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Abstracts of Papers Presented at the Annual Meeting

SESSION 1: THE HISTORICAL EVOLUTION OF TRADE AND TRANSPORT COSTS

Passenger Fares for Ocean Travel from 1826 to 1916

We present the first consistent and comprehensive time series on passenger fares for overseas travel covering nearly a century of travel by Americans. We describe the new evidence on passenger fares for ocean travel from 1826 to 1916, discuss the conceptual and empirical difficulties of constructing the series, and examine the reasons for differences between the behavior of advertised fares and those based on passenger revenues. We also use these new data to reexamine some issues that have been of longstanding interest in the history of the maritime trade, such as the timing and causes of the shift from sail to steam and whether technological change in shipping led to passenger fares declining to the same extent as freight rates.

BRANDON DUPONT, *Western Washington University*,
DREW KEELING, *University of Zurich*, and
THOMAS WEISS, *University of Kansas*

Reaffirming the Importance of Transport Costs: Evidence from the Transatlantic Iron Trade, 1870–1913

We use newly compiled evidence on effective transport costs from the transatlantic iron trade to investigate the relationship between trade costs and trade volumes. Like other empirical work on British trade during the late nineteenth and early twentieth centuries, we find a surprisingly weak correlation between ocean freight rates and export quantities. Despite sharply falling transatlantic shipping costs, export volumes stagnated and Britain's role in North America's iron markets declined. However, when we control for endogenous shipping costs, tariffs, and prices, and measure the full range of transport costs that affected trade, including overland transport costs, insurance, wharfage, and brokerage fees for both final goods and raw material inputs, the importance of transportation reasserts itself. We find that effective transport costs had a strong and underappreciated impact on the total tonnage of iron shipped between Britain and North America.

KRIS INWOOD, *University of Guelph*, and
IAN KEAY, *Queen's University*

The Pricing Revolution in Marine Insurance

The widespread adoption of marine insurance by merchants in international trade was the result of a revolution in the pricing of marine insurance in the seventeenth century. In London, marine insurance prices dropped by more than half, and in some cases 75 percent. The city soon became the leading insurance center in the world, as a progressive increase in the number of trade voyages allowed the transformation of "uncertainty" into "risk," which allowed more accurate risk-based pricing. This paper is in two parts. The first, quantitative section examines the fall in prices from the sixteenth century to the eighteenth, drawing on a new, unique database. The second

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explores the reasons behind the fall in prices, and London's resulting success in this important sector of the international transportation business. It does so first by adopting the framework of New Institutional Economics, then by comparing marine insurance practice and pricing in other markets.

ADRIAN LEONARD, *University of Cambridge*

SESSION 2: CITIES IN ECONOMIC HISTORY

Razing San Francisco: The 1906 Disaster and the Legacy of Urban Land Use

Natural disasters that destroy urban areas leave opportunities to adapt city environments to contemporary needs. Since it is costly for developers to adapt real estate to changing economic conditions, durable capital investments can be a significant factor in determining urban development patterns over time. Exploiting the 1906 San Francisco fire as an exogenous reduction in the city's building stock, this paper examines residential density before and after the disaster using a unique data set and the fire's boundary as a discontinuity in treatment. All else equal, significant differences between pre- and post-disaster land use imply that the durability of urban capital is an important barrier to redevelopment, which the disaster eliminates. Estimates reveal that, upon reconstruction, residential density increased significantly in areas razed by fire relative to unburned areas. This finding suggests that thriving cities experience substantial rigidities in the form of durable capital.

JIM SIODLA, *University of California, Irvine*

Carnegie's Legacy and the Growth of American Cities: Did Public Libraries Have Any Measurable Effects?

From 1870 to 1930 access to free community-based library services spread to a larger share of the U.S. population, while the institutional structure of local libraries underwent a transition from quasi-private, voluntary associations to the tax-supported public institutions familiar today. In this paper, we examine the effects of public libraries on the growth of American communities. Our identification strategy relies on the philanthropy of Andrew Carnegie, who helped establish or improve almost 1,700 libraries between 1898 and 1922. Using census data, we use an event-study framework to examine the impact of libraries on local economic development. Consistent with libraries catalyzing growth, our preliminary findings show that Carnegie's library grants are associated with significant increases in grantee cities' population. In ongoing work, we consider libraries impact on literacy, school attendance, industrialization, women's outcomes, city demographic characteristics (foreign-born, share nonwhite, age structure), and local measures of civic participation.

MARTHA J. BAILEY, *University of Michigan*,
BRIAN JACOB, *University of Michigan,*
MICHAEL KEVANE, *Santa Clara University*, and
WILLIAM SUNDSTROM, *Santa Clara University*

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Real Wage Evolution in São Paulo, Brazil, 1891–1930

We know remarkably little about how people actually lived and what standards of living were in the city of São Paulo during a period of nearly unprecedented transition. During the Old Republic (1891–1930), rapid industrialization accompanied exponential population growth as the city grew from 64,000 inhabitants in 1890 to over one million in 1933. There is no systematic knowledge of wages or the evolution of such wages during this period. This paper helps fill the void by creating and introducing a homogenized wage series for the period using firm-level data. The evidence shows decreasing real wages over the majority of the period but no systematic increase in wage premiums. Given the depressed wages, it is surprising that labor organization in São Paulo did not strengthen more over the Old Republic. The potential applications of this wages series for Brazilian and development history are vast.

MOLLY C. BALL, *University of California, Los Angeles*

SESSION 3: CENTRAL BANKS FOR LIQUIDITY AND OTHER PURPOSES

Eligibility to Central Bank Liquidity and the Bankruptcy Rate: Lessons from France, 1826–1913

This paper uses a newly compiled data set on local bankruptcy rates in 86 French districts between 1826 and 1913 to assess whether easier access to central bank refinancing helped to mitigate the consequences of negative liquidity shocks. Using an exogenous negative productivity shock on agriculture as an instrument for liquidity demand of the industrial and service sectors, we show that the adverse consequences of the shock for those two sectors were smoother in those districts in which agents had an easier access to central bank refinancing. We show evidence that allows ruling out that this result may have been the outcome of the central bank subsidizing insolvent agents by playing the role of a "bad bank."

VINCENT BIGNON, *Bank of France*, and
CLEMENS JOBST, *Austrian National Bank*

Financial System Liquidity and Bankruptcy: Mississippi, 1929–1931

The debate over the responses of central banks and government agencies to recent credit crises underscores the importance of understanding how bank bailouts affect firms, their owners, and their employees. The no-bailout policy followed by the St. Louis Fed from 1929–1931 is known to have led to the failure of many banks in northern Mississippi relative to southern Mississippi, where banks were associated with the Atlanta Fed. This paper uses a new data set drawn from original bankruptcy court case files to identify two ways in which the no-bailout policy appears to have caused unnecessary distress. Petitioners in northern Mississippi had lower debt-to-asset ratios than petitioners in the south, particularly during the most severe crisis period of November 1930 to July 1931. Merchants were more adversely affected than wage earners. Further, the proportion of a petitioner's creditors that were in the no-bailout Fed districts was negatively correlated with the asset-to-debt ratio.

MARY ESCHELBACH HANSEN, *American University*

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Financing a Planned Economy: Institutions, Information Network, and Credit Allocation in the French Golden Age of Growth, 1954–1974

How is credit allocated in an economy with strong state intervention in the financial sector? This paper studies the French mixed economy from the end of the Marshall Plan to the mid-1970s. State interventions focused on two main objectives: the provision and coordination of information, and the supply of medium and long-term credit. The central bank was at the core of the system: it ran a policy of credit selectivity that offered rents to the priority sectors (notably through the discount window). Using a new database that matches the amount of short-term and mid-long-term credit to other characteristics of 49 sectors, I provide a global evaluation of credit policy. Medium and long-term credit was positively correlated with sectoral marginal returns to capital and it contributed significantly to output and investment growth. Financial factors and credit policy were decisive for the French Golden Age of growth after World War II.

ERIC MONNET, *Paris School of Economics*

How is the Substitute Account Doing?

Triffin famously predicted that relying on a national currency as a global reserve asset would prove unsustainable as the demand for global reserves increased, fed by deficits by the issuing country. Efforts to rectify this flaw by replacing the dollar with another reserve asset culminated in the creation of the SDR in 1967, but its limitations meant that it never fulfilled its mandate. From 1973–1980 the world came closest to an institution to replace the dollar with SDR through a Substitution Account. Recently, efforts to promote the SDR led to a revival of this scheme. Evoking fresh historical evidence to explain the origins of the scheme and why it was abandoned in 1980, this paper contributes to the current debate. We use details of alternative formulations of the scheme to assess how it would have functioned if it had been introduced and find that this simulation contradicts the optimistic analysis by Kenen.

ROBERT N. MCCAULEY, *Bank for International Settlements*, and
CATHERINE R. SCHENK, *University of Glasgow*

SESSION 4: RAILROADS AND ECONOMIC DEVELOPMENT

Railroads and American Economic Growth: A Market Access Story

This paper examines the historical impact of railroads on the American economy. Expansion of the railroad network and decreased trade costs may affect all counties directly or indirectly, an econometric challenge in many empirical settings. However, the total impact on each county can be summarized by changes in that county's "market access," a reduced-form expression derived from general equilibrium trade theory. We measure counties' market access by constructing a network database of railroads and waterways and calculating lowest-cost county-to-county freight routes. As the railroad network expanded from 1870 to 1890, changes in market access are capitalized in agricultural land values with an estimated elasticity of 1.5. Removing all railroads in 1890 would decrease the total value of U.S. agricultural land by 73 percent and GNP by 6.3 percent, more than double social saving estimates (Fogel 1964). Fogel's proposed Midwestern canals would mitigate only 8 percent of losses from removing railroads.

DAVE DONALDSON, *Massachusetts Institute of Technology*, and
RICHARD HORNBECK, *Harvard University*

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Engines of Growth: The Productivity Advance of Indian Railways, 1874–1912

While other sectors of the Indian economy enjoyed limited productivity growth under the British Raj, railways were an exception. In this paper, we present new estimates of total factor productivity (TFP) using railway-level data on outputs and inputs from 1874 to 1912. The data indicate that railway-industry TFP growth was substantial averaging more than 2 percent per year from 1874 to 1912. A key implication is that TFP growth accounts for a significant portion of the social savings attributed to Indian railways by Donaldson (2011). Moreover, we show that TFP growth on Indian railways accounted for 12 percent of all Indian GDP per capita growth from 1874 to 1912. The reasons for the surprising performance of Indian railways are also explored. We show that greater capacity utilization was secondary in importance, and that technological change was significant. Indian railways represent one of the few successful sectors during the colonial era.

DAN BOGART, *University of California, Irvine*, and
LATIKA CHAUDHARY, *Scripps College*

Railroads and Market Integration in China

The period between 1881 and 1911 witnessed a boom of railway construction in China. Using a unique data set of prefecture-level wheat price, we measure the impacts of railways on market integration by regressing price differences of prefecture-pairs. We find that railways explain 40 percent of the decline in the price gap of those prefectures, and this effect was significant not only for the prefectures along the railways but also those close to railways. We also find that these effects were larger for long-distance trade, and that the railways had mixed effects on market integration of prefectures along traditional trade routes. Finally, using three methods (two-way fixed-effect model, controlling the opening time, "place," effects of unbuilt railways), we study the endogeneity of times and locations of these railways and confirmed our conclusions.

SE YAN, *Peking University*

A GIS Analysis of the Evolution of the Railway Network and Population Density in England and Wales, 1851–2000

We analyze the uneven geographical transformation of England and Wales from 1851 to the present day, by means of following the evolution of the railway network in relation to the distribution of urban settlements in England and Wales. In the nineteenth century, railways would have helped to promote new areas and those with previous economic activity and the capacity for growth were particularly successful at attracting population. We test whether the uneven distribution of population is significantly related to access to new means of transportation, namely the newly established railway lines. Indeed, there is a dynamic relationship between population growth and transport infrastructure. We relate data obtained from population censuses taken at ten year intervals (from 1851 to 2001) to a Railways GIS including tracks and stations in operation and compiled at one-year intervals for the same period.

MARTA FELIS-ROTA, *Universidad Autonoma de Madrid*,
JORDI MARTI HENNENBERG, *Universitat de Lleida*, and
LAIA MOJICA, *Universitat de Lleida*

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SESSION 5: BIRTHS AND DEATHS

The Validity of the Boas Cherokee Height Data

In the absence of reliable data on GDP, income, or wages, economists and other social scientists have increasingly turned to the average height of a population to gain insight into its standard of living. By comparing the average height between societies or across time, insight can be gained into a society's relative standard of living. However, the very strength of height data is also its weakness. As economists tend to rely on height measures when other data in unavailable, this precludes being able to test its reliability. How can one go about confirming the conclusions of such height-related research? In this work, I propose a method to assess the representativeness of one popular source of height data: the sample of American Indian heights collection by Boas in 1893. I have located an 1890 Census on the Cherokee Nation and have linked over 80 percent of the Cherokees in the Boas sample to this census.

MELINDA MILLER, *U.S. Naval Academy*

Fertility Transitions Along the Intensive and Extensive Margins

By augmenting the standard quantity-quality model with an extensive margin, we generate sharp testable predictions of causes of fertility transitions. We test the model on two generations of Southern black women affected by a large-scale school construction program. Consistent with our model, women facing improved schooling opportunities for their children became more likely to have at least one child but chose to have smaller families overall. By contrast, women who themselves obtained more schooling due to the program delayed childbearing along both the extensive and intensive margins and entered higher-quality occupations, consistent with education raising opportunity costs of child rearing.

DANIEL AARONSON, *Federal Reserve Bank of Chicago*,
FABIAN LANGE, *Yale University*, and
BHASHKAR MAZUMDER, *Federal Reserve Bank of Chicago*

Malthus in the Bedroom: Birth Spacing as a Preventive Check Mechanism in England, 1540–1870

We question the received wisdom that birth limitation was absent among historical populations and that it did not emerge before the fertility transition of the late nineteenth century. Using duration-, panel-, and IV-analyses on a rich set of Anglican parish data, we find a statistically significant, negative effect of living standards (real wages and wheat prices) on birth intervals in the three centuries leading up to England's fertility transition. While the effect could be driven by biology in the case of the poor, the presence of an effect also among more affluent families suggests that birth spacing was used as birth control mechanism in premodern England. Our findings thus support the Malthusian preventive-check hypothesis and motivate England's historical leadership as a low population-pressure, high-wage economy.

FRANCESCO CINNIRELLA, *IFO Institute and CESifo, Munich*,
MARC P. KLEMP, *University of Copenhagen*, and
JACOB WEISDORF, *University of Copenhagen*

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Early Life Conditions and Adult Outcomes: Evidence from Japanese-American Internment

Using War Relocation Authority records linked to the Social Security Death Index, I investigate how internment during early childhood affected the life expectancy of male internees. Using uninterned Japanese Hawaiians as a control group, difference-in-differences estimates suggest that incarceration within the first four years of life decreased life expectancy by approximately two years. Furthermore, the internees from low socioeconomic status families drive almost the entire effect, decreasing their life expectancies by three years. The results are robust to controlling for endogenous fertility decisions, and data on Chinese Americans suggest that the identifying assumption is satisfied.

MARTIN SAAVEDRA, *University of Pittsburgh*

SESSION 6: THE DECISIVE ROLE OF BOND MARKETS

Geography and Capital: Global Finance and the U.S. Railroad Industry

The globalization of capital markets is a pervasive phenomenon in recent times. In this paper, we examine the motivation for ongoing capital market globalization by studying the role of foreign listings in the financing of the U.S. railroad industry during the first era of financial globalization from 1870 to 1913. Our goal is to understand the effects of foreign listing both during a period of time and in an industry when this mattered most. Moreover, this period was one of intense foreign listing activity on a scale much larger than that studied in the more recent work on foreign listings. Our preliminary results indicate that this activity before 1913 was soundly motivated, that there is substantial evidence of firm capital constraint and of a dramatic reduction in investment-cash flow sensitivity consequent upon the foreign listing of U.S. railroad bonds, preferred shares or ordinary shares in either of the major overseas markets, London and Amsterdam.

DAVID CHAMBERS, *University of Cambridge*,
SERGEI SARKISSIAN, *McGill University*, and
MICHAEL SCHILL, *University of Virginia*

Waterloo: A Godsend for French Finance?

Following Waterloo, managing French public finances represented a daunting task. Defeated France had lost a substantial part of its population and of its territory. Part of the country was occupied and France was to pay huge amounts as reparations to the victors. Furthermore, France's reputation had been tarnished by the partial default on its debts in 1797. Despite all these elements, in the ten years between 1815 and 1825 not only did France manage to place a huge amount of debt on the market (resulting in a threefold increase) but it did so with a spread, compared to the British consol, falling from more than 400 basis points to a meagre 100 basis point. Based on an econometric analysis of the yields of the French rentes, we show that the improvement in French institutions explains the dramatic decrease in yields.

KIM OOSTERLINCK, *Universitelibre de Bruxelles*,
LOREDANA URECHE-RANGAU, *Universite de Picardie Jules Verne*, and
JACQUES MARIE-VASLIN, *Universite de Picardie Jules Verne*

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Landschaften as Credit Purveyors: The Example of East Prussia

Following Waterloo managing French public finances represented a daunting task. Defeated France had lost a substantial part of its population and of its territory. Part of the country was occupied and France was to pay huge amounts as reparations to the victors. Furthermore France's reputation had been tarnished by the partial default on its debts in 1797. Despite all these elements, in the ten years between 1815 and 1825 not only did France manage to place a huge amount of debt on the market (resulting in a threefold increase) but it did so with a spread, compared to the British consol, falling from more than 400 basis points to a meagre 100 basis point. Based on an econometric analysis of the yields of the French rentes, we show that the improvement in French institutions explains the dramatic decrease in yields.

KIRSTEN WANDSCHNEIDER, *Occidental College*

SESSION 7: MARKET ACCESS AND TRADE: CAUSES AND CONSEQUENCES

Cheap Coal, Market Access, and Industry Location in Germany, 1846–1882

Most research in new economic geography focuses on the role of consumer markets in explaining the geographic concentration of industry. Historically however, fixed factors were similarly if not more important in determining the location of industry. This paper shows the importance of the fixed factor black coal in determining regional industrial development in Germany between 1846 and 1882. Black coal became a crucial input in many manufacturing industries after the inventions of coke smelting and the steam engine. Deposits were geographically concentrated and transportation on roads was prohibitively expensive, which suggests that access through rivers, canals, and railroads was an important condition for the development of manufacturing. Preliminary results indicate that access to black coal was more important than access to consumer markets for regional employment in metal and machine production and had a significant impact on regional employment in textile industries.

THERESA GUTBERLET, *University of Arizona*

It's All in the Mail: The Economic Geography of the German Empire

The transport revolution in the nineteenth century transformed mail services with the ideas of uniform pricing and universal access. This paper uses postal data and a New Economic Geography model to derive index values for local literacy, ability to trade and endowment values in the empirical setting of the German Empire. Extensive data about the whole postal network in 1876 and annual panel data about important towns afterwards is combined together with an extended set of location characteristics covering geographic endowments, infrastructure, institutions, and cultural factors to identify the actual factors underlying the observed regional structure of the German Empire. This is combined with a novel approach to measure local applied literacy, which is a based on estimating the private mail volume for each location.

FLORIAN PLOECKL, *University of Oxford*

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Shanghai's Trade, China's Growth: Continuity, Recovery, and Change Since the Opium War

In this paper, we provide aggregate trends in China's trade performance from the 1840s to the present. Based on historical benchmarks, we argue that China's recent gains are not exclusively due to the reforms since 1978. Rather, foreign economic activity can be understood by developments that were set in motion in the nineteenth century. We turn our focus to Shanghai, currently the world's largest port. Shanghai began direct trade relations with Western nations starting in 1843. By 1853 Shanghai already accounted for more than half of China's foreign trade. In tracking the levels and growth rates of the city's net and gross imports and exports, foreign direct investment, and foreign residents over more than a century, we find that Shanghai's level of bilateral trade today with the United States, the United Kingdom, or Japan, for example, are by no means high given Shanghai's nineteenth-century experience. This paper argues that a regional approach that embeds national trading destinations within an international trading system provides a meaningful approach to understanding the history of China's trade.

WOLFGANG KELLER, *University of Colorado, Boulder*,
BEN LI, *Boston College*, and
CAROL H. SHIUE, *University of Colorado, Boulder*

SESSION 8: INTERNAL AND INTERNATIONAL MIGRATION

The Cultural Diffusion of the Fertility Transition: Internal Migrations in Nineteenth-Century France

The early decline in French fertility remains a perennial puzzle to economists as France was a relative laggard in urbanization, mortality decline, education, and social insurance. We analyze how internal migrations between French districts affected the convergence in fertility rates between 1861 and 1911. We compute bilateral migration rates over time, as opposed to the overall migration rate, and examine the effect of fertility in the resident and birthplace districts on fertility in respectively the birthplace of emigrants and the residence of immigrants. We use bilateral travel costs as an instrumental variable to solve for the endogeneity of migration choices. Our results suggest a role for the transmission of fertility norm in explaining the convergence of fertility rates in France.

GUILLAUME DAUDIN, *Sciences Po*,
RAPHAEL FRANK, *Bar-Ilan University*, and
HILLEL RAPOPORT, *Harvard University*

Immigration Quotas and Immigrant Skill Composition: Evidence from the Pacific Northwest

The 1921 Emergency Quota Act was the first American immigration policy passed to control explicitly the number of incoming migrants. Utilizing newly transcribed individual-level data from ship passenger lists, this article analyzes the effect the 1921 immigration quota had on the characteristics of admitted migrants. Comparisons are made across less- and more-restricted immigrants, while using unrestricted migrants as a control group. Difference-in-difference estimates indicate that immigration quotas resulted in flows of higher-skilled immigrants.

CATHERINE MASSEY, *University of Colorado, Boulder*

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British, American, and British-American Social Mobility: Intergenerational Occupational Change Among Migrants and Nonmigrants in the Late Nineteenth Century

The occupational mobility experienced by immigrants in the nineteenth century has been difficult to assess because of a lack of both information on their premigration occupations and information on a comparable group of individuals who were observed at the same origin but did not migrate. We take advantage of new samples of Americans linked 1860–1880 and 1880–1900, British linked 1861–1881 and 1881–1901, and British-American migrants linked 1861–1880 and 1881–1900 to compare the experience of migrants from Britain to the United States to both those who remained in Britain and those who were always located in the United States. We assess the selectivity of migration and explore several of the mechanisms through which the intergenerational mobility of migrants exceeded that of both those they left behind in Britain and those they joined in the United States.

JOSEPH FERRIE, *Northwestern University*, and
JASON LONG, *Wheaton College*

SESSION 9: FINANCIAL CRISES IN THE UNITED STATES

Harvests and Financial Crises in Gold Standard America

Most American financial crises of the pre-1914 gold standard era were caused by fluctuations in the cotton harvest due to exogenous factors such as weather. The transmission channel ran through export revenues and financial markets under the pre-1914 monetary regime. As a poor cotton harvest depressed export revenues, it reduced international demand for American assets, which depressed American stock prices, drained deposits from money center banks, and precipitated a business-cycle downturn. These conditions bred financial crises. The crises caused by cotton harvests could have been prevented by an American central bank, even under gold standard constraints.

CHRISTOPHER HANES, *Binghamton University*, and
PAUL RHODE, *University of Michigan*

An Overlooked Central Bank Rescue: How the Bank of France Ended the American Panic of 1907

Recent American and European financial crises prompt the questions: under what conditions do crises end, when does a rescue plan crystallize, and how does a rescue happen? We examine a successful rescue operation in the worst pre-Federal Reserve financial crisis, the Panic of 1907, with these questions in mind. Received tradition ascribes the resolution of the crisis to a series of efforts to expand domestic liquidity, coordinated by J. Pierpont Morgan. In this study, however, we find it was a direct intervention by the French in American money markets that ultimately relieved the stringency by providing a new source of international liquidity. We challenge the notion that Morgan saved the American markets by devising a series of ad hoc domestic liquidity measures during the crisis. While Morgan's actions may have averted a settlement crisis on the floor of the New York Stock Exchange and provided temporary relief for equity prices, we find that it was the announcement by the Bank

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of France to accelerate its gold payments directly for American crops that ultimately reversed the downtrend in equity prices. We find evidence that signs of spillover to the French banking and financial systems accompanied the French decision to rescue the United States. Furthermore, discussions among French bank regents reveal how the rescue operation met their competing mandates to provide liquidity while not forsaking rigorous credit quality standards for assets the Bank purchased in exchange for its liquidity provision. Implications are that rescues occur when a surplus-reserve central bank experiences signs of domestic stress, that central banks cooperate when their self-interests are served, and that a collateralized rescue operation can provide systemic liquidity and still maintain central bank portfolio quality.

MARY TONE RODGERS, *SUNY-Oswego*, and
JAMES PAYNE, *University of South Florida*

Runs on Early "Shadow Banks:" Trust Companies and the Economic Effects of the Panic of 1907

We use the unique circumstances that led to the Panic of 1907 to analyze its consequences for nonfinancial corporations. The onset of the panic occurred following a series of scandalous revelations about the investments of prominent financiers, which triggered widespread runs on trust companies associated with those men. Using newly collected data, we find that corporations with close ties to the trust companies that faced severe runs experienced an immediate decline in their stock price, and performed worse in the years following the panic: they earned fewer profits and paid fewer dividends, and faced higher interest rates on their debt. Consistent with the notion that information asymmetries aggravated the consequences of the contraction of credit intermediation, these effects were largest for smaller firms and for industrials, whose collateral was more difficult to value than that of railroads.

CAROLA FRYDMAN, *Boston University*,
ERIC HILT, *Wellesley College*, and
LILY ZHOU, *Federal Reserve Bank of New York*

SESSION 10: SLAVERY AND SERFDOM

Peculiar Institutions: The Economics of Slavery in the USA

The institution of slavery was at the heart of U.S. economic development. We propose a model of slavery's impact on the overall allocation of resources in the economy. The model reflects the idea that the slave market economized on recruitment and retention costs that characterize free labor markets, particularly historical ones. The model produces new predictions about the allocation of labor in agriculture and manufacturing, and the distribution of labor and its marginal product across firms and farms, which we take to the microcensus data. The theory also delivers new measures of location-specific quality of life for free workers. We use these measures of quality of life to document the spatial equilibrium of the pre-Civil War United States—and how slaves were systematically located in unattractive places. Finally, we present new microdata on thousands of runaway slaves to document the runaway threat to property rights and its impact on local economic development.

JEREMIAH DITTMAR, *American University and IAS*, and
SURESH NAIDU, *Columbia University*

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Climate, Ecosystem Resilience, and the Slave Trade

African societies exported more slaves in colder years. Lower temperatures reduced mortality and raised agricultural yields, lowering the cost of supplying slaves. Our results help explain African participation in the slave trade, which is associated with adverse outcomes today. We merge annual data on African temperatures with a panel of port-level slave exports to show that a typical port exported fewer slaves in a year when the local temperature was warmer than normal. This result is strongest where African ecosystems are least resilient to climate change, and is robust to several alternative specifications and robustness checks. We support our interpretation using evidence from the histories of Whydah, Benguela, and Mozambique.

JAMES FENSKE, *University of Oxford*, and
NAMRATA KALA, *Yale University*

Serfdom, Land Inequality, and Economic Development in Tsarist Russia

How did Russian serfdom and emancipation matter for subsequent economic development? One possible mechanism was by fostering an unequal distribution of land that persisted into the Soviet era. Utilizing a new district-level data set describing variation in serfdom, the structure of the emancipation process, and detailed information on the subsequent distribution of communal and non-communal land, this paper documents the institutional roots of land inequality and underdevelopment in Tsarist Russia.

STEVEN NAFZIGER, *Williams College*

SESSION 11: HOUSEHOLDS AND FIRMS IN U.S. ECONOMIC HISTORY

Do Patent Pools Encourage Innovation? Evidence from Twenty Industries in the 1930s

Patent pools, which allow competing firms to combine their patents, have emerged as a prominent mechanism to resolve litigation when multiple firms own patents for the same technology. This paper takes advantage of a window of regulatory tolerance under the New Deal to investigate the effects of pools on innovation within 20 industries. Difference-in-differences regressions imply a 16 percent decline in patenting in response to the creation of a pool. This decline is driven by technology fields in which a pool combined patents for substitute technologies by competing firms, suggesting that pools, which form in the absence of effective antitrust, discourage innovation by weakening competition to improve substitutes.

RYAN LAMPE, *DePaul University*, and
PETRA MOSER, *Stanford University*

Income Taxation and Business Incorporation: Evidence from the Early Twentieth Century

If the corporate income tax is set at a different rate from noncorporate income tax, it can play an important role in a firm's choice of organizational form. The impact and interdependency of income tax incentives are crucial factors to take into account

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when designing efficient tax policies. In this paper, I exploit the substantial variation in income taxes across U.S. states in the early twentieth century to estimate these sensitivities. The potential endogeneity of state taxes is addressed using an IV approach. The results demonstrate that the relative taxation of corporate to personal income has a significant impact on the corporate share of economic activities. Raising the entrepreneur's tax cost of incorporation by 10 percent decreases the mean corporate share of economic activities by about 11–18 percent. In addition, higher personal tax rates may affect the share of corporate activities through tax evasion and tax progressivity.

LI LIU, *University of Oxford*

Inter-Urban Health Disparities: Survival in the Wards of Nineteenth-Century American Cities

Survival rates were low in large nineteenth-century American cities. We ask whether this was attributable to a few "bad" wards or whether urban wards were uniformly bad. The paper employs two data sets. The Union Army database has been augmented with veterans who enlisted in and/or resided in Boston, Chicago, New York City (including Brooklyn), and Philadelphia. Additionally, the Historical Urban Ecology (HUE) database has been created containing ward-level data on health indicators, the expansion of public infrastructure, and socioeconomic indicators. These data are used to construct a "Ward Development Index" which identifies "good" versus "bad" wards and is part of hazard ratio regressions. Preliminary results suggest there is little difference between good and bad wards in 1860. By 1900, however, the urban mortality penalty remains in bad wards and is much reduced in good wards. Understanding why this difference emerged is vital to understanding the urban mortality transition.

LOUIS CAIN, *Loyola and Northwestern Universities*,
SOK CHUL HONG, *Sogang University*, and
CARLOS VILLAREAL, *University of Chicago*

SESSION 12: THE STATE FOR WAR AND GROWTH

State Capacity and Military Conflict

In 1500 Europe was composed of hundreds of statelets and principalities, with weak central authority, no monopoly over the legitimate use of violence, and multiple, overlapping levels of jurisdiction. By 1800 Europe had consolidated into a handful of powerful, centralized nation states. We build a model that simultaneously explains both the emergence of capable states and growing divergence between European powers. In our model, the impact of war on the European state system depends on: i) the capital intensity of war (which stands for the financial cost of war), and ii) a country's initial level of domestic political fragmentation. We emphasize the role of the "Military Revolution," which raised the cost of war. Initially, this caused more internally cohesive states to invest in state capacity, while other (more divided) states rationally dropped out of the competition. This led to both increasing divergence between European states, and greater average state building on the continent overall.

NICOLA GENNAIOLI, *Universitat Pompeu Fabra*, and
HANS-JOACHIM VOTH, *Universitat Pompeu Fabra*

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State Capacity and Long-Run Performance

We present new evidence about the long-term links between state capacity and economic performance. Our database is novel and spans eleven countries and four centuries in Europe, the birthplace of modern economic growth. A dynamic simultaneous equation panel model indicates that the performance effects of states with modern extractive and productive capabilities are significant, large, and robust to a broad range of specifications, controls, and subsamples. We find that the establishment of an effective state increased per capita GDP by 7 percent over a half-century and by 12 percent over a full century.

MARK DINCECCO, *IMT-Lucca Institute for Advanced Studies*, and
GABRIEL KATZ, *IMT-Lucca Institute for Advanced Studies*

Financing Japan's World War II Occupation of Southeast Asia

This article analyzes how Japan financed its World War II occupation of Southeast Asia, the transfer of resources to Japan, and the monetary and inflation consequences of Japanese policies. In Malaya, Burma, Indonesia, and the Philippines, the issue of military scrip to pay for resources and occupying armies greatly increased money supply. Despite high inflation, hyperinflation hardly occurred because of a continued transactions demand for money, Japan's strong enforcement of monetary monopoly, and because of declining Japanese military capability to ship resources home. In Thailand and Indochina, occupation costs and bilateral clearing arrangements created near open-ended Japanese purchasing power and allowed the transfer to Japan of as much as a third of Indochina's annual GDP. Although the Thai and Indochinese governments financed Japanese demands mainly by printing large quantities of money, inflation rose only in line with monetary expansion due to money's continued use as a store of value in rice surplus areas.

GREGG HUFF, *University of Oxford*, and
SHINOBU MAJIMA, *Gakushuin University*

SESSION 13: ECONOMIC GROWTH IN THE COLONIES

Global Trade, Contract Failure, and Ethnic Assimilation: Cochineal in Mexico

We explore the role played by transportation, political institutions, and contractual incentives in the production of a commodity characterized by non-replicable factors, high risk, and costly verifiability in securing long-term, sustained gains from world trade. We examine the long-term effects on indigenous communities of cultivating one of the world's most valuable traded commodities during the Spanish colonial period: a dye extracted from the cochineal insect. We exploit micro-climatic differences during the growing season to identify the effect of a legacy of cochineal production. We address incentives and compliance by exploring the tradeoff faced by indigenous growers between being located close to the seats of colonial rule (the Alcaldias Mayores created by the Bourbon reforms), and hence having securing greater access to markets, but also being subject to greater contractual oversight. We find that a legacy of cochineal production was to lower poverty; while allowing for retention of indigenous identity.

ALBERTO DIAZ-CAYEROS, *University of California, San Diego*, and
SAUMITRA JHA, *Stanford University*

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India and the Great Divergence: An Anglo-Indian Comparison of GDP per Capita, 1600–1871

This paper provides estimates of Indian GDP constructed from the output side for the pre-1871 period, and combines them with population estimates to track changes in living standards. Indian per capita GDP declined steadily during the seventeenth and eighteenth centuries before stabilizing during the nineteenth century. As British living standards increased from the mid-seventeenth century, India fell increasingly behind. Whereas in 1600, Indian per capita GDP was over 60 percent of the British level, by 1871 it had fallen to less than 15 percent. As well as placing the origins of the Great Divergence firmly in the early modern period, the estimates suggest a relatively prosperous India at the height of the Mughal Empire, with living standards well above bare-bones subsistence.

STEPHEN BROADBERRY, *London School of Economics*, and
BISHNYPRIYA GUPTA, *University of Warwick*

Evidence of Labor Bargaining Power Among Indian Industrial Workers in the Early Twentieth Century

Sivasubramonian's (2000) data on Indian industrial labor productivity indicate 15 percent growth in the period 1900–1938. However, a detailed examination of these data show that most measured growth in large-scale organized industry can be attributed to the enormous gains made by Tata Iron and Steel (TISCO) after a firm wide 1928 strike. This paper looks for an economy-wide explanation of the generally stagnant labor productivity in India by examining India's four largest industries: cotton and jute textiles, TISCO, and coal mining. I look for evidence of labor bargaining power, poor nutrition, low taste for effort, and managerial failure. There is evidence that labor had some control over wages in all four industries, and some control over employment in cotton and jute. The ability of TISCO's management to exert control over labor outcomes lends support to hypotheses of managerial failure in other industries.

SUSAN WOLCOTT, *Binghamton University*

SESSION 14: INNOVATION AND INSTITUTIONS

Distant Tyranny: Why Spain Fell Behind in the Early Modern Period

Spain's decline from one of the faster growing European economies in the sixteenth century to economic backwater by 1800 has generally been ascribed to an unfavorable political regime. Institutionalists have either argued that the absolutist state predated on economic activity in general thus distorting investment incentives (North and Weingast 1989; Acemoglu, Johnson et al. 2005) or more recently referred to a literature on early modern France (Rosenthal 1998) that claimed that rulers who had to share sovereignty with strong elites and corporate interests predated even more severely on those part of the economy they could effectively control. This paper argues by contrast that Spanish rulers were successfully constrained from predation by strong local and regional prerogatives over taxation. This resulted in low interest public interest rates. However, paradoxically it also severely circumscribed market integration in Spain and with it growth. In short, Spanish economic growth was not stymied by predatory rulers but by local representation and indirect taxation.

REGINA GRAFE, *Northwestern University*

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Adapting Law to Fit the Facts: The GmbH, the SARL, and the Organization of Small Firms in Germany and France, 1892–1930

Unlike the corporate governance literature that focuses on publically traded corporations, we examine how a founder trying to attract capital might try to structure his firm. In the 1860s France and Germany initially had quite similar corporate law, but starting in the 1880s, divergence set in. In particular, the two countries enacted different private limited liability company laws (the German GmbH in 1892 and the French SARL in 1925). The GmbH was popular but never eliminated alternative forms. The SARL's introduction, on the other hand, quickly replaced the French alternatives. Alsace-Lorraine is especially informative: when it was German, its firms behaved liked other German firms, and when it was French, its firms behaved liked other French firms (excluding Paris). In each case, the relative popularity of a form was driven by tradeoff between tying control rights to equity ownership (as in a corporation) or to individuals (as in a partnership).

TIMOTHY GUINNANE, *Yale University*, and
JEAN-LAURENT ROSENTHAL, *California Institute of Technology*

Open Technology and the Early Airplane Industry

It took a century from the first fixed-wing airplane design about 1800 before a piloted airplane flew a controlled flight. An industry began quickly after that point. Participants in the slow and painfully uncertain development of the first airplanes often followed what we call here open technology practices. Like scientists or open-source programmers, they generally shared information without cost or burden as they tried to make progress. They produced thousands of publications, joined into clubs, exchanged letters, and visited one another. Many also filed patents but did not apparently earn license fees. Thus the first airplanes were built on the basis of knowledge that was mainly in the public domain. By 1908 an infant industry was beginning, with on the order of 25 new firms a year. This paper illustrates (in a preliminary way, in this draft) that the new entrepreneurs, investors, and designers were a different set of people from the earlier experimenters. The transition may be analogous to those of other new technology industries.

PETER B. MEYER, *Bureau of Labor Statistics*

SESSION 15: MARKETS AND MARKET INTEGRATION

Ex Tridens Mercatus: Sea Power and Trade in the Age of Globalization

We test Kindleberger's hypothesis that a hegemon can increase commercial stability by measuring the influence of naval power projections on global trade during the latter nineteenth and early twentieth centuries. We use archival original source data on navies for England, France, the United States, and Germany, capturing longitudinal measures of ship deployment, tonnage, and ship personnel. First, we develop a model of naval power, and demonstrate that the navies of England and France in particular responded heavily to each other. We then use our estimates of naval power projected around the world to measure their effects on bilateral trade using a panel-data gravity model. Both the English and American navies were positive forces for global commerce. However, the French navy bolstered its own trade at the expense of other nations' trade. Our results demonstrate that military buildups can be positive or negative for commerce, depending on their use.

DARRELL J. GLASER, *United States Naval Academy*, and
AHMED RAHMAN, *United States Naval Academy*

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Market Failure During the Great Famine in England and Wales (1315–1317): Towards the Reassessment of the Institutional Side of the Crisis

My study examines market failure during the one of the greatest subsistence crises of European history, the Great Famine of 1315–1317. Contrary to the common view that the disaster was brought about by exogenous factors, the current study, based on a large number of hitherto unpublished archival material, reveals that, in reality, it is the anthropogenic factor that is to be blamed for creating and aggravating the famine. Various manifestations of the institutional aspects of the catastrophe included severe disruptions in grain market supply, short-term "hyperinflation," decline in the value of market information, the rise of "preferential" trade, market segmentation, grain speculation and hoarding. To make things even worse, however, the government did very little, if anything, to interfere and control the chaotic situation. The research is based on several thousands of hitherto unpublished manorial documents (chiefly manorial accounts) related to the Great Famine years, collected from various repositories in the United Kingdom.

PHILIP SLAVIN, *McGill University*

Integration in the English Wheat Market, 1770–1820

Cointegration analysis has been used widely to quantify market integration through price arbitrage. We show that price variations are caused in this framework by: (i) the magnitude of price shocks; (ii) the correlation of price shocks; (iii) within-period arbitrage; and (iv) between-period arbitrage. We show formally that identification of each component depends upon sampling frequency. We measure the variation of these components across time and space using English weekly wheat price data, 1770–1820. We show that conclusions about arbitrage are sensitive to the precise form of cointegration model used; that the different components behave differently; and that different explanations—in terms of transport and information—are needed to explain the components. Previous analyses need to be interpreted with caution.

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EDMUND CANNON, *University of Bristol*

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