

RECENT MATERIALS AND OPPORTUNITIES FOR QUANTITATIVE RESEARCH IN LATIN AMERICAN HISTORY: NINETEENTH AND TWENTIETH CENTURIES*

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IN 1968, I WAS OFFERED THE OPPORTUNITY TO PREPARE A BRIEF SURVEY OF RESOURCES and prospects for quantitative research in Latin American History by the ad hoc Committee on Quantitative Data of the American Historical Association. I was at first charged with treatment of the whole period 1500–1960, but the willingness of John TePaske to undertake a lion's share of the task ended in limiting my responsibility to 'only' the 19th and 20th centuries. The results of that survey, as indeed those of Professor TePaske's work, are available in the collection of papers edited by Val R. Lorwin and Jacob Price, *The Dimensions of the Past*.¹ In the notes which follow I will try to avoid repeating any of the presentation in that work and will instead try to build a bridge between that effort of five years ago and developments in this field of research in the past few years.

A sampling of publications and preliminary papers prepared over the past quinquennium indicates that a good deal of quantitative research has been underway on Latin American historical topics. A list derived from reprints, manuscripts, and books I have received over the past two years includes over eighty separate books and papers which contain quantitative material treating nearly as many topics and problems. Here I will review and analyze some of the new methods used in the preparation of these research reports with a view to determining approaches to research problems which have demonstrated the highest potential for yielding improved understanding of the past two centuries of Latin American history.

The accompanying table presents the topical distribution of 82 studies in the field of Latin American history prepared in recent years. The distribution of studies by topic would seem to indicate some trend toward greater concern with the domestic economy, society, and polity than was characteristic of studies carried out between 1945 and 1967.² This trend was already underway in the late 1960s and has been in-

* This article was originally presented in a session on quantification in Latin American history, held at the Annual Meeting of the American Historical Association at San Francisco in December 1973. Another paper on quantification, dealing mainly with the colonial period, was read by Dr. John J. TePaske, Duke University. Brief comments on the two papers were made by Professors Charles Berry, Wright University, H. Bradley Benedict, Paul E. Hoffman, Louisiana State University (Baton Rouge), and James W. Wilkie, UCLA. The session was chaired by the Editor of LARR. Professor TePaske plans to publish an article on quantification in Latin American history in a subsequent issue of LARR. Ed.

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tensified by the growing number of Latin Americans who are writing about historical subjects from their own internal, rather than an internationalist (some would say hegemonic), perspective. Demographic and urban studies, agriculture, and slavery accounted for half of the 82 studies reviewed. These subjects all require concern with the domestic society and economy rather than with the ties of that society to the international scene.

The growing interest in the internal consistency of the national economy and society is not inconsistent with the impact of foreign research technologies in historical research. These technologies, the main subject of this paper, have been adapted to the local scene by national scholars and young foreigners who believe that studies of the internal workings of each society are the necessary next step in improving work in the field of Latin American history. New quantitative technologies promise to bring the study of Latin American history somewhat nearer the quality levels that have been attained over the past two decades by historical studies in other geographical regions 'marginal' to the North Atlantic area, e.g. Russian, Japanese, and Indian history.

Among the more interesting of these technologies is that of the reconstitution of families, which has revolutionized historical demography in France and Britain. Maria Luiza Marcilio in Brazil³ and McCaa and Salinas Meza in Chile⁴ are working to adapt this technology to studies in São Paulo and Concepción, and CELADE (the Latin American Demographic Center) in Santiago is now hoping to promote further work in other parts of Latin America.⁵ At a meeting in Santiago in July 1973, CELADE took steps to secure continuing support for this field of research with special attention to the preservation of extant archival materials such as parish and notary records, and such other local bodies of data that will contribute to the reconstitution of families. Research in this area will be particularly important for any effort to understand the history of decision-making within individual families, particularly such decisions as fertility and family size, ethnic differences, and the impact at the family level of major events in the past.

*Topical Distribution of Recent Studies Employing
Quantitative Methods in the Study of Latin
American History*

Topic	Number	Percent
Bibliographic & General Works	14	17
Demographic & Urban Studies	22	27
Industrial Development	10	12
Export Economies, esp. Mining	9	11
Agriculture & Slavery	17	21
Politics	7	9
Transportation	3	4
Total	82	101%

Source: Materials received.

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Successful adoption of the method of family reconstitution will be important for an understanding of the colonial period in Latin American history but will be of even greater utility in explicating nineteenth and twentieth century demographic trends. For it is in the period since 1850 that one looks for some signs of a demographic transition from high birth and death rates to the lower rates characteristic of the North Atlantic community. A group of Berkeley demographers, quite separate from *l'école Berkeley*⁶ which is well-known to the history fraternity, has prepared a series of fundamental monographs based on the modern censuses of Latin America, i.e., those taken since about 1850. An important recent contribution by this group is the new set of estimates of mortality based on the application of standard life tables to corrected population census data.⁷ These investigations use new techniques made possible by advances in the theory of stable populations, some of which were made by the Colombian demographer-economist, Alvaro López Toro.⁸ The Berkeley demographers suggest that the pattern of a demographic transition in Latin America will be quite different from that which occurred in Europe or North America. The decline in death rates since 1930 has been more rapid than it was in the North Atlantic area; further, it has been induced by the application of externally developed public health measures rather than by higher standards of living in general. Since a critical problem in attempting to anticipate the future course of economic and social change in Latin America is the timing of future steps in the demographic transition, research in this field is of fundamental importance. Studies of family reconstitution on a parish level should usefully complement the work done on the aggregate level with national censuses. Studies of ethnic subcultures could equally well be integrated into the study of secular demographic trends.⁹

Another new technology, or more exactly, a formalized traditional historical method, is that of the counterfactual conditional applied to the analysis of past events. This technique has been used in the study of slavery, the role of the railroads, and certain government policies in the United States. So far in Latin America it has been applied to similar subjects though not necessarily with the same consciousness of method or the same impressive results.¹⁰ In an innovational project sponsored by the Foreign Area Fellowship Program in the summer of 1972, an historian and a political scientist jointly directed a study of dependence and development in Latin America, with the special feature of applying quantitative methods to the study of historical dimensions of the dependence problem. Professor Coatsworth, the historian of the project, is especially well versed in the adoption of the counterfactual conditional to problems of historical research. The study group and senior scholars who participated in the project continue to maintain contact; they will probably have an impact on publications in this field over the next several years.¹¹

Not surprisingly, some of the most useful and positive innovations in recent publications have involved the application of fairly simple descriptive statistics and nonparametric tests of significance to bodies of data not easily assimilated without these techniques. The calculation of a real wage index for Colombia from the late

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nineteenth to the early twentieth century involved no sophisticated statistical maneuvering, but the resulting series is an important building block in understanding the social and economic history of the country.¹² Wilkie's use of Mexican census data, though his work was published before the period covered by this paper, continues to elicit attention and some criticism; however, it should be recognized that he attempted no complicated statistical trickery but rather constructed a simple unweighted index of five variables, gave the new series a catchy title (the poverty index), and at the same time advanced the discipline, in my view, by leading many scholars to look at familiar evidence in a new light.¹³ Equally important to the intellectual development of the field has been the critical review of the Wilkie data undertaken by Skidmore and Smith and by Barkin. These critical evaluations and commentaries have not been directed at negative criticism alone but have in effect developed new data out of the correlation coefficients and other descriptive statistics that the authors have calculated on the basis of Wilkie's work. It is this very process of scholarly interaction which marks a significant and positive change in the field of Latin American history, a change that would only be possible with the application of quantitative methods.

New estimating techniques have been applied in an efficacious manner in two distinct activities—the estimation of mining output in colonial Latin America¹⁴ and migratory movements and their relationship to wages and economic activities in Bogotá.¹⁵ In the first case Brading and Cross make use of the apparently close correlation between mercury input and silver output in silver processing to arrive at fresh—and significantly higher—estimates of silver production in much of the colonial period, thus leading to a revision of the conventional wisdom about colonial economic history. In the second, Udall brings together disparate data to attempt to judge whether migratory movements into Bogotá responded more to such phenomena as rural violence (a 'push' factor) or to work opportunities (a 'pull' factor) defined by fluctuations in production in the modern manufacturing sector. One may quibble with the specific results of both investigations, but these authors have played a substantial role in changing the nature of historical debate from fuzzy "on the other hands" to specific analysis of the implications of various pieces of the quantitative puzzles they have fitted together.

A 'natural' relationship has grown up between quantitative research techniques and studies of urban history, perhaps because of the importance of numbers, density, and propinquity in the very definition of urbanity. Nonetheless, many studies in this field have not moved far beyond the stage of 'bean-counting.'¹⁶ Some analytical works have treated the structure and function of cities,¹⁷ and a number of works link past urban growth to the city's hinterland, the international economy, and the process of regional development.¹⁸ On the whole, however, there seems to exist a gap between the tantalizing hypotheses of dependence, marginality, and urban alienation on the one hand, and, on the other, the dreary manipulation of population statistics. Too little effort has been made to draw out the relationships between population change and other variables. Improvements in ocean transport brought European goods at

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cheaper prices to Latin American ports and thus competed with handicrafts and nascent industry; better land transport brought the hinterland economically and socially closer to the city and hence altered fundamental political and social relationships in both spheres. Immigrant entrepreneurship as a promoter of urban development has received little attention (the work of Dean cited above being a happy exception), and the growing role of the centralizing state in contributing to what a colleague calls hyperencephalization could profit from international comparative analysis to complement studies of single metropli. Studies in the field of urban and regional development seem particularly in need of effective theoretical guidance through the maze of data available. In that regard, workers in the vineyard are fortunate to have Jorge Enrique Hardoy, Richard M. Morse, and Richard Schaedel working individually and jointly through their biennial efforts conducted through the International Congress of Americanists to bring together theoreticians and data analysts to discuss the state of the art in the field of quantitative historical research. These scholars contemplate concentrating their efforts in 1974 on nineteenth-century urban history of Latin America, thus complementing earlier work on pre-Columbian and colonial epochs.

Political scientists, as well as historians, have been among the most sophisticated users of simple statistical relations to reveal political behavior through electoral participation rates, voting behavior, and elite turnover.¹⁹ Since experts in this field have never been sanguine about the directness of parallels between North Atlantic political institutions and those which appear to be the same in Latin America but often are not, the political historians have had to use special skill to adapt the techniques of behavioral political science to the Latin American context. To a large degree the techniques used are not those of political science at all but rather adaptations of social statistics. Smith's analysis of the social bases of Peronism owes less to political science as a discipline than it does to methods of multivariate analysis developed by statisticians and applied to a wide variety of social phenomena. Sinkin draws on the technique of factor analysis used by psychologists and others for the pooling of large masses of data to establish sets of related variables of a smaller, more manageable number. Such techniques do more than permit the analysis of existing masses of information that are unassimilable; they create new data which are built in terms of the intellectual constructs which the scholar has brought to the analysis. As such, these new materials are potentially useful to other scholars—their utility governed by the quality and applicability of the intellectual constructs which created them. Quantitative political studies appear at this juncture to offer considerable potential for further development.

A variety of techniques extracted from the economist's kit bag have been used for the study of Latin America's economic history. At first glance these might appear to be essentially statistical tools applied to economic problems; however, when the use of statistical tools (multivariate analysis, two-stage least squares estimation techniques to deal with problems of multicollinearity) is guided by a priori hypotheses developed from economic theory, then one may fairly differentiate those techniques

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from ones which seem similar when applied, for example, by a political scientist. Examples can be found in publications concerning the larger countries—Argentina,²⁰ Brazil,²¹ and Mexico.²² The work of Professor Díaz Alejandro on Argentine economic history is leading to significant changes in the received wisdom about the evolution of the economy, as noted in a recent book by Platt.²³ Other significant work is in progress at the Instituto Torcuato Di Tella in Buenos Aires, particularly in the development of historical statistics on the Argentine economy.²⁴ Brazilian studies by economists are particularly directed at an understanding of the complex interrelationships between the rise of the central state as an important economic institution with tax, fiscal, and commercial policies; the special role of the export sector, principally coffee; and the rise of industrialization and import substitution. Mexican studies of the economy in the twentieth century continue a concern with the economic consequences of the Mexican Revolution and the re-estimation of national product and hence of the timing and pace of economic growth and structural change in the manufacturing, agricultural, and other aspects of the economy. An interesting effort to apply the perspectives of the new economic history is Clark Reynold's estimate of the costs of the Mexican Revolution contained in his larger work on Mexican economic development.²⁵ The best of the studies being conducted by a generation of young economists demonstrate a consciousness of the complexity of the development process and an awareness that technical economics can be brought to bear in understanding that process only if the more traditional and less technical approaches of the historian are used to complement and deepen the perceptions of the past emanating from these technical analyses.

Finally, one must mention certain studies recently completed by historians which develop fresh quantitative data. Carmagnani's study of Chilean industrial development²⁶ comes immediately to mind, as do Florescano's study of corn prices,²⁷ Bauer's studies of Chilean agriculture,²⁸ and innovative work in the analysis of sugar, slavery, and society.²⁹ These studies are marked not so much by the use of a strikingly new technique as by the development of new data, particularly time series, by linking together unpublished archival materials. Perhaps the essence of the method is plain hard work guided by the intention to gather all pertinent quantitative materials. The French *histoire des prix* is an important forebear of this work, particularly since an inductive approach appears to be the organizing principle which would contrast this work with that of the economists at work on economic history who are guided by deductive models drawn from economic theory.

A distinctive contribution to the analysis of slavery was offered at another session of the 1973 AHA meeting by Mr. Arnold Kessler. He combines his inductive survey of archival materials in Bahia and Rio de Janeiro with a number of 'received' hypotheses about manumission practices in nineteenth century Brazil. The result is a refutation of some of these hypotheses; more importantly, his statistical analysis of the causes of manumission amplifies our understanding of the structure of slave society, particularly the social roles of immigrant slaves. Perhaps Kessler's work points the way toward which all these studies are leading—away from disciplinary splinter-

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ing and the isolated monograph toward a structural interdependence of all scholars' research products.

Certainly that is the necessary path of quantitative research on Latin American history. The costs of research are too great to be borne by individual scholars. The data output will have to be shared and used by more than one or even a few investigators if their costs of production are to be justified. Perhaps in this field of historical research more than most, a good neighbor policy is essential to further progress.

SOURCES

1. Yale Univ. Press, New Haven, 1972.
2. Cf. McGreevey, "Recent Research on the Economic History of Latin America," *LARR*, 3: 2:107 (1968).
3. Maria Luiza Marcilio. *La Ville de São Paulo: Peuplement et Population, 1750-1850* (l'Université de Rouen, 1972), and "Tendances et Structures des Menages dans la Capitainerie de São Paulo. . ." *L'Histoire Quantitative du Bresil de 1800 a 1930* (Colloques Internationaux de Centre National de la Recherche Scientifique, No. 543, 11-15 Oct. 1971), pp. 157-165.
4. Rene Salinas Meza and Robert McCaa, "La documentación histórico-demográfica del 'Norte Chico'" (unpub. ms. presented at CELADE Working Group Meeting on Demographic History, Santiago, Chile, 23-27 July 1973).
5. CELADE (Centro Latinoamericano de Demografía) sponsored a year-long review of the potential for work in Latin American demography which ended in a working group meeting in July 1973. Among the many documents prepared for that meeting were "Documentos útiles para la demografía histórica en América Latina: Resumen de Informes," and Julio Morales Vergara, ed., "Bibliografía de demografía histórica," *CELADE Series B*, No. 35, July 1971.
6. A recent product of the group is the collection of papers by Sherburne F. Cook and Woodrow Borah, *Essays in Population History: Mexico and the Caribbean*, I (Univ. of California Press, Berkeley and Los Angeles, 1971), which includes a methodological essay on their past work in Mexico, new estimates of the pre-Columbia population of Hispaniola, and a critical review of population studies of highland Colombia.
7. See Eduardo Arriaga and Kingsley Davis, "The Pattern of Mortality Change in Latin America," *Demography*, 6:3:223-242 (1969), which summarizes and draws certain conclusions from the important monographs prepared by Arriaga. Earlier work by Collver on birth rates also made use of sophisticated techniques for estimating vital rates from imperfect census data.
8. See his *Problems in Stable Population Theory* (Princeton Univ. Press, Princeton 1958), which contains a proof of the theorem of weak heteroscedasticity, an important theoretical advance, according to Ansley Coale.
9. Examples of such studies include the following: Herbert S. Klein, "The Colored Freedmen in Brazilian Slave Society," *Journal of Social History*, 3:1:30-52 (Fall, 1969); "The Trade in African Slaves to Rio de Janeiro, 1795-1811: Estimates of Mortality and Patterns of Voyages," *Journal of African History*, 10:4:533-549 (1969); and "The Internal Slave Trade in Nineteenth-Century Brazil: A Study of Slave Importations in Rio de Janeiro in 1852," *HAHR*, 51:4:567-585 (1971); Peter Eisenberg, "Abolishing Slavery: The Process on Pernambuco's Sugar Plantations," *HAHR*, 52:4:580-597 (Nov. 1972). A number of works on slavery combine a concern with slavery per se and the demography of slave societies. In part these concerns have come together because of the often exaggerated and poorly supported claims that have been made in the past about the institution.

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10. See, for example, some of the unpublished papers of Professor John Coatsworth, who has done excellent work on the Mexican railways during the Porfiriato, including his "Nineteenth Century Transport Innovation in Latin America: The Case of Mexico," presented at the 1972 meeting of the AHA; and the doctoral dissertation of Professor David Denslow of the University of Florida, (which I have seen only in early drafts), and which treats sugar production and railway innovations in the Brazilian Northeast and Cuba. Two excellent papers by Professor Shane Hunt of Princeton University, "Price and Quantum Estimates of Peruvian Exports, 1830–1962," and "Growth and Guano in Nineteenth Century Peru," have been circulated by the author and draw in some respects on methodological advances made by the 'new economic history.' An effort along these lines by Clark Reynolds is mentioned below.
11. The need for an organized approach to the application of this and other quantitative techniques is indicated by the paucity of response among Latin Americanists in the "Summary of Responses: AHA Quantitative Data Committee Questionnaire," the results of which were presented by QDC Chairman Allan Bogue at the December 1972 meeting of the committee. Only five Latin Americanists had responded to the questionnaire: These included John TePaske, R. M. Levine, J. S. Tulchin, Jaime E. Rodríguez-O., and W. J. Fleming. Obviously, there are other historians of Latin America conducting quantitative research; some organizational effort is in order to bring them to each other's attention, especially given the advantages of division of labor and economies of scale in this kind of research effort.
12. See Miguel Urrutia and Mario Arrubla, eds., *Compendio de estadísticas históricas de Colombia*, Dirección de Divulgación Cultural, Universidad Nacional de Colombia, pp. 31–105 (Bogotá, 1970).
13. A new edition of Wilkie's now classic work has been published by the Univ. of California Press.
14. D. A. Brading and Harry E. Cross, "Colonial Silver Mining: Mexico and Peru," *HAHR*, 52:4:545–579 (Nov. 1972). Brading's earlier work, *Miners and Merchants in Bourbon Mexico, 1763–1810*, (N.Y., Cambridge Univ. Press, 1971), also makes able use of simple descriptive statistics.
15. Alan T. Udall, "Migration and Employment in Bogotá, Colombia" (unpub. Ph.D. diss., Yale Univ., 1973), creates a new series of annual gross and net migration rates into the city, 1946–64, and reviews related evidence from the 1920s onward.
16. Summaries of urban historical data appear in Richard E. Boyer and Keith A. Davies, "Urbanization in 19th Century Latin America: Statistics and Sources," *Supplement to the Statistical Abstract of Latin America* (Latin American Center, Univ. of California, Los Angeles, July 1973), and Richard Morse, et al., *The Urban Development of Latin America, 1750–1920* (Center for Latin American Studies, Stanford Univ., Stanford, 1971). For the period since 1950, International Population and Urban Research (IPUR), Univ. of California, Berkeley, has published estimates of the size of all the world's metropolitan areas and has issued a number of analyses by Professor Kingsley Davis and other members of the IPUR staff.
17. Jeffrey R. Gibson, "A Demographic Analysis of Urbanization: Evolution of a System of Cities in Honduras, El Salvador and Costa Rica," *Latin American Studies Program Dissertation Series*, No. 20, (Sept. 1970); David R. Radell, "Historical Geography of Western Nicaragua: The Spheres of Influence of León, Granada, and Managua, 1519–1965" (unpub. Ph.D. diss., Univ. of California, Berkeley, 1969); Paul Singer, *Desenvolvimento econômico e evolução urbana: Análise da evolução econômica de São Paulo, Blumenau, Porto Alegre, Belo Horizonte e Recife* (Companhia Editora de São Paulo, Universidade de São Paulo, 1968); and Luis Unikel, *La dinámica del crecimiento de la Ciudad de México* (Fundación para Estudios de la Población, México, D. F., 1972).

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18. Professor Chi-Yi Chen summarizes a wealth of data on Venezuelan urban and regional development in "Distribución espacial de la población venezolana: diagnóstico y perspectiva," (unpub. ms. of a paper presented at the First Latin American Meeting on Policies of Migration, Urbanization and Population Distribution, Sochagota, Colombia, Sept. 1973), and to be published by the Centro Regional de Población, Bogotá. Studies of urban industrial development by François Chevalier, "Les origines d'un Pôle de Développement Industriel: pour une étude globale du cas de Medellín, Colombie," *Melanges de la Casa de Velazquez*, 9:633-651 (1973), and Warren Dean, *The Industrialization of São Paulo, 1880-1945* (Univ. of Texas Press, Austin, Texas, 1969), examine the relationship between manufacturing growth and such factors as entrepreneurship, transportation, and expansion of coffee exports for a global view of the urbanization process. Alejandra Moreno Toscano's unpublished paper, "Cambios en los patrones de urbanización en México, 1810-1910," *Center Discussion Paper No. 28*, Univ. of Wisconsin-Milwaukee, Center for Latin American Studies, Dec. 1971), develops the relationship between the growth of the economy of the western United States and the gradual reorientation of regional development in Mexico. A more formalistic treatment is offered by Luis Unikel and Gustavo Garza, "Análisis demográfico de la urbanización en México: 1900-1970," *Revista de Economía Política*, 9: 2:5-45 (1972), who analyze urban population change by city size classes. The extent of the literature on this subject is indicated by the 600 item bibliography prepared by Luis Unikel, "Bibliografía sobre desarrollo urbano y regional en México," *Demografía y Economía*, 6: 3:377-408 (1972), which unfortunately is not annotated.
19. I am far from familiar with this literature; however, the following citations have come to my attention: David Bushnell, "Voter Participation in the Colombian Election of 1856," *HAHR*, 51:2:237-249 (May 1971); Joseph L. Love, "Political Participation in Brazil, 1881-1969," *Luso-Brazilian Review*, 7:2:3-24 (Dec. 1970); "External Financing and Domestic Politics: The Case of São Paulo, Brazil, 1889-1937," In: Robert E. Scott, ed., *Latin American Modernization Problems: Case Studies in the Crises of Change* (Univ. of Illinois Press, Urbana, 1973), pp. 236-259, and *Rio Grande do Sul and Brazilian Regionalism, 1882-1930* (Stanford Univ. Press, Stanford 1971); Steven W. Sinding, "The Evolution of Chilean Voting Patterns: A Re-examination of Some Old Assumptions," *The Journal of Politics*, 34:774-796 (1972); Richard N. Sinkin, "The Mexican Constitutional Congress, 1856-1857: A Statistical Analysis," *HAHR*, 53:1:1-26 (Feb. 1973); Peter H. Smith, "Continuity and Turnover within the Mexican Political Elite, 1900-1971" (unpub. ms. of paper presented at the IV International Congress of Mexican Studies, Santa Monica, Cal., 1973), and "The Social Bases of Peronism," *HAHR*, 52:1:55-73 (Feb. 1972).
20. Carlos F. Díaz Alejandro, *Essays on the Economic History of the Argentine Republic* (Yale Univ. Press, New Haven, 1970).
21. Albert Fishlow, "Origins and Consequences of Import Substitution in Brazil," *Economic Theory and Mathematical Economics Series* (Academic Press, N.Y. and London, 1972), pp. 311-365, and "The Rise of Brazilian Industrialization Before the Second World War" (unpubl. ms., 1970), two works which apply the author's previous experience in development economics and U.S. economic history to the analysis of the Brazilian historical experience. Carlos Manuel Pelaez, "As Consequencias Econômicas da Ortodoxia Monetária, Cambial e Fiscal no Brasil entre 1889-1945," *Revista Brasileira de Economia*, 25:3:5-82 (July-Sept. 1971), brings to bear monetary and trade theory in the analysis of state policy. Some parallel work by Professor Nathaniel Leff, "Long-term Brazilian Economic Development," *The Journal of Economic History*, 29:3:473-493 (1969), may also be mentioned. Douglas Graham has analyzed immigration and labor supply in "Internal and Foreign Migration and the Question of Labor Supply in the Early Economic Growth of Brazil" (unpub. ms. of paper presented at LASA Meeting, Madison, Wis., May 1973). Annibal Villanova Villela and Wilson Suzigan, *Política do Governo e Crescimento da Economia Brasileira, 1889-*

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- 1945 (IPEA/INPES, Rio de Janeiro, 1973), present a wealth of detail on the government sector.
22. Leopoldo Solís, *La realidad económica mexicana: retrovisión y perspectivas* (Siglo Veintiuno Editores, México, 1970), presents revised national income estimates reaching back to 1895; Donald B. Keesing, "Structural Change Early in Development: Mexico's Changing Industrial and Occupational Structure from 1895 to 1950," *The Journal of Economic History*, 29:4:716-738 (Dec. 1959), analyzes the skill-intensiveness of various occupations and shows how industrial development and reduced manufacturing employment went hand in hand.
 23. See D. C. M. Platt, *Latin American and British Trade, 1806-1914* (Harper & Row, N.Y., 1973), p. 82.
 24. In an unpublished paper, "Mercado de trabajo, 1880-1914," Professor Roberto Cortés Conde presents new series on labor force, real wages, and related variables. He is also a participant in and co-editor for an international comparative project which will yield critical bibliographies and essays on six countries over the period 1830-1930. His co-editor on that project is Professor Stanley J. Stein, Princeton Univ.
 25. *The Mexican Economy: Twentieth Century Structure and Growth* (Yale Univ. Press, New Haven, 1970).
 26. Marcello Carmagnani, *Sviluppo Industriale e Sottosviluppo Economico: Il Caso Cileno (1860-1920)* (Fondazione Luigi Einaudi, Torino, Italy, 1971).
 27. Enrique Florescano, *Precios del maíz y crisis agrícolas en México (1708-1810)* (El Colegio de México, México, 1969).
 28. Arnold J. Bauer, "Expansion económica en una sociedad tradicional: Chile Central en el siglo XIX," *Historia* (Instituto de Historia, Universidad Católica de Chile, Santiago), 9: 137-235 [1970]); "The Hacienda 'El Huique' in the Agrarian Structure of Nineteenth-Century Chile," *Agricultural History*, 46:4:455-470 (Oct. 1972), and with Ann Hagerman Johnson, "Distribution of Land and Rural Income in Modern Chile: 1854-1965" (unpub. *ms.* of paper presented at the Symposium on Landlord and Peasant in Latin America and the Caribbean, Cambridge, England, Dec. 1972. The foregoing studies present Chilean data; Bauer reviews a somewhat larger problem in his "The Church and Spanish American Agrarian Structure, 1765-1865," *The Americas*, 28:1:78-98 (July 1971).
 29. Of particular interest is the comparative analysis of sugar estates in Mexico and Brazil, conducted jointly by a geographer and an historian: Ward J. Barrett and Stuart B. Schwartz. "Two Colonial Sugar Economies: Morelos, Mexico, and Bahia, Brazil: a comparison" (unpub. *ms.*, Univ. of Minn., n.d.). Both authors have contributed individual quantitative studies, including Ward Barrett, *The Sugar Hacienda of the Marqueses del Valle* (Univ. of Minn. Press, Minneapolis, 1970).