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Abstract
Professor Boyer reviews and comments upon the three dissertations that were finalists for the Alexander Gerschenkron Prize in 2002.

Keywords
economic history, labor history, income, agriculture, industry, Alexander Gerschenkron Prize

Disciplines
Economic History | Labor Economics | Labor History | Labor Relations

Comments

Suggested Citation

Boyer, G. R. (2003). Comments on Geraghty, Márquez, and Vizcarra [Electronic version]. *Journal of Economic History 63*(2), 549-554.

Required Publisher Statement

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Comments on Geraghty, Márquez, and Vizcarra

The discussant for non-American dissertations in 1984, the first year the Gerschenkron prize was awarded, was Joel Mokyr, and he began by noting that all the finalists, and perhaps all the submissions (that is not clear) dealt with Great Britain. He hoped that this was an aberration, and he got his wish. There were nine submissions this year: one dealt with Britain; three with Latin America; one with Sweden, and one with a Hong Kong-based conglomerate; the other three were comparative, dealing with Britain, the United States, and other European countries. Four of the dissertations were written in history departments, three in economics departments, one in an economic history department, and one in a department of management studies. All of the submissions were first rate, and the authors and their thesis supervisors should be proud of their work.

Thomas Geraghty's dissertation examines a topic that has been addressed many times before, recently by some people in this room: the rise and triumph of the factory system in Britain. Geraghty groups earlier work on the rise of the factory into four views: focusing on scale economies, transactions costs, asymmetric information, and political economy. He maintains that there are problems with each of these explanations. The scale-economies view offers no explanation for the organizational changes typically associated with factory production. The transactions-cost and asymmetric-information views cannot explain the timing of the transition to factories, and many of the efficiency gains stressed by these views could have been achieved outside of the factory system. The political-economy view has various problems, and Geraghty devotes little attention to it in the rest of the dissertation.

In place of these earlier explanations, Geraghty offers his own, "complementarity hypothesis." According to this view, firms that adopted the new technologies also found it profitable to adopt organizational innovations, including more intensive supervision, disciplinary systems, and new compensation schemes for workers. The machinery associated with the factory system enabled manufacturers to improve, and standardize, the quality of goods produced, which raised the return to ensuring that employees paid close attention to workmanship. Manufacturers who set up a factory therefore faced a "multitask agency problem"—how to get their workers to produce at a high volume, but also to pay strict attention to the quality of production and to the maintenance of expensive machinery which they did not own. Because workmanship and asset maintenance largely were unobservable, piece-rate contracts could not solve the multitask problem, which required increased supervision of the workforce. Thus, the complementarity hypothesis, unlike the other explanations for the rise of the factory system, can explain both why factories were large *and* why they developed their distinctive internal organizational structure.

In chapter 3 Geraghty develops a mathematical model of an employer's organizational and technological choice. The model is something a mathematical economist would love. In order to determine the employer's optimal strategy, Geraghty uses "the theory of monotone comparative statics using supermodular functions." The model is clever, but will be confusing to most economic historians, and I would move it to an appendix.

The heart of the dissertation is the series of firm studies in chapters 4–7, which examine the development of the factory system in textiles, iron, metals, engineering, pottery, and glassmaking. Geraghty contends that firms that adopted both machinery and organizational innovations support the complementarity hypothesis. The persistence of "disorganized factories"—which adopted machinery but allowed employee work habits similar to those of the domestic system—or "nonmechanized factories"—which adopted organizational innovations but not machinery—would support the economies-of-scale and transactions-cost hypotheses, and be evidence against the complementarity story. Rather than do in-depth case studies, Geraghty devotes a few pages each to (by my count) 30 firms, relying mostly on secondary sources. These chapters provide a rich and detailed discussion of the development of the factory system in early industrial Britain. Any analysis based on a large number of firms in several industries is bound to yield results that are somewhat messy, and this is no exception. On the whole, however, the firm studies support his hypothesis that technological changes and organizational innovations went together. In the final chapter, Geraghty creates a data set with information on technology and organizational structure for 75 factories in nine industries, and finds that the use of machinery was positively correlated with regulated work conditions and the supervision of workers.

I found Geraghty's story largely convincing. He presents both qualitative and quantitative evidence showing that the adoption of production machinery increased the marginal net benefits from adopting supervision, regulated work conditions, and new forms of compensation. The thesis is impressive, but I have a few suggestions for revisions. The discussion of factories' compensation systems is a bit sketchy. Geraghty contends that the shift from the domestic system to the factory system led to a shift from payment by piece rates to payment by time rates, but his empirical analysis shows that the conditional correlation between machinery and time rates was negative. Moreover, his firm studies indicate that compensation systems were more complicated than his model suggests. In some factories, workers were paid a weekly wage, but with piece-rate bonuses in order to stimulate productivity. Many firms also adopted systems of fines for poor workmanship or inattention to machine maintenance, which suggests that it *was* possible for some factories to measure the quality of workmanship. I would like to see Geraghty offer a more detailed analysis of the changing nature of compensation systems in a few firms for which archival data are available. In this way he could make an important contribution to the historical branch of the developing field of Personnel economics.

Geraghty's case studies suggest that for several firms another effect of the adoption of machinery was the deskilling of the workforce. New machinery often enabled manufacturers to replace skilled craftsmen with lower skilled men, women, and children. This was true not only in textiles but also to some extent in iron (puddling and rolling), engineering, and pottery. Skilled craftsmen were expensive, and they tended to resist organizational innovations such as supervision and discipline. The factories that came closest to adopting continuous-flow production techniques also were the ones that were most likely to replace skilled with unskilled workers. This is an important aspect of the rise of the factory system, and it needs to be addressed in more detail.

Whereas Geraghty's dissertation deals with a topic long-debated by economic historians, the other two dissertations are part of an explosion of research in what had been until recently a neglected subject—Latin American economic history. Graciela Márquez's dissertation examines protectionism in Mexico from the beginning of the restored republic in 1868 to the Revolution of 1911. Part 1 provides a detailed examination of the political economy of tariff reform during this period. Part 2 examines the effects of the Mexican monetary regime, and in particular the depreciation of silver after 1873, on protection, and calculates ad valorem tariff rates and rates of "total protection" for 1892–1910.

The dissertation is monumental in size, with 314 pages of text and another 281 pages of appendices. The appendices present specific tariff rates (that is, taxes per unit of quantity) for several hundred commodities for each of the six tariffs adopted between 1872 and 1905, changes in tariff rates between major pieces of legislation, and ad valorem rates (that is, taxes as a percentage of the price of the good) for 32 commodities from 1892 to 1910. These data will be quite useful for economic historians interested in the history of Mexican commercial policy, and I predict that (until a book appears) Márquez's thesis will log thousands of frequent flyer miles traveling about the country on interlibrary loan.

The examination of the political economy of protection in chapters 1–3 brings together the information on tariff rates in the appendices and qualitative data from various primary sources, including the archives of the *Hacienda y Crédito Público* (Hacienda for short), the government ministry in charge of budget design, tax collection, and control of customs houses. Márquez weaves these sources into an analytic narrative of the nearly constant debates over the tariff in the last third of the nineteenth century. In Mexico, as in many economies at the time, tariffs played two important, and conflicting, roles. First, they served as a major source of revenue for the central government—for most of the period from 1868 to 1888, import duties made up 50 percent or more of total revenue. Second, tariffs served as a method of protecting domestic industries from lower-cost foreign competition. The problem, of course, was that the optimal level of tariffs for generating revenue typically was lower than the optimal level for protecting domestic industries.

The government's quandary over tariff policy is made clear in Part 1. In the debate that led up to the tariff of 1872, Romero, the Secretary of Hacienda, claimed to favor the ideal of free trade, but he set as a constraint for the new tariff that import duty receipts could not fall below current levels-a constraint made necessary by the importance of tariff revenue as a source of government funds. Throughout the period from 1868 to 1887, the main objective of tariff policy was to generate revenue. In 1887, however, the government shifted its commercial policy toward promoting industrial development, and maintained this orientation until 1911. Márquez contends that this shift in policy was possible because a rescheduling of foreign debt payments, renewed access to foreign credit, and an increase in domestic taxes eased budget problems and reduced the need for tariff revenue.

In chapter 4 Márquez extends her discussion of protection to include the effects of silver depreciation. The sharp decline in the price of silver that began in the 1870s and continued into the early twentieth century caused a depreciation of the Mexican currency, which drove up the price of imports, and offered manufacturers additional nontariff protection against foreign competition. However, declining silver prices also raised the price of imported raw materials and machinery, along with the real costs of government foreign debt obligations, which created serious budgetary problems. Eventually the costs outweighed the benefits, and in 1905 Mexico adopted the gold standard, thus ending the nontariff protection associated with silver. In order to protect those sectors that had benefited from the frequent silver devaluations, the government also adopted the Tariff of 1905, which raised duties on many finished products.

Chapter 5, in my opinion, contains Márquez's most important contributions. She combines data on specific tariffs and price changes to construct ad valorem tariff rates for 32 manufactured products in six representative industries (cotton, paper, beer, soap, cement, iron, and steel) for 1892/93 to 1909/10, and finds that the level of protection dropped sharply in the 1890s, and then increased slightly after 1903. She decomposes the tariff rates into legislative and price components, and shows that the decline in rates in the 1890s was driven almost completely by price changes, as most specific tariff rates remained unchanged during the decade. Finally, she offers a measure of "total protection," which adjusts the ad valorem tariff to take account of exchange-rate fluctuations. Total protection also declined during the 1890s and increased slightly after 1905, although it was more volatile than the ad valorem rate, and was quite high in some years, such as 1893 and 1897.

Márquez's dissertation will be a starting point for future research on Mexican commercial policy before the First World War, and will be useful for anyone studying the late-nineteenth-century Mexican economy. However, there are ways in which it could be improved. The thesis needs a more detailed discussion of the government's nontariff economic policies in order to better place its commercial policy in context. For example, Márquez contends that the shift in tariff policy in the late 1880s from revenue generation to protection was made possible by an easing of the government's public finance problems, resulting in large part from a sharp increase in domestic tax revenue. She does not explain why tax revenue increased. Did the government raise taxes, or did economic growth generate additional tax revenue? If the latter, perhaps it could be argued that the beginnings of industrialization caused the change in commercial policies rather than vice versa.

Márquez maintains that in the 1890s tariff policy played an important role in "the government's industrial development plans," but these development plans are never spelled out. Did the government follow an explicit import-substitution strategy? Did it subsidize manufacturing firms or interest rates? How did nontariff economic policies in the 1870s and 1880s differ from those in the 1890s? The rich archival sources that she employs in discussing tariff policy presumably also could shed more light on nontariff aspects of government economic policy.

Márquez's estimates in chapter 5 show that ad valorem tariff rates declined sharply in the 1890s. It is not clear, however, whether this decline began around 1892, or whether rates had been declining throughout the 1880s. It is difficult to determine the extent to which there was a change in government tariff policy around 1890 without estimates of ad valorem tariff rates before 1892. I understand that data problems make this difficult, but the estimates of ad valorem rates in 1874/75 presented in Table 5.10 suggest that some estimate of the long-term trend in protection is possible. I suggest that she attempt to construct ad valorem rates for a few benchmark years, perhaps the years of tariff reforms: 1872, 1880, and 1885.

Finally, I would like to see more discussion of the effects of the government's commercial policy on Mexican economic development. Márquez claims that the trade barriers created in the late nineteenth century led to a rapid expansion of manufacturing, but she does not examine the effects of changing levels of protection on the importation of finished goods or on the rate of growth of the leading sectors in Mexican industrialization. It appears from chapter 5 that data on the quantity of imports from 1892 onwards are readily available, which would enable her to report trends in the importation of finished goods as well as intermediate goods that would have been used as inputs by domestic manufacturers. This is an important issue, given the debate in recent decades on the pros and cons of import substitution policies, and I believe that Márquez should examine it head on.

Catalina Vizcarra's dissertation examines the Royal Tobacco Monopoly in Peru from its inception in 1752 to 1813. The tobacco industry was an important part of the colonial Peruvian economy, and the Bourbon monarchy instituted the monopoly in order to increase fiscal revenue. The traditional literature contends that the monopoly produced meager revenues, which were remitted to Spain. Vizcarra challenges this conclusion. She uses data obtained from archives in Peru and Seville to reconstruct the revenue of the tobacco monopoly, and finds that it was in fact quite successful, providing a significant share of the revenues for the Viceroyalty of Peru throughout the second half of the eighteenth century. Moreover, while some of this revenue was remitted to Spain, especially after the mid-1780s, a large share remained in the colonies.

Vizcarra divides her discussion of the monopoly into three periods: 1752–1779, 1780–1792, and 1792–1813. Prior to 1752 there was a sales tax on tobacco, but it yielded little revenue because of an extensive contraband trade—Vizcarra estimates that from 1725 to 1746, 70–80 percent of tobacco was traded illegally. The monopoly was established, in large part, to reduce this contraband. In the early period, the monopoly set prices for tobacco leaf and production quotas for planters. As the sole legal buyer of tobacco, it purchased leaf, transported it to Lima, and sold it to licensed workshops, where cigars and cigarettes were produced. These could be sold only in licensed stores. Penalties were established for planters who did not comply with production quotas or who sold leaf illegally. The regulations succeeded in reducing contraband, and the monopoly earned relatively high revenues in the 1760s and 1770s. However, the state faced another financial crisis in the late 1770s, and tried to alleviate it by generating more revenue from the monopoly. As a result, in the 1780s the monopoly adopted tighter control of the tobacco industry. The cultivation of tobacco was strictly regulated and monitored. Harsher penalties were established against contraband, expenditures on enforcement increased, and the government centralized the production of tobacco, shutting down private workshops and establishing state-run factories in Lima and Trujillo. These were nonmechanized factories as discussed by Geraghty— workers were brought together and supervised, but the production process was similar to that in the workshops. The state factories were created not to increase production but as a means to control contraband. Strict supervision and discipline were meant to prevent collusion between workers in order to prevent fraud and maintain quality. Packs of cigarettes and cigars produced in the factories were stamped with a government seal, in order to make it easier to detect contraband tobacco.

The overall result of the reforms of the early 1780s was a sharp increase in revenue, as Vizcarra shows in chapter 5, where she examines monopoly finances. She considers various possible causes of the increase in revenues, including exogenous shifts in demand or in the cost function, and concludes that revenues increased because the government increased the mark-up on cigarettes and cigars, and because it succeeded in reducing contraband. The cost of controlling contraband was high, but the benefits (namely the revenue from increased legal sales) were greater. The era of high revenues was short lived, however. After the deaths of Gálvez in 1787 and of Charles III in 1788, there were significant changes in the administration of the monopoly. The state factories were shut down in 1791, regulations on the cultivation of tobacco were reduced, and the enforcement against contraband was moderated. Despite a sharp cut in bureaucratic costs, the overall effect of the reforms was a decline in net revenue.

Vizcarra's dissertation is a valuable addition to the literature on the effects of the Bourbon reforms on the colonial economy. It is based largely on archival sources, and it presents important new data on monopoly revenues and costs. The thesis would be even more useful if it contained a data appendix, in which time series on tobacco production, consumption, and prices, and monopoly revenues and costs were presented for the entire period, and in which the construction of each of these series was discussed in detail. As it is, the data are scattered throughout the text, and much information is reported in the form of figures rather than tables.

I learned a lot from Vizcarra's thesis, and I hope it will lead her to address other aspects of the colonial Peruvian economy. When she comes to revise the thesis, I would like to see her devote more attention to some important issues dealing with the period after 1787 that she addressed only in passing. First, it is not clear why, given the high revenues generated in the 1780s, the Spanish crown transformed the monopoly into a more lenient (and less profitable) tax in the 1790s. In some colonies the new tax apparently was meant to reduce conflicts with local elites, but Vizcarra gives no evidence that this was the case in Peru. The monopoly had been established in order to increase fiscal revenues. Did the crown's need for revenue decline in the 1790s? Did it believe, incorrectly, that the reforms would increase monopoly revenues? Or did the American and French Revolutions convince the crown that it was worth sacrificing some revenue in order to maintain peace in the colonies?

The dissertation ends in 1813, seven years before Peruvian independence and the end of the monopoly. I wish that Vizcarra had extended the analysis up to 1820, or even beyond, to examine the development of the tobacco industry in the first few decades after independence. In the introduction she writes that an understanding of Bourbon economic policies is especially relevant for the debate on the origins of Latin American underdevelopment. By stopping in 1813, her dissertation is less helpful in understanding the long-run impact of the monopoly on the Peruvian economy than it might have been. I would urge her therefore, in revising the thesis, to add a chapter examining the tobacco industry after 1820.

Most conveners of the dissertation session end with a statement similar to that made by the President of the United States at the beginning of the State of the Union address, and I will continue the tradition. I can say, after reading the nine non-American dissertations submitted this year, that the field of economic history is strong, and that it will continue to prosper.

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