

## British Cliometrics Meeting Held last Fall

*[Editor's note: For many years the Social Science Research Council of the United Kingdom, now called the Economic and Social Research Council (ESRC), has supported cliometric work on and in Britain via a series of conferences and workshops. Since the late 1970s this has taken the form of an annual meeting of the "Quantitative Economic History Study Group", limited to 30 to 35 participants. In 1985 the conference was organized by Steve Broadberry and Trevor Boyns of University College, Cardiff. (For information on the 1986 meetings, see our Classified ads.) The following summary of proceedings was prepared by Steve Broadberry.]*

### Introduction

The Conference was held at University College, Cardiff, on September 6-7, 1985, with 31 participants. The papers were grouped around four themes, which provided the basis of four sessions on Interwar Britain, 19th Century Economic Development, the Climacteric and Demographic History.

### Interwar Britain

The Conference opened with a paper by Sue Bowden on "Regional Household Income and the Market for Consumer Durables in the 1930's: Some Further Explorations." The paper fell into two parts, describing the derivation of estimates of average household income on a regional basis, and the use of these estimates to examine the link between income and consumer durables during the 1930's. Variations in average household income were shown to help explain the regional dispersion of household electric cooker ownership.

The discussion centred around both aspects of the paper. Dealing first with the regional income estimates, Nick Crafts was worried by the apparently slow growth of income between 1932 and 1937, and pointed out some marked differences between towns within regions, as well as between regions. In the construction of the estimates, Bill Kennedy was worried about the assumptions about female participation and unemployment, while Nick VonTunzelman suggested the use of Census of Production data on employment. Turning to modelling the relationship between income and electric cooker ownership, Peter Andrews suggested the use of a logit specification, since the dependent variable (the proportion of households with an electric cooker) was constrained to lie between 0 and 1. Paddy Geary suggested the inclusion of a lagged dependent variable in an attempt to capture a crude permanent income specification, while Rolf Dumke stressed the need to consider both spatial and temporal aspects of the diffusion of consumer durables.

Kent Matthews closed the first session with a paper entitled "Could Lloyd

George Have Done It? The Pledge Re-examined." A New Classical econometric model of Interwar Britain was estimated, based on the assumptions of rational expectations and market clearing. Simulation results were then reported for bond financed and money financed deficits of the order of magnitude suggested by Lloyd George in 1929. Matthews suggests that although a bond financed deficit would have had little impact, a money financed deficit would have permanently reduced unemployment by about one million. However, whereas in Keynesian models, such a boost to employment comes about through a boost to aggregate demand, Matthews' model relies on a boost to aggregate supply. The money financed deficit increases unanticipated inflation, which reduces the real wage so long as unemployment benefits are not index linked. This fall in the real wage boosts employment.

In the discussion, Nick Crafts was worried by the high natural rate of unemployment in Matthews' model, since the key determinants stressed by Matthews, such as union power and unemployment benefits, were not unusually high during this period compared with the 1970's, when unemployment was much lower. Steve Broadberry was worried by the effects of the simulations on aggregate demand with a rise in unanticipated inflation leading to a rise in consumption, and a rise in wealth leading to a fall in money demand. James Foreman-Peck, Nick VonTunzelman and Dudley Baines were all sceptical about the supply side effects in the simulations, which relied on the falling real wage to affect competitiveness and thus to boost

exports. It was suggested that such a boost to exports was not feasible during the Great Depression with the growth of protection and bilateral agreements.

#### 19th Century Economic Development

Nick Crafts gave a paper on "British Economic Growth 1700-1850: Some Difficulties of Interpretation," in which he looked at some of the issues raised by new quantitative work on the Industrial Revolution. In particular, unresolved differences between the recent books of Crafts and Williamson were aired. These included the reasons for slow growth prior to 1820, the pattern of sectoral productivity growth, the role of the terms of trade, and the state of the standard of living debate. On the first point, Crafts accuses Williamson of exaggerating the role of crowding out during the Revolutionary and Napoleonic Wars, while on the second point he argues that Williamson's conclusions on unbalanced growth between agriculture and industry are better regarded as assumptions than conclusions. Thirdly, Crafts argues that Williamson's assumption that Britain was a small country and could take the terms of trade as given, is unwarranted at this time. Fourthly, Crafts argues that Williamson has been too optimistic in his assertions over the improvement in working class living standards; in particular, attempts to quantify the importance of changing quality of life have so far ignored leisure.

During the discussion, James Foreman-Peck felt that under-counting of non-market output during the 18th century might be leading to an over-statement of growth later on. Kent Matthews supported Crafts' scepticism on the importance of crowding out by pointing out that Britain was a net importer of capital at this time. Rolf Dumke agreed with Crafts on the importance of the terms of trade, arguing further that growth elsewhere was important to prevent a deterioration in the terms of trade as Britain increased her output of manufacturers. Ian Gazeley was worried by Williamson's use of an additive utility function when making allowances for the quality of life.

The second paper on the nineteenth century, by Peter Wardley, looked at "Modelling Aspects of British Extractive Industries." This paper began by pointing out an error in the implementation of a FIML estimation procedure in a paper by Hirsch and Hausman on the coal industry. The estimation period was not shortened to allow the generation of lagged values, which were therefore set to zero by the computer programme. Correcting for this error substantially alters the

#### THE CLIOMETRICS SOCIETY

% Department of Economics  
Miami University  
Oxford, Ohio 45056 USA

#### ELECTED TRUSTEES

Elizabeth Hoffman  
Donald N. McCloskey  
Joel Mokyr  
Richard Sutch  
G. N. Von Tunzelman

#### EX OFFICIO TRUSTEES

Larry Neal, Editor *Explorations in Economic History*  
Samuel H. Williamson, Secretary/Treasurer  
*Cliometric Society*

Copyright © 1986 by the Cliometrics Society, Inc.

results. The second part of the paper replicates the Hirsch and Hausman study for the Cleveland ironstone mining industry. Particular interest is focussed on the possibility of a backward sloping labour supply function, which Wardley confirms. Wardley then goes on to model the diffusion of power drilling and ratchet drilling technology, concluding that there was no evidence of entrepreneurial failure here.

The discussion centred mainly around Wardley's controversial finding of a backward sloping labour supply curve in the Cleveland ironstone industry. Trevor Boyns suggested that the data seemed to fall naturally into two parts, with productivity rising before 1890 and falling thereafter, so that it would be useful to test for stability; in a paper presented at an earlier ESRC QEH Study Group Conference he had found that the Hirsch and Hausman conclusions were substantially altered by such a change of sample period. Boyns was also worried by the absence of a variable for days worked, which was an important determinant of productivity in the coal industry at this time. Ian Gazeley felt that the cost of living index used by Wardley to deflate wages was very poor, being based on interpretation between a limited number of observations. Steve Broadberry felt that the dynamics were poorly specified. In particular, a negative relationship between productivity and the real wage is not possible in the long run in an economy with some degree of substitutability and competition, although a short run negative relationship is quite possible. Turning to the issue of diffusion and entrepreneurship, Nick VonTunzelman suggested experimentation with other models of diffusion besides the logistic curve.

The second session was brought to a close by Rolf Dumke, looking at "Urban Inequality in Wilhelmine Germany." Using data on 45 Prussian cities in 1901, Dumke finds evidence to support the Kuznets inverse-U path of income inequality over time, in line with recent work in the U.S. Further, Dumke finds that changes in capital's share of income were an important factor in explaining household income inequality, thus suggesting that the human capital model of personal income inequality may be inadequate for explanations of historical urban inequality.

In the discussion, Steve Broadberry suggested that the regression with the top 5% of households' share of total income as the dependent variable should be estimated in logit form, since this variable can only vary between 0 and 1. Jim Oeppen suggested that the wide range of measures used to represent inequality might be usefully combined using multidimensional

scaling, as an alternative to regressing each measure on the explanatory variables in turn. Nick VonTunzelman was worried by the possibility of widespread simultaneity between the variables; for example, higher income can buy a better education.

### The Climacteric

The third session produced two papers on the same topic, the climacteric in 19th century Britain. Solomos Solomou, in "The Edwardian Climacteric: Fact or Artefact?," argues that the climacteric is a statistical artefact. The output measure of national income shows a relatively smooth growth path from the middle of the nineteenth century to the outbreak of World War I, while the income and expenditure estimates fluctuate, but in different ways. Putting the three series together to create Feinstein's compromise estimate of GDP produces a series which exhibits a slowing down of growth after 1899. Solomou interprets the growth variation in the income and expenditure series as evidence of a Kuznets swing pattern, but with disagreement between the series on the phasing, and the climacteric as a statistical artefact obtained by averaging the series.

David Greasley, in "British Economic Growth: The Paradox of the 1880's and the Timing of the Climacteric," concentrates on the income estimate of GDP in an attempt to improve on Feinstein's estimate. When Greasley's new income series is combined with the Feinstein expenditure and output series to produce a revised compromise estimate, Greasley finds no evidence of a climacteric, but his results do support the idea of a Great Depression during 1873-89.

Since the two papers were so closely related, they were discussed together. Rolf Dumke questioned the use of fixed weights in some of the Feinstein series. With different growth rates in different sectors, the assumption of constant weights could lead to misleading aggregate results. Nick Crafts also questioned the assumptions on which the Feinstein calculation of service sector output were based. James Foreman-Peck was worried by changes in classification over time, which may bias the Feinstein series. Dealing specifically with the Greasley corrections to the income series, Bill Kennedy questioned the use of Metropolitan Police pay in the calculation of service sector income, suggesting that this gave an upward bias to the series. Steve Broadberry noted the importance of the terms of trade in generating differences between the output based and income or expenditure based estimates. This suggested that simply averaging the three measures may not be appropriate.

### Demographic History

The final session began with a paper by Jim Oeppen entitled "How Optimal are Wrigley and Schofield's Population Estimates for Early-Modern England?" In the light of recent advances in demographic theory and solution methods, Wrigley and Schofield's "back projection" can be shown to be equivalent to Lee's "inverse projection" if the latter is opened to net migration. Oeppen reformulates the Wrigley-Schofield method in the light of this "new synthesis" using optimal control methods. This approach is tentatively called "generalized inverse projection." The method is tested on Swedish and Norwegian data where the population is known. Finally, some revised Wrigley and Schofield estimates are produced for England.

In the discussion, Nick Crafts asked whether the new estimates were superior to the old Wrigley and Schofield estimates. Oeppen preferred to see his work as exploring possibilities rather than providing definitive new estimates. He was careful to stress that the Wrigley and Schofield numbers should be treated as estimates and not as data. Oeppen was particularly interested in suggestions for links between demographic and economic information. Dudley Baines was worried about the discrepancy between the amount of effort put into obtaining population estimates and the rather patchy use of doubtful economic series for pre-industrial England. Bill Kennedy suggested further investigation of the link between grain prices and marriage and fertility.

The final paper of the conference was presented by Paddy Geary. This was based on joint work with Cormac O Grada on "Immigration to the United States in the Nineteenth and Twentieth Centuries: Time Series and Structural Approaches." The first part of the paper looked at a structural approach to modelling migration, building upon the general equilibrium approach of Williamson. In particular, the relationship between migration and wage differentials was stressed. The second part of the paper looked at the relation between immigration and the real wage in the host country, using time series analysis. Granger-causality tests indicate that immigration lowered the real wage in the host country, but there was no causation running from the real wage to immigration.

Dudley Baines began the discussion with a dose of scepticism about the data and the value of aggregate studies of migration. He felt that the gross migration data, based on ship passengers without cabins, were unreliable, that net migration

rates could not be ascertained since return migration was not measured, and that migration was between a region of one country to a region of another country so that aggregate national data were misleading. John Latham was also worried by the possibility of overland immigration to the United States from Mexico and the possibility of unrecorded Chinese immigration. Turning to aspects of the modelling of migration, Steve Broadberry felt that the two studies could have been brought together to provide a dynamic structural model, since the time series analysis demonstrated the importance of lags in the migration process. Bob Millward was worried by the possibility of immigration of indentured labour, since wage differential would hardly have been a key factor here. Rolf Dumke suggested that the problem of return migration could be alleviated by the use of dummy variables, since different national groups moved predominantly at different times, and had different rates of return to their home countries.

### Cliometrics Competition #1 Has a Winner

After lengthy deliberations, the judges have decided that Peter Lindert is the winner of the contest to name the period circa 1890 to 1914. His entry was as follows:

"What to call the era 1890 - 1914, you ask? I agree it's a tough problem, worthy of cliometric attention.

The best simple and relevant label is *The Age of Guano*. It was after the loss of the southern nitrate regions in the War of the Pacific that Peru turned to developing her guano deposits into what became the key to agricultural productivity growth for the 1890-1914 era, before World War I brought reliance on synthetics. The age of guano was the last one in which mankind drew nourishment from nature herself. From then on all was ersatz.

There are other possibilities, of course, depending on how closely you want to adhere to the era 1890-1914:

- the bicycle age
- ragtime (c. 1895-1914)
- early Freud
- post-impressionism (1880's on, fading)
- the age of Puccini (1893-1910; Turandot later)
- the Second International (1889-1918)
- the age of Alec Ford (1880-1914)

You choose."

If you forgot to send your entry (as everyone else did), fear not; there will be another competition just as soon as one of you suggests one.

### Society Business

The Cliometrics Society can now add Inc. to its name. We have recently completed the paper work for incorporation with not-for-profit status.

The trustees will have their first meeting next month. The agenda will include the planning of future meetings, the direction of the Newsletter, and the question of raising funds for a Society endowment. All of us would welcome your suggestions.

Eighty-eight of you have taken advantage of the reduced subscription rate to *Explorations in Economic History* that we negotiated with Academic Press. We have encountered a minimum number of difficulties with them; however, if you are not receiving your issues or have other problems, please contact our office.

### Coming In The Next Newsletter...

Reports on two meetings coming up next month: the 26th Cliometrics Conference and the U.C. Conference on "Searching for Security: Old Age and Poverty in the Nineteenth Century."

A feature article by William Parker entitled "Economic History Since 1929; In Search of a Framework."

And more...

### Abstracts from the All-UC Conference in Economic History at Asilomar, November 15-18, 1985

The Effectiveness of Government Policies to Alleviate Agricultural Distress, 1925-1939

Lee J. Alston  
Williams College & University of California-Davis  
and  
Randy Rucker  
North Carolina State University

Farm failure rates in the U.S. reached historic heights in the inter-war years. We estimate the dynamic relationship between farm earnings and farm failures and assess the effectiveness of government intervention - state farm foreclosure moratoria, an expanded federal role in farm mortgage lending and benefits from the Agricultural Adjustment Act and its successor. Our empirical results indicate that the influence of past earnings on farm failures is important and complex. Our counterfactual estimates of a world with government programs suggest that government intervention may have saved one million farms from failure.

The Political Economy of Crude Oil Cartelization by the Texas Railroad Commission, 1933-1972

Gary D. Libecap  
University of Arizona

The paper analyzes the behavior of the Texas Railroad Commission and its efforts with other regulatory agencies in Kansas, Louisiana, Oklahoma, Illinois and California to control crude oil production to fix prices from 1933 to 1972. To analyze the Railroad Commission a political model is developed in lieu of a dominant firm model. The political model emphasizes the desire of the popularly-elected Railroad Commissioners to secure reelection and their need to balance the political costs from restricting the production of low-cost wells with the political gains from sustaining high-cost wells through higher crude oil prices. Testable implications are drawn from the model to examine the output and price policies of the Railroad Commission. Statistical analysis of the output policies of the six states reveals that Texas did not behave systematically as a residual producer as predicted by the dominant firm model, though aspects of dominant firm behavior exist. The analysis also shows remarkable coordination among the states in month-to-month output adjustments for 40 years to maintain total production at targeted price levels despite important interstate differences in production costs and regulatory arrangements. The paper concludes by arguing that explicit consideration of the institutions and history of cartel settings is necessary if an understanding of cartel behavior is to be achieved.

Corporate Chartermongering, 1875-1929

Christopher J. Grandy  
University of California-Berkeley

The rise of the market in corporate charters from 1875 to 1929 provides a special perspective on the relationship between private economic agents and rule-making government bodies. The project attempts to describe and evaluate the mutual effects of the rise of large firms and the development of liberal corporation law by a few States, particularly New Jersey. The first chapter examines the relationship between the State corporation law and the large firm, with emphasis on the merger wave of 1895-1904. Chapter Two focuses on the antitrust themes of the period and the charge that New Jersey's liberal law defeated the antitrust efforts of other States. Chapter Three

provides a description and analysis of the evolving interpretation of the Constitution's commerce clause and the New Jersey corporation law. The business of chartermongering within New Jersey is the subject of Chapter Four. This legal/historical analysis culminates in a fifth chapter in which a formal theoretical model is proposed which captures the important elements of the economic relationship between private agents and public agents with rule-making power. Both types of agents play an active role in the model where private decisions and public institutions (legal constraints) are the outcomes.

**Market, Culture, and Authority: A Comparative Analysis of Management and Organization in the Far East**

Gary G. Hamilton and  
Nicole Woolsey Biggart  
University of California -Davis

Three frameworks purport to explain industrial arrangements and practices: An economic approach that emphasizes market characteristics, an anthropological approach that sees organization as the expression of culture, and a Weberian approach that explains organization as a historically developed structure of domination. The authors test the efficacy of each approach in explaining the organizational structures of the three rapidly growing East Asian economies of Japan, South Korea, and Taiwan. They argue through comparative analysis that organizational growth is best explained by market and culture factors, but that authority patterns and legitimation strategies best explain organizational structure.

**Inflation in Nueva Galicia, 1557-1598: Auctions of Tribute Maize**

Woodrow Borah  
Univ. of California-Berkeley

The records of the royal treasury officials for the Audiencia of Guadalajara offer an unusually rich source for examining the movement of prices of commodities in that region during the second half of the sixteenth century. Since tributes in kind of each Indian town were put up for auction after the harvest each year for purchase by the Spanish residents, there is for each commodity to be delivered by each Indian town an annual, recurring value representing the successful bid for the year. For maize in the years from 1557 to 1598, there were approximately two thousand bids. In the present study the bids have been segregated by

coast and plateau, with a special calculation for the Zacatecas area even though it is also included in the plateau. Regression lines were calculated by least squares for the unit prices of individual transactions and for the average weighted price of the year for the subregions, the latter method giving weight to the amounts involved. Either method reveals a sharp rise in prices paid for tribute maize in the audiencia, perhaps of the order of 2 1/2-fold in the forty-one years studied. The coast and plateau showed similar rises. The Zacatecas area is anomalous in that prices were higher at the outset but then fell rather than rising. The explanation must be the development of supply from Spanish-owned haciendas, which obviated any urgent need for tribute maize in the mining area. In general, the trend in west-central Mexico was similar to that in central Mexico in the same period.

**Livestock Herds, Overgrazing and Range Degradation in Zimbabwe: How and Why do the Herds Keep Growing?**

Lovell S. Jarvis  
Univ. of California-Davis

The paper develops data on livestock herd growth in Zimbabwe from the preindependence period to the present and utilizes these data to examine whether livestock productivity and herd growth have declined due to overgrazing. Changes in herd output and in herd productivity appear closely related to changes in market conditions and in government land and extension policies. Despite dramatic increases in herd size, the aggregate data show little evidence of overgrazing. This may have resulted from large increases during the post-World War II period in government expenditures, particularly on water, range and animal health service development, which have offset the effects of a declining land/animal ratio.

**The Determinants of Southern White Schooling, 1880-1940**

James Gerber  
San Diego State University

This paper discusses several hypotheses about the determinants of white Southern schooling between 1880 and 1940. They are largely drawn from the educational history literature and analyzed from the perspective of economic theory. It is shown that persistent beliefs about the importance of a rural setting are inconsistent, while other factors such as

income are central, and that theory is indeterminate with regard to factors such as the impact of racial discrimination on white schooling. A regression model using state level data is specified to test these hypotheses and others concerning the effects of a greater number of children, immigration, and the plantation system of agriculture. The most significant results are that (1) ruralness by itself played an insignificant role in the movement to public education; (2) discrimination affected whites differentially depending on the level of schooling; and (3) the plantation system of agriculture had a negative influence on the growth of schooling.

#### The Occupational Distribution of the Chinese in California, 1860-1900

Sucheng Chan  
Univ. of California-Santa Cruz

The occupational distribution of the Chinese population in nineteenth-century California showed three distinct regional patterns. In areas where gold was found, not only did the great majority (80 to 90 percent) of the Chinese work as miners, but they persisted in this occupation for several decades after whites had left it. A small number of merchants, artisans, and providers of professional and personal services made money by serving the miners. Relatively few Chinese in the mining regions were laundrymen, servants, cooks, or common laborers, there being an inverse relationship between the percentage of Chinese who mined and the percentage who earned a living in menial tasks.

In agricultural districts in the 1870s and 1880s, approximately a third of the Chinese population worked in agriculture, while another third earned a living in nonagricultural labor. By the turn of the century, with a decline in the total number of Chinese in California, the percentage in agriculture increased to over 40 percent, while nonagricultural laborers fell to about a sixth. During the last three decades of the nineteenth century, the proportion in domestic service fluctuated between a sixth to a fifth of the population. The number of merchants, artisans, and professionals was relatively small.

San Francisco, which has been the metropolis of Chinese America since the beginning of Chinese immigration, supported a large number of merchants, artisans, manufacturers, factory workers, and professionals throughout the second half of the nineteenth century - the proportion rising from 28 percent in 1860 to 45 percent in 1870, 57 percent in 1880, and 49 percent in 1900. There being few farmers, truck gardeners, or farm laborers in the city, the rest of the population

earned a living in common labor and domestic service.

Changes in settlement and occupational patterns of the Chinese followed closely changes in the larger economy. As was true of the white population, as mining waned, Chinese moved into agriculture and manufacturing. At the same time, as anti-Chinese hostility developed and Chinese were driven out of more "desirable" occupations, an increasing number turned to common labor and domestic service for survival. Although Chinese immigrants had been accused of being "cheap labor" from the time they first arrived on the Pacific Coast, the secular trends revealed in the data based on tallies from the manuscript schedules of the census of population show that it was changes in the economy and anti-Chinese discrimination - rather than any cultural tendencies - that drove so many of them to the bottom of the occupational ladder.

## Classifieds

The deadline for submissions to the Classifieds for the September Newsletter is August 15. Note that this is a place to make free announcements, advertisements or want ads. Please tell your recruiting committees to send us announcements of job openings in economic history.

This year's ESRC Quantitative Economic History Study Group is being arranged by Professor Roderick Floud and Dr. Paul Johnson, and will be held 19th-20th, September 1986 at Birkbeck College, University of London, WC1E 7HX. Anyone wishing to attend should contact Professor Floud at the Department of History, Birkbeck College. Numbers are limited to 35, and places are allocated on a first come - first served basis.

The Fifteenth Conference on the Application of Quantitative Methods in Canadian Economic History will take place in the Spring of 1987 at McMaster University in Hamilton. This is a working conference whose objective is to further the use of a wide range of quantitative and theoretical methods in Canadian economic history. Participants present and discuss papers or work-in-progress. Interested scholars, including graduate students, who wish to contribute a paper or report on their research are invited to submit by June 15, 1986, a brief abstract stating clearly the questions addressed and the methods to be employed. To request an invitation to attend, send all abstracts and program suggestions to: Professor Ann Carlos, Dept. of Economics, Huron College, 1349 Western Rd., London, Ontario N6G 1H3, Canada.



The Department of Economic and Social History of the University of Leicester has recently established a Centre for Urban History and staff exchanges are among the broad spectrum of activities envisaged. Should any Cliometricians have material for inclusion in the Conference Reports section of the Urban History Yearbook, such as abstracts of papers with an urban historical focus, please contact Richard G. Rodger at the Dept. of Economic and Social History, University of Leicester, Leicester LE1 7RH, U.K.

The annual International Issue of the Rivista di storia economica, in English, is available as an individual subscription for only \$8 (US), according to Editor Gianni Toniolo. Send a check for that amount payable to the Rivista di storia economica, Dipartimento di Scienze Economiche, Ca' Foscari, Universita di Venezia, 30123 Venezia, Italy and you will receive the 1985 issue.

Contributors are being sought for THE HANDBOOK OF AMERICAN BUSINESS HISTORY. The HANDBOOK will compile brief histories and bibliographies of American business sectors as delineated by the Enterprise Standard Industrial Classification and expanded by the MANUAL OF THE STANDARD INDUSTRIAL CLASSIFICATION. Volume I will begin with Manufacturing. Payment will be a copy of the volume carrying the contribution plus one title from a backlist. Contact David O. Whitten, Editor, The Handbook of American Business History, Dept. of Economics, Auburn Univ., AL.36849-3501.

---

**THE CLIOMETRICS SOCIETY**  
DEPARTMENT OF ECONOMICS  
MIAMI UNIVERSITY  
OXFORD, OH 45056

