

## *Abstracts of Papers Presented at the 2020 Annual Meeting*

### SESSION 1: DEMAGOGUES, RACISTS AND CENSORS

#### *Eppur si muove: Effects of Catholic Censorship during the Counter-Reformation*

The Protestant Reformation in the early sixteenth century challenged the monopoly of the Catholic Church. The printing press helped the new movement spread its ideas well beyond the cradle of the Reformation in Luther's city of Wittenberg. The Catholic Church reacted by issuing indexes of forbidden books, which blacklisted not only Protestant authors but all authors whose ideas were considered to be in conflict with Catholic doctrine. We use newly digitized data on the universe of books censored by the Catholic Church during the Counter-Reformation, containing information on titles, authors, printers, and printing locations. We classify censored books by topic (religion, sciences, social sciences, and arts) and language and record when and where books were indexed. Our results show that Catholic censorship did reduce printing of forbidden authors, as intended, but also negatively impacted on the diffusion of knowledge, and city growth.

SASCHA O. BECKER, *Monash University and University of Warwick*,  
FRANCISCO J. PINO, *University of Chile*,  
and JORDI VIDAL-ROBERT, *University of Sydney*

#### *Media, Pulpit, and Populist Persuasion: Evidence from Father Coughlin*

New technologies make it easier for charismatic individuals to influence others. This paper studies the political impact of the first populist radio personality in American history. Father Charles Coughlin blended populist demagoguery, anti-Semitism, and fascist sympathies to create a hugely popular radio program that attracted tens of millions of listeners throughout the 1930s. I evaluate the short- and long-term impacts of exposure to Father Coughlin's radio program. Exploiting variation in the radio signal strength as a result of topographic factors, I find that a one standard deviation increase in exposure to Coughlin's anti-FDR broadcast reduced FDR's vote share by about 2 percentage points in the 1936 presidential election. Effects were larger in counties with more Catholics and persisted after Father Coughlin left the air. An alternative difference-in-differences strategy exploiting Coughlin's switch in attitude towards FDR during 1932–1936 confirms the results. Moreover, I find that places more exposed to Coughlin's broadcast in the late 1930s were more likely to form a local branch of the pro-Nazi German-American Bund, sell fewer war bonds during WWII, and harbor more negative feelings towards Jews in the long run.

TIANYI WANG, *University of Pittsburgh*

#### *Political Threat and Propaganda: Evidence from the U.S. South*

Can politics motivate propaganda in media? This paper examines the case of the unexpected and short-lived electoral success of the pro-redistribution Populist Party in the 1892 presidential elections. The Populists sought support among poor farmers, regardless of race. This biracial alliance threatened the Democratic establishment in the South, providing it with an incentive to fan racial fears to split the newly formed coalition. Newspapers affiliated with the Democrats spread propaganda of attacks by Blacks on the White community, often involving allegations of rape. Using novel newspaper data,

we identify these hate stories and show that they become more prevalent in the years following the 1892 presidential election in counties where the Populists were active. The effect is large and found in newspapers affiliated with the Democrats only. The evidence suggests that the propaganda “worked”: where newspapers spread more propaganda, the Democrats see stronger gains in presidential elections in the following decades, long after the Populists left the political arena.

MAX WINKLER, *University of Zurich*, and  
SEBASTIAN OTTINGER, *UCLA*

#### SESSION 2: MONETARY REFORMS AND RESUMPTIONS

##### *Interwar Poland's Late Exit from Gold: A Case of Government as “Conservative Central Banker”*

Poland's Great Depression was both long-lasting, with a robust recovery not beginning until 1937, and the second most severe of any country in the world in terms of the fall in real output. Poland's adherence to the gold standard until April 1936, substantially longer than economic fundamentals would have justified, was a leading cause of its underperformance. Why did Poland continue to defend the parity of the Zloty for so long? Using documents from Polish, French, and British archives and data from the Bank of Poland's balance-sheet returns, I conduct the first econometric analysis of Polish monetary policy and find that the government's takeover of control over the hitherto independent central bank in October 1931 was crucial to Poland's persistence on gold. Poland's decision to abandon convertibility in 1936 was driven not by a run on the currency, but by changing geopolitical priorities following Hitler's remilitarization of the Rhineland.

THEA DON-SIEMION, *London School of Economics*

##### *Monetary Crisis and Reform in Seventeenth c. Naples*

In 1622, a major foreign exchange and monetary crisis broke out in Naples. We examine the origins of the crisis and the government's attempts at ending it, in particular the choice of a new parity for the currency and the allocation of costs. Contemporaries struggling to understand the problem conceptualized the basics of the current account. The ensuing monetary reform required a bail-out the banking system hit by the ensuing deflation.

FRANCOIS VELDE, *Federal Reserve Bank of Chicago*, and  
LILIA COSTABILE, *University of Naples Federico II*

##### *Charity Begins at Home—Why Britain Resumed the Gold Standard after the French Wars*

Will politicians prioritize the public interest over personal financial gain? Analyzing the decision to resume the gold standard after the French Wars (1793–1815), we find that politicians acted to maximize their personal interest. We show the importance of politicians' personal financial motivations by analyzing the size and timing of their government debt holdings, as recorded in the archives of the Bank of England. Our analysis contributes to the literature concerned with politicians' conflicts of interest. It also informs the policy choice between maintaining a fixed exchange rate and restructuring an outstanding debt overhang.

PAMFILI ANTIPA and QUOC-ANH DO, *Sciences Po*

## SESSION 3: FINANCIAL CRISES: ORIGINS AND RESOLUTIONS

*New York Clearing House Last Resort Lending in 1884: Orderly Resolution of a Systemically Important Financial Institution*

The voluntary liquidation of Metropolitan National Bank, in November of 1884, occurred several months after the Panic of 1884 had been resolved. During the panic, the New York Clearing House provided liquidity to Metropolitan sufficient to ensure its continued operations. We demonstrate that the New York Clearing House, advocating Metropolitan's voluntary liquidation and administering repayment of its clearing house loan certificates over two years, provided an informative antecedent to orderly liquidation authority (OLA). In order to understand the effectiveness of these actions we perform a counterfactual analysis in which we compare the macroeconomic response to Metropolitan's bailout to a subsequent panic in 1907 in which the Clearing House famously decided to not extend aid to an important financial institution. Finally, we estimate the cost of the coordinated bailout of Metropolitan by the Clearing House using the framework of Lucas (2019) in order to frame the cost of nonaction in 1907.

PATRICK VAN HORN, *Scripps College*, and  
ELLIS TALLMAN, *Federal Reserve Bank of Cleveland*

*Micro-Evidence from a System Wide Financial Meltdown: The German Crisis of 1931*

This paper studies a major financial panic, the run on the German banking system in 1931, to distinguish between banking theories that view depositors as demanders of liquidity and those that view them as providers of discipline. Our empirical approach exploits the fact that the German Crisis of 1931 was system-wide with cross-sectional variation in deposit flows as well as bank distress and took place in absence of a deposit insurance scheme. We find that interbank deposit flows predict subsequent bank distress early on. In contrast, wholesale depositors are more likely to withdraw from distressed banks at later stages of the run and only after the interbank market has started to collapse. Retail deposits are—despite the absence of deposit insurance—largely stable. Our findings emphasize the heterogeneity in depositor roles, with discipline being best provided through the interbank market.

STEPHAN LUCK and KRISTIAN BLICKLE,  
*Federal Reserve Bank of New York*

*A Monetary Explanation of the Great Crash of 1929 of the New York Stock Exchange*

The crash of the New York Stock Exchange in October 1929 is most commonly explained by the end of a bubble, which had emerged due to an expansion of credit in the form of brokers' loans. However, the exact cause of the bubble's burst remains unexplained. One month before the crash, the Bank of England led a wave of monetary tightening and foreign deposits were removed from New York banks. As international monetary instability increased, non-traditional suppliers of speculative funds withdrew their loans and caused a liquidity crisis.

JEAN-LAURENT CADOREL, *Paris School of Economics*

SESSION 4: ASSIMILATING THE IMMIGRANT:  
CONSEQUENCES FOR GROWTH AND INNOVATION

*Migrant Self-Selection in the Presence of Random Shocks: Evidence from the Panic of 1907*

We evaluate the responsiveness of migrant self-selection to short-run changes in the economic environment. Using novel historical micro data, we estimate the initial selectivity of Mexican migration (1906–1908) and focus on labor institutions as short-run adjustment channels of self-selection. We find that the first Mexican migrants were positively self-selected on the basis of height—a proxy for physical productivity of labor. Additionally, the U.S. financial crisis of 1907 significantly modified self-selection. Shifts in migrant self-selection during and after the crisis were influenced by the *enganche*, an institution that reduced migration costs, but only for the “best” Mexicans during “good” economic times.

DAVID ESCAMILLA-GUERRERO, *University of Oxford*, and  
MORAMAY LOPEZ-ALONSO, *Rice University*

*Immigration, Innovation, and Growth*

We show a causal impact of immigration on innovation and dynamism in U.S. counties. To identify the causal impact of immigration, we use 130 years of detailed data on migrations from foreign countries to U.S. counties to isolate quasi-random variation in the ancestry composition of U.S. counties that results purely from the interaction of two historical forces: (i) changes over time in the relative attractiveness of different destinations within the United States to the average migrant arriving at the time and (ii) the staggered timing of the arrival of migrants from different origin countries. We then use this plausibly exogenous variation in ancestry composition to predict the total number of migrants flowing into each U.S. county in recent decades. We show four main results. First, immigration has a positive impact on innovation, measured by the patenting of local firms. Second, immigration has a positive impact on measures of local economic dynamism. Third, the positive impact of immigration on innovation percolates over space, but spatial spillovers quickly die out with distance. Fourth, the impact of immigration on innovation is stronger for more educated migrants.

KONRAD BURCHARDI, *Institute for International Economic Studies, Stockholm*,  
THOMAS CHANEY, *Sciences Po*,  
TAREK HASSAN, *Boston University, NBER, and CEPR*,  
LISA TARQUINIO and STEPHEN TERRY, *Boston University*

*Immigrants' Changing Labor Market Assimilation in the United States during the Age of Mass Migration*

Whether immigrants advance in labor markets relative to natives is a fundamental question in immigration economics. It is difficult to answer this question for the Age of Mass Migration, when U.S. immigration was at its peak. New datasets of linked census records show that immigrants experienced substantial “catching up” relative to natives’ occupational status from 1850 to 1880, but not from 1900 to 1930. This change was not due to the shift in immigrant source countries. Instead, it was rooted in a sizable change in natives’ occupations. The results revise the influential view that European immigrants “worked their way up.”

ARIELL ZIMRAN and WILLIAM J. COLLINS, *Vanderbilt University and NBER*

SESSION 5: THE ROLES OF CONFIDENCE AND INFORMATION  
IN FINANCIAL CRISES*Restoring Confidence in Troubled Financial Institutions after a Financial Crisis*

An unprecedented number of banks in the United States were forced to close their doors during the Panic of 1893. The head regulator of banks chartered by the national government allowed about 100 of these banks to reopen after certifying their solvency. We evaluate whether actions by these banks to change management, contract with depositors to extend the maturity structure of bank liabilities, write off bad assets, and/or inject capital affected the likelihood of their survival and deposit retention. This historical episode is particularly informative because there was no expectation of government intervention or backstops. We find that injecting capital and contracting with depositors were helpful in retaining deposits in the short run, but improving the condition of the bank and dealing with bad assets mattered most in the long run. We also analyze the information being provided to the public in newspapers around the time banks were re-opened. Quoted statements of senior government officials that supported the re-opening are associated with greater deposit retention while statements by bank management had no effect.

CHARLES W. CALOMIRIS, *Columbia University and NBER*,  
and MARK CARLSON, *Board of Governors of the Federal Reserve*

*Information Management in Times of Crisis*

How does information management and control affect bank stability? Following a national bank holiday in 1933, New York state bank regulators suspended the publication of balance sheets of state-charter banks for two years, whereas national-charter bank regulators did not. We use this divergence in policies to examine how the suspension of bank-specific information affected depositors. We find that state-charter banks experienced less deposit outflows than national-charter banks in 1933. However, the behavior of bank deposits across both types of banks converged in 1934 after the introduction of federal deposit insurance.

HAELIM ANDERSON, *Federal Deposit Insurance Corporation*,  
and ADAM COPELAND, *Federal Reserve Bank of New York*

*Bank Executive Experience in a Financial Crisis*

This paper evaluates whether bank executive experience can influence bank outcomes during financial crises. Some bank presidents in New York City possessed experience as a bank president at the same bank in New York during the previous banking crisis. The evidence from four crises between 1884 and 1907 suggests that individual bank deposit losses at the same institution appear uncorrelated across adjacent crises, so bank performance does not persist across crises. Further, the retention of an experienced bank president does not mitigate deposit losses in a subsequent financial crisis.

CHRISTOPHER HOAG, *Trinity College*

## SESSION 6: ENGLISH AND FRENCH MONEY TROUBLES

*Flight-to-Safety and the Real Effects of Banking Crises: Evidence from the French Great Depression (1930–1931)*

This article examines the real effects of bank runs during the French Great Depression (1930–1931) through the unique institutional features of this crisis. Depositors withdrew

their funds from commercial banks “then unregulated” and deposited them in government-backed savings institutions. The latter were not allowed to lend, so alternative sources of borrowing were cut at the local level. Our identification is based on the fact that easier access to savings institutions increased the likelihood of bank runs because it reduced the cost of withdrawing bank deposits. It was heterogeneous across regions and unrelated to economic characteristics. We use pre-crisis density of savings institutions to instrument the regional decline in banking activity. A 1 percent decrease in bank branches reduced income by 0.75 percent. In addition to real effects of bank distress, our study shows how competition between unregulated and safer financial institutions affects financial fragility, which holds important lessons for current financial regulation.

ERIC MONNET, *Paris School of Economics*, and  
ANGELO RIVA, *European Business School*

*Assignats or Death: Inflationary Finance in Revolutionary France*

Between 1794 and 1796, France experienced an unprecedented hyperinflation fueled by an explosion of paper money called the assignat. In September 1795, the French adopted the Constitution of Year III, which we use to demonstrate how changes in the “rules of the game” and in the “political equilibrium” can have important effects on the monetary phenomena that are critical to the study of inflationary finance. We find that the new regime had a structural effect on the demand for money that substantially weakened the link between real money balances and inflation, and that failing to account for this effect results in substantially different estimates of the seigniorage-maximizing rates of inflation. If we ignore this effect, we find that the seigniorage-maximizing rate of inflation was 35 percent per 10 days, but once we incorporate the effect of the new regime, this rate falls to 19 percent. Lastly, we also find that the new regime increased the volatility of inflation, suggesting that the previous regime was more effective at anchoring the public’s inflation expectations. Taken together, these results lend credence to the constitutional perspective’s primary theoretical insight.

BRYAN P. CUTSINGER, *Angelo State University*,  
JOSHUA S. INGBER, *Northern Michigan University*,  
and LOUIS ROUANET, *George Mason University*

*Zombie International Currency: The Pound Sterling 1945–1973*

This paper provides new evidence on the decline of the pound sterling as an international currency, with a focus on its role as a foreign exchange reserve asset in the Bretton Woods era. I construct a new dataset on the composition of foreign exchange reserves of European and sterling area monetary authorities. The shift away from sterling occurred earlier than commonly assumed for countries outside the sterling area. Using both quantitative analysis and new archival findings, I provide a new narrative for the decline of sterling. The continuation of the postwar reserve role of sterling was possible because the sterling area was a captive market in which countries were constrained to keep their foreign exchange in pounds sterling. I document the exchange controls, commercial threats and economic sanctions employed by the British authorities within the sterling zone to limit the divestments of their assets. Sterling area members suffered from the erosion of the value of their holdings while the British economy and the City largely profited from the system.

MAYLIS AVARO, *Graduate Institute of Geneva*

## SESSION 7: MONEY SUPPLY AND GLOBAL CURRENCIES

*The Rise and Fall of Global Currencies over Two Centuries*

This paper analyzes the dynamics of global currency status and the structure of the international monetary system (IMS) over two centuries, relying on a newly collected weekly dataset of foreign exchange prices from 1846 to 2018. I obtain a continuous measure of the relative global dominance of key currencies, comparable over time, allowing to characterize the dynamics of monetary zones and the overall IMS structure. The paper offers three key contributions. First, I provide a classification of monetary blocs over a significantly longer time-span compared to the historical classification of the IMS by Ilzetzki et al. (2018) and Ito and McCauley (2019). Second, I provide a more systematic analysis of historical episodes of IMS multi-polarity, building on previous detailed work focusing on the inter-war period by Eichengreen et al. (2017). Third, the obtained classification allows to test several predictions on the relationship between the IMS structure and its stability made in a nascent theoretical literature Farhi and Maggiori (2017).

ROGER VICQUERY,  
*London School of Economics*

*Eight Centuries of Global Real Interest Rates, R-G, and the “suprasecular” Decline, 1311–2018*

With recourse to archival, printed primary, and secondary sources, this paper reconstructs global real interest rates on an annual basis going back to the fourteenth century, covering 78 percent of advanced economy GDP over time. I show that across successive monetary and fiscal regimes, and a variety of asset classes, real interest rates have not been “stable,” and that since the major monetary upheavals of the late middle ages, a trend decline between 0.6–1.6 basis points per annum has prevailed. A gradual increase in real negative-yielding rates in advanced economies over the same horizon is identified, despite important temporary reversals such as the seventeenth century crisis. Against their long-term context, currently depressed sovereign real rates are, in fact, converging “back to historical trend”—a trend that makes narratives about a “secular stagnation” environment entirely misleading, and suggests that—irrespective of particular monetary and fiscal responses—real rates could soon enter permanently negative territory. I also posit that the return data here reflects a substantial share of “non-human wealth” over time: the resulting R-G series derived from this data show a downward trend over the same timeframe: suggestions about the “virtual stability” of capital returns, and the policy implications advanced by Piketty (2014) are in consequence equally unsubstantiated by the historical record.

PAUL SCHMELZING,  
*Yale School of Management*

*The Vagaries of the Sea: Evidence on the Real Effects of Money from Maritime Disasters in the Spanish Empire*

We exploit a recurring natural experiment to identify the effects of money supply shocks: maritime disasters in the Spanish Empire (1531–1810) that resulted in the loss of substantial amounts of monetary silver. A 1 percentage point reduction in the money growth rate caused a 1.3 percent drop in real output that persisted for several years. The

empirical evidence highlights nominal rigidities and credit frictions as the primary monetary transmission channels. Our model of the Spanish economy confirms that each of these two channels explain about half of the initial output response, with the credit channel accounting for much of its persistence.

ADAM BRZEZINSKI, *University of Oxford*, and  
NUNO PALMA, *University of Manchester and CEPR*

#### SESSION 8: THE POLITICAL ECONOMY OF SOVEREIGN DEBT CRISES

##### *The Political Economy of the First Modern Sovereign Debt Crisis*

Scholars typically date the first modern sovereign debt crisis to 1825/26. In the London financial markets in late 1825 preceded the failure of recently issued loans to Latin American states that began in 1826. This paper analyzes the crises with a two-prong approach. It considers the divergent goals and expectations of borrowers and investors, and it utilizes a newly accumulated data base of high frequency bond prices translated into current yields, to mine for information about the events and interpretations of each default. Integrating these analyses supports the conclusions that, although the initial bond issues had little chance of success, the defaults were more complicated and differentiated among each other than previously understood. Conditions and information in the financial markets explain the proximate causes of default more strongly than the circumstances of borrowers. Nevertheless, investors, bankers, and borrowers learned quickly during the first global market crisis.

GAIL TRINER, *Rutgers University*

##### *The Aftermath of Sovereign Debt Crises: A Narrative Approach*

In every year since the mid-1970s, more than 30 percent of sovereigns have been in default (Beers and Mavalwalla 2017). Despite the scale of the global sovereign debt problem, the causes and consequences of defaults are still imperfectly understood. In this paper, we focus on the latter and try to quantify the economic impact of defaults. In so doing, we face three major empirical challenges. The first is recording when and how big these events were. The second is the heterogeneity of sovereign debt crises. The third is the endogeneity of crises. In this paper, we start by compiling a new chronology of default episodes from 1870 to the present day. We then use the narrative approach to identify the economic impact of debt crises, finding a large and long effect, persistent past five years after each episode.

RUI ESTEVES, *IHEID Geneva*, and SEAN KENNY,  
*Lund University*

##### *Democracy, Autocracy and Sovereign Debt: How Polity Influenced Country Risk in the First Financial Globalization*

This article tests the hypothesis that democracies produce better borrowers because of the capacity of the legislative to limit the power of the executive to credibly commit its contracts, and to protect the property rights of creditors against the action of sovereigns. We test this democratic advantage hypothesis during the first financial globalization, from circa 1880 to 1914, by regressing the sovereign risk premium of 27 independent peripheral countries on indicators of political regime type (indices of Polity IV, executive constraint and executive recruitment) and political stability (years without a coup d'état and civil war), controlling for a number of variables that capture economic conditions. The exercise



shows that democracies were penalized with a higher risk premium. Moreover, political stability decreased the cost of borrowing in international financial markets. Yet interactions between these variables suggest that creditors marginally preferred democracies in peaceful countries. We deal with endogeneity by lagging years of domestic political stability in three decades and by using it as an instrument of current years of domestic political stability. At odds with the mainstream literature, we conclude that dictatorships performed better than democracies in the world financial markets before 1914 because they promoted political stability.

ALI COŞKUN TUNÇER, *University College London*, and  
LEONARDO WELLER, *São Paulo School of Economics, FGV*

#### SESSION 9: SOME DEMOGRAPHIC ORIGINS OF THE MODERN WORLD

##### *The Impact of the WWI Agricultural Boom and Bust on Female Opportunity Cost and Fertility*

Using variation in crop prices induced by large swings in demand surrounding WWI, we examine the fertility response to increases in crop revenues between 1910–1930. Our estimates from samples utilizing both complete count decennial census microdata and newly collected county-level data from state health reports indicate that a doubling of agricultural prices reduced fertility by around 8 percent both immediately and in the years following the boom. Robustness checks and analysis of potential mechanisms indicate that the decrease in fertility was driven by increased female opportunity costs, which dominated any household income effects resulting from the price boom.

CARL KITCHENS and LUKE P. RODGERS,  
*Florida State University*

##### *Export Booms and Net Fertility in a Malthusian Economy: Evidence from the Lancashire Cotton Famine*

This paper investigates the effect of the boom in cotton prices that occurred during the American Civil War in 1861–1865 on net fertility (number of surviving children) in nineteenth-century rural Egypt, long before Egypt's demographic transition. The boom generated a large positive income shock to cotton-suitable areas, as Egypt's cotton output and exports quadrupled and remained at a high level even after prices subsided. This is expected to increase net fertility according to the Malthusian model. However, the cotton boom may have had a negative effect on public health and on net fertility, due to the cotton-boom-induced expansion in perennial irrigation and its association with the spread of Schistosomiasis (Bilharzia), a freshwater-borne parasitic worm that found a suitable habitat in Egypt's new deep summer canals that kept water all year long. To address this question, I employ individual-level samples of Egypt's population censuses in 1848 and 1868, where I infer for each individual their marital status and the number of their surviving children who co-reside with their parent(s), from the relationship to the household head. I use a difference-in-differences strategy that exploits the timing of the cotton boom and the geographic variation in cotton suitability within rural Egypt. Preliminary findings suggest a negative impact of the cotton boom on net fertility. I hypothesize that this finding is driven by the unintended effect of the cotton-boom-induced expansion in perennial irrigation, on infection with Schistosomiasis and on net fertility (empirical evidence is in progress).

MOHAMED SALEH, *Toulouse School of Economics*

*Modernization before Industrialization: Cultural Roots of the Demographic Transition in France*

This research identifies the origins of the early demographic transition in eighteenth century France. Before the French Revolution and more than a hundred years before the rest of Europe, this event remains one of the “big questions of history” in part because of limited data availability. I document an important process of dechristianization with novel data on religious beliefs over time and space. Using standard econometric methods and machine learning with census data, I find large, significant, and robust results suggesting that secularization accounts for the bulk of the decline in fertility. Finally, I draw on a novel dataset crowdsourced from publicly available genealogies to study individuals at the time and to establish a causal interpretation, by controlling for time-varying unobservables, studying the effect of treatment before and after secularization in a differences-in-differences framework, and exploiting the choice of second-generation migrants in order to control for unobserved institutional factors. These findings reveal that changes in preferences and the transition away from tradition may shape development.

GUILLAUME BLANC, *Brown University*

SESSION 10: SOVEREIGN DEBTS AND CREDIT MARKETS

*Sovereign Default and Capital Flows: Evidence from the American States in the 1840s*

Default with high creditor losses harms foreign demand for sovereign debt. We study European demand for American state bonds after the state debt crisis of the 1840s to establish this finding. We show, using new high-frequency transactions data, that defaulting states with large creditor losses saw weaker European demand in response to events that raised European investor demand for the bonds of states that did not default. Conversely, we show stronger reductions in demand in response to events that lowered European investor demand for non-defaulting state bonds. Additionally, these differential responses persist beyond the weeks of the events.

COLIN WEISS, *Board of Governors of the Federal Reserve*,  
and NATHANAEL COFFEY, *Johns Hopkins University, SAIS*

*Vulture Diplomacy: Distressed Sovereign Debt and the London Stock Exchange the Nineteenth Century*

This paper lays the foundations of a new approach to the history of sovereign debt in the nineteenth century as what I called “vulture diplomacy.” It suggests reconsidering the nineteenth century experience with sovereign default. It was not a tale of incompetent investors with a short view and a shorter memory defrauded by “serial defaulters” but one of the sophisticate operations of first class speculators belonging to the wealthiest “1%.” I demonstrate how the London stock exchange enabled these wealthy foreign debt vultures to transcend sovereign immunity. This casts doubt on the view that “sovereign immunity” prevented creditors from going after defaulters. A detailed case study provides a measurement of the effects of such tactics. I show that distressed debt investors were able to tamper with the politics of the target and managed to extract significant value. I also report evidence consistent with looting. Distressed debt investing was a profitable business and a critical element of British imperialism.

MARC FLANDREAU, *University of Pennsylvania*

*Borrowing, Lending, and Financial Intermediation in the Netherlands in 1921*

This paper investigates the intermediated and non-intermediated credit markets in the Netherlands in 1921. We combine two novel datasets, one containing 2,321 individual death duties (a full listing of personal assets and liabilities with the goal to levy inheritance taxation) and another one containing nearly all financial institutions in the Netherlands in the same period. We use these data to estimate the relative size of three different credit market: notarial credit, peer-to-peer loans, and intermediated bank credit. Our findings indicate that peer to peer lending remained important even in the developed financial system of the Netherlands in 1921. Banking services were less important than private borrowing and lending as people preferred to go either to notaries, or find counterparties within their social network.

OSCAR GELDERBLOM, *Utrecht University*,  
JOOST JONKER, *University of Amsterdam*  
and *International Institute for Social History*,  
RUBEN PEETERS and AMAURY VICQ,  
*Utrecht University*

## SESSION 11: MANUFACTURES, TRANSPORTATION, AND INFORMATION ACCESS

*Technology Adoption and Productivity Growth: Evidence from Industrialization in France*

We construct a novel dataset to examine the process of technology adoption during a period of rapid technological change: The diffusion of mechanized cotton spinning during the Industrial Revolution in France. Before mechanization, cotton spinning was performed in households, while production in firms only emerged with the new technology around 1800. This allows us to isolate the firm productivity distribution of new technology adopters. We document several stylized facts that can explain the well-documented puzzle that major technological breakthroughs tend to be adopted slowly across firms and—even after being adopted—take time to be reflected in higher aggregate productivity: The productivity of firms in mechanized cotton spinning was initially highly dispersed. Over the subsequent decades, cotton spinning experienced dramatic productivity growth that was almost entirely driven by a disappearance of firms in the lower tail. In contrast, innovations in other sectors (with gradual technological progress) shifted the whole productivity distribution. We document rich historical and empirical evidence suggesting that the pattern in cotton spinning was driven by the need to re-organize production under the new technology. This process of “trial and error” led to widely dispersed initial productivity draws, low initial average productivity, and—in the subsequent decades—to high productivity growth as new entrants adopted improved methods of production and organization.

RÉKA JUHÁSZ, *Columbia University, NBER, and CEPR*,  
MARA SQUICCIARINI, *Bocconi University and CEPR*,  
and NICO VOIGTLÄNDER, *UCLA, NBER, and CEPR*

*Railroads, Reallocation, and the Rise of American Manufacturing*

We examine impacts of market integration on the development of American manufacturing, as railroads expanded through the latter half of the nineteenth century. Using new county-by-industry data from the Census of Manufactures, we estimate substantial impacts on manufacturing productivity from relative increases in county market access as

railroads expanded. In particular, the railroads increased economic activity in marginally productive counties. Allowing for the presence of factor misallocation generates much larger aggregate economic gains from the railroads than previous estimates. Our estimates highlight how broadly-used infrastructure or technologies can have much larger economic impacts when there are inefficiencies in the economy.

RICHARD HORNBECK, *University of Chicago*, and  
MARTIN ROTEMBERG, *NYU*

*Knowledge Access: The Effects of Carnegie Libraries on Innovation*

Between 1883 and 1919, Andrew Carnegie donated approximately \$1 billion in 2019 dollars to fund the construction of more than 1,500 public libraries across the United States. We show that this historical rollout of public libraries—which promoted access to knowledge for millions of people—increased the innovation output of recipient towns. To identify the causal effect of Carnegie libraries on innovation, we use new data on city-level patenting and a novel control group: cities that qualified to receive a library grant, applied for the program, received preliminary construction approval, but ultimately did not build a Carnegie library. Patenting in recipient towns increased by 8–13 percent in the 20 years following library entry. We show that this increase is concentrated in technology classes that overlap with library holdings. The number of women and immigrant inventors also increased after libraries opened. We provide evidence that additional access to scientific knowledge and opportunities to interact with fellow patrons are possible mechanisms.

PETER NENCKA and ENRICO BERKES,  
*The Ohio State University*

SESSION 12: BANKING SERVICES FOR UNDERSERVED COMMUNITIES

*Generating African-American Wealth through Banking*

Compiling a new dataset of banks owned and managed by African Americans from 1907 to 1930, I provide the first analysis of the contribution of African-American banks to the increase in economic welfare of African-American communities. This data explains, in part, the narrowing of the Black-White income gap during this time first reported in Margo (2016). Linking the locations of African-American banks to census data shows that an additional African-American bank per ten thousand African-American adults in a county increased the share of African-Americans employing at least one person by 1.9 percentage points, 1.5 times the median rate. Put another way, African-American banks from 1907 to 1930 created roughly 14,000 African-American business owners. The effects on white-collar occupations and home ownership are positive but relatively small. Overall, African-American banks made significant contributions to their communities, contrary to skepticism expressed in the previous literature.

GEOFF CLARKE, *Brandeis University*

*Modern Banking Reforms and Financial Activities of Indigenous Merchants:  
A Case from Japan in the Late Nineteenth Century*

Following the opening of the treaty ports in 1859 and Meiji Restoration in 1868, Japan instituted a series of drastic reforms, successfully modernized, and achieved prolonged economic growth. Among other entities, national banks structured as joint stock companies according to the U.S. model played a key role in the modernization of the country

by providing the society with liquidity and integrating the national financial markets. I explore the factors that led to the success of the national banks by constructing new datasets characterizing details on the origins of the national banks and the viability of individual national banks. I then perform a probit regression analysis with this database to test whether the origins of the banks affected their viability. Empirical results from econometric analysis and case studies demonstrate that commoners who engaged in commercial activities played a key role in Japan's modernization as the founders of the national banks.

MASATO SHIZUME, *Waseda University*

*Public Banking and Global Marketplaces in Antebellum Georgia and South Carolina*

This paper analyzes public banking in Antebellum South Carolina and Georgia. Both states owned banks to help provide currency and credit to their citizens. Specie, paper money, and credit were in short supply throughout the first half of the nineteenth century. Some state governments generated needed revenue by directly investing in banks and by taxing them. However, monetary and fiscal issues were not the immediate reason for public banks in South Carolina and Georgia. The Embargo of 1807 and the War of 1812 devastated their economies, reducing the value and volume of agricultural exports. The states' legislatures enacted public banks to stabilize and repair their respective economies to mitigate the impact of foreign wars and a global depression in agricultural markets.

CRAIG M. McMAHON, *Villanova University*,  
and JEREMY LAND, *University of Jyväskylä*  
and *University of Helsinki*

SESSION 13: INSTITUTIONS MATTER

*Was Domar Right? Serfdom and Factor Endowments in Bohemia*

Is one lesson from economic history that institutions are shaped by factor endowments? Labor coercion institutions such as serfdom, which profoundly restricted economic growth, were ascribed by Domar (1970) to high land-labor ratios. But historical evidence appeared to refute this hypothesis. We carry out the first multivariate analysis of factor proportions and serfdom, using data for 11,349 serf villages in Bohemia (the Czech lands). We hold constant political economy variables by analyzing a specific serf society, and also control for village and estate characteristics that may have obscured the impact of factor endowments in previous studies. The net effect of higher land-labor ratios, we find, was to increase labor coercion. The impact intensified when landlords extracted labor in human-animal teams, and diminished as land-labor ratios rose. Outside options in the urban sector exerted no effect. Controlling for other factors, we conclude, institutions are indeed shaped partly by economic fundamentals.

ALEXANDER KLEIN, *University of Kent*,  
SHEILAGH OGILVIE, *University of Oxford*, and  
JEREMY EDWARDS, *University of Cambridge*

*Fascistville: Mussolini's New Towns and the Persistence of Neo-Fascism*

This paper explores the link between infrastructures built by autocratic regimes and political values in the wake of the transition to democracy and in the long run. In Fascist Italy (1922–43), Mussolini founded 143 “New Towns” (Città di Fondazione). Exploring municipality-level data before and after their construction, I document (i) that

the New Towns enhanced local electoral support for the Fascist Party and (ii) that the effect persisted through democratization, enhancing local support for Italy's neo-fascist party, which endured until recent times. Placebo estimates of New Towns planned but not built and spatial regression discontinuity design both support a causal interpretation of this pattern. Survey respondents near the New Towns currently exhibit preferences for a stronger leader in politics, for nationalism, and for the fascists as such. The effect is greater for individuals who lived under the Fascist Regime and is transmitted across generations inside the family. The findings suggest that authoritarian leaders may exploit public goods provision to induce a favorable view of their ideology, which persists across institutional transitions and over the long term.

MARIO FRANCESCO CARILLO, *University of Naples, Federico II*

#### SESSION 14: EDUCATION AND INNOVATION

##### *The Consequences of Radical Patent-Regime Change*

This paper analyzes the consequences of radical patent-regime change by exploiting a natural experiment: the forced adoption of the Prussian patent system in territories annexed after the Austro-Prussian War of 1866. Compared to other German states, Prussia granted patents more restrictively by setting higher novelty requirements, while patent fees were much lower. By using novel hand-collected data, we show that the forced adoption of the Prussian patent law caused a massive drop in the number of patents per capita in annexed territories. By contrast, we find a significantly positive effect of patent-regime change on World's Fair exhibits per capita, which we use as a proxy for non-patented innovation. We interpret this finding as evidence that restrictions on the granting of patents, which foster competition and technology diffusion, can be conducive for the generation of innovation.

ALEXANDER DONGES, *University of Mannheim*, and  
FELIX SELGERT, *University of Bonn*

##### *Surnames, Status, and Schools: A Long-Term View of the Social Ladder in Colombia*

Colombia is considered among the most unequal and least mobile countries in the world. However, the analysis of the long-term evolution of inequality and social status lacks historical empirical evidence. The goal of this study is to measure the persistence of social status in the long term. We use different past and contemporary sources to define social status attributes for different historical groups. We analyze how stable is the social status of indigenous, encomenderos (Spaniard colonial officers), nineteenth century slave-owners, and members of different educational, social and business elites of the seventeenth, late nineteenth, and the beginning of the twentieth centuries. Assuming that sufficiently rare surnames are part of the same extended family, we can trace dynasties from colonial times and observe if their social status has been persistent over time. Using micro-data from different administrative sources, we observe contemporary outcomes and define performance categories. We test if the historical status of each social group is associated with disadvantageous or privileged contemporary social status. The results confirm that the original social status of our historical groups is highly associated with their contemporary performance, in particular in educational outcomes. We also explore assortative mating as a possible mechanism behind these results, finding suggestive evidence of contemporary homogeneity within the historical elites and underclass surnames. We conclude that

Colombia reproduces patterns of social exclusion that originated as far as the colonial period. Our results suggest that the educational system has contributed to perpetuate the segregated nature of the social status structure in the long term.

ANDRÉS ÁLVAREZ, *Universidad de Los Andes*, and  
JULIANA JARAMILLO-ECHEVERRI, *London School of Economics*

*The Impact of State-Provided Education: Evidence from the 1870 Education Act*

How does access to public education affect occupational outcomes and intergenerational mobility? The U.K.'s 1870 Education Act, which introduced a public education system in England and Wales, provides a unique historical context in which to explore these questions. Using newly digitized historical records and a regression kink design, I find that public school access improved a child's chance of obtaining an occupation requiring literacy in adulthood by as much as 13 pp. I use a triple difference specification to show that the effect extended to children further removed from the kink, and that the quality of occupational outcomes increased with each additional year of schooling. To study the reform's effect on intergenerational mobility, I link father-son pairs across time, matching nearly 4 million individuals using full-count historical censuses. I find that by targeting the lower classes, public school introduction significantly improved intergenerational mobility, with the adult outcome gap between high- and low-class children decreasing by over 10 percent.

BENJAMIN MILNER, *University of British Columbia*

SESSION 15: INEQUALITY AND ITS PERSISTENCE

*Country of Women? Repercussions of the War of the Triple Alliance in Paraguay*

Skewed sex ratios often result from conflict, disease, and migration, yet their long-term impact remains less understood. The War of the Triple Alliance (1864–1870) in South America killed up to 70 percent of the Paraguayan male population. According to Paraguayan national lore, the skewed sex ratios resulting from the conflict are the cause of present-day low marriage rates, high rates of out-of-wedlock births and a generally male chauvinist culture. We collate historical and modern data to test this conventional wisdom in the short and the long run. We examine both cross-border and within-country variation in child-rearing, education, and labor force participation in Paraguay over a 150-year period. We find that more skewed post-war sex ratios are associated with higher out-of-wedlock births, more female-headed households, and better female educational outcomes, even after sex ratios return to normal. These impacts of the war persist into the present, and are seemingly unaffected by variation in economic openness, uncertainty, or traditional norms.

FELIPE VALENCIA, *University of British Columbia*, and  
LAURA SCHECHTER, *University of Wisconsin*

*The Deep Roots of Inequality*

This paper shows how wealth inequality was lower in East Asia than Western Europe over the very long-run, 1300–2000. A rich new dataset of village censuses in Japan, 1640–1870, and secondary evidence suggest Gini coefficients of wealth inequality in the East

were 0.4–0.5 relative to 0.7–0.9 in the West preceding industrialization. Such regional patterns also precede the black death so any explanation must predate this. I propose the demographic institution of adoption as one such explanation. Adoption prevented the failure of male lines through which wealth was inherited. Adoption was practiced across Eurasia until the fifth century when the church began preaching against it. This increased household extinctions in Europe causing wealth concentration among surviving male lines. In contrast, the Japanese data suggest adoption prevented household extinctions and kept wealth in the family. Simulations show that this mechanism can explain much of the gap in regional wealth inequality.

YUZURU KUMON, *University of California, Davis*

*The Intergenerational Persistence of Welfare Receipt*

We study the intergenerational persistence of welfare receipt for birth cohorts spanning much of the twentieth century. We use a unique dataset that links historical welfare applications to more recent administrative welfare records from Ontario. We observe the children of welfare recipients whose files were closed between 1970 and 2000 (but opened as early as 1936). We search for these children as adults in the administrative records, which begin in 2001. We infer the rate of persistence from the linkage rate, making adjustments for linkage error, out-migration, and death. We compare the linkage rate to the unconditional probability of receiving welfare, inferred from case count data. We focus on characterizing differences in persistence by birth cohort and other demographic characteristics. This will shed light on patterns of intergenerational economic mobility at the low end of the income distribution.

LAURA SALISBURY, *York University*, and SHARI ELI, *University of Toronto*

SESSION 16: DISCRIMINATION:  
IMMIGRANTS, WOMEN, AND MORTGAGE LENDING

*Education and the Women's Rights Movement*

With the advent of the women's rights movement many gender gaps have started to narrow in Western societies. While this improvement has attracted much scholarly work, empirical evidence on the factors that allowed the women's rights movement to emerge in the first place remains scarce. We compile detailed biographical data on the universe of notable women in German history and document that the staggered introduction of secondary education—in the form of religious finishing schools—from the seventeenth century onwards led to an increase in women's representation among the human capital elite. By easing access to critical ideas and reducing the cost of accessing networks of like-minded women, these finishing schools promoted the emergence of a female human capital elite that formed the nucleus of the German women's rights movement. Through further dissemination of critical ideas and the institutionalization of their networks, the women's rights movement ultimately succeeded in obtaining equal access to education, the right to work, and suffrage. Taken together, our results suggest that by facilitating the formation of a female human capital elite, finishing schools—that is, secondary education for women—played a pivotal role in the emergence of the women's rights movement and thus for women's empowerment at large.

MATHIAS BÜHLER, LEONHARD VOLLMER, and JOHANNES WIMMER,  
*Ludwig Maximilian University of Munich*



*The Long-Run Impacts of Mexican-American School Desegregation*

While historical accounts indicate widespread segregation of Mexican-Americans throughout the southwestern United States in the early to mid-twentieth century, the economics literature has paid little attention to the elimination of de jure segregation for this population. This paper presents the first quantitative analysis of the impact of ending de jure segregation of Mexican-American school children by examining the effects of the 1947 *Mendez v. Westminster* decision on long-run educational outcomes in California. Identification rests on comparing individuals in counties which were more likely to have segregated schools with individuals in counties which were less likely to have segregated schools across birth cohorts that started school after Mendez relative to birth cohorts that started school prior to the ruling. Results point to a significant increase in educational attainment for Hispanics fully exposed to desegregation.

FRANCISCA ANTMAN, *University of Colorado Boulder*,  
and KALENA E. CORTES, *Texas A&M University*

*The Dark Side of Social Capital? Battles and Mortgage Lending*

I study how a shock in culture and trust in the past still affects mortgage lending today. More specifically, I investigate the long run effects of the American Civil War, a defining event for culture in American history, on current mortgage lending approval between 2000 and 2011. Using a spatial regression discontinuity design, exploiting the random occurrences of battles during the Civil War, I find that location matters for credit extension: Applicants from minority groups, such as African Americans, have a significant lower probability to obtain a mortgage loan in counties where a battlefield during the Civil War was located compared to similar applicants in adjacent non-battle counties. Conditional upon approval they also receive lower loan amounts. I show that a channel through which this battle effect persists is culture: Counties in which soldiers actively fought during the Civil War show higher levels of social capital today. Additionally, I find that remembrances of Civil War battles are important for the persistency of local social capital: Those battle counties that actively remember through re-enactment groups have even higher social capital today compared to those battle counties that do not. Moreover, applicants from minority groups have a significant lower probability to see their application currently being approved in these counties compared to minority applicants from battle counties that do not actively remember through such groups. Furthermore, conditional upon approval, they are also granted a lower loan amount, suggesting a possible “dark side” of social capital. These effects are reinforced in counties where the Union won a battle but mitigated by minority bank presence.

MINTRA DWARKASING, *Erasmus University, Rotterdam*

## SESSION 17: THE POLITICS OF HEALTH

*Rent-Seeking for Madness: The Political Economy of Mental Institutionalization in America, 1880 to 1923*

From the end of the Civil War to the onset of the Great War, the United States experienced an unprecedented increase in commitment rates for mental asylums. Historians and sociologists often explain this increase by noting that public sentiment called for widespread involuntary institutionalization to avoid the supposed threat of insanity to social well-being. However, this explanation neglects the increased role of rent-seeking within

psychiatry and the broader medical field over the same period. In this paper, we argue that increased political influence from mental healthcare providers contributed significantly to the rise in institutionalization. We test our claim empirically by using the taxonomy of medical regulations from 1870 to 1910, as well as primary sources documenting rates of insanity at the state level. Our findings provide an alternative explanation for the historical rise in institutionalization within the United States.

VINCENT GELOSO, *King's University College*, and  
RAYMOND MARCH, *North Dakota State University*

*Public Health in the First Mortality Transition in the Tropics: Puerto Rico, 1923–1945*

This paper assesses the role of public health in Puerto Rico during one of the fastest mortality transitions in history and the first outside of Europe and Western offshoots. Using newly digitized, municipal-level data from 1923 to 1945 in an event study framework, I show that public health units (PHUs, or county health departments) were responsible for most of the reduction in infant and tuberculosis mortality and one-third of the decline in general mortality during the first half of the transition—and did so without significantly increasing public expenditures. PHUs also reduced stillbirths and maternal mortality but had no effect on malaria mortality. More per capita nurses and midwives, but not sanitary inspectors, are associated with steeper declines in infant and maternal mortality, suggesting the importance of, for example, home visits, prenatal clinics, and occupational licensing. These results challenge the emphasis in the literature on postwar economic growth as the catalyst for improvements in health and provide evidence of the efficacy of anti-tuberculosis measures (e.g., quarantine and contact tracing) before modern medicine. More broadly, this paper provides a window into historical public health in Latin America, since most countries subsequently established local health departments but did not publish reliable vital statistics.

BRIAN MAREIN, *University of Colorado Boulder*

*The Long-Term Effects from Hospital Deliveries in Sweden*

This paper analyzes the long-term effects on mortality and socio-economic outcomes from being born in a maternity ward compared to home births. We focus on two Swedish public health interventions that affected the costs of hospital deliveries and the supply of maternity wards during the 1926–46 period. Using exogenous variation from the supply of maternity wards to instrument the likelihood of giving birth in an institution, we find that giving birth in a maternity ward has substantial effects on later-life outcomes such as educational attainment and mortality. The positive effects on socio-economic outcomes cannot be fully explained by increases in selective survival. We argue that a decrease in child morbidity from better treatment in the case of complications could be a likely explanation for the large gains from being born in a hospital. This interpretation is corroborated by evidence from primary school performance, which a large reduction in the probability of being low performing. In contrast to an immediate and large take-up in hospital deliveries as response to an increase in the supply of maternity wards, we find no increase in hospital births from the abolishment of fees—but instead some degree of displacement of high-SES parents.

MARTIN FISCHER, *Karolinska Institute*,  
MARTIN KARLSSON and NIKOLAOS PRODROMIDIS,  
*CINCH, University of Duisburg-Essen*

## SESSION 18: HUMAN CAPITAL LEGACIES

*Fading Legacies: Human Capital in the Aftermath of the Partitions of Poland*

This paper studies the role of institutions for the longevity of historical legacies in human capital. The Partitions of Poland (1772–1918) represent a large-scale natural experiment that subjected Poland to three different sets of educational institutions. Poland's independence after WWI, in turn, rapidly harmonized the institutions of education. To study the evolution of human capital under these different institutional regimes, I construct a large, unique dataset on schooling and education in the Polish territories from 1911 to 1961. Using a spatial RD design, I find substantial differences in primary enrollment between the partitions prior to WWI. However, within two decades of Polish independence, enrollment becomes universal in all former partitions, with a particular strong growth in female access to schooling. This is accompanied by a high intergenerational mobility in education that equalizes literacy and educational attainment between the former partitions. Educational institutions hence drive both substantial divergence and convergence in human capital.

ANDREAS BACKHAUS,

*Federal Institute for Population Research*

*The Long-Run Effect of Public Libraries on Children: Evidence from the Early 1900s*

Between 1890 and 1921, Andrew Carnegie funded the construction of 1,618 public libraries in cities and towns across the United States. I link these library construction grants to census data and measure the effect of childhood access to a public library on adult outcomes. Library construction grants increased children's educational attainment by 0.10 years, did not affect wage income, and increased non-wage income by 6 percent. These income effects are driven by occupational choice. Access to a public library caused children to shift away from occupations like manual labor, factory-work, and mining into more prestigious occupations like farm-ownership, clerical, and technical jobs. I show that compulsory schooling laws had parallel effects on children, increasing educational attainment, non-wage income and occupational prestige without affecting wage income. Economists often rely solely on wage income to measure the returns to education. But public libraries and compulsory schooling laws in the early 1900s increased educational attainment, non-wage income, and occupational prestige without affecting wage income.

EZRA KARGER, *University of Chicago*

*Female Educational Achievement, Labor Market Outcomes, and the Servicemen's Readjustment Act of 1944*

By providing generous benefits to returning war veterans, the 1944 Servicemen's Readjustment Act (the "G.I. Bill") improved access to higher education for millions of Americans. The bill's educational benefits were considerable: veterans could receive up to \$500 (nominal dollars) per year for tuition, fees, and books, plus a \$50 monthly allowance for living expenses. For context, average tuition in 1948 was just over \$400 at private universities and from 1945 to 1950 the federal minimum wage was 40 cents per hour. While a number of studies examine whether the G.I. Bill increased education and future earnings for male veterans, little is known about how the G.I. Bill affected female veterans. Using data on female veterans from the 1980 Census 5% Public-use Microdata Sample, I find that WWII female veteran status is associated with a 19 percentage point

increase in the number who attend any college, a 7.8 percentage point increase in college completion, and earnings that are 19.8 percent larger relative to comparable females who were not veterans. Because service was voluntary, I use enlistment patterns, service eligibility requirements, and the G.I. Bill's retroactive nature to help establish a causal relationship among service, educational attainment, and increased earnings. When I instrument for educational attainment using age at the time of the G.I. Bill's announcement, I find that female veterans' earnings increased by \$1,350 (11.6 percent) per year of G.I. Bill-induced education.

CONOR LENNON, *University of Louisville*