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Explorations in Latin American economic history

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Conclusions

6.1. Summary

During the last decades, the use of statistical techniques and economic theory to explain Latin American history has produced a significant rethinking of the economic past. However, several fundamental questions have remained overlooked. Despite pioneering contributions by prominent economic historians, the poor quality or total absence of historical data and the limited use of economic theory have been factors hampering the progress in solving major historical questions in Latin America. Notwithstanding various data and methodological constraints, this dissertation was an effort in ‘squaring the circle’ quantitatively into four major questions:

- Was the colonial fiscal system in Spanish America unsustainable before 1810?
- Did a secular decline of real wages inspire the Mexican Revolution in 1910?
- Did import substitution promote structural change between 1935 and 1975?
- Did institutional change stimulate catching up in Latin America after 1970?

Regarding the first question, **Chapter 2** examined empirically the long-run fiscal sustainability of the colonial treasuries of Spanish America from c.1570 to c.1810. It introduced a basic macroeconomic framework of the government budget constraint into the historical case of the Spanish American finances to show statistical evidence on how these macroeconomic conditions changed over time in different colonies. Furthermore, it provided new estimates by adjusting the fiscal series of major colonial treasuries for inflation.

Findings suggest that the long-run fiscal performance of the treasuries can be misleading when inflation is not taken into account; the colonial finances of the largest *caja* for the Spanish empire, Mexico City, can be misrepresented for the period of 1760-1810. Also, for Peru when inflation is not considered, total revenues and expenditures in Lima’s *caja* are undervalued for most of the seventeenth century.

Moreover, there was a shifting process of fiscal sustainability between the colonial treasuries across centuries. While the treasuries of New Spain were unsustainable during the ‘Habsburg reign’, Peru’s treasuries experienced a sustainable

fiscal pattern. During the period of ‘succession and transition’, New Spain’s treasuries restored their sustainability in contrast to Peru and Buenos Aires. And finally, in the period of the ‘reformism and Napoleonic wars’, the treasuries of New Spain deteriorated vastly reaching an unsustainable position, contrary to their counterparts in Peru and Rio de la Plata.

The ensuing general question in the thesis was addressed in **Chapter 3**. This chapter examined quantitatively the historical assumption of a relationship of a declining trend of real wages and the Mexican Revolution. The analysis conducted a re-estimation of real wages across Mexican regions from 1877 to c.1910. It showed that the estimated lower-bound regionally-adjusted wages remained relatively stable in most of the Mexican regions throughout the period. Although these wages followed divergent within-country patterns and although there was a slight declining trend in wages of the industrial sector of the Pacific South region, from a broader quantitative perspective there was no dramatic decline as the conventional literature argues. The present estimates indicate that the interpretation of a secular decline in workers’ living standards in Mexico from 1877-1910 does not have strong quantitative foundations.

However, a pattern of real wage divergence across regions was a salient feature. The regions in the Center and Pacific South of the country experienced slower real wage growth relative to the North, Pacific-North, and Gulf generating wide sectoral wage gaps. A tension between the forces of regional convergence and divergence emerged in which prevalent labor market institutions in Mexico tended to promote regional divergence, keeping structural labor market barriers that prevented inter-regional labor mobility and income convergence within the country.

The third general question was examined in **chapter 4**. This was focused on one of the ultimate objectives of industrial policy, the “reallocation” of employment from traditional to modern economic activities in order to increase overall productivity, a feature broadly known as *structural change*. Using a higher degree of data disaggregation, the analysis assessed empirically the competing views on productivity and structural change during the period of 1935-1975 in three Latin American countries: Mexico, Argentina, and Brazil. It tested the existence of a *structural bonus/burden* within manufacturing industries on whether there were significant labor input shifts from less to more productive manufacturing branches induced by tariff policies. The analysis employed disaggregated data from official industrial censuses and produces new estimates of labor productivity for 1935/39, 1950, and 1975. Then, it decomposed the components of productivity growth in manufacturing industries by applying a shift-share analysis to this newly compiled data.

Estimates from the analysis were unable to find significant evidence of structural change within manufacturing in these countries over the period. The reallocation of labor within the sector did not provide an extra bonus to aggregate productivity growth in addition to growth within individual branches. Most of these branches (food and beverages; textiles and wearing apparel) were by nature labor-intensive and contributed the most to overall productivity growth. Needless to say, one of the broad accomplishments of import substitution was the development of a productive ‘light’

manufacturing industry; however, despite the government incentives in protecting other more relatively sophisticated sectors (machinery, transport equipment, and chemicals) with capital-intensive technologies, manufacturing remained ‘stuck’ into traditional industrial activities.

The last question of the dissertation was addressed in **Chapter 5**. This investigated the role of a set of different institutions in the process of catching up at the sectoral level. Employing various indicators of institutional quality, it examined through a panel dataset the partial effects of a set of institutions on sectoral productivity growth. Drawing on the range of sectoral data from 1970 to 2010, the empirical analysis is based on nineteen ‘catch up’ economies and taking the United States as the technology leader.

The empirical approach relies on a re-arranged version of the Nelson-Phelps catch up model of technology diffusion. The analysis points out different channels in which institutional quality impacts sectoral productivity growth. Controlling for other growth factors, institutions which interacted with the distance to the frontier affected positively and significantly the growth of labor productivity at the sectoral level. This indicated that backward sectors in countries endowed with higher institutional quality grow faster than in sectors of countries with lower institutional quality.

Following the empirical specification, the chapter analyzed the different effects that the same institutions have on sectors far-removed from the frontier. The results pointed to different channels through which institutional quality impact on sectoral productivity growth: greater freedom in the legal structure and property rights, freedom from tight market regulations, greater access to sound money, and a small and more efficient government, all in a different magnitude affected positively the growth of sectoral productivity.

In hindsight the results were broadly in line with the body of literature of the so-called ‘New Institutional Economics’ regarding the prominence of ‘market-friendly’ institutions in enhancing productivity growth in the long-run. However, in spite of controlling for country and time invariant factors, estimates are sensitive to the sample selection. The model predictions apply to the majority of the sectors in the Asian sample. On the other hand, sectoral productivity growth in Latin America is not statistically associated with the quality of property rights and market regulations; only in the mining and construction sectors, productivity is statistically associated with the reduction in the size of government and with a better access to sound money.

6.2. Future research avenues and quantitative challenges

During the process of providing new answers to the aforementioned questions, new puzzles emerged. Regarding the first question on colonial fiscal sustainability (chapter 2) we still do not know how sustainable ‘relative’ to other major empires (for e.g. the British empire) those transatlantic fiscal policies were in Latin America. In order to advance in the debate of colonialism and on the issue of fiscal sustainability

in the very long-run, this fiscal data should be put on a broader global scale since colonialism was a global phenomenon.

Some of the questions have already started to be answered by ongoing quantitative research.²⁴⁵ Still, new data should be rendered into a global context. As the historian Paul Kennedy argues, the ‘Great Powers’ can only be properly measured in relation to others. Thereby, a comprehensive comparative picture of the contribution of economic growth of the colonies to the empires (and vice versa) is essential to further expand the field of Latin American colonial history from a global economic perspective.

Regarding the second question addressed in **chapter 3** related to the standards of living of Latin Americans during the *belle époque* (1870-1913), particularly on the trends of Mexican real wages, the previous work by Williamson (1999) and Gómez-Galvarriato (1998) have already provided a global comparative view.²⁴⁶ Overall, Mexican wages in this period appeared to move in tandem with the wage growth of the industrialized ‘core’.

Although the empirical findings in the Mexican case show that the overall trend of real wages remained stable, wages increasingly diverged over time and across Mexican regions, and certainly did not approach a point of equalization (between regions) as the standard trade theory suggests. This finding is of particular importance in the so-called *New Economic Geography* theory which remarkably mirrors today’s Mexico; the wage divergence generated by the ‘Porfirian’ economic policies can be seen as an historical parallel with present regional developments in Mexico. That is, the regional wage inequality in the late 19th century bears a close resemblance to the emergence of the regional wage inequality after the liberalization of trade in the late 20th century.²⁴⁷

Yet, the dramatic decline of Mexican worker’s wages that according to various historians occurred from 1876 to 1910 and that may have spurred the sentiment against the dictatorial regime, cannot be observed in the estimated real wage data. While there was a slight deterioration in the southern regions relative to the northern ones, it is difficult to warrant this feature as a precursor for a widespread discontent that incited the Mexican Revolution. In fact, as has been widely documented in previous studies, the proliferation of mining protests and the formation of the armed revolutionary groups occurred mainly in the northern part of the country and to a lesser degree in the southern part where real wages were lower.

²⁴⁵ For instance, Arroyo Abad, L., & van Zanden, J. L. (2014). *Growth under extractive institutions? Latin American per capita GDP in colonial times* (No. 0061). Utrecht University, Centre for Global Economic History.

²⁴⁶ Williamson, J. G. (1999). Real wages, inequality and globalization in Latin America before 1940. *Revista de Historia Económica/Journal of Iberian and Latin American Economic History (Second Series)*, 17(S1), 101-142; Gómez-Galvarriato, A. (1998). The evolution of prices and real wages in Mexico from the Porfiriato to the Revolution. *Latin America and the World Economy Since 1800*, p. 347-78.

²⁴⁷ See the dynamics of Mexican regional wages during the 1990s in the work of Hanson, G. H. (2003). What has happened to wages in Mexico since NAFTA? (No. w9563). National Bureau of Economic Research.

Nevertheless, in addition to answering these historical questions on regional development, more studies employing disaggregated data on physical and human capital are required to understand in depth the regional dynamics of the Mexican economy in the late-nineteenth century.²⁴⁸

As regards to the third question on whether import substitution promoted structural change, this inexorably leads to the recent debate on protectionism and industrialization. Notable contemporary economists like Dani Rodrik, Justin Y. Lin, Joseph Stiglitz, and several others, have brought back the discussion on the role of the state in the promotion of industrialization via structural transformation. As was shown in **chapter 4**, although import substitution policies failed to induce structural change in manufacturing, it does not imply a definite rejection of active industrial policies to boost economic growth. While acknowledging the policy shortcomings to sustain productivity growth, the rates accomplished in the manufacturing sector have not been replicated since in any of these countries. Thereby, an unavoidable counterfactual surfaces in the light of this paradox: could import substitution have promoted structural change if tariff policies would have not been captured by vested interests of unproductive industries? That is to say, are ‘good’ institutions a prerequisite for an effective industrial policy?

Finally, in relation to the last question, **chapter 5** tackled the puzzle on whether ‘good’ institutions have stimulated productivity growth. Interestingly, the empirical results were not as satisfactory for the case of Latin America as the proponents of the traditional theory of institutions would like. They regard them as main drivers of long-term productivity growth. Unlike most of Asian countries, catching up in Latin America occurred in the natural-resource based sectors.

Furthermore, the types of institutions that were found statistically significant in stimulating productivity in these sectors are not the ones typically described in the seminal literature. Instead of institutions such as the protection of property rights and a ‘good’ regulatory structure, the empirical analysis showed that the institutions of sound access to money, and the reduction in the size government is associated with the enhancement of productivity in those sectors.

Although at first glance it may seem that any sort of boost in productivity growth represents a positive feature for the region, empirical research has shown an important exception. Some country case studies on developing regions have revealed that economic growth in natural resource-based sectors supplemented with institutions that promote the reduction in the size of government and minimal regulatory frameworks, has turned instead of a blessing into a curse.²⁴⁹

²⁴⁸ For instance, in relation to the agenda on historical regional development, recently the work of Melissa Dell has showed evidence of the role of the regional demands for land redistribution during the Mexican Revolution and subsequent economic development across Mexican states. See, Dell, M. (2012). *Insurgency and long-run development: Lessons from the Mexican revolution. Harvard University, mimeograph.*

²⁴⁹ See for instance, Frankel, J. A. (2012). *The natural resource curse: a survey of diagnoses and some prescriptions*; Melham, H., Moene, K., & Torvik, R. (2006). *Institutions and the resource curse. The*

Considering these findings and the existent literature revealing the link between different stages of economic growth and environmental degradation (for e.g. the environmental Kuznets curve hypothesis), the possibility of a comeback of cliometrics in Latin American's scholarship can be a fruitful research avenue.²⁵⁰ An interdisciplinary fusion between environmental history and institutional economics might not only be an emerging academic field but also a necessity for the public policy of the region.

Economic Journal, 116(508), 1-20; and in Sala-i-Martin, X., & Subramanian, A. (2003). *Addressing the natural resource curse: An illustration from Nigeria* (No. w9804). National Bureau of Economic Research.

²⁵⁰ As explored in Kander, A. (2016). "Economic environmental history." In *Structural Analysis and the Process of Economic Development*. Routledge: London & New York.