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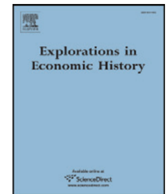

Agricultural institutions, industrialization and growth: The case of New Zealand and Uruguay in 1870–1940☆

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ABSTRACT

In this paper we apply a model of early industrialization to the case of New Zealand and Uruguay in 1870–1940. We show how differences in agricultural institutions may have produced different development paths in two countries which were similar under many respects. While in New Zealand the active role of the Crown in regulating the land market facilitated access to land, in Uruguay land was seized by a small group of large landowners. Our model shows that land concentration may have negatively influenced industrialization and growth by impeding the formation of a large group of middle-income landowners and, as a consequence, the development of a domestic demand for basic manufactures. We support this view with a comparative analysis of agricultural institutions and industrial development in New Zealand and Uruguay.

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1. Introduction

In this paper we investigate how institutions governing the agricultural sector may have affected the evolution of industrial production and GDP in New Zealand and Uruguay during the period 1870–1940. To this aim we apply a model of early industrialization under functional distribution and hierarchical preferences, proving that the mentioned differences in agricultural institutions can in principle produce the observed patterns of industrialization and growth.

New Zealand and Uruguay were two countries of new settlement that before the end of the 19th Century succeeded in achieving a moderately high income per capita. Both countries prospered thanks to their flourishing agricultural sectors: they were characterized by the abundance of natural resources and by scarce population, formed mostly by descendants of European immigrants. Their initial economic growth was based on exports of food and raw materials to a rapidly expanding international economy. By the last quarter of the 19th Century New Zealand and Uruguay had achieved levels of income per capita higher than many leading European countries. However, their subsequent trajectories were quite different. Although it is true that both countries found increasing difficulties to sustain growth in the first half of 20th Century, the case of Uruguay was particularly

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disappointing. The country grew at high rates in the twenties, when the external markets were buoyant, but it could not sustain growth after 1930: its GDP per capita in 1940 was about the same of 1912. On the other hand, New Zealand, while experiencing a fall in the rate of growth after the 1930 crisis, was able to trigger a non-negligible industrial takeoff, especially if measured in terms of the diversification of industrial production, horsepower usage and size of productive units (Willebald and Bértola, 2007).

Our aim is to help shed light on this puzzle by taking into account the role of agricultural institutions in the two countries. Indeed, although similar under many respects, New Zealand and Uruguay had rather different institutions governing their agricultural sectors. In particular, they had different rules and practices concerning access to land and the distribution of agricultural product among the suppliers of production factors. In New Zealand the British Crown adopted a policy of land distribution to new migrants, and in general to those entering the labor market, that rapidly expanded the number of landowners in the country. Instead, in Uruguay land ownership rapidly concentrated – as a consequence of the appropriation of public lands by a few landlords – and remained highly concentrated afterwards. Furthermore, the share of agricultural product retained by New Zealander landowners was systematically lower than that of their Uruguayan counterparts. Our basic idea is that these differences, shaping the distribution of purchasing power in the population, had a major impact on the size of the domestic markets for manufactured goods. More precisely, in Uruguay domestic demands for basic manufactures were smaller than in New Zealand, generating a systematic relative disadvantage for Uruguay in the exploitation of mass production. This led to a weaker process of industrial diversification and industrial expansion in the case of Uruguay.

In order to make precise our intuition we present a model of early industrialization based on Murphy et al. (1989). The main result of this model is that industrial takeoff depends on the composition of domestic demand for manufactures which, in turn, is shown to depend on the distribution of income. Two key assumptions give rise to such an outcome: first, consumers have hierarchical preferences; second, industrialization in the manufacturing sector entails the substitution of an increasing return technology (with fixed start-up costs) for a constant return technology. Bilancini and D'Alessandro (2008, 2009) have shown that adding the assumption of functional distribution of income is sufficient for industrial takeoff to depend on both the distribution of land ownership and the distribution of agricultural product between landowners and peasants.

The main contribution of the present paper is to apply this framework to the case of New Zealand and Uruguay. In order to keep our argument as parsimonious as possible, we suppose in the model that the two countries were equal under any respect but the concentration of land ownership and the share of agricultural product going to workers. We show how such differences suffice to produce divergence in terms of both industrialization and GDP growth. In other words, we provide a theoretical argument whose implications are consistent with available historical evidence about the evolution of the two countries and which highlights the importance of agrarian institutions in early industrialization. Of course, we do not intend to argue that this is the only cause of the different development paths followed by New Zealand and Uruguay. We only claim that the mechanism that we highlight – and that to the best of our knowledge has not been put forward in comparative studies of these two countries – may have played a significant role.

In the last decades, the debate on geography and institutions revived the interest on the determinants of divergent development paths across countries. A growing body of literature has sought to compare the institutions emerging from the colonization process in different regions (Acemoglu et al., 2001; Galor et al., 2008) and particularly in the regions of new settlement (Denoon, 1983; Engerman and Sokoloff, 1997, 2005). Differently from such a literature which focuses on the indirect effects of agrarian institutions on economic development, the present paper suggests that there is a direct relation going through the demand side and which has to do with the composition of manufactures' demand (Murphy et al., 1989; Willebald, 2007).[1]

The interest in comparing the development of Uruguay with that of New Zealand is not new. By the end of the seventies two Uruguayan historians pointed out that "Uruguayans have been comparing themselves with New Zealand for at least seventy years", ((Barrán and Nahum, 1978), p. 191). Notwithstanding this long tradition, most comparative studies were produced in the 1960s and 1970s. Two strands of literature can be identified. The first looked at New Zealand and Uruguay within the context of the countries of new settlement, comprising a more general comparison between the River Plate and the Australasian regions (see for instance Alvarez et al. (2007); Bértola and Porcile (2002); Blattman et al. (2007); Willebald and Bértola (2007); and Williamson (2002)). The second approach emerged from studies of the agrarian sector which emphasized the potential for the diffusion in Uruguay of the technology and productive practices that were successful in New Zealand.[2] In this direction, citetkir, studying the period between 1960s and 1970s, presents an interesting analysis of the main similarities between the two countries and investigates their land tenure systems. Although his concerns were tied to the policies which Uruguay should implement in order to promote economic development, he clearly pointed out that "the parallel development of New Zealand and Uruguay obviously stopped short, or diverged, sometime in the past" ((Kirby, 1975), p. 264). In this respect, our paper focuses on a plausible explanation of this earliest divergence.

The rest of the paper is organized as follows. The next section highlights the similarities between the two countries as well as their different evolutions in terms of industrialization and GDP per capita. In Section 3, we review the available historical evidence about the agricultural institutions in New Zealand and Uruguay and argue about their consequences in terms of property rights and income distribution. In Section 4 we apply the model developed in Bilancini and D'Alessandro (2008, 2009) to the case of

[1] Other authors focus on the key link between access to frontier land, institution building and growth, which has been explored by the economic history literature since the seminal work by Jackson Turner. In the case of the United States, the existence of *free* land in the frontier may have contributed to keep real wages higher in the East (Margo, 1999), encouraging the use of more advanced technology and leading to higher labor productivity growth.

[2] Our proposed explanation is independent of – though not incompatible with – those which stress differences in the performance of the agricultural sectors or the lack of sufficient stimuli for agricultural production – such as pointed out in the classical comparison between Australia and Argentina by Davie (1960); Duncan and Fogarthy (1984); and Álvarez and Bortagaray (2007).

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