firms in affected industries and localities were more likely to adopt improved labor-saving machinery, as competition in (low-skilled) labor became futile. Second, using county-industry-level data from Hornbeck and Rotemberg (2018), I show that firms in affected industries and locations invested in technologies associated with increased productivity of capital relative to technologies related to the productivity of labor. Moreover, the set of available technologies—in the words of Caselli and Coleman (2006), the "technological frontier"—of affected firms improved. Third, I demonstrate that the returns-to-capital relative to returns-to-labor ratio increased by 0.5 percentage points annually in affected counties (interquartile range). However, the increase in the capital-labor ratio is also driven by changes in industrial composition. Using firm-level data from Atack and Bateman (1999), I show that it is also partially explained by the exit of labor-intensive firms in the affected industries.

In the second chapter, I study whether convict labor had a direct effect on incarceration. First, convict labor could incentivize the police to arrest more people. In some, predominantly southern, states policemen would receive a share of profit from each criminal in whose capture he was involved (Wilson 1933). In other states, police and judges were often bribed by prison wardens in order to arrest more people and assigning longer sentences (e.g., Department of Labor 1901). Second, due to lower wages among the low-skilled workers, the opportunity cost of crime decreased thus indirectly increasing incarceration.

Using novel dataset of the county of residence of inmates from the U.S. censuses I show that counties exposed to a more severe exploitation of convict labor in 1886 experienced higher rates of incarceration among minorities in 1920 and 1930. I also document the presence of racial discrimination in policing: convict labor had deferential effect on the Black men to be incarcerated in the Southern states relative to white, and Irish and Italian were more likely to be incarcerated in the Northern states. That effect persisted even after closure of old prisons: the same variation of convict labor

camps predicts excessive arrests of Black and Hispanic for non-violent crimes (drugs and vagrancy).

In the third and last chapter, I study the long-run effect of convict labor on equality of opportunities. My first chapters show that convict labor adversely affected wages of low-skilled workers and had positive effects on firms in affected industries. It implies that even after private usage of convict labor essentially was prohibited in 1941 those localities where coerced labor was in abundance experienced its persistent effect. Over the long term, intergenerational mobility could decrease as children of poor, unskilled workers had lower chances to succeed in life to leave the poverty trap, while capital-owners seem to have benefited from exploiting low-skilled free and convict labor making an example of Marxist ideas. In addition, human capital could depreciate as more people were incarcerated and subject to harsh prison conditions.

I combine Raj Chetty's "Equality of Opportunity" project's intergenerational mobility data with exposure to competition with prison-made goods in 1886–1940, I show suggestive evidence that this reallocation of welfare from wage earners to capital owners had a long-lasting effect on equality of opportunities: intergenerational mobility of the bottom income quintile got worse, while it improved for the other quintiles.

The convict labor problem is more salient today and with lots of policy discussions and controversies. The number of convicts has soared from approximately 160,000 in 1932 to more than 2.3 million today, and the effect of contemporary convict labor on the U.S. economy is likely large. No detailed data are released on the amount and industrial composition of convict labor, but according to the U.S. Census of State and Federal Adult Correctional Facilities, approximately 1.4 million prisoners were employed in 2,500 U.S. prisons in 2005. From 2000 to 2005, the number of prisoners employed in manufacturing almost doubled, from approximately 308,000 to approximately 594,000.[4] Today, those prisoners still receive lower-than-minimum wage and impose externalities on free labor. My dissertation is the first comprehensive study on the economic effects of convict labor. My analysis highlights the fact that many aspects of economic life and many groups of people can be affected directly and indirectly by competition from prison-made goods. Thus, when we evaluate the overall effect of the penitentiary system, we should carefully weigh the long-run impact and assess the negative externalities created by convict labor.

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# *Three Lessons for Labor Economics From History*

There have been two recent developments in the field of economic history: the large-scale digitization of historical datasets and the introduction of efficient record linkage methods (Abramitzky, Boustan, and Eriksson 2012, 2014, 2019; Feigenbaum 2016). When combined together, the two advancements allow researchers to provide a historical perspective on whether and how circumstances earlier in life affect an individual's subsequent outcomes. My dissertation illustrates three ways of doing this within the context of the United States. First, I explore the link between one's location of residence and intergenerational mobility. Second, I study whether family size matters for a person's education attainment in the short and long run. Third, I consider if military service during WWI had any effects on the economic status of veterans.

The first chapter begins by establishing a stylized fact: the geography of intergenerational mobility has changed over time. Chetty et al. (2018) compute contemporary measures of upward mobility for individuals who grew up in each Commuting Zone (CZ).[1] They find that those who were raised in the non-industrial Midwest tend to exhibit higher levels of upward mobility. To characterize the historical landscape of upward mobility, I build a large linked sample of individuals, matching persons from the 1910 to the 1940 census. This linked dataset enables me to construct measures of mobility that are comparable with Chetty et al.'s (2018). In contrast to their contemporary

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[1] CZs are groups of counties characterized by strong within-CZ and weak between-CZ commuting ties (Tolbert and Sizer 1996). Similar results can be obtained with counties instead.

observations, I find that upward mobility in the early twentieth century was higher along the coastal regions and in the industrial Midwest. The land of opportunity has thus shifted from the outer parts of the country to the center.

Why did the spatial patterns of upward mobility change? Chetty and Hendren (2018) and Chetty et al. (2018) attribute much of the geographic variation in mobility *today* to differences in childhood environment, rather than labor market conditions. I propose that the opposite was true *historically*—labor markets may have had a more important role than childhood environment. The rest of the first chapter explores each factor in turn.

I exploit variation in the ages at which children moved across neighborhoods to illustrate the smaller role of childhood environment in the early twentieth century, building on Chetty and Hendren's (2018) research design. This approach assumes that the potential outcomes of children are independent of the ages when they moved. A key challenge to applying the age-at-move strategy in a historical setting is that an individual's age at move is not directly observed. To address this, I make use of differences in the state and year of birth among siblings to infer when a person moved. I then illustrate the feasibility of the age-at-move method in a historical setting by studying the impact of childhood environment on grade-for-age status—whether or not a child is in the appropriate grade for his or her age. The contemporaneous nature of this outcome permits an evaluation of the research design's feasibility without the added complications of linked data. I find that those who spent more time growing up in better neighborhoods are more likely to be in the appropriate grade for their age. These findings are unlikely to have been severely compromised by attenuation bias or by threats to the identifying assumption.

Having established the feasibility of using the age-at-move strategy in a historical setting, I then turn to the primary relation of interest: the impact of childhood environment on adult income ranks. In contrast to the present-day findings in Chetty and Hendren (2018) and Chetty et al. (2018), the historical association between childhood environment and adult income ranks is not robust. Geographic differences in childhood environment are thus unlikely to be a key determinant of the historical patterns of upward mobility.

If childhood environment was less important, what else might explain the spatial patterns of upward mobility in the past? I propose a role for local labor markets: places with better jobs provide more opportunities for upward mobility. Any observed relation between labor market structures and individual outcomes, however, is likely to be biased by endogenous location choices among different individuals. To address this, I compare the outcomes and labor markets of persons who are more likely to share similar characteristics: brothers.[2] This eliminates any differences between households. The

[2] The labor market analysis has been completely rewritten in more recent versions of this chapter. Instead of a within-brothers comparison, I compare internal migrants with each other, adapting the approach of Charles, Guryan, and Pan (2019). Specifically, I compare internal migrants who grew up in places with similar labor market structures within the same state, but who ended up in different labor markets as adults due to plausibly exogenous differences in migration costs. Two determinants of migration costs are used: relative distance and historical networks. Consistent with the findings in the original chapter, I find that being in better labor markets improved economic outcomes historically.

within-brothers comparison suggests that better labor markets improved the economic status of individuals in the past.

Moving away from intergenerational mobility, the second chapter studies how family size affects a person's education attainment, both in the short- and long-run. This is motivated by two trends that characterized the demographic transition in the US – a decline in family size and a rise in education attainment. Using twin births to isolate exogenous variation in family size, I find that each additional sibling reduced the likelihood of a child attending school during the late 19th and early 20th centuries. In addition to these short-term effects, could family size also have long-term implications? To shed light on this, I build a linked sample of individuals, matching them from the 1920 to the 1940 census. Those from larger families tend to accumulate less human capital by the time they are adults. While both the short- and long-run effects of family size are statistically significant, it is important to note that they are quantitatively small in magnitude.

The third chapter of my dissertation offers one final example of how a combination of digitized historical data and linking methods can be used to understand whether later-life outcomes are affected by earlier circumstances, this time focusing on military service during WWI. While a sizable literature in economics has looked at the impact of later wars on U.S. veterans (see, e.g., Angrist 1990; Angrist and Krueger 1994; Bedard and Deschenes 2006; Stanley 2003), WWI has received relatively less attention.[3] This study seeks to fill that gap in the literature. The identification challenge here is that veterans and non-veterans are likely to be different. A simple comparison of their outcomes may thus yield biased estimates of the impact of military service. To address this, I exploit discontinuous changes in the likelihood of military service induced by the transition between different registration regimes under the WWI draft. A precise implementation of this approach requires an accurate assignment of individuals to their respective registration regimes. Because the switch between regimes typically occurred in the middle or third quarter of a calendar year, information on birth date that is more detailed than just the year of birth is needed. Such information is available in the 1900 census (birth month) and from the 1960 census onward (birth quarter). For the short-term analysis, I thus build a 1900–1930 linked sample, combining information on birth month from 1900 with data on veteran status in 1930. The long-term analysis, on the other hand, will be based on the 1960 census. Using a difference-in-discontinuities approach, I find little evidence of a causal relation between wartime service and economic status. This apparent null effect may reflect America's relatively short duration in the war, coupled with comparatively less-generous benefits thereafter.

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# *The Dissertations of Thilo N. H. Albers, Anne Sofie Beck Knudsen, and Yuzuru Kumon: 2019 Alexander Gerschenkron Prize Competition*

For this year's submissions to the Gerschenkron Prize for theses that cover regions outside North America, I received an extraordinary—perhaps record—24 submissions (25 if including one that was submitted one day after the deadline), the majority of which, I would like to emphasize, are of very high quality. To short-list three and award one out of these 24 is ever more challenging. This surge in quantity and quality of economic history dissertations is simply a reflection of the phenomenal growth both within the field of economic history itself (as represented by the Economic History Association) as well as from outside such as political science, sociology, and area studies. As an economic historian, this is certainly a cause for celebration for our profession.[1] But as the sole judge of this prize, my decision carries more than the usual agony given the high quality and rich diversity in topics, methodology, and regions covered. Often, I have to take the uncomfortable position of relying on more diverse criteria with multiple considerations. For this prize summary, I will take a slightly different format. Before discussing the three short-listed dissertations, I would like to devote some space to an overview of all the submissions followed by a brief mention of eight high-quality dissertations that did not make this year's short list, but perhaps were equally disserving.

## OVERALL SUBMISSIONS AND HONORABLE MENTIONS

This year, most dissertations submitted for consideration for the prize were completed at European or North American universities. Of the 24 dissertations submitted, 13 were from European institutions, followed by 9 from the United States and one each from Latin America and Africa. The overwhelming majority of the dissertations were completed at economics departments, with about the remaining one-fifth completed at either specialized economic history or history departments. Twelve covered mainly the regions of Western Europe, three were on Eastern Europe, two each were on Latin America and East Asia, and one was on Africa. The remaining had more global coverage rather than focus on a specific area.

The themes covered are wide-ranging, going from the ever popular topic of finance and financial crisis, to foreign and colonial investments, migration, environment, famine, economic geography, technology, innovation, entrepreneurship, social networks, political economy, the role of institutions, religion and culture, and the measurement of long-term living standards. In particular, we see quite a few submissions on the more recent topics of long-term persistence and Great Divergence (i.e., the rise of the West versus the rest). Some dissertations pushed the boundary of the discipline with methodological innovations. Most noticeable is the adoption of innovative empirical identification strategies that have become very influential in labor and development economics. Often these strategies are combined with careful compilation of micro or individual-level data to test more sharply focused hypotheses. Other dissertations reflect the rise of big data collection and computation that involved sample size of hundreds of thousands or millions. Besides econometrics, some of the most innovative thesis also brought a new

[1] See Margo (2018) for various issues with the growth of interest in economic history.

conceptual framework, such as behavioral and experimental economics, into economic history. Others experimented with applied theoretical modelling and simulation. Having said that, it is still heartening to see a couple of good old-fashion dissertations with deep narrative history on a single area or a city.

In this context, I want to mention eight specific dissertations in particular. We have two dissertations that specifically focus on the two great famines in the Communist Soviet and China in 1933 and 1959–1961, respectively. Natalya Naumenko's thesis titled "The 1933 Soviet Famine: Causes and Consequences" (Northwestern University) evaluates the causes of the 1933 famine and, as well, the long-run impact of the famine on population and urbanization patterns. Naumenko's study echoes some of the more recent works on China's Great Leap Famine in 1959–1961. In a chapter titled "Historical Traumas and the Roots of Political Trust" in the thesis submitted by David Yang (Stanford University), he focused on the causal effect of the Great Chinese Famine (1958–1961) on the survivors' political distrust, using a novel nationally representative survey and a difference-in-differences framework to compare citizens who were exposed to the Famine versus those who were not. His overall thesis includes studies on contemporary China where he investigates three distinctive forces—historical experiences, indoctrination, and media censorship—in shaping citizens' political beliefs, attitudes, preferences, and behaviors and contributes to forces of stability in authoritarian regimes. Both the methodology and findings are inspiring. Political economy and ideology also featured in Eric Melander's thesis titled "Democracy Manifest: Essays in Historical Political Economy" (University of Warwick), which focus the relationship between social movements and ideology in Sweden and Germany.

Javier Mejia's thesis titled "Three Essays on Social Networks and Economic History" (*Los Andes University*, Colombia) is an ambitious thesis that aims to construct a general model on the economic role of social networks in tribal societies in the Middle East historically. His thesis ends with a well-constructed empirical study of social networks and entrepreneurship in nineteenth-century Colombia. Information, networks, and innovation are also the central theme in Fabian Lorenz Schrey's thesis titled "Trade, Networks, and Innovation: An Application of Network Theory in Economics" (Yale University).

Two dissertations on finance stand out. Pamfili Antipa's thesis "The Interactions between Monetary and Fiscal Policies during the French Wars" (Paris School of Economics) is a careful re-examination of public finance at the macro-level, whereas the dissertation titled "Essays on Finance in History" by Chengzi Xu (Harvard University) examined bank failures in England and the United States in the nineteenth and twentieth century based on careful compilation of bank archives.

Last but not least, Daniel Gallardo Albarran at the University of Groningen in the Netherlands submitted an excellent work on the measurement of the long-term living standards titled "Health, Well-being and Inequality Over the Long Term."

## THE THREE SHORT-LISTED OF DISSERTATIONS BY THILO N. H. ALBERS, ANNE SOFIE BECK KNUDSEN AND YUZURO KUMON

The three theses on the short list reflect three distinctive and significant themes in economic history, namely, the role of global trade and financial crisis (Thilo N. H. Albers), the role of culture and cultural transition (Anne Sofie Beck Knudsen), and the Great Divergence debate as illustrated through the unique case of Tokugawa Japan (Yuzuru Kumon).

Thilo N. H. Albers' thesis, "Trade Frictions, Trade Policies, and the Interwar Business Cycle," is a massive undertaking on the Great Depression (London School of

Economics) and possibly the most ambitious and comprehensive thesis among all the submissions. It is composed of six chapters. Based on a comparison with other recessions throughout history, the first chapter motivates studying the Great Depression from a trade perspective. The second chapter introduces a new macroeconomic dataset for the interwar period and investigates the prelude and global impact of the Great Depression. The third chapter tests this conjecture based on a causal estimate of the multiplier and auxiliary data. It demonstrates that the trade channel can explain significant proportions of the initial depth of the Depression in small open economies. The fourth chapter thus turns to the analysis of retaliatory trade policies in response to currency devaluations and shows that tariff retaliation was an important feature of interwar protectionism. The fifth chapter assesses the relative importance of tariffs and transport costs during the interwar period shows that not only were tariffs the dominant trade friction during this period, but their increase rendered distance related trade costs relatively less important. Finally, the sixth chapter draws implications for the academic and political discourse.

Although covering a well-trodden terrain, Albers' thesis still stands out in three aspects. It is a very comprehensive, nearly exhaustive, study on nearly all aspects of the trade channel in the causal chain of the Great Depression, a factor that was still relatively neglected in existing studies. Second, the thesis builds a large amount of global and national-level data and employs a battery of modelling and econometric tools to support his argument. Finally, the thesis contains a comprehensive literature survey and extensive discussion on policy implications that have huge bearings on the contemporary world economy as witnessed by the ongoing trade war between the United States and China.

Anne Sofie Beck Knudsen's thesis, "Persistence and Change in Long-Run Development" (University of Copenhagen), is concerned with understanding how and when societies experience lasting change by examining the joint evolution of individualism and emigration in Scandinavia during and since the Age of Mass Migration (1850–1920), in which a quarter of the Scandinavian populations left to settle in New World countries. A long-standing hypothesis holds that people of a stronger individualistic mindset are more likely to migrate as they suffer lower costs of abandoning existing social networks. The thesis argues for a theory of cultural change and convergence where migrant self-selection generates a relative push towards collectivism in migrant-sending locations through a combination of initial distributional effects and channels of intergenerational cultural transmission. Relying on the uniqueness of people's first names, the thesis combines various sources of empirical data, including complete historical census records and near-complete passenger lists of emigrants, and tests the relevant elements of the proposed theory at the individual and aggregate level, and in the short and long run. Together, the empirical results suggest that individualists were more likely to migrate than collectivists, and that the Scandinavian countries would have been considerably more individualistic and culturally diverse, had emigration not taken place. In the second chapter, Knudsen examines the transmission of cultural traits more closely by using a wider collection of historical population censuses and studies the transmission of cultural traits across more than four million North European families during the period 1703–1910. Here, she uses the commonness of first names as traits of collectivist culture and shows that parents adhere to the cultural values inherited from their childhood homes and pass them on to their own children, though the transmission is not perfect and parents appear to be influenced by the average cultural traits of the surrounding population.

Knudsen's thesis is an outstanding example of the use of big data in economic history, marked by very careful compilation, robustness checks, and explanation. It is also a remarkable and innovative attempt to test the role of culture, which has always eluded solid empirical exercises. Obviously, the heavy and sometimes the sole reliance on the use of first names as the main dependent variable for these tests may cause some concern on the robustness of the result.

The thesis by Yuzuru Kumon, "Rich Europe, Poor Asia: How Wealth Inequality, Demography and Crop Risk Explain the Poverty of Pre-Industrial East Asia, 1300–1800" (University of California, Davis), zooms in on the pre-modern economy of Tokugawa Japan (1603–1867) in a comparative context but asks a much larger question relevant for the Great Divergence debate. The thesis pieces together an impressive set of primary source regional-level data on farm wages and land ownership to show that Japanese per capita income, as demonstrated by farm wages 1600–1867, was consistently lower than that of England, and stagnated across these years, but so was Japanese inequality. Kumon went beyond measurement to construct models in the Malthusian framework of income determination and show two important factors that explain much of low Japanese income. The first was much greater wealth inequality in Europe, which paradoxically is shown in the Malthusian framework to increase average incomes. He traces these inequality differences in family structure between northwest Europe and Japan, notably the differential customs of adoptions of sons in the household. Second, greater fluctuations of net grain output in European agriculture compared to Japan would drive up average incomes in Europe according to predictions from the Malthusian framework.

Kumon's thesis makes innovative contributions in two important aspects. First, it represents an in-depth study of a relatively closed economy as a microcosm of the much larger agrarian economies of neighboring China or East Asia in general. Instead of highlighting Japan as unique from the rest of East Asia, Kumon demonstrates that many features of the Tokugawa economy are directly relevant for our understanding of East Asia and hence shed light on the ongoing Great Divergence debate. Although focused on Japan, Kumon also makes careful comparisons with England and Europe whenever relevant. For example, he shows that the unique feature of primogeniture in the Japanese family structure, often touted as strikingly similar to that of England, was actually complemented by the adoptions of sons in the household, which had the effects of equalizing wealth in Tokugawa Japan as the pattern of partible inheritance did for China.

A second unique contribution in Kumon's thesis is the combination of empirical evidences and economic theories. Although some of the empirical evidences and exercises are far from perfect or even solid partly due to limitations in the primary source data, the thesis goes beyond just measurements but contains great and thoughtful insights.

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# *Trade Frictions, Trade Policies, and the Interwar Business Cycle*

The wide scope of the study of economic history encompasses the long-run evolution of living standards, sudden crises, their politics, and their consequences. This thesis is about the mother of all modern economic crises. Like no other event, the Great Depression shaped economic policy in the twentieth—and as we learned 10 years ago—the twenty-first century. Rightfully, much ink has been spilled on the monetary origins of the Depression, be they of systematic nature as in Barry Eichengreen's (1992) view or executive nature as proposed by Milton Friedman and Anna J. Schwartz (1963). Together with novel and well-established research agendas of how crises propagate through financial channels,[1] we now have a much fuller picture of the Great Depression. Yet, in one key area of economics, we have arguably made little progress in our understanding of global crises since the 1930s. We have not yet confronted the question of how important real trade linkages are in a Great Depression-type event in a way that allows us to sensibly discuss how devastating misguided trade policies can be. The first part of this thesis aims to fill this blind spot, providing important lessons for economic history and economics. The second part of this thesis focuses on political and geographical trade frictions and their effect on trade. Combining these two parts yields policy recommendations for economic crises in the twenty-first century.

## THE FALL OF TRADE AND INCOMES

In the 1930s, Roy Harrod postulated the idea of a trade-multiplier akin to Keynes' fiscal multiplier. Empiricists of the time such as Jacques J. Polak provided statistical material consistent with the idea that the trade multiplier mattered. Yet, their methods as well as the underlying data appear insufficient by modern standards. Unfortunately, while macroeconometric methodology evolved rapidly in the last decades, datasets on the Great Depression remained insufficient to make use of the new machinery. The first chapter of the dissertation addresses this shortcoming.[2] It provides a new database with 1,150 *monthly* time series and estimates of economic activity, interpretable as GDPs, for a panel of 28 countries spanning the period 1925–1936. Not only do these data reveal that steady growth was far from universal in the 1920s, they allow us to analyze the Great Depression in the tradition of the business cycle literature emanating from Arthur F. Burns and Wesley C. Mitchell. In particular, the variation in the depth and length across and within countries indicates a rising importance of the trade channel at the later stages of the crisis. As I argue in the chapter, this leads to a pattern that is consistent with the view that the loss of export markets played a significant role in propagating the

Thilo N. H. Albers, Postdoctoral Researcher, Humboldt University, Berlin, Germany and Lund University, Lund, Sweden. E-mail: t.n.albers@lse.ac.uk. This dissertation was completed under the supervision of Oliver Accominotti and Albrecht Ritschl, London School of Economics and Political Science. A shorter and, in parts, very similar version of this summary is forthcoming in the *European Review of Economic History*.

[1] This field was pioneered by Bordo et al. (2001) and further popularized by, among others, Jordá, Schularick, and Taylor (2011). With regards to the Great Depression, Accominotti's (2012) micro approach takes Temin's (1993) hypotheses of financial contagion to the test.

[2] Now published in *Explorations in Economic History* (Albers 2018).

Depression. In as much as this chapter provides the necessary data for future research on the Great Depression, it thus formulates a testable conjecture based on a stylized fact.

Harrod's contemporaries had neither the data nor the methodology to cleanly separate the trade channel from other events in this tumultuous period. As the first chapter resolves the data problem by providing high-frequency GDP data for a large set of countries, the second chapter aims to repurpose existing econometric methodology to fit the purpose of identifying the trade multiplier. Given the importance of the question at hand—investigating the effect of trade shocks on income—it is surprising that this required the development of a new identification strategy rather than adopting existing ones. Typically, the econometric literature relies on natural experiments.[3] However, history provides few such experimental setups to identify the effect of trade on income and thus very few such studies exist, often related to very specific historical events or countries. As it is hard to think of a natural experiment exclusively affecting trade links during the interwar period, I develop a methodology that rests on four historical insights: (i) that trade links are persistent, (ii) that the United Kingdom, the United States, and Germany traded to different degrees with the small economies, (iii) that much of world trade was absorbed by these three large economic powerhouses, and (iv) that the Great Depression evolved very heterogeneously across them. These four insights allow me to create a credible instrument for the small countries' exports and thus assess the impact of trade on income. Adjusted for trade balance effects, the estimates suggest that the export multiplier is 0.7, indicating that a 1 percent loss of exports (in terms of GDP) led to a 0.7 percent loss in GDP. Employing national accounting data on the observed loss of trade and the estimated export multiplier, we can now calculate how much of the fall of incomes worldwide can be explained through the loss of export markets. Consistent with the qualitative evidence from contemporaries and historians, it turns out that many small countries imported much, if not most, of the severity of the Depression from abroad. Some 80 years on, this chapter thus achieves what Harrod's contemporaries were unable to do—cleanly identifying the effect of trade on income during the Great Depression.

## TRADE FRICTIONS AND TRADE POLICY

If trade mattered so much for the spread of the Depression, then investigating trade frictions is imperative. The second part of the dissertation thus turns to the analysis of the role of tariffs, import restrictions, and transport costs for the course of trade. Seminal contributions in the field of economic history and economics have interpreted the erection of trade barriers as a response to monetary turmoil,[4] showed that the new trade barriers had little effect on the direction of trade,[5] and in some cases, even marginalized the role of tariffs and quotas relative to exchange rate volatility and transport costs for the fall in the level of trade.[6] In contrast to these interpretations, this part of the dissertation ascribes a significant role to policy in shaping the volume and direction of trade flows.

The first chapter of this section analyses the economic and political significance of the infamous beggar-my-neighbor policies surrounding the currency depreciations of the 1930s.[7] While the devaluations of 1931 were a precondition for recovery from

[3] See Donaldson's (2015) excellent review.
[4] See Eichengreen and Irwin (2010).
[5] See Eichengreen and Irwin (1995).
[6] See Estevadeordal, Frantz, and Taylor (2003).
[7] Now forthcoming in *Economic History Review* (Albers 2019).

the Great Depression, their deflationary character on the countries remaining on the gold standard prevented them from being beneficial in a strictly Paretian sense. Thus, they provoked retaliatory trade policies abroad. The first part of the chapter, a thorough analysis of financial and economic newspapers, documents the poisonous impact of the devaluations on the commercial policy environment in the 1930s. In fact, gold bloc countries retaliated to the devaluations by imposing beggar-my-neighbor penalties—trade barriers specifically targeting those countries that devalued their currencies. Relying on novel and existing datasets on the introduction of quotas, tariffs, and bilateral trade costs, the second part of the chapter quantifies the magnitude of the beggar-my-neighbor penalties. Not only were these significant by contemporary standards, but they indeed reduced trade to a similar degree that modern trade treaties foster trade. In sum, the devaluations came at a high price in economic and political terms. These costs must have necessarily reduced their benefit to the world as a whole. In this sense, the devaluations were a success *and* failure at the same time. On the one hand, they facilitated the recovery in the countries depreciating. On the other, they spurred a new kind of discriminatory protectionism. While the economics underlying overvalued currencies, deflation, depreciation, and retaliation may remain broadly the same, policy environments can change. Thus, unilateral devaluations may or may not be the second-best policy option in circumstances other than the 1930s.

Moving from a case-based approach to a macroeconometric approach, the final chapter of the dissertation systematically relates transport and political trade frictions by analyzing the distance elasticity of trade during the 1930s. It demonstrates that tariffs and political trade frictions, not transport costs or exchange rate volatility, brought down world trade in the 1930s. Furthermore, it proposes a solution to the "distance puzzle of international trade" as popularized by Anne-Célia Disdier and Keith Head (2008). The puzzle's essence is the observation that despite the increasing globalization and falling real transport costs, estimates of the gravity model of trade suggest that distance between countries has become a larger trade friction in the post-war period. Based on theoretical considerations, I conjecture that rather than simply measuring the absolute importance of trade, the distance elasticity also measures the importance of distance relative to other trade frictions. The proposed solution is consistent with the stylized facts of the post-war period. As the decrease of tariffs was presumably sharper than the one in transport costs, due to pro-free trade institutions such as GATT and WTO, the distance between countries would become *relatively* more important. To test this conjecture, the chapter zooms into the interwar period, in which the reverse can be observed. In a short amount of time, tariffs increased rapidly. We would hence expect distance to become *relatively* less important—a conjecture that is indeed borne out by macro- and micro- trade data. In sum, this chapter demonstrates that political trade frictions rather than rising transport costs affected trade during the interwar period and that the interwar experience can be used as a laboratory for solving modern macroeconomic puzzles.

## CONCLUSIONS AND POLICY IMPLICATIONS

Taken together, the four chapters carry important implications for academic debates and policy. In light of the academic discourse on the Great Depression, the thesis highlights the importance of trade for propagating the Depression. Contrary to previous research, it demonstrates that the fall in trade was not a mere effect of the Depression but indeed contributed to it. For the school that posits that the Great Depression spread

from the industrial powerhouses to the rest of the world, it thus highlights a novel link: the trade channel. Having estimated the trade multiplier for this period, we can then speculate about the difference that protectionism made for the course of the Depression. A very conservative back-of-the-envelope calculation suggests that these tariffs can explain 15–20 percent of the global downturn. This is a non-trivial contribution to the depth of the Depression around the globe. More importantly, it is a contribution to the Depression that could have been prevented by better economic policy and, in particular, more international cooperation.

The policy implications thus follow immediately from the academic implications. First, the presented work reminds us of the costs of breaking up a liberal international trade order. In a poisonous commercial policy environment, trade barriers are erected within a few years. Yet, it takes decades until trade barriers such as the ones established in the 1930s are fully unraveled. Second, this implies that preventing such a break-up can be an important contribution of international organizations such as the WTO. Often bemoaned because of its slow progress regarding further international integration, a core value may ironically lie in its lethargy. The complex rules and the general agreement of the members in keeping a liberal trade order can severely impede the protectionists' desire to erode international cooperation—at least in the short run. Finally, this rings particularly true for small open economies as the efficacy of their domestic economic policies is very limited. This implies that they will inevitably lose most from global trade wars—without means to fight the crisis.

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# *Persistence and Change in Long-Run Development*

This dissertation studies two distinct topics in economic history. The main part of the dissertation focuses on the cultural development of nineteenth century Scandinavia. I distinguish between individualistic and collectivist cultural values and trace their evolution as a result of selective migration and intergenerational transmission. The other part of the dissertation takes a global, comparative perspective and studies the economic impact of access to abundant maritime resources.

The main part of the dissertation is motivated by an increasing academic interest in understanding how cultural values shape and are shaped by the economy (Nunn 2012). Several studies have focused on one specific dimension of culture: individualism versus collectivism. These concepts differ in whether you emphasize your own individual independence or connections and loyalty to certain social groups. Individualistic cultural values are dominant in Western countries, and they are believed to have played an important role in fostering the technological progress and economic growth of this region (Gorodnichenko and Roland 2017; Buggle 2018). Yet, empirical studies in economic history on these cultural traits are largely nonexistent. I bridge this gap with novel quantitative data and study a particularly important period of Scandinavian (and Western) history, the nineteenth century.

In the first article, titled "Emigration and Individualism: Cultural Change during the Age of Mass Migration," I study the cultural causes and consequences of Scandinavian mass emigration to the United States between 1850 and 1920. In this period, known as the Age of Mass Migration, more than 30 million Europeans left to settle in New World countries such as the United States. Sweden, Norway, and Denmark experienced some of the highest emigration rates in Europe during this period, involving the departure of approximately 25 percent of their populations.

Based on research in social psychology (Kitayama et al. 2006), the article hypothesizes that individualistic and collectivist traits shaped the costs of emigration at this time. Scandinavians that were more reliant on their social groups for a sense of identity and support (collectivism) would have faced a higher cost of emigration. That is, unless a large part of that group had already migrated. An implication of this hypothesis is that

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migrant self-selection generates a relative push away from individualism, and towards collectivism, in migrant-sending locations.

To test these predictions, the article presents a novel database of emigrants and non-emigrants who lived in Scandinavia during the Age of Mass Migration. The Scandinavian countries were particularly meticulous in registering not just their home populations but everyone that left to settle elsewhere. I combine historical population census records with detailed passenger lists from ships that carried migrants abroad. The results is database of 1.7 million Scandinavian first-time emigrants that cover 75 percent of the total emigration flows of the period. For a subset of these emigrants, their childhood households are identified in the population census records. To study individualistic versus collectivist cultural traits, the analysis relies on three proxies: Non-conformist naming patterns, nuclear (vs. extended) family structures, and marriage outside the social group. While the latter two are standard in the literature, the first is new to economics and better captures the preference aspect of individualism versus collectivism. Specifically, I measure the commonness of first names within cohorts that are born in the same decade and subnational district. Here, common first names proxy parents' collectivist traits and uncommon first names proxy individualistic traits.

The motivation for using first names to derive measures of historical individualism and collectivism comes from social psychology. First names encode both individual and social identity, and this balance is best captured by how common the name is in a given social context. In his seminal work, sociologist Lieberson (2000) showed that the commonness of a first name was among the most important characteristics considered in a first name choice. Other studies have documented how the motivations behind choosing more or less common first names are strongly connected with individualistic versus collectivistic values (Emery 2013). While a common first name reflect a preference to conform and fit in, an uncommon first name signals independence and originality. In addition, I find that the prevalence of uncommon first names given to newborns in the Western world today correlate most strongly with individualism in a number of global value surveys.

With this data, I document that individualistic versus collectivist cultural values indeed shaped the propensity to emigrate among Scandinavians. Children who grew up in households with non-conformist naming patterns, a nuclear family structure, or between-group marriages were on average more likely to emigrate later in life. This association is not explained by their socioeconomic status, level of religiosity, geographical location, family size, family traditions, past migration, or other personal circumstances.

Not all emigrants were equally selected. With a number of additional data sources, I show that selection was weaker under circumstances that reduced the social costs of emigration. This was the case with larger migration networks abroad, and in situations where people emigrated collectively. Individuals that grew up in more individualistic households were thus more likely to be among the pioneers in migration, migrate by themselves, and settle away from people with same nationality in the United States.

I then proceed to investigate if selection in emigration generated lasting cultural change across migrant-sending districts in Scandinavia. To answer this question I rely on contemporary survey data on individuals' values and beliefs. Districts that experienced larger outflows of people with individualistic traits are today inhabited by relatively more collectivist people. The cultural change that took place during the Age of Mass Migration was thus sufficiently profound, and cultural traits sufficiently persistent, to leave a long-run impact on contemporary cultural differences in Scandinavia.

The second article, "The Intergenerational Transmission of Collectivistic Traits: Evidence across Millions of Historical European Families," develops a framework to study the evolution of cultural traits at the family level. Research on the formation of individual preferences, attitudes, and values is central to several fields in economics. Wide agreement exists that such traits are initially inherited early in life from one's parents and subsequently influenced by other members or circumstances of society. While the theoretical literature on the mechanisms of cultural transmission is well developed (Bisin and Verdier 2000), existing empirical evidence is scarce and based on data samples of moderate size with an important example being Dohmen et al. (2012).

In this article, I study the intergenerational transmission of cultural traits across two million families in historical population censuses from Sweden and Norway in the period 1865–1910. The cultural traits of focus are collectivism and religiosity, which I proxy with the commonness and Biblical content of first names. With this data, I study the relative importance of family and community in shaping cultural traits. I relate a changing nature of cultural transmission to one of the most general aspects of a developing economy: Urbanization. I find that family matters more and community less in the transmission of culture in urban versus rural municipalities. This result remains true when exploiting within-municipality changes in urban status over time. Exploring mechanisms, I find that assortative matching between parents with similar cultural traits is particularly strong in urban areas. Larger and culturally more diverse marriage markets in cities relieve constraints on finding a culturally similar match, facilitating a more efficient transmission of own traits.

The third article, "The Bounty of the Sea and Long-Run Development," is joint work with Carl-Johan Dalgaard and Pablo Selaya. The article is motivated by the observation that while the natural productivity of land has received ample attention in the literature on comparative development, the role played by the natural productivity of oceans has been ignored. We bridge this gap and document a considerable developmental advantage from a high level of natural productivity of the ocean.

We construct a global index of ocean productivity based on maps of oceanographic characteristics and information on optimal living conditions of a number of exploitable fish species. This index captures how reliant societies potentially could have been on the exploitation of marine resources. In validation checks, the index predicts both contemporary and historical fishing activities. The empirical analysis shows that coastal areas with access to more productive oceans are more populated and developed. This holds true both historically and today. Exploring possible mechanisms, we suggest that productive oceans facilitated early coastal settlements and skills in sailing and navigation, giving rise to a comparative advantage in international trade.

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# *Rich Europe, Poor Asia: How Wealth Inequality, Demography, and Crop Risks Explain the Poverty of Pre-industrial East Asia, 1300–1800*

Why was Japan in particular, and East Asia in general, so poor compared to Northwest Europe in the centuries preceding the Industrial Revolution? Despite the importance recently attached to high wages in explaining the Industrial Revolution (Allen 2009), there has been little explanation of why pre-industrial living standards varied so greatly across societies. This dissertation addresses these issues with a quantitative approach and the collection of a considerable amount of new data for the case of Japan. Since a comparative perspective is indispensable for understanding Japanese conditions, I also use comparable evidence from other parts of East Asia and the richer Northwestern Europe. Elaborating the Malthusian framework of income determination, I show that lower levels of both wealth inequality and crop risk led to higher population densities. In turn, the abundance of labor in these agricultural societies led to lower wages and lower GDP per capita, which explains much of East Asian poverty.

The dissertation begins by discussing the timing of the east-west divergence, which remains a matter of great controversy. Three competing narratives have emerged. Qualitative studies on incomes suggest a "great divergence" due to the industrial revolution in 1800 (Hanley 1997; Pomeranz 2009). Quantitative studies based on urban day wage evidence suggest a largely stable divergence from 1300 (Bassino and Ma 2006; Bassino et al. 2010). Alternatively, GDP per capita estimates point to a gradual

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divergence since the medieval period (Bassino et al. 2019). Although these narratives seem incompatible, I show that much of the evidence can be reconciled in one narrative of stable divergence since 1300.

Theoretically, a divergence between societies must be based on comparisons of either GDP per capita or wages. Based on this definition, the "great divergence" narrative which compares incomes for typical households is methodologically flawed. East Asian peasants owned land so incomes capture both (implicit) wages and land rental incomes that are compared to wages for the landless laborers of Europe. Of GDP per capita or wages, wages are more favorable as a measure of divergence due to their observability. However, the urban day wages are an unreliable guide to the wages of the rural masses. I use new data to show that rural annual farm wages were low and well below subsistence, which is consistent with urban day wage estimates. They also put Japanese unskilled wage levels at less than half of that for comparable laborers in England. There is also no evidence that there was an increasing gap in wages over time as suggested by GDP per capita estimates. However, this is consistent with the agricultural GDP estimates by Bassino et al. (2019), the most reliable part of their estimation. The gradual divergence narrative is a product of the GDP estimates in the manufacturing and service sector which are highly speculative.

What can explain the long-run divergence in wages since at least 1300? One explanation is the much greater inequality in Western European land ownership distribution, which paradoxically is shown in the Malthusian framework to increase average incomes. Malthusian regimes require typical peasant household incomes to be at subsistence level. In an unequal society, the typical peasant owns no land and relies solely on wages. Therefore, wages converge to subsistence. In an equal society, peasants have access to both wages and land rental incomes so the wage plus land rental income converges to subsistence level. Consequently, wages must be below subsistence level and the low wage is generated through higher population densities and labor abundance. This also results in less land per person and lower GDP per capita.

I first show that the macro-level prediction of lower inequality in low wage areas are consistent with the evidence. I am the first to measure long-run wealth inequality in pre-industrial East Asia using Japanese village censuses, 1640–1870, from 598 villages spanning much of Japan. I show that more than 87 percent of peasant households owned land unlike the mostly landless households of England. Further, this equality was not limited to Japan and scattered evidence from East Asia from ancient times up to industrialization also suggest equality. In contrast, observations of wealth inequality from Western Europe preceding the black death shows high levels of inequality. This long-run divergence in wealth inequality match the long-run divergence in wages observed in these two regions.

I then show that the demographic predictions of the model match the findings from my data in the case of Japan. First, fertility was positively correlated with wealth. Second, I show that landless households, who were reliant on wages, were unable to reproduce their population as predicted by the model. This also matches my wage estimates which suggest a male laborer could not have sustained a family of four. Despite such low wages, there was a stable population due to the large number of landowning households whose positive population growth counteracted the decreasing number of the poor. Had most households been landless, as in Europe, the population would have been unsustainable without higher wages. Indeed, the English demographic evidence suggests even the landless laborers were close to zero net reproduction (Clark and Hamilton 2006). Using

my demographic data, I estimate that the equality of land distributions in Japan explain 36 percent of the gap in wages with England.

If we are to believe in this mechanism, a more fundamental question is why wealth inequality diverged between these two regions. I show that the differences can be explained by the demographic institution of adoption. Adoption was used as a means of securing an heir when male children were unavailable. This allowed wealth to remain within the family, via the adoptee, rather than being transferred to other households via marriage of heiresses or by will. I show that adoption institutions existed in both Europe and Asia in ancient times. However, differences emerged in the fifth century when the church began preaching against adoptions in Western Europe. This was motivated by greed. The church had a higher chance of inheriting land if a household had no heir. This can be conceived as two similar regions having existed but Western Europe receiving a potentially exogenous treatment that stopped adoptions and increased inequality.

Using the Japanese village census data, I first show that adoptions prevented almost all households with significant amounts of wealth from going extinct. This is surprising because the high child mortality rates of the time meant more than one-third of children died before adulthood. Therefore, one would expect at least 10 percent of the richest households to go extinct per generation but adoption was highly effective at preventing this. In contrast, the English elite had male line extinction rates of at least 25 percent due to the lack of adoptions. I then conduct a calibrated simulation of Japanese society and show the lack of adoption would have led to greater levels of wealth inequality, comparable to Western European societies. This leads to an interesting new narrative to the prosperity in Western Europe. It was not the enlightened capitalists of Europe who created riches and inequality preceding the industrial revolution. Instead a band of bishops and priests in the fifth century put the region on a trajectory of both immense riches and inequality.

Although the above mechanism helps explain a large share of the divergence, it fails to explain everything. Therefore, I provide a second explanation, which is the greater fluctuations of net grain output in European agriculture compared to Japan. A risk-return trade-off exists whereby households in riskier societies require higher average incomes to survive shocks. This would drive up average incomes in Europe according to predictions from the Malthusian framework.

Using evidence from yield data, I compare both the risk environment and risk coping capabilities of England and Japan. I show that agricultural risk was significantly higher in England for a risk minimizing portfolio of crops. In England the coefficient of variation of yield was 0.32 compared to 0.18 for Japan. This was due to the low yield to seed ratio for European crops such as wheat, barley, and oats. For instance, growing one wheat seed on average yielded only three wheat seeds which tended to magnify risk. In contrast, rice had far lower risk due to a high seed-yield ratio of 20. The risk-return trade-off materialized through the greater average savings of grain required in Europe. I estimate this by using yields during famines when grain savings were effectively non-existent. As all yield was being used to sustain people during famines, I can use such episodes to estimate the amount of grain savings during normal years. I estimate that differences in grain savings can explain 12 percent of the average income gap between England and Japan.

The two novel mechanisms explored in my dissertation can together explain half the gap in wages observed between these two regions. I am not the first to offer an explanation for Japanese poverty based on Malthusian mechanisms, and others have suggested

high birth rates, low death rates, lower levels of urbanization, plague, and war as potential causes (Malthus 1798; Clark 2008; Voigtländer and Voth 2012). Such explanations may also explain part of the divergence, but they have also been highly speculative and require further investigation.

While so far I have been concerned to document and explain low wages and living standards in pre-industrial Japan, I also want to explore the consequences of the Japanese equilibrium for economic growth. Both mechanisms discussed above resulted in greater levels of population and hence in labor abundant societies in East Asia unlike the labor scarce societies of Western Europe. If labor saving incentives were important for the industrial revolution, as argued by Allen (2009), there was little incentive for Japanese producers to save on labor. On the contrary, many villages in Japan saw the replacement of cows and horses with manpower because labor was so cheap (Hayami 2003). Japanese technologies were developing, but on a labor-intensive path. These findings may help explain the timing and location of the Industrial Revolution in northwest Europe as opposed to Japan or China.

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