

Abstracts of Papers Presented at the Annual Meeting

SESSION 1A: ANTHROPOMETRY AND HEALTH (I)

A Quarter-Century of Research on the Antebellum Puzzle

Cliometric research on the history of human physical stature began in the mid-1970s. The intention was—simply put—to use height as a proxy for per capita income and shed light on the living standards of populations going back to the eighteenth century. The research immediately discovered some reassuring patterns that made sense in the light of the working hypothesis: Americans were much taller than Europeans, urban populations were shorter than rural ones, and so forth. However, some important exceptions also began to surface: heights decreased beginning with the birth cohorts of the mid-1830s in the United States at a time when real per capita income was increasing significantly during the decades prior to the Civil War. The anomaly was discovered by Margo and Steckel in the early 1980s and first published in 1983. Subsequently christened the “Antebellum Puzzle,” the finding posed quite a challenge to the working hypothesis without a convincing explanation. Hence, the anomaly, as often happens in scholarly discourse—spawned a veritable literature in order to understand its many facets. The major contenders for an explanation were that the disease environment deteriorated substantially due to urbanization and that the economic processes separated producers and consumers of food during the onset of modern economic growth which meant that prices of food increased faster than income and moreover, farm-gate prices increased even faster than recorded urban prices. The goal of this paper is to outline the development of this research agenda during the course of the last quarter-century.

JOHN KOMLOS, *University of Munich*

The Postbellum Continuation of the Antebellum Puzzle

The term “Antebellum Puzzle” was coined to describe the paradox of declining human height among American men between 1850 and 1880, a period of substantial economic growth in the United States, despite the Civil War (1861–1865). Only in 1910 average height rose to its pre-1850 level (Costa and Steckel, 1995). The purpose of this paper is to determine whether the antebellum decline and stagnation in heights continued in the post-Civil War period, an issue previously addressed only by Steckel and Haurin (1994) and Hiermeyer (2008). Using a data set of over 45,000 U.S. Army recruits born between 1847 and 1894 and data from the 1880 census, we find that heights continued to decline until the Civil War and then stagnated for the remaining 15 years before they began to increase in the 1880s. We find substantial variation in stature among regions and among occupations; the South was distinguished for having the tallest men and the Northeast for having the shortest. We find that height was positively correlated with proximity to protein-rich nutrients during childhood and with geographic mobility and was negatively correlated with urbanization, infant mortality rates, market access, and the availability of wheat.

MATTHIAS ZEHETMAYER, *University of Munich*

SESSION 1B: PUBLIC POLICY

The Demarcation of Land and the Role of Coordinating Institutions

This paper examines the economic effects of the two dominant land demarcation systems: metes and bounds (MB) and the rectangular system (RS). Under MB, property is demarcated by its perimeter as indicated by natural features and human structures and linked to surveys within local political jurisdictions. Under RS, land demarcation is governed by a common grid with uniform square shapes, sizes, alignment, and geographically based addresses. In the United States, MB is used principally in the original 13 states, Kentucky, and Tennessee. The RS is found elsewhere under the Land Ordinance of 1785 that divided federal lands into square-mile sections. We develop an economic framework for examining land demarcation systems and draw predictions. Our empirical analysis focuses on a 39-county area of Ohio where both MB and RS were used in adjacent areas as a result of exogenous historical factors. The results indicate that topography influences parcel shape and size under a MB system; that parcel shapes are aligned under the RS; and that the RS is associated with higher land values, more roads, more land transactions, and fewer legal disputes than MB, all else equal. The comparative limitations of MB appear to have had negative long-term effects on land values and economic activity in the sample area.

GARY LIBECAP, *University of California, Santa Barbara and NBER*, and
DEAN LUECK, *University of Arizona*

The Political Economy of Saving Mothers and Babies

Using data collected by the Children's Bureau and data from the Financial Statistics of the States, we document and then analyze the different experiences of states under the Sheppard-Towner program. We first consider how the degree to which a state participated in the Sheppard-Towner program, measured by the fraction of the maximum federal appropriation it accepted, varied with its social, demographic, and political conditions. In particular, we examine how the strength of the AMA, women's organizations, and past spending on child welfare programs affected a state's participation. We also examine whether these factors were systematically related to how a state structured its Sheppard-Towner program and the particular activities in which it engaged. Finally, we look specifically at the charge leveled by the AMA that Sheppard-Towner "crowded out" state spending by looking at how state expenditures on child welfare programs were related to Sheppard-Towner appropriations and then the withdrawal of those appropriations in 1929.

CAROLYN MOEHLING, *Rutgers University and NBER*, and
MELISSA THOMASSON, *Miami University and NBER*

Climate Variability and Water Infrastructure: Historical Experience in the Western United States

Greater historical perspective is needed to enlighten current debate about future human responses to higher temperatures and increased precipitation variation. We analyze the impact of climatic conditions and variability on agricultural production

and flood control in the western states, which are characterized by the continent's driest and most variable climate. We have assembled county-level data on dams and other major water infrastructure; agricultural crop mixes and yields; precipitation and temperature; soil quality; and topography. Using this extensive data set, we analyze the impact of water infrastructure investments on crop mix and yields and the incidence of floods in affected counties relative to similarly endowed counties that lack such infrastructure. We anticipate that water infrastructure will smooth agricultural crop mixes and output, and reduce flooding. In addition, we explore the political economy of the Reclamation Act of 1902 to cast light on how politics and climatic factors may influence contemporary investment decisions.

ZEYNEP K. HANSEN, *Boise State University*, and
SCOTT E. LOWE, *Boise State University*

SESSION 2A: ANTHROPOMETRY AND HEALTH (II)

Biological Welfare Change and Variation in Mid- to Late-Nineteenth-Century Pennsylvania: Evidence from the Stature of the Pennsylvania National Guard

The description and measurement of historical human physical well-being using anthropometric measures has become a standard tool in the arsenal of economic historians. Studies of the nineteenth-century United States have focused heavily upon the century's first five decades and the "Antebellum Puzzle." Less work has been done on post-1850 birth cohorts. This paper examines the latter period using an 8,000 observation (5 percent random) sample of Pennsylvania National Guardsmen born between 1850 and 1890, a time of intense urbanization and industrialization. Occupational and spatial variation in mean height will be analyzed with attention to the economic and demographic characteristics of the regions in which these men were born and experienced their growth years. Comparisons will be made with work on this period by Steckel and Haurin (Ohio National Guardsmen) and by Carson (Pennsylvania convicts). Methodological issues relative to the use of military versus prison samples will also be discussed.

TIMOTHY CUFF, *Westminster College*

Neither So Low nor So Short! Wages and Heights in Late Colonial Latin America in Comparative Perspective

Based on substantial empirical work, our paper contributes to the ongoing debate on the historical causes of contemporary Latin America problems of development (slow growth and high inequality). It shows solid quantitative evidence on wages and heights for late colonial Latin America that, in our opinion, challenges mainstream assumptions about the—allegedly negative—effects of Spanish colonialism on the welfare of common people. Purchasing capacity of miners and laborers in terms of grain and, especially, of meat was generally equal to—or higher than—that in most parts of Europe and Asia. Heights of some 5,000 recruits in the colonial army and militias show a significant interregional variance. In southeastern Mexico, they turn out to be slightly below Western standards, whereas in northern Mexico and Venezuela (Maracaibo) they are comparable with those of central, eastern, and southern Europe. Thus, wages of ordinary Latin Americans in the eighteenth and early

nineteenth centuries were not low by international standards. Neither were their physical statures always shorter than the European norm in the middle of the eighteenth century. Our results might carry other far-reaching implications. On the one hand, an increasing and influent scholarship characterizes colonial Latin America as an extreme case of economy based on extractive institutions and inequality. Was it really the case? Our response is somewhat skeptical. On the other hand, calculating ratios of heights and real wages to GDP per capita estimates [Maddison (2008)] converts Latin America into a clear outlier within a sample of countries. This finding suggests that available estimations on colonial Latin America GDP per capita should be revised upwards.

RAFAEL DOBADO-GONZALEZ, *Universidad Complutense, Madrid, Spain*, and
HECTOR GARCIA, *Universidad Complutense, Madrid, Spain*

SESSION 2B: PUBLIC POLICY (II)

Slum Clearance and Urban Renewal in the United States, 1949–1974

This paper assesses the effects of federal Urban Renewal (UR) projects funded between 1949 and 1974. Instrumental variable estimates based on differences in the timing of state enabling legislation indicate that UR spending is correlated with a number of positive economic outcomes in 1980: faster growth of population and housing stock, higher income, higher property values, higher employment rates, and (less precisely estimated) fewer poor families and fewer units without full plumbing. Controlling for a variety of political, fiscal, and economic characteristics does not dispel these correlations. The simultaneous increases of housing units, population, and housing values suggest that the program did not merely knock down the left-hand tail of the housing stock (though there is a notable decline in old housing stock). The optimistic tone of these findings is tempered by recognition of the non-pecuniary costs and potential inequities associated with the slum clearance approach.

WILLIAM J. COLLINS, *Vanderbilt University and NBER*, and
KATHARINE L. SHESTER, *Vanderbilt University*

The Standard of Living in the Colonies and States of the Middle Atlantic Region Before 1800: Evidence from a Sample of Widows' Allowances

We present new evidence on changes in the standard of living in the colonies and states of the Middle Atlantic region between 1720 and 1800. Drawing on evidence from over 464 widow's allowances collected from ten counties in New York, Pennsylvania, and Delaware, we analyze changes in the composition and value of the allowances of food these wills specified be provided to support the decedent's wife. There is a relatively high degree of dispersion in these values, making it difficult to draw strong conclusions about changes over time, but it appears that there was little or no increase in the value of food in widow's allowances during the eighteenth century.

JOSHUA L. ROSENBLOOM, *University of Kansas and NBER*,
THOMAS WEISS, *University of Kansas and NBER*, and
PETER C. MANCALL, *University of Southern California*

Pests and Pestilence: Belle Époque Brazil

This paper examines funding for public health in Brazilian municipalities at the turn of the twentieth century, when economic expansion prompted growth in spending on urban improvements. I analyze the provision of the public good most directly related to human welfare—health—in the context of total municipal spending during the Belle Époque period from 1889 to 1914. I use annual reports, budgets, and financial statements from Sao Paulo municipalities to ask which public health goods municipalities provided; how per capita spending on public health varied between municipalities and across time; how spending on public health goods compared to spending on other public goods; how economic prosperity affected spending trends; and how administrations responded to unanticipated financial demands in times of crisis such as epidemic disease. Together, these questions measure how administrators prioritized the provision of essential public goods in an era of rapid economic and demographic expansion.

ANNE HANLEY, *Northern Illinois University*

SESSION 3A: PUBLIC FINANCE AND CAPITAL FORMATION

Public-Private Partnerships and Efficiency: A Historical Perspective from Indian Railways

Using a new data set on Indian railway companies, we study the effects of ownership structure on performance between 1882 and 1912. Over this period, new public-private partnerships came to dominate the scene as former private companies were bought out by the state but were allowed to retain operations in most cases. Moreover, any new companies created in these decades often managed the operation of state-owned lines. By exploiting the switch from private ownership and operation to state ownership and private operation within the same railway line, we find state ownership and private operation lead to significant efficiency gains. This shift contributed to India's success in developing one of the most efficient railway networks in the world by the early twentieth century.

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

Stretching the Inelastic Rubber: Taxation, Welfare, and Lobbies in Amazonia, 1870–1910

This paper examines the effect of government intervention via taxation on domestic welfare. A case study of Brazilian market power on rubber markets during the boom years of 1870–1910 shows that the government generated 1.3 percent of GDP through an export tax on rubber but that it could have generated 4.7 percent in total, had the government set the tariff at the optimal level. National, regional, and local constraints prevented the government from maximizing regional welfare. In a context of lobbies, government budget maximization may have differed from regional welfare maximization.

FELIPE TAMEGA FERNANDES, *Harvard Business School*

Was the First Transcontinental Railroad Built Ahead of Demand? Evidence from Entrepreneurial Expectations and an Empirical Entry Decision Model

The construction of the first transcontinental railroad is a key event in the westward expansion of the rail network and the U.S. economy. The railroad was built between 1863 and 1869 with large federal government subsidies. The standard view is that the railroad was expected to be built ahead of demand, but it turned out to be built after demand. This paper develops a novel approach to evaluate whether the first transcontinental railroad was built ahead of demand. The approach emphasizes on using information generated during the ex-ante period and is organized into two parts. First, reports written by entrepreneurs (and overlooked by previous literature) are used to identify entrepreneurs' declared expectations. Second, since such expectations could be different from entrepreneurs' true beliefs, an empirical entry decision model is used to evaluate the plausibility of declared expectations. The evidence indicates the railroad was expected to be profitable, and thus it was both ex-ante and ex-post built after demand.

XAVIER DURAN, *Northwestern University*

SESSION 3B: HEALTH (I)

Inequality and Physical Well-Being Among Colored and White Men in the Cape Colony Before 1900

Industrialization, rapid population growth, and segregation are thought to have undermined individual health, especially for those living in the mining camps and urban areas of late-nineteenth-century South Africa. In this paper, we provide new evidence of a stagnation in average physical well-being and growing inequality in health status during this period. Our principal evidence comes from the medical examination of men who enlisted in the South African Expeditionary Force for the 1914–1918 conflict. We focus particularly on recruits from the Cape Colony because they illustrate most clearly the comparison between whites and coloreds. Truncated regression and OLS results and the associated sensitivity tests suggests that colored recruits were significantly shorter than the white soldiers, among the whites, farmers were significantly taller, unskilled whites were significantly shorter than other occupations. Oaxaca decomposition confirms the overwhelming importance of race even after controlling for occupation, place of birth, and birth cohort. Mean stature did not improve and may have declined slightly for cohorts born into the late nineteenth century. This evidence is consistent with qualitative observations about the ways in which industrialization, especially in port cities and the mines, may have been injurious to physical well-being. Comparative data with troops on other British Empire jurisdictions suggests that by international standards, the South African whites were exceptionally tall and the coloreds exceptionally short. The available data do not yet permit an assessment of the extent of convergence or divergence of stature among different populations, but first impressions are that the height advantage of white South Africans was increasing relative to South African coloreds and to Canadian soldiers who enlisted in the same conflict, although the differential with British soldiers does not appear to have changed.

KRIS INWOOD, *University of Guelph*, and
OLIVER MASAKURE, *University of Guelph*

Measuring Living Standard from the Lowest: Height of the Haengryu Deceased in Colonial Korea

Living standard of Koreans during the colonial period (1910–1945) has been debated for a long time. We explored this problem using the height of the male Haengryu deceased, who died without any acquaintances. We found that the height of male Haengryu deceased aged 20 to 30 increased by 2.4 cm during the colonial period. This result is consistent with recent quantitative studies measuring income level or demographic information. However, when this growth started and how this pattern is related to the colonial regime needs further investigation.

DUOL KIM, *Korea Development Institute*, and
HEEJIN PARK, *Kyungpook National University*

Sultans, the Shariah, and Seven Empty Ears: Economic Catastrophes, Religion, and Institutional Change

This paper uses 800 years of Nile flood data and a novel data set on the tenure of Egyptian political and religious leaders to investigate how large economic shocks affected the balance of power between the judiciary (controlled by religious elites) and political authorities in medieval Islam. Results show that although political leaders were more likely to be deposed during Nile failures, high-ranking judicial leaders were less likely to be dismissed during periods of economic distress. Empirical evidence and the historical record suggest this lower probability of dismissal reflects increased political influence of the judiciary. The paper concludes that understanding how societies mobilize to resist the status quo may shed light on why some societies implemented institutional changes at a faster rate than others.

ERIC CHANEY, *Harvard University*

SESSION 3C: DEMOGRAPHY

Europe's Tired, Poor, Huddled Masses: Self-Selection and Economic Outcomes in the Age of Mass Migration

Between 1850 and 1913 the United States absorbed nearly 30 million immigrants from Europe. This paper estimates the economic return to migrating from northern Europe to the United States and the selection of the migrant flow. We construct a novel data set of Norway-to-U.S. migrants and their brothers. Because brothers share a common family environment and a portion of their genetic material, the earnings of brothers who remained in Norway provide our best estimate for what migrants' earnings would have been had they not migrated. A simple comparison of all Norwegian-born men produces returns to migration of 93 percent for those leaving rural areas and 42 percent for those leaving urban areas. Larger within-brother estimates suggest that households with poor economic prospects in Norway are more likely to send migrants to the United States (negative selection), particularly in urban areas. An instrumental variables procedure, which uses birth order as an instrument for migration, provides evidence of such negative selection even within households.

LEAH PLATT BOUSTAN, *University of California, Los Angeles and NBER*,
RAN ABRAMITZKY, *Stanford University*, and
KATHERINE ERIKSSON, *University of California, Los Angeles*

The Evolution and Sustainability of Seasonal Migration from Poland to Germany: How it Came into Being, and How and Why It Has Survived the Passage of Time

This paper seeks to document and explain the durability of seasonal migration from Poland to Germany, a phenomenon prevailing for more than a century. In general, seasonal migration from Poland to Germany could be expected to occur when the demand for a particular type of labor in Germany can be met by a ready supply of labor of the required type from Poland. The paper alludes to the role of the tradition of engaging in seasonal migration as a force that helped invigorate the process and contribute to its sustainability even when, to different degrees and at different times, the process was interrupted by a shifting political, regulatory, and legal environment. The paper argues that the role of a tradition of engagement in seasonal migration as an explanatory variable can be separated from the explanatory role of other variables, such as economic fundamentals. This argument is supported, among other things, by the continuation of the seasonal migration outflow from once border regions—thereafter (following World War II) internal regions—despite the fact that since the redrawing of the German-Polish border, proximity is no longer a factor encouraging repeated, short-term seasonal moves.

EWA KEPINSKA, *Warsaw University*, and
ODED STARK, *Universities of Bonn, Klagenfurt, and Vienna; Warsaw University; and
Warsaw School of Economics*

Child Adoption in the United States, 1880–1930: New Evidence from IPUMS

Adoption, as an alternative to childbearing, is a widely accepted means of creating a family in the United States today. According to the historical literature, a modern form of adoption was a legal innovation in the mid-nineteenth century that evolved over time and had profound implications for the welfare of adopted children and adoptive parents. Due to the lack of quantitative data, however, we know little about the extent and nature of adoption in the United States prior to 1950. How widely was adoption practiced before its widespread social acceptance? Who adopted children, and what motivated them to adopt? How did adopted children fare compared to biological children? In this paper, using microdata from the federal censuses in 1880–1930 and 2000, I document the prevalence of adoption, examine the characteristics of adoptive children and their households, and compare parental investments in adopted and biological children. Among other things, I reevaluate the commonly held hypothesis that, during the early twentieth century, adoption evolved from “pragmatic” to “sentimental” adoption as adoptive parents began to demand children not for their potential labor value but for the utility of parenting itself. When completed, this paper will provide the first empirical analysis of adoption in the United States prior to 1950 using nationally representative data.

CHIAKI MORIGUCHI, *Hitotsubashi University and NBER*

SESSION 4A: INSTITUTIONS

The Adoption of Constitutional Home Rule: A Test of Endogenous Policy Decentralization

In 1875 the Missouri state legislature adopted the first home rule legislation. By 1912 eleven other states passed similar constitutional provisions granting home rule to municipalities. Home rule gave municipalities the option of self-chartering and the ability to independently determine their desired structure and functions. Fiscal federalism theory suggests that decentralization of power at the state level is more likely when there is heterogeneity across local governments. Estimated predictions of a latent taste for home rule at the municipal level show states that adopted constitutional home rule had stronger and more heterogeneous preferences. The analysis uses a cross section of data from 1890 and panel data spanning 1890–1932. The predictions are generated using probit, linear probability and duration estimation. Results are robust to both the data and choice of econometric model, and consistently suggest that the adoption of home rule legislation at the state level was influenced by municipal-level preferences.

JESSICA HENNESSEY, *University of Maryland*

Dynamic Effects of Legal Origins: Evidence from the American States

This paper explores the dynamic interaction between legislatures and courts in the American states over the course of the twentieth century. Specifically, drawing on state-level panel data, we investigate how the legal origin of states appears to have affected the timing of changes in the judiciary and the response to these changes by the legislature. States settled by civil law countries were slower to move from the partisan election of judges to other methods of judicial selection and retention than states settled by common law countries. Further, states settled by civil law countries required above-average levels of political competition to do so, while states settled by common law countries did not. Following a change in the method of judicial selection and retention, which was often lobbied for by outside actors, states settled by common law countries increased judicial budgets, while states settled by civil law countries lowered budgets significantly. The evidence supports our hypothesis that legislatures differ in their preferences for judicial independence in ways related to the legal system of the settling country.

KAREN CLAY, *Carnegie Mellon University*

Land Abundance and Economic Institutions: Egba Land and Slavery, 1830–1914

This paper uses two types of evidence to show how abundance of land and scarcity of labor shaped African institutions prior to colonial rule. First, it uses ethnographic and geographic data to show that the existence of land rights and slavery occurred in those areas that were the most suitable for agriculture, and in which population density was greatest. Polygyny and the cost of wives were both positively related to agricultural suitability and to population density. States were strongest where population was dense, but their existence was not systematically based on access to fertile land. Second, this study looks in depth at the Egba of southwestern Nigeria from 1830–1914. While many of their economic institutions were typical of a land-abundant environment, they sold land and had disputes over it. These exceptions are explained by a period of land scarcity when they first arrived at Abeokuta, and by the characteristics that made certain plots of land valuable.

JAMES FENSKE, *Yale University*

SESSION 4B: LABOR

The Emergence of Wage Discrimination in U.S. Manufacturing

Using firm-level data from 1833, 1850, and 1860, I estimate production functions for U.S. manufacturing firms. The functional form I use allows me to directly estimate the female-male productivity ratio. The productivity ratios are not significantly different from the observed wage ratios, so I conclude there is no evidence of wage discrimination in nineteenth-century U.S. manufacturing. Since there is evidence of wage discrimination in the twentieth century, this raises the question of what institutional changes occurred to cause the emergence of wage discrimination in U.S. manufacturing.

JOYCE BURNETTE, *Wabash College*

State Variation in Workers' Compensation Insurance: A Political Economy of Benefits, 1930–2000

Workers' compensation insurance programs play an instrumental role in providing protection for American workers and limiting the liability of employers. This paper quantifies the monetary benefits that workers expect to receive if injured and illustrates how and why they vary across states and over time. State-level political and economic data are used to understand benefit changes, and to test the hypotheses of existing theoretical models of political decision-making. The treatment of injured workers and state mandated benefits have been influenced by national politics, inflation, and labor groups. Calls for greater generosity in the early 1970s, and the threat of a federal takeover induced dramatic and lasting changes as states raised benefit levels and increasingly linked them to state average weekly wages in order to mitigate the future impacts of inflation.

SAM ALLEN, *Virginia Military Institute*

Riding the Wave of Trade: Explaining the Rise of Labor Regulation in the Golden Age of Globalization

This paper challenges the received view that pins the adoption of labor regulation before 1914 on domestic forces, particularly the rises in income and voter turnout. Building on standard state-year event history analysis, we find that trade was also a main pathway of diffusion. Countries that traded with each other were more likely to establish a level playing field. The transmission mechanism was strongest in north-west Europe because intra-industry trade was significant in the region. When states failed to emulate the superior labor regulations of their most important trading partners, they left themselves vulnerable to embargos and sanctions on their exports. Threats of market loss were not credible in the New World because it exported mainly primary products and prices were fixed by world demand and supply. Domestic forces trumped international pressures to converge, with the result that labor regulation developed more slowly in regions of new settlement than in the European core.

MICHAEL HUBERMAN, *Université de Montréal*, and
CHRISTOPHER MEISSNER, *University of California, Davis*

SESSION 4C: HEALTH AND LIVING STANDARDS

Adjustment of Age-Related Height Shrinkage in Archival Data for Chinese: A Post Hoc Longitudinal Survey

Height data is a useful and concise summary measure of human welfare for historical populations in absence of conventional economical data. Most studies use the final attained height of adults aged between about 20 and 40–45 years on the premise that younger subjects are still growing and older subjects have begun to shrink. Data outside this range are discarded. For many studies, the data lost is quite small and of little consequence for the study. However, where the sample includes many people older than 45–50 years, the exclusion of these may make analysis impractical because of the resulting small sample size. Several studies have used a variety of approaches to estimate the original attained height of the elderly subjects before next estimating the secular trend in heights using the adjusted heights. These adjustments are based on studies of the aging of European populations and may not fit the pattern observed in other human populations, such as the Chinese, who have been the focus of my studies. In this paper, I use a large data set of nineteenth-twentieth century Chinese immigrants to Australia who were measured repeatedly over many years to simulate a longitudinal age-related height shrinkage study. The estimates of shrinkage obtained are compared with estimates from other studies and applied to several sets of height data for Chinese to examine the reliability of adjusted height estimates in calculating secular trends in height, and in turn making inferences about their welfare.

STEPHEN L. MORGAN, *University of Nottingham*

The Urban Penalty: Stature Within the U.S. Urban System, 1850–1880

This paper investigates the divergence in stature that occurred within America's urban system using the U.S. Army's national enlistment records for 1898 to 1900 of men born between 1847 and 1882, and data from the U.S. census of 1880. As American cities grew between 1850 and 1880, their residents suffered from an urban penalty manifest in lower life expectancy, higher mortality rates, and smaller average stature than in rural districts. Consistently, the urban-born recruits from our data sets were on average shorter than the national average for all of the U.S. Army recruits. Average heights declined before the Civil War followed by stagnation until the late 1870s. In addition to this general pattern, however, by 1880 the U.S. urban system comprised diverse urban environments, and this paper chiefly examines variations in body height among urban residents of the United States to identify determinants. We found that there was also a wide range of average heights across U.S. cities and within them. The average heights of recruits born in New Orleans, Louisville, San Francisco, St. Louis, Chicago, Milwaukee, Cincinnati, Pittsburgh, and Washington DC were significantly taller than those born in Brooklyn, and those born in New York City, and Philadelphia significantly shorter. Determinants of these variations including the population of the city, real wages, and mortality rates, as well as the crowding rate in housing, the percentage of the population who were foreign born, and the freight moving capacity of the city.

GORDON M. WINDER, *University of Munich*

Land Productivity and Standards of Living in Medieval England, 1200–1500

This paper discusses a claim made by a leading scholar of late medieval England (Bruce Campbell) who argued that population growth and expanding urbanization acted as stimuli to economic growth leading to productivity improvements, retaining per capita grain output and living standards at stable levels. Contrary to this view, it is argued that neither the evidence on yields nor indirect evidence on the evolution of the “technological matrix” of the country warrants such excessive optimism. England was already in a state of crisis because of systemic factors with the adverse weather conditions and the Black Death overdetermining it but not causing it in the first place.

HARRY KITSIKOPOULOS, *New York University*

PLENARY SESSION: FINANCIAL CRISES: LESSONS FROM THE PAST FOR THE PRESENT

When and why do banking crises occur? Banking crises properly defined consist either of panics or waves of costly bank failures. These phenomena were rare historically compared to the present. A historical analysis of the two phenomena (panics and waves of failures) reveals that they do not always coincide, are not random events, cannot be seen as the inevitable result of human nature or the liquidity transforming structure of bank balance sheets, and do not typically accompany business cycles or monetary policy errors. Rather, risk-inviting microeconomic rules of the banking game that are established by government have always been the key additional necessary condition to producing a propensity for banking distress, whether in the form of a high propensity for banking panics or a high propensity for waves of bank failures.

Some risk-inviting rules took the form of visible subsidies for risk taking, as in the historical state-level deposit insurance systems in the United States, Argentina’s government guarantees for mortgages in the 1880s, Australia’s government subsidization of real estate development prior to 1893, the Bank of England’s discounting of paper at low interest rates prior to 1858, and the expansion of government-sponsored deposit insurance and other bank safety net programs throughout the world in the past three decades, including the generous government subsidization of subprime mortgage risk taking in the United States leading up to the recent crisis.

Other risk-inviting rules historically have involved government-imposed structural constraints on banks, which include entry restrictions like unit banking laws that constrain competition, prevent diversification of risk, and limit the ability to deal with shocks. Another destabilizing rule of the banking game is the absence of a properly structured central bank to act as a lender of last resort to reduce liquidity risk without spurring moral hazard.

Regulatory policy often responds to banking crises, but not always wisely. The British response to the Panic of 1857 is an example of effective learning, which put an end to the subsidization of risk through reforms to Bank of England policies in the bills market. Counterproductive responses to crises include the decision in the United States not to retain its early central banks, which reflected misunderstandings about their contributions to financial instability in 1819 and 1825, and the adoption of deposit insurance in 1933, which reflected the political capture of regulatory reform.

Moderator, CHARLES CALOMIRIS, *Columbia University*,

LEE OHANIAN, *University of California, Los Angeles*,
 J. BRADFORD DELONG, *University of California, Berkeley*, and
 RICHARD SYLLA, *New York University*
 Commentator: RICHARD H. STECKEL, *Ohio State University*

SESSION 5A: INDUSTRIAL ORGANIZATION AND INSTITUTIONS

A Green Light for Red Patents? Outsourcing Patent Protection in the Soviet Union and Russia, 1971–2007

Private property was largely outlawed in the Soviet Union. Between 1924 to 1991 less than 100 patents, which granted control rights to inventors, were awarded in the USSR. Simultaneously, thousands of patents were granted to Soviet citizens elsewhere, including in France, Germany, Britain, Japan, Switzerland, and the United States. Among Soviet inventors, patterns of inventive activity within and outside the Soviet Union differed substantially. This puzzle raises two important questions. Does the idea of patented ideas offer another challenge to the official prohibition of private property among citizens of the Soviet Union? What explains differences in the rate and composition of technological change in and beyond the borders of the USSR? The preliminary evidence suggests that foreign patent offices were substitutes for and complements of their Soviet counterpart. The implications of this research would be meaningful for better understanding the returns to significant long-term investment in scientific research in the USSR.

LISA D. COOK, *Michigan State University*

Compulsory Licensing: Evidence from the Trading with the Enemy Act

Compulsory licensing, which is permissible under TRIPS, allows domestic firms to produce inventions that are patented by foreign nationals, without the consent of patent owners. As an emergency measure, compulsory licensing offers obvious benefits: It helps to deliver lifesaving drugs to millions of patients. Its long-run effects, however, are unclear. This paper uses an exogenous change in compulsory licensing as a result of World War I to measure the long-run effects of compulsory licensing. Specifically, the analysis compares changes in patents by domestic inventors across technologies that were differentially affected by compulsory licensing under the Trading with the Enemy Act. Our data suggest that compulsory licensing has a large positive effect on domestic invention. This effect increases with the number and with the novelty of licensed patents. Our data also show that the full effects of compulsory licensing take up to ten years to materialize, suggesting that they will be missed in analyses of contemporary data.

PETRA MOSER, *Stanford University and NBER*

Promoting the Useful Arts: An Empirical Estimation of Technological Innovation Outside the Patent System, 1790–1880

To date, the most extensive studies of the economic history of technological change have relied on patents to gauge progress in the “useful arts,” although it is acknowledged that inventive activity occurs outside the patent system. This paper employs an original and unique data set of approximately 19,000 inventions that were submitted for annual prizes in the United States during the course of the nineteenth

century. The data were matched to patent records, and to the population censuses to obtain information on characteristics of the inventors. This allows us to systematically assess inventive activity outside the patent system, across industrial and sectoral categories, geographical distribution, as well as the wealth and occupation of inventors. These patterns for unpatented inventions are compared to patenting activity. Moreover, I estimate the factors that influenced whether specific inventions and inventors appropriated returns through the protection of intellectual property rights or through alternative institutions.

ZORINA KHAN, *Bowdoin College and NBER*

SESSION 5B: LIVING STANDARDS AND INEQUALITY

Sweet Diversity: Colonial Goods and the Rise of European Living Standards After 1492

Colonial goods transformed European diets after the discovery of America and the rounding of the Cape of Good Hope. Tea, coffee, tobacco, and sugar became household items in many countries by the end of the seventeenth century. Traditional real wage indices are not designed to capture gains from new goods. They suggest broadly stagnating living standards for the early modern period. We address this problem by calculating the welfare gain from colonial products, using the Greenwood-Koepcke (2007) method for valuing new goods. We apply this method to the case of England, 1550–1850, using detailed data on the changing prices and quantities of sugar, tea, and coffee. Our results suggest that tea, sugar, and coffee increased living standards markedly. By 1850 the average Englishmen would have been willing to have his income cut by 15 percent in order to maintain access to sugar and tea alone. Our findings are robust to the use of other data sources and alternative valuation methods. Once the value of variety is taken into account, the conclusion of stagnating real wages during this period needs to be qualified—well-being rose substantially, but surreptitiously.

HANS-JOACHIM VOTH, *Universitat Pompeu Fabra and CREI, Barcelona*, and
JONATHAN HERSH, *University of Chicago*

Poverty and Women's Work in Interwar London

This paper investigates the relationship between poverty and female labor supply using a large sample of working-class households from the 1929–1931 New Survey of London Life and Labour. Recent research posits an “S-shaped” household labor supply curve with a potentially negative own-wage elasticity for secondary workers in poor households, and I assess how well this model describes patterns of female labor supply in interwar London. I find that the relationship between wages and participation and hours of work does appear to be well described by a quadratic function, with a negative relationship at low wages that turns positive at higher wage rates. I also find that poverty appears to have a strong positive effect on female participation and hours—probit estimation indicates that women from households that would have been poor without their earnings were 50–60 percent more likely to be in the labor force.

JESSICA BEAN, *Cornell University*

Can Endowments Explain Regional Inequality? State Governments and the Provision of Public Goods in Brazil, 1889–1930

Economists and economic historians believe that much of the inequality we observe today in Brazil is a byproduct of the colonization pattern followed by the Portuguese at the time of arrival. In particular, there is a growing literature arguing that the endowments of a country may have caused an institutional system that favored a small elite. In this paper, we contribute to the debate by arguing that endowments did matter to determine the inequality we observe in state expenditures and living standards across states in Brazil. Yet, instead of looking at endowments and institutions at the time of colonization, we argue that it was during the first republican period (1890–1930) that inequality among states got accentuated as a consequence of the asymmetric effects of the commodity boom of the late nineteenth century. The Brazilian constitution of 1891 decentralized revenues and expenditures, giving states the capacity to collect taxes on exports and to pay for most public goods. We show that this institutional set up accentuated the asymmetric effects of the commodity boom and led to significant differences in the level of exports per state and, consequently, in revenues per capita. The variation in revenues then ended up determining differences in expenditures in public goods, such as education, police, and public works. We use a newly created database of state level fiscal and trade data for the period 1900 to 1930 and show, using OLS, that there is a positive and significant relation between export revenues per capita at the state level and expenditures on public goods (per capita). To correct for possible endogeneity and serial correlation, we use state export price indices as instrumental variables (IVs). Our results in the IV regression confirm the idea the variation in commodity prices explains part of the variation in expenditures on public goods per capita.

ANDRE C. FRITSCHER, *Boston University*, and
ALDO MUSACCHIO, *Harvard Business School*

SESSION 6A: EDUCATION AND HUMAN CAPITAL

Childhood Health and Human Capital Formation: New Evidence from Genetic Brothers in Arms

Few people question that a strong link between health and human capital exists. However, there remain many gaps in our knowledge of both the historical evolution of health and human capital and the magnitude of the effects of health shocks on human capital formation. This paper uses World War II enlistment records to explore the relationships between childhood health and educational attainment. With the enlistee data, we describe the coevolution of health and education during the late nineteenth and early twentieth centuries. We then construct a sample of siblings from these records linked to data on their childhood households to identify the relationship between childhood health and educational attainment at the individual level. Using sibling height differences as a measure of differences in childhood health that are independent of parental income and household characteristics, we estimate the effects of health on educational attainment while controlling for income and environmental factors.

JOHN PARMAN, *University of California, Davis*

Land Endowments, Child Labor, and the Development of Public Schooling: Evidence from the Early Twentieth-Century United States

This paper proposes a new explanation for the rise of public schooling in the U.S. South during the early twentieth century by focusing on the role of local economic activity. Specifically, it emphasizes the relatively higher demand that cotton agriculture had placed on child labor before its mechanization, in addition to differences in schooling by race because blacks had been more engaged in child labor than whites. Combining a newly assembled annual, county-level database about public schools and students with data on cotton production, I find evidence that racial inequality in public school quality had been largest in cotton-growing regions of the South. As cotton production declined, I use an instrumental variables strategy to show that school attendance rose in response, most notably for black children. Finally, I find that racial differences in school quality narrowed significantly with the decline in black-white differences in attendance.

JEFFREY GREENBAUM, *University of California, Berkeley*

Health in the Nineteenth Century Through the Lens of Geographically Weighted Regression

This paper offers a fresh look at the “Antebellum Puzzle” by using geographically weighted regression to understand spatial variation in mortality rates during the middle of the nineteenth century. The technique estimates spatially varying coefficients, and is relatively new to the field and certainly to this research problem. Empirical estimates are based on data kindly provided by Mike Haines for his paper with Craig and Weiss (2003), “The Short and the Dead.” The regression results support the hypothesis that the force driving the puzzle in rural areas was commercial farming. Access to water transportation increased crude death rates in the food exporting areas of the Midwest, but decreased crude death rates in the food importing areas of New England. The spatial pattern of coefficients is consistent with the idea that the transportation revolution changed the strategies of Midwestern farmers from self-sufficiency to production for export, but with adverse nutritional consequences.

DONGWOO YOO, *Ohio State University*

SESSION 6B: INEQUALITY AND INCOME

The Unexpected Developments of the U.S. Poverty Thresholds: Production, Distribution, and Usage Since 1963

Poverty measures have offered important insights for illuminating the evolution of human welfare. This paper analyzes how the U.S. poverty thresholds, income levels below which a household is counted as poor, have been produced, distributed, and used. In 1963 Mollie Orshanksy unexpectedly became the producer of the official U.S. poverty thresholds. Her thresholds published in the Social Security Bulletin were immediately picked up by a variety of users, most notably President Johnson who declared “War on Poverty” in 1964. The thresholds have been used not only to measure, analyze, and interpret poverty, but also to inform policy design and evaluation in America since the 1960s. Despite the theoretical and practical

improvements that have since become available, the thresholds are still used today. This paper argues that the conflicting interests from politicians, statisticians, administrators, and academics have inhibited the thresholds from changing into an updated measure of poverty in the United States.

JULIA MENSINK, *London School of Economics*

The Funding of Social Expenditures and Long-Term Economic Growth: The Contribution of a Synthetic Indicator of the Historical Human Development. The Case of France from the Mid-Nineteenth Century to the Present Day

The aim of this paper is to show the structuring nature of social expenditure for growth using the way in which such expenditure is funded in the long term. In France, social expenditure has increased periodically since the beginning of the nineteenth century, forming a component of the end of the long phases of depression. This common feature enables us to develop a synthetic indicator of the historical human development and to show how social expenditure becomes a structural component of growth. Study of the funding of the historical human development shows the way in which this component became established as time went by: less than a question of redistribution, social expenditure involves recognition of its increasingly productive character. For the contemporary period, it also shows that the dependence of economic growth on expenditure on the historical human development cannot be supported by the present funding mode.

SANDRINE MICHEL, *LASER and IRD, University of Montpellier I*, and
DELPHINE VALLADE, *University of Montpellier III*

The Long-Run Determinants of Inequality: What Can We Learn from Top Income Data?

This paper studies determinants of income inequality using a newly assembled panel of 16 countries over the entire twentieth century. We focus on three groups of income earners: the rich (P99-100), the upper-middle class (P90-99), and the rest of the population (P0-90). The results show that periods of high economic growth disproportionately increases the top percentile income share at the expense of the rest of the top decile. Financial development is also pro-rich and the outbreak of banking crises is associated with reduced income shares of the rich. Trade openness has no clear distributional impact (if anything openness reduces top shares). Government spending, however, is negative for the upper-middle class and positive for the nine lowest deciles but does not seem to affect the rich. Finally, tax progressivity reduces top income shares and when accounting for real dynamic effects the impact can be important over time.

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