

Resources, Environment, and Rural Development in Uruguay, 1779-1913 *

Latin America's economic backwardness relative to North America is often traced back to rural structures and institutions inherited from colonial times.¹ Yet, some Latin American countries prospered for decades on the back of the agricultural economies that emerged from that past. Uruguay's livestock export agriculture made the country relatively rich in the late-nineteenth century, when it accounted for a third of GDP. By 1913 the Uruguayan average income was only 10% lower than France's and about three times higher than the Latin American mean (excluding next-door Argentina, which underwent a similar process). As such, Uruguay (and Argentina) is considered a special case in the most influential accounts of New World divergence.² Understanding the reasons for Uruguay's relative prosperity, and for its eventual decline, can uncover the agrarian bases for long-term variation across Latin American development paths as well as for the continued divergence between the region and the leading world economies.

This dissertation examines Uruguay's agrarian evolution in the long nineteenth century by giving careful consideration to both the natural environment and the colonial legacy. I argue that export-led 'modernization' in Uruguay (c.1870-1913) must be explained in relation not only to the opportunities and challenges of the world economy of the First Globalization, but also to the potential and limits of its own environment: a 'second nature' resulting from resource endowments and preceding history. In telling the story of how a small economy exploited its natural resources to transform itself from colonial backwater to prosperous agricultural exporter, this project draws from economic and environmental history, as well as from modern agronomic and environmental research. The natural environment is not treated here as a time-invariant initial condition for economic development, but as a co-evolving influence. Uruguay's grassland landscapes played a key role in nineteenth-century growth; they can also contribute to explain the country's more disappointing twentieth-century performance, not just because world market trends shifted, but also because the grasslands themselves changed as a result of the rural development they had sustained.

Following Chapter 1, which reflects on approaches to Latin American development in economics and economic history, the thesis is structured as four chapters organized chronologically into two parts. Each of these parts corresponds to a broad 'spatial code' for agrarian development, that is, a set of structures which shaped the economic use of rural resources.³ Chapters in Part I explore the largely unenclosed countryside of late-colonial and newly-independent Uruguay, where agricultural land was widely available to free households. Their main contribution is the use of quantitative, qualitative, and spatial evidence on landholdings, farming patterns, and the life paths of slaves to explain how rural slavery operated in this labor-scarce, land-abundant, and highly seasonal agrarian setting. Chapters in Part II examine the First Globalization era, when fertile land, still physically abundant, was made institutionally scarce following steel wire enclosures. The central empirical contribution of Part II is the reconstruction

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¹ The long-term legacy of colonial institutions, notably those surrounding land tenure and rural labor relations, is highlighted by current neo-institutionalist approaches; it was also a classic theme in Latin American economic historiography in the 1950s-1970s, which is generally ignored by the recent literature. Two excellent review essays are Bértola, 'Institutions' and Coatsworth, 'Structures'.

² Among economic historians, see Sokoloff and Engerman, 'Institutions.' In the development economics literature, Acemoglu, Johnson, and Robinson also described colonial 'Argentina' and 'Uruguay' as something of an exception in the region, a positive case of 'Reversal of Fortune.'

³ The concept of 'spatial code' was introduced by Lefebvre, *Production*. In this dissertation I think of a spatial code as including a system of land tenure, a preference for certain farming techniques, a prevailing crop repertoire, and a set of agricultural labor relations.

Emiliano Travieso, Assistant Professor, Carlos III-Juan March Institute & Department of Social Sciences, Universidad Carlos III de Madrid, Calle Madrid 135, Getafe 28903, Spain. E-mail: etravies@clio.uc3m.es. This dissertation was completed at the University of Cambridge (King's College) under the supervision of Gareth Austin. It was supported by a Cambridge International Scholarship. The Cambridge Group for the History of Population and Social Structure (Campop) provided an excellent research environment.

of rural districts in the early 1900s to map and analyze agricultural, environmental, and population data at an unprecedented level of spatial resolution.

SLAVERY AND AGRICULTURAL CHANGE, 1779-1870s

Chapter 2 examines the economics of rural slavery in late-colonial Uruguay, where free and coerced labor often performed the same tasks in the same place at the same time, which was hard to find elsewhere in the New World.⁴ Analysis of tax and land archival records reveals that widespread access to farmland strengthened the bargaining hand of free peasants, but also created economic incentives for large cattle-owners to acquire slaves. Resource ratios (abundant land, scarce labor, scarce capital except for cattle) made slavery viable for year-round tasks but did not completely displace wage labor: Nieboer-Domar conditions arose only at times throughout the agricultural calendar.⁵ Zooming into the accounts of a very large colonial *estancia* (cattle ranch), I show that slavery could indeed be profitable in temperate-zone ranching, even if work routines were very different from those of plantations economies. The natural environment (climate, topography, soils, and animal behavior) encouraged farming and ranching systems in which slaves with estate-specific knowledge achieved positions of managerial authority that, elsewhere in the Americas, were reserved for Europeans or white creoles. This gave enslaved Africans and their families some leverage, while also shaping an unequal gender distribution of resources and tasks.

Chapter 3 focuses on the period immediately following colonial rule, arguing that even if the economic hopes surrounding Latin American independence revolutions were not fulfilled, these were not ‘lost decades’⁶ in terms of economic change. To prove that point in a specific context, I rely on local records to describe and explain two momentous transformations in Uruguay’s mid-nineteenth century rural economy: the slow demise of slavery and the emergence of export-oriented sheep-farming. Analysis of the surviving enumerators’ books from a projected census shows that by the mid-1830s, after ‘free birth’ was enshrined in law, slavery persisted in parishes across rural Uruguay, with slaves making up about a fifth of the workforce in the sample. Analysis of the life paths of hundreds of free black people—women as well as men—showed that rural slaves achieved emancipation largely through their own efforts, rather than primarily because of policy changes immediately following independence. Despite having received comparatively little attention in the specialist economic historiography, emancipation from slavery mattered greatly for the path Uruguay’s rural development would take thereafter. Even if a series of legal tools were introduced to discipline the rural workforce, when cattle herds recovered after a cycle of civil wars ending in 1851 labour coercion was no longer an option for large producers.

If this gradual emancipation laid the groundwork for the labor market of the late-nineteenth century, the ‘wool revolution’ of the 1860s expanded the geographical reach of the land market and created new incentives to physically define property rights over grazing land and not just over the animals standing on it. While the adoption of Merino sheep resulted in an extraordinary aggregate increase in rural assets, I show that it was not a ‘vent’ for surplus land without opportunity cost.⁷ Pressure on resources increased and, especially in the most suitable areas, there were environmental trade-offs that evidenced the limits to the complementarity of cattle and sheep in low-input and extensively-managed grazing.

LATIFUNDIA, INNOVATION, AND OCCUPATIONS, 1870s-1913

Economic historians have long debated the part played by latifundia (large, privately-owned estates) in Latin American development, particularly their impact on technical change.⁸ Previous quantitative studies in the Uruguayan context suffered from serious ecological fallacy problems, as they worked with data at

⁴ Wright, *Slavery*, 24.

⁵ The Nieboer hypothesis, in Evsey Domar’s (‘Causes of slavery’) version, suggests a trilemma between free peasants, free land, and a non-working landowning elite: two out of those three, but never all three, are to be found in historical agricultural systems.

⁶ Bates, Coatsworth, and Williamson, ‘Lost Decades’; cf. Prados de la Escosura, ‘Lost Decades?’.

⁷ The general ‘vent-for-surplus’ model was originally developed by Hla Myint, ‘The “Classical Theory.”’

⁸ See the arguments surveyed (and quantitatively tested) in Taylor, ‘Latifundia’.

the very aggregated level of provinces (19 *departamentos*). I rely on archival maps and a range of other sources to georeference agricultural, environmental, and railway data, producing the first historical dataset for rural Uruguay at the sub-provincial level. In Chapter 4, I exploit regional differences in the adoption of cattle crossbreeding—the genetic improvement of local herds through hybridization with foreign breeds—to examine the drivers behind innovation adoption.⁹ Regression analysis shows that local environments, not landholding patterns, explained different adoption rates across districts. The spatial distribution of the crucial biological innovation in Uruguay’s rural modernization followed the geography of soil types (which affected grass growth and hence expected profitability) rather than that of estate sizes. While cattle crossbreeding would eventually reach laggard areas as well, the regional divides forged in this period proved long-lasting.

Chapter 5 turns from land to labor and reconstructs the population geography and the occupational structure of Uruguay in the late-nineteenth and early-twentieth centuries to interrogate how large and how productive was the agricultural workforce and to discuss to what extent did export-oriented agriculture contribute to wider economic development. It innovates by using not only census data but also individual-level sources, including a random sample of secular birth certificates. The excellent coverage and survival rate of these records (which substituted Catholic baptism certificates since 1879) means that this method could be extended to reconstruct demographic and occupational data for other periods without population censuses, such as between 1910 and 1970 when the Uruguayan state counted cattle and sheep seven times but human population only once. I found that while large-scale European immigration in the late-nineteenth century was linked to urban employment, agriculture remained the largest employer in the economy by 1908. The new estimates also offer a major reassessment of the female workforce in agriculture, which was much larger than scholars previously thought. Finally, while it appears that the livestock sector remained the productivity leader by 1890, results suggest that its productivity began to stagnate in the face of resource bottlenecks.

Uruguay’s agrarian evolution in the nineteenth century implied profound institutional transformations to the mechanisms through which rural resources were allocated. However, throughout this period and beyond, Uruguay—the country with more cattle per person in the world (then and now)—continued to draw its comparative advantage from the ecological services of its grassland environment. As these deteriorated and became more expensive relative to the declining terms of trade of beef, leather, and wool, Uruguayan agriculture entered a long cycle of stagnation: the background to the country’s divergent twentieth-century *siesta*.¹⁰ Though economic historians have in recent decades focused on institutions as history’s crucial legacy, this project suggests that a transformed environment can be as powerful a bearer of the past’s grip on the present.

EMILIANO TRAVIESO, *Universidad Carlos III de Madrid*

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⁹ Previous landmark analyses are Barrán and Nahum, *Civilización*, 305-17; Millot and Bertino, *Historia económica*, 89-102 (who first considered soil quality indicators); and Moraes, ‘Capitalismo pastor’.

¹⁰ Bértola, ‘Overview’.

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