Institutions, the land market and income distribution in New Zealand and Uruguay, 1870-1940.

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New Zealand and Uruguay are two countries of new settlement that achieved a relatively high income per capita during the First Globalization era at the end of the Nineteenth Century, based on the high productivity of their agricultural sectors. However, in spite of many similarities (geography, climate, demography, and the insertion in the international economy as suppliers of agricultural goods, mainly to the British market), Uruguay lagged behind New Zealand in terms of income per capita and agrarian productivity since the first decades of the Twentieth Century. This paper discusses why Uruguay and New Zealand (NZ) diverged. It is argued that an institutionalist approach to the determinants of economic growth, focusing on property rights for land and land distribution, may contribute to shed light on this question.

The interest in comparing Uruguay and New Zealand is not new. By the end of the seventies two Uruguayans 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 strains of work can then be recognized. The first emerged from studies of the agrarian sector, which emphasized the potential for the diffusion in Uruguay of technology and productive practices that were successful in NZ. The second approach looked at NZ and Uruguay within the context of the countries of new settlement, aiming at a more general comparison between the River Plate and the Australasian regions. These regions were characterized by the abundance of natural resources and by scarce population (formed mostly by descendents of European immigrants), which successfully participated in the expanding international economy as exporters of food and raw materials. By the last quarter of the XIXth century NZ and Uruguay had achieved levels of income per capita higher than many leading European countries. However, their subsequent trajectories were rather different. Although it is true that both countries found increasing difficulties to sustain growth in the second half of XXth century, the case of Uruguay was particularly
disappointing, ending this period with an income per capita which was in 1940 just 59 % (78% in 1870) of the income per capita of NZ. Uruguay fell behind: why this happened is the key concern of this paper.

To address this problem the paper analyzes how factors of production and investment decisions were rewarded in both countries. More specifically, the hypothesis is that institutions were very different in NZ and Uruguay, shaping incentives to investment in such a way that while in Uruguay they favored a renter approach, in NZ stimulated productivity growth. The paper is organized in three sections. Section I discusses the evolution of the land rent to wages ratio between 1870-1940. This relation is used as a proxy for the evolution of income distribution in the two countries. Section II discusses the institutional framework that defined property rights in the agrarian sector and the conditions that regulated the access to land. Section III addresses how the total agricultural product was distributed between wages, the land rent and capitalist profits. It is argued that in Uruguay the land rent captured a larger part of the total product in the agriculture, thereby discouraging productive investments. Finally, the main conclusions of the paper are briefly summarized.

I. The impact of globalization on income distribution

There has been a growing interest in the economic literature on the relationship between income distribution and growth. While in the past it was emphasized the existence of a trade-off between these variables, in recent years a new perspective emerged. In this perspective high levels of inequality may produce a political economy and a set of institutions that are inimical to growth. The new theoretical findings (which to a large extent formalize a long standing intuition already presented in many development theorists) encouraged new research on the topic, affecting the comparative studies on the economies of new settlement. As part of these efforts, several works have sought to estimate the long run evolution of income distribution in NZ and Uruguay (Galt, 1985; Atkinson – Leigh,
2005; Bértola, 2005; Ardente, Díaz y Rossi, 2004) and have tried to link their empirical findings with the new growth literature.

The works by Galt (1985) and Atkinson-Leigh (2005) analyze the economic impact of wealth distribution in NZ by estimating the proportion of total wealth that was in the hands of the most affluent groups in society. Working with data on wills and inheritances, as well as with aggregate statistics, Galt (1985) estimated the participation in total wealth of the wealthiest 1% of the population between 1879-1930. He found that in 1890 this group concentrated 55-60% of total wealth, while in 1930 this percentage was 25-30%. Between 1893 and 1903 the participation of the top 10% increased, while that of the top 1% declined. This was the result of policies that encouraged the subdivision of great properties, along with the natural process of subdivision of land between heirs and the opportunities offered by the expansion of refrigeration, which stimulated the adoption of more capital-intensive production processes.

Atkinson and Leigh (2001) collected evidence for the period 1921-2002, for which they estimated the participation of the wealthiest groups (representing 10%, 5%, 1%, 0.5% and 0.1% top income percentiles) based on the tax-system statistics. They found that the participation of these groups increased slightly in the 1920s, declined in the 1930s and increased again with World War Second. From the 1950s to the 1980s the participation of these groups in total wealth fell moderately, while increasing significantly in the 1990s.

In Uruguay, the works by Bértola (2005), Ardente, Díaz and Rossi (2001) identified different trends in income distribution between 1880-2000. There was a rise in income inequality between 1880-1910, then a fall between 1910-1960, and a new rise in 1960-2000. These results use as a proxy for income distribution the rental (land rent) to wage ratio, which aims at capturing the relative rewards of land and labor under different historical conditions. The estimates of the rental / wage ratio are computed on the basis of data for real wages and for land prices. It is worthwhile comparing the Uruguayan series with that produced by Greasley and Oxley (2004) in NZ.
The rental / wage ratio in NZ and Uruguay: comparing long run trends

As noted by Williamson (2002) it is not surprising that the First Globalization era (1879-1914) brought about such strong effects on income distribution in small open economies integrated to world trade. The accelerated growth of the European population, migration from rural areas and the urbanization process were factors that fostered a massive emigration of Europeans to many regions of the globe. The substantial increase in transports productivity in the last quarter of the XIXth century allowed for a dramatic fall in transportation costs. This enhanced the integration to world markets of new regions as suppliers of food and raw materials. Kenwood and Loughheed (1990) has pointed out that between 1824 and 1924 about 43.6 million of people emigrated from Europe to the temperate regions of new settlement, mainly America and Australasia. In the context of the First Globalization of capitalism, characterized by a substantial international mobility of factors, NZ and Uruguay experienced accelerated population growth.

Between 1870 and 1940 the population of NZ increased from 291,000 to 1,633,645 inhabitants, to which immigration contributed with 413,847 people. In the same period Uruguay increased its population from 420,000 to 1,980,000 inhabitants, being the contribution of immigration of about 297,185 people. Thus, the contribution of European immigration to total population represented on average in this period 14 % in Uruguay and 24.2 % in NZ (Álvarez, 2006). Rapid demographic growth had different effects in NZ and Uruguay. NZ had not yet reached its frontiers in 1870, and thus migration allowed this country to expand the occupation of land between 1890 and 1911, from 8 to 17 millions of hectares. Such a process was favored by the distribution of land and the subdivision of large properties. On the other hand, by 1870 Uruguay had no free land where to settle immigrants. Its 17 million of hectares were already in (mostly) private hands, and this amount of land would remain constant thereafter.
The statistical information for the XIXth century and the first decades of the XXth century requires to approach the measurement of income distribution using proxies like the price of land and to the real wages ratio. Time series are available for wages and land prices both in NZ (estimated by Greasley and Oxley, 2004) and for Uruguay (wage estimates provided by Bértola et al, 1996, and land prices by the PHES Data Bank). This allows for a comparison of the evolution of the rental / wage ratio in both countries between 1875-1945.

Graph 1

Sources:
New Zealand - Real Wages and Real Land Prices :Greasley and Oxley (2004: 27, 28);

Graph 1 shows that the rental / wage ratio in NZ and Uruguay followed fairly similar trends: they increased until the first decades of the XXth century and then declined since 1915. These trends probably express the impact of the higher prices for foodstuffs and raw materials in the international economy until 1915, which in turn affected land prices in the exporting countries. On the other hand, one should have expected a less marked deterioration of income distribution in NZ than in Uruguay, to the extent that the supply of...
land was more elastic in the former country. But the increase in the supply of land in NZ was compensated by the much higher inflow of migrants, who settled mainly in the rural areas.

Summing up, trends in income distribution (approached by the evolution of the rental / wage ratio) do not point out significant differences between NZ and Uruguay. But looking solely at trends misses significant level differences in the distribution of the agriculture product and in the opportunities for having access to land. This access was much more open and land was much less concentrated in NZ than in Uruguay. Therefore the same rental / wage ratio may have different meanings in terms of income distribution in each country. The intense process of agrarian colonization in NZ stemmed from very different policies and institutions organizing the distribution of land as compared to Uruguay. We turn our attention to this in the next section.

II. Institutions, property rights and the access to land in NZ and Uruguay

A key tenet of the institutionalist approach is that institutions shape the structure of incentives that regulate the behavior of economic agents. Property rights are a key institution in this respect. The definition and enforcement of property rights are the necessary foundations for the processes of production, exchange and capital accumulation. Institutions depend on a stable political-juridical system and on the capacity of the state to enforce its norms. The distribution of political power interacts with institutions, determining the process of political and economic change and explaining the outcomes of social conflict. In this section we discuss how property rights on land were defined. The evolution of the land and labor markets deeply affected income distribution and investment decisions in NZ and Uruguay.

New Zealand

The NZ historiography has emphasized that the process of land distribution in this country was highly idiosyncratic, representing a factor that contributed to the emergence of an
agrarian society with high welfare levels and democratic values. The distribution of land constituted a political and economic resource that the state widely used in the XIXth century with a view to securing the efficient and productive use of land.

In Article II of the Waitangi Treaty of 1840 the UK acknowledged the individual and collective rights of the native Maories over their territories. The Waitangi Treaty was a turning point in NZ economic history, as it represented the moment in which the Maories ceded the sovereignty of their territory in exchange for autonomy and property rights. In general terms, the Treaty was systematically disrespected, giving rise to the massive transference of land to European colonizers.

Land distribution among the colonizers followed the British tradition of making explicit the Royal origin of property titles. Colonizers could not negotiate directly with the natives, but the intermediation of the Crown was required. The Colonial authorities (and the representatives of the autonomous government) created a juridical framework regulating the expropriation of land from the Maories and granting property titles to the Europeans.

Between 1840 and 1860 the process of land distribution followed suit the arrival of new immigrants, providing for the effective occupation and exploration of the allotments of land. The state controlled land distribution rigorously in order to allow an ample sector of the population to have access to this crucial asset. Public land was sold or leased by the state for long periods under certain conditions, which included the effective exploration of the allotments, measures for soil conservation as well as the improvement of eroded lands (Prichard, 1970; Hawkes, 1985, 1999).

In the 1870s, in the context of the political and administrative reform that eliminated the provincial system and centralized the structure of the state, it was established the Torrens system that highly simplified the registration of property, facilitating the formation of a market for land. The extending of the territorial frontier since 1890, the active role of the state in distributing land and the positive effects of refrigeration (that encouraged the
division of the large estates with a view to adopting more capita-intensive techniques) highly contributed to the transformation of the structure of land property in NZ.

The 1891 Land and Income Tax established a progressive tax on land property for three categories of tax-payers. Keall (2001) suggests that income from this tax represented in 1922 about 10% of the total income of the state. The Lands for Settlement Act of 1892 and 1894 were key juridical pieces in the regulation of land distribution between 1892 and 1912. The first established the abolition of the system of selling land in installments and at the same time allowed for the leasing of public lands (including a purchase option up to a maximum of 8,000 hectares). The initial period of leasing was 10 years with a purchase option, but the leasing could be renewed for a maximum of 25 years, after which the land was occupied in perpetuity (900 years). By means of this mechanism the producer was as a matter of fact the owner of the land, while the state kept for itself the right to demand a rent and to secure the effective occupation of the land and the improvement of the allotment. The same Law granted to the government a budget of 50,000 sterling pounds per year to expropriate land and promote the division of latifundia, increasing this amount to 250,000 sterling pounds in 1894. The estimation of the income received by the state out of the renting of public lands between 1882 and 1894 was high enough as to pay for the costs of the expropriation of the large states in this period (as shown in Álvarez, 2005). The state bought and distributed lands, thereby contributing to the division of large estates, particularly in the Northern Island. The extension of latifundia fell from 3.2 million of hectares in 1891 to 1.4 million in 1910, reflecting the influence of public policy and the advantages of a more capital-intensive type of exploitation. In 1907 the National Endowment Act provided for an extension of the amount of public lands for leasing, with a view to financing the system of public education and supporting the old-age pension system adopted in 1894.

In sum, the NZ state was able to clearly establish property rights in the rural sector at the initial stages of colonization. It allowed for the extension of this property rights for the new waves of white colonizers, while at the same time kept a tight control over the destination and uses of public land. By doing so, it facilitated the access to land to large part of the
population, effectively preventing the control of land by oligarchic groups. As it will be seen next, a rather different pattern characterized the institutions of the Uruguayan rural sector.

**Uruguay**

When Uruguay adopted its first Constitution in 1830, public lands represented 80% of the territory, the national frontiers had already been occupied and the population of the country only reached 70,000 inhabitants. The access of the population to land was a highly conflictive process that the state could not organize properly, being unable to resist the pressure of large landowners, the financial demands produced by frequent fiscal crises, and the military and political power of the *caudillos*, of paramount influence among the rural population that had neither formal property titles nor leasing contracts protecting their interests. The occupation of public land was such a chaotic process that at the beginning of the XXth Century (when the Batlle y Ordoñez administration sought to implement new policies for encouraging agricultural production) the amount of public lands was still unknown. It is likely that these lands did not represent at that time more than 15% of the national territory. The state received no income from them.

A clearly defined policy as regards public lands was absent in the nineteenth-century Uruguay. On the contrary, the state showed a major vulnerability in political and institutional terms, marked by recurrent financial crisis and the lack of effective control of the national territory. Between 1830 and 1870, the successive governments that ruled the country adopted a policy of selling public land instead of offering this land for leasing contracts. Between 1830 and 1836 the private property of land rose from 20% to 42% of total land. Laws in the years 1831, 1833 and 1835 promoted the private property of land and regulated the leasing of public lands, limiting the extension and the duration of leasing contracts. But the continuous political instability that haunted the Uruguayan history in that period prevented the consolidation and the effective working of a market for factors of production before 1870. The state lost its control over public lands, being unable to determine precisely their localization and extension in the national territory.
The consolidation of property rights in the rural sector would only be attained in the second half of the 1870s, in the context of the military regimes which began with Colonel Latorre in March 1876. The emergence of new technologies in weaponry (the Mauser and Remington rifles), transportation (railways) and communication (telegraph) offered the government a decisive advantage over the old-style rural caudillos. In addition, the delimitation of the rural properties was made possible by the diffusion of the iron fence (alambramiento) in the landscape of the pampas (Barran and Nahum, 1967; 1971; 1972; 1973; Jacob, 1969; Millot y Bertino, 1996; Moraes, 2001; Vázquez, 1968). This consolidated the dominance of large estates in the rural sector, to which a substantial part of public lands would be eventually incorporated.

### Table 1

| NEW ZEALAND | | URUGUAY | | |
|-------------|------------------|-------------|------------------|-------------|------------------|-------------|
|             | Private property | Publica Lands | TOTAL | años | % | % | años | % | % | TOTAL |
| 1881        | 67,8            | 32,2         | 100  | 1830 | 19,6 | 80,4 | 100  |
| 1891        | 64,0            | 36,0         | 100  | 1835 | 30,7 | 69,3 | 100  |
| 1913        | 56,4            | 43,6         | 100  | 1836 | 42,2 | 57,8 | 100  |
| 1929        | 58,6            | 41,4         | 100  | 1878 | 75,0 | 25,0 | 100  |
| 1930        | 58,5            | 41,5         | 100  | 1894 | 79,3 | 20,7 | 100  |
| 1940        | 60,7            | 39,3         | 100  | 1931 | 88,5 | 11,5 | 100  |

**Sources and comments**

**URUGUAY**

Own elaboration in base to: Acevedo (1933; Tomo 1: 504,505; Tomo 5: 71); Bertino– Bucheli, (2000; 33); Libro del Centenario (1925 ;99)

**New Zealand**

Own elaboration in base to: Prichard (1970; 138, 334); The statesman’s year-book (1930; 411), (1931; 411), (1932, 413), (1933, 416), (1935, 429), (1937, 439).

#### III. Functional income distribution in the agrarian sector

The literature suggests that the wage share is the key determinant of income distribution in modern industrial societies. As regards to distribution within the group of wage earners, differences in wages levels are related to human capital. Still, to be able to understand the
The evolution of income distribution in the long term, it is necessary to take into account the income derived from the property of land, especially in pre-industrial societies.

In this paper we address income distribution from a macroeconomic perspective, estimating the reward of factors of production in the rural sector. This estimation is based on the following criteria:

i) The agrarian sector was the key driving force of economic growth during a large part of the period under analysis;

ii) The functional distribution of income is a relevant variable affecting the productive performance of the sector;

iii) The asymmetric distribution of the property of assets (land) was the main source of inequality in NZ and Uruguay in the first decade of the XXth century;

iv) The advantage of working with the functional distribution of income is that it provides a theoretical basis for the analysis of the forces that influence personal income distribution.

The theoretical approach

A key contribution to the theory of income distribution was the model proposed by David Ricardo (1817 [1985]), who rigorously analyzed how agricultural output was distributed among workers, landowners, and capitalists in the British economy at the beginning of the XIXth century. He was particularly interested in the role of income distribution in capital accumulation and economic growth in the long run. More recently, some authors have revisited Ricardo’s view in the context of the modern theory of arbitrage in investment between different assets, including non-reproducible land (Foley and Michl, 1999, chap. 11; Kurz e Salvatori, 1995).

From this perspective growth depends directly on the accumulation of capital, which is in turn a function of capitalist profits. The influence of the decreasing returns to capital would lead to a fall in the profit rate and investment, as less fertile lands are gradually
incorporated to production. On the other hand, wages would remain constant and the land rent would rise. This implies that a trend to stagnation sets in, as the land rent absorbs significant resources that would otherwise have been directed to the expansion of production. If there is no technical change in the model the economy approaches stagnation as agricultural production increases.

In order to avoid a steady state in which the economy stops growing, it is necessary to have investments in technical change that would curb the depressing influence of decreasing returns on the profit rate. A higher share of total outcome accruing to the capitalist sector (rather than to renters) would provide stronger incentives to this kind of investments. In the next section it is estimated the participation in the total agricultural output of wages, rents and profits, showing that the share of the latter was higher in NZ and Uruguay. Within the theoretical model suggested before, such a behavior of income distribution in NZ was more favorable to economic growth than the one observed in Uruguay.

Estimation and results

We estimated the functional income distribution of the agrarian sector in NZ and Uruguay between 1890 and 1940. More specifically, it was estimated the agrarian product, wages and total rent paid in the agrarian sector in selected years: 1891, 1996, 1911 and 1936. In both cases the volume of profits was obtained as a residual.

For NZ, the estimation of total wages was based on:


b) Wages of rural workers obtained from Greasley and Oxley (2003; 1998).

The estimation of total rents was based on:
a) Land prices taken from Prichard (1970) and Greasley and Oxley (2003). The series of the latter authors are deflated by the IPC series produced by Briggs (2003);
b) Total land occupied and exploited each year, identifying public and private lands in the total, as published by Prichard (1970).

The estimation of the agrarian product was drawn from Hawke (1985) and Prichard (1970).

**Uruguay**

The estimation of total wages was based on:

The estimation of the volume of the land rent was based on:
a) Time series data for land prices provided by the PHES data bank, elaborated from Barrán and Nahum (s/f, 319) for the period (1886-1895); Barrán and Nahum (1973) for the period 1896-1905; Barrán and Nahum (1977) for the period 1906-1913; Balbis for the period 1916 and 1930; Reig-Vigorito (1986) for the period 1931-40.
b) Prices for rural leasing elaborated on the basis of PHS databank; Buchelli, Moraes (2001); Barrán and Nahum (1972) for the years 19908-1911; BROU (1933) for the years 1916 and 1930; Jacob for the year 1940.

The estimation of the agrarian output was based on Bértola et al (1998); Bertino et al (1999) and Bértola 2005.
Table 2

Functional distribution of the incomes in the agrarian sector

<table>
<thead>
<tr>
<th>Year</th>
<th>Wage (Public)</th>
<th>Wage (Private)</th>
<th>Rent</th>
<th>Benefit</th>
<th>AGRARIAN PRODUCT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1891</td>
<td>33.1</td>
<td>4.4</td>
<td>21.7</td>
<td>26.2</td>
<td>40.7</td>
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<tr>
<td>1896</td>
<td>31.9</td>
<td>3.5</td>
<td>15.6</td>
<td>19.1</td>
<td>48.9</td>
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<td>1911</td>
<td>21.4</td>
<td>4.6</td>
<td>21.6</td>
<td>26.2</td>
<td>52.4</td>
</tr>
<tr>
<td>1936</td>
<td>33.1</td>
<td>4.5</td>
<td>17.8</td>
<td>22.3</td>
<td>44.7</td>
</tr>
</tbody>
</table>
| Average | 30          | 4              | 19   | 23      | 47               | 100

Source:

Table 3

<table>
<thead>
<tr>
<th>Year</th>
<th>Wage (Public)</th>
<th>Wage (Private)</th>
<th>Rent</th>
<th>Benefit</th>
<th>AGRARIAN PRODUCT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1892</td>
<td>22.0</td>
<td>67.7</td>
<td>10.3</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>1895</td>
<td>22.0</td>
<td>57.1</td>
<td>20.9</td>
<td>100</td>
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</tr>
<tr>
<td>1908</td>
<td>20.3</td>
<td>43.6</td>
<td>36.1</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>1911</td>
<td>19.5</td>
<td>45.6</td>
<td>34.9</td>
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</tr>
<tr>
<td>1916</td>
<td>24.6</td>
<td>32.8</td>
<td>42.6</td>
<td>100</td>
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<tr>
<td>1930</td>
<td>21.5</td>
<td>37.9</td>
<td>40.5</td>
<td>100</td>
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</tr>
<tr>
<td>1937</td>
<td>22.8</td>
<td>30.6</td>
<td>46.5</td>
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<tr>
<td>1940</td>
<td>22.0</td>
<td>36.6</td>
<td>41.4</td>
<td>100</td>
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</tr>
<tr>
<td>Average</td>
<td>22</td>
<td>44</td>
<td>34</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

Source:

The evolution of functional income distribution shows that total wages as a share of total product was stable in both countries, representing about 30 % in NZ and 22 % in Uruguay. The rent share fell from 68 % of the total agricultural product in 1892 to 37 % in 1940 in
the case of Uruguay. In NZ the decline was less marked (from 26% in 1891 to 22% in 1936), but the participation of land rent always remained at much lower levels than in Uruguay. The profit share was very low Uruguay in 1892 (10%) as compared to NZ (41%), but they converged to similar values by the end of the thirties (41% in Uruguay (1940) and 45% in NZ (1936))

The evolution of income distribution was more stable in NZ than in Uruguay. From the beginning of the period analyzed NZ offered higher rewards to labor and reproducible capital than Uruguay (these factors received about 70% of total output in NZ, while Uruguay only approached this figure at the end of the period). In Uruguay the land rent absorbed 68% of total output in 1891. On average, in Uruguay land renters captured 44%, capitalists 34% and workers 22% of the total agricultural output. These figures were 23%, 47% and 30%, respectively, in the case of NZ.

Moreover, in NZ the agrarian rent was made of two parts, one accruing to the government (4% of total output) and the other to private landowners (19%). Public property of land was a key difference between NZ and Uruguay, since it crucially affected the availability of land to be distributed and allowed the NZ state to enjoy during most of the period a much more equilibrated fiscal situation. Another form of looking at this difference is by comparing the land rent derived from the private property of land in both countries: 44% in Uruguay and 19% in NZ.

In sum, in general terms income distribution in NZ favored the reward of labor and of productive investment over the land rent and land speculation. Investments in productivity growth were more attractive in NZ than in Uruguay, since in the latter country the simple possession of land permitted the owner to seize a significant part of the total agricultural output.

Conclusions
The paper discussed why the evolution of NZ and Uruguay was so different in the long run, in spite of the many similarities that both countries held by the end of the XIXth century. It
is shown that there were key institutional differences between them as regards the distribution of land and the role the state played in promoting its effective occupation.

In Uruguay public lands were offered to those sectors endowed with political and military power, preventing new colonizers from having access to land. In the second half of the XIXth century there was no more frontier land in Uruguay, which conferred to private owners all the (economic and political) advantages of the possession of a limited, critical asset in a mostly agrarian country. On the other hand, in NZ the state kept for itself a substantial part of the total available land. It gave this land to colonizers that were able to exploit their own parcels in stable conditions, avoiding a too high oligopolistic concentration of land property in private hands. From this emerged a democratic society in which economic opportunities were more equally distributed among colonizers, having this relevant implications from the perspective of both the political economy of economic growth and the incentives to invest.

It was not possible to address in this paper all the political economy implications of so different institutional frameworks (emphasized by authors like Acemoglu et al, 2004, among others). We focused instead on a specific dimension of institutions, namely property rights and income distribution in the agrarian economy. It was shown that land rent absorbed a much larger part of total output in Uruguay than in NZ. Rent-seeking clearly was a much stronger influence in investment decisions in the former country than it was in the latter. This may have contributed to hinder the diffusion of technology in Uruguay, with negative effects on long run growth.

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Statistics Appendix
### TABLE 1

Quantity of grounds, busy surface (thousands of hás.) and so great average of the grounds (hás.)

<table>
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<th></th>
<th>1891</th>
<th>1896</th>
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<td>58.940</td>
<td>73.876</td>
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<td>90.931</td>
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<td>UY</td>
<td>17.177</td>
<td>17.177</td>
<td>16.745</td>
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<td>13.653</td>
<td>16.491</td>
<td>16.053</td>
<td>17.593</td>
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</tbody>
</table>


### TABLE 2

Natural growth and migratory balance percentage of the total population

<table>
<thead>
<tr>
<th>Quinquennium</th>
<th>Natural growth</th>
<th>Migratory balance</th>
<th>Total</th>
<th>Natural growth</th>
<th>Migratory balance</th>
<th>Total</th>
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<tbody>
<tr>
<td>1871 – 75</td>
<td>97.5</td>
<td>2.5</td>
<td>100</td>
<td>33.1</td>
<td>66.9</td>
<td>100</td>
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<tr>
<td>1876 – 80</td>
<td>113.0</td>
<td>-13.0</td>
<td>100</td>
<td>53.5</td>
<td>46.5</td>
<td>100</td>
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<tr>
<td>1881 – 85</td>
<td>61.5</td>
<td>38.5</td>
<td>100</td>
<td>69.9</td>
<td>30.1</td>
<td>100</td>
</tr>
<tr>
<td>1886 – 90</td>
<td>53.8</td>
<td>46.2</td>
<td>100</td>
<td>115.6</td>
<td>-15.6</td>
<td>100</td>
</tr>
<tr>
<td>1891 – 95</td>
<td>74.7</td>
<td>25.3</td>
<td>100</td>
<td>79.1</td>
<td>20.9</td>
<td>100</td>
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<tr>
<td>1896 – 00</td>
<td>69.5</td>
<td>30.5</td>
<td>100</td>
<td>84.8</td>
<td>15.2</td>
<td>100</td>
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<tr>
<td>1901 – 05</td>
<td>115.7</td>
<td>-15.7</td>
<td>100</td>
<td>60.2</td>
<td>39.8</td>
<td>100</td>
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<td>1906 – 10</td>
<td>107.4</td>
<td>-7.4</td>
<td>100</td>
<td>66.6</td>
<td>33.4</td>
<td>100</td>
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<tr>
<td>1910 – 14</td>
<td>90.0</td>
<td>10.0</td>
<td>100</td>
<td>70.9</td>
<td>29.1</td>
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<tr>
<td>1915 – 19</td>
<td>97.7</td>
<td>2.3</td>
<td>100</td>
<td>91.9</td>
<td>8.1</td>
<td>100</td>
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<tr>
<td>1920 – 24</td>
<td>78.1</td>
<td>21.9</td>
<td>100</td>
<td>65.3</td>
<td>34.7</td>
<td>100</td>
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<tr>
<td>1925 – 29</td>
<td>65.5</td>
<td>34.5</td>
<td>100</td>
<td>73.5</td>
<td>26.5</td>
<td>100</td>
</tr>
<tr>
<td>1930 – 34</td>
<td>86.8</td>
<td>13.2</td>
<td>100</td>
<td>109.3</td>
<td>-9.3</td>
<td>100</td>
</tr>
<tr>
<td>1935 – 39</td>
<td>92.4</td>
<td>7.6</td>
<td>100</td>
<td>87.9</td>
<td>12.1</td>
<td>100</td>
</tr>
</tbody>
</table>

Promedio

| 1871 – 1939 | 86.0 | 14.0 | 75.8 | 24.2 |
TABLE 3
Migratory balance (1870 - 1940)

<table>
<thead>
<tr>
<th></th>
<th>URUGUAY</th>
<th>NEW ZEALAND</th>
</tr>
</thead>
<tbody>
<tr>
<td>1870 – 1915</td>
<td>147.216</td>
<td>305.254</td>
</tr>
<tr>
<td>1915 – 1940</td>
<td>116.797</td>
<td>88.057</td>
</tr>
<tr>
<td>1870 - 1940</td>
<td>264.013</td>
<td>393.311</td>
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</tbody>
</table>


Graphic 1
Rural population as percentage of the total population

Sources:
Table 4

Functional distribution of the incomes in the agrarian sector

<table>
<thead>
<tr>
<th>NEW ZEALAND (Pounds)</th>
<th>WAGE</th>
<th>Public Rent</th>
<th>Private rent</th>
<th>RENT</th>
<th>BENEFIT</th>
<th>AGRARIAN PRODUCT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1891</td>
<td>4,458,800</td>
<td>597,493</td>
<td>2,925,323</td>
<td>3,522,816</td>
<td>5,480,908</td>
<td>13,462,524</td>
</tr>
<tr>
<td>1896</td>
<td>4,251,612</td>
<td>465,353</td>
<td>2,078,295</td>
<td>2,543,648</td>
<td>6,514,973</td>
<td>13,310,233</td>
</tr>
<tr>
<td>1911</td>
<td>6,324,843</td>
<td>1,363,764</td>
<td>6,391,324</td>
<td>7,755,088</td>
<td>15,487,688</td>
<td>29,567,619</td>
</tr>
<tr>
<td>1936</td>
<td>18,510,665</td>
<td>2,523,492</td>
<td>9,953,774</td>
<td>12,477,266</td>
<td>25,012,069</td>
<td>56,000,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>URUGUAY (Pesos)</th>
<th>WAGE</th>
<th>RENT</th>
<th>BENEFIT</th>
<th>AGRARIAN PRODUCT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1892</td>
<td>5,096,357</td>
<td>15,680,000</td>
<td>2,388,901</td>
<td>23,165,257</td>
</tr>
<tr>
<td>1895</td>
<td>6,044,252</td>
<td>15,680,000</td>
<td>5,749,622</td>
<td>27,473,875</td>
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<tr>
<td>1908</td>
<td>11,014,734</td>
<td>23,724,629</td>
<td>19,639,754</td>
<td>54,379,116</td>
</tr>
<tr>
<td>1911</td>
<td>11,288,427</td>
<td>26,422,347</td>
<td>20,201,493</td>
<td>57,912,267</td>
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<tr>
<td>1916</td>
<td>20,777,224</td>
<td>27,688,694</td>
<td>35,946,659</td>
<td>84,412,577</td>
</tr>
<tr>
<td>1930</td>
<td>30,394,067</td>
<td>53,583,496</td>
<td>57,273,472</td>
<td>141,251,035</td>
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<tr>
<td>1937</td>
<td>33,361,378</td>
<td>44,708,763</td>
<td>67,932,585</td>
<td>146,002,726</td>
</tr>
<tr>
<td>1940</td>
<td>33,876,958</td>
<td>56,430,161</td>
<td>63,688,807</td>
<td>153,995,926</td>
</tr>
</tbody>
</table>

Sources:
Uruguay: