Agro in Uruguay: Ground Rent, Labor Income, and Profit

Gabriel Oyhantçabal[1]
Martín Sanguinetti[1]

[1] University of the Republic, Uruguay. E-mail
addresses: gaboyha@gmail.com and masanguin58@gmail.com, respectively.

Abstract

Since 2002, the agriculture and livestock sector in Uruguay has undergone an intense transformation in the context of high commodities prices and rising foreign investment. This research studied an as-of-yet unaddressed dimension of these changes concerning their impact on income distribution to contribute to the recent literature on these matters. The distribution of income by source of remuneration (labor income, profit, and ground rent) and social class, including the State, in the period 2000-2015, was analyzed. The results show that landholders were the group whose appropriation of value increased the most. The total wage bill grew slightly, and state participation held steady in both the value of agriculture and livestock and ground rent.

Keywords: Agriculture and livestock sector, labor income, ground rent, surplus, State.

INTRODUCTION

After sinking into a deep recession between 1999 and mid-2003, the Uruguayan economy underwent a series of intense transformations with high economic growth rates in a context fueled by international drivers, such as high prices for exported products and thriving foreign direct investment (FDI).[2] Between 2004 and 2015, the cumulative growth of the gross domestic product (GDP) amounted to an annual average rate of 6.4%, the annual gross fixed capital formation rate reached 19.9% of GDP, and exports of goods and services grew 5.3% per year (BCU, 2016).

The agriculture and livestock sector was one of the most dynamic, thanks not only to growth within the sector, but also to its multiplicative effects rippling to the rest of the economy, and

it was one of the strongest sectors when it came to exports. After agriculture and livestock production declined in physical volume between 1998 and 2001, between 2002 and 2015, the agriculture and livestock GDP grew 42.5% in constant 2005 pesos, at an annual rate of 3.3%. However, this growth was slower than that of the economy as a whole, which grew at a rate of 6.2% per year in the same time period (BCU, 2016).

Particularly striking about this sector's growth in the time period was the change in the sectoral makeup of its GDP as a result of the expansion of new fields like forestry and soy, which in 2011 accounted for 2,617 hectares, 16% of the 16.36 million agriculture and livestock hectares (DIEA, 2014). Forestry began to rise in the nineteen-nineties, going from 186,000 hectares in 1990 to 660,000 hectares in 2000, and 1,071,128 hectares by 2011. For its part, farming growth dates back to the turn of the twenty-first century, essentially driven by the soy crop, which went from 404,291 hectares in 2000 to 1,545,889 hectares by 2011 (DIEA, 2003 and 2014). Looking at planted surface area by agricultural fiscal year, including annual dual crop systems, there is an increase from 637,810 hectares in 2000 to 1,947,113 hectares in 2011 (DIEA, 2003 and 2014). Among agricultural crops, soy made an exponential leap forward in planted surface area, going from 8,900 hectares in the 1999/2000 harvest to 1,334,000 hectares in 2014/2015 (DIEA, 2015).

In a country where practically all of the agriculture and livestock fields were already in use by the end of the nineteenth century, the rise of forestry and agriculture entailed the territorial displacement of other agriculture and livestock activities. Comparing the censuses of land use taken in 1990, 2000, and 2011, it emerges that natural field surface area (natural pastures) fell by 2,132,000 hectares in just 21 years, plunging by 262,000 hectares of artificial prairie space between 2000 and 2011 alone. In both cases, this was a matter of land uses destined primarily for meat livestock and wool, in the former case, and meat and dairy livestock in the second.

These transformations in land use were expressed in the flourishing land market. In 2000-2015, 7.84 million hectares of land, representing 48.1% of the national territory, were sold. Land prices skyrocketed from 448 to 3,594 dollars/hectare, peaking at 3,934 dollars/hectare in 2014. Annual lease prices jumped from 28 to 124 dollars/hectare, peaking at 174 dollars/hectare in 2014 (DIEA, 2016a and 2016b).

However, in spite of their magnitude, little has been done to study the impact of these transformations on income distribution. Where the official agencies are concerned, the Central Bank of Uruguay (BCU), in charge of the National System of Accounts (SCN), stopped estimating the income generation account in 2005; the Annual Economic Activity Survey published by the National Statistics Institute (INE) does not include in its sample

agriculture and livestock exploitation; and the body in charge of agriculture and livestock statistics, the Agriculture and Livestock Statistics Directorate (DIEA-MGAP), does not deal with the distribution of income by sector.

Nor are there rigorous estimates as to the magnitude of the surplus appropriated as ground-rent, a relevant aspect when it comes to analyzing the dynamics of a sector whose activities are predicated on the exploitation of land as a resource, a finite, heterogeneous, and monopolizable means of production that imposes specific laws on the development of capitalism, to the extent that the formation of production and market prices ought to permit the appropriation of differential and absolute rent or rent through simple monopoly (Foladori, 2013).

The recent national literature addressing topics surrounding income distribution in Uruguay is fundamentally academic in nature. The literature initially focused on studying the personal distribution of income (distribute by decile or through the Gini index), then looked at the link between the personal distribution and functional distribution of income, generally from the standpoint of remuneration by production factor (Burdín *et al.,* 2014; Burdín *et al.,* 2015 De Rosa and Vigorito, 2015).

By way of relevant background information, the United Nations Development Program (PNUD, 2008: chap. 3), estimated the functional distribution of income for the overall economy based on national accounts. The study points to the share of wages in the value appropriated nationwide, revealing that some of the major trends include the sharp devaluation of labor-power in step with the last military dictatorship (1973-1985), when the share of wages in GDP fell from 40% to 28%, followed by a slight post-dictatorship decrease, and a nosedive again with the 1999-2002 crisis.

Working with the same data series, Alarco (2014) estimated the share of total wages in GDP in 15 Latin American countries, looking at wages from 1950 to 2010. For Uruguay, the series goes from 1955 to 2011. Just as in the previous study, in Uruguay, total wages abruptly decline until 1984, begin to recover in the nineties, drop off once again with the 1999-2002 crisis, and later rebound meagerly, reaching numbers close to 36% of GDP in 2011.

For their part, Abeles *et al.* (2014), also using a long-term and comparative approach to study countries in Latin America, estimated the share of labor income in GDP at three moments in time: 1990, 2000, and 2009. What makes this study different from the research mentioned above is that it included in its analysis the portion of mixed income coming from salaries and capital alike. For Uruguay, the estimates are only available for the years 2000 and 2010, with the wage share waning from 47.4% to 45.8%.

Drawing on theory anchored in the political economy, Notaro (2012) estimated the share of income earned by the popular classes (workers and employees, the self-employed, the economically inactive, and welfare-dependent) in available gross national income (GNI) from 2006 to 2010 and found that it tended to hover around 41%.

Research studies published by the Cuesta Duarte Institute (ICD, 2011) and Burdín *et al.* (2014) are two examples of estimates of the share of wages in GDP since 2005, working with microdata from the Continuous Household Survey (ECH). The difference between the two papers is that Burdín *et al.* (2014) uses administrative data from the General Tax Directorate (DGI) to improve some of the underestimating issues related to capital income and administrative data from the Social Welfare Bank (BPS) to estimate wages better. The ICD estimates that total wages grew from 26% to 30% between 2005 and 2010. Burdín *et al.* (2014) estimated an increase from 28% to 38% in the same years. The discrepancy may be due to the different methods used in these studies.

Finally, De Rosa and Vigorito (2015) estimated functional income distribution working with tax returns from companies paying the tax on income from business activities (*Impuesto a la Renta de las Actividades Empresariales,* IRAE), which does not include all companies, but is the only piece of data containing an estimate of income distribution in the agriculture and livestock sector. On average, they found that wages accounted for 47.6% of the income earned in 2012, but with significant gaps between categories of activity: to the primary sector goes 32-33%, but to the industrial more than 50%.

This research was designed to study the distribution of the value appropriated by the agriculture and livestock sector in Uruguay in 2000-2015, in the understanding that studying the disaggregation of value, and in particular, ground-rent, is relevant to understanding the distributive effects of the recent agriculture and livestock boom as a source of input for designing redistributive policies.

This analysis was performed on two different levels. First, on a more abstract level, addressing primary distribution in the three ways new value is distributed—as a function of relations of production—across the owners of the different forces or factors that intervene in production: labor income that remunerates labor-power, the profit that remunerates the owners of capital, and the income on the land that remunerates its owners, these constituting the forms adopted by surplus labor or surplus value in a capitalist society (Marx, 1980). And at another more concrete level, this paper delves into the secondary distribution of the same value across the social classes that take part in the economic process (capitalists, landlords, wage-laborers, direct-market producers)[3] and the State, which appropriates surplus value to reproduce the general conditions of accumulation.

METHODOLOGY

The main source to estimate the proportion of value appropriated by sector of activity is a country's national accounts, which the BCU publishes regularly for Uruguay. This paper analyzed the relative distribution of the value appropriated nationally by a sector of activity, the gross value added (GVA), with aggregate figures from the SCN in current American dollars, considering that this is a good way to express the value of annual production by disregarding fluctuations in the national currency (Uruguayan peso). The Uruguayan pesos were converted to American dollars using the annual average nominal exchange rate.

The total value appropriated by the agriculture and livestock sector is referred to in the SCN pursuant to the International Standard Industrial Classification (ISIC), revision 3, in primary activities, under the line item "agro" (branch A), subdivided into three activity sectors: "General crops: agriculture services applied to these crops" (branch A.011), "Animal husbandry; livestock services" (branch A.012), and "Forestry, timber, and services for related activities" (branch A.020).

Distribution by Income Source

At a more abstract level, this research examined how value is distributed between the labor income remunerating the labor-power and the surplus, understood as the excess value produced through the consumption of labor-power, which remunerates the owners of capital in the form of profit and the landowners in the form of ground-rent. It is a matter of what the contemporary literature conceptualizes as the functional income distribution, which at the time, Marx (1980) defined as the income sources of the "three big classes of modern society."

To the extent that the SCN produces gross information, without booking consumption of fixed capital, rent and profit are gross. In any event, taking as a reference the recent estimates for the manufacturing industry in Uruguay, it turns out that the depreciation rate has been on the order of 4% of GVA between 2009 and 2012, as reported by Olmos (2015), working with tax returns, while the Annual Economic Activity Survey reported that from 2003 to 2010, depreciation rose to 8.5% on average (INE, 2016).

Agrarian ground-rent was calculated assuming that all landowners with commercial agriculture and livestock activities, amounting to 16.36 million hectares in 2011, earn income, whether they are simultaneously businesspeople and landlords (in which case they

earn income on the price of goods), or only landlords who lease their land in exchange for rent, which is separate from the profit. Rent was estimated through a series of leasing prices published by the DIEA, assuming that lease prices are directly equivalent to rent or, in other words, that through the lease price, landlords appropriate neither a portion of the capitalists' profits nor a portion of the labor-power's value resulting from paying below value. The component that does contribute to the lease price together with rent is the depreciation of capital fixed to the ground (facilities, fertility, etc.) which could not be deduced, due to lack of information, but supposing a lifetime of between 40 and 50 years for agricultural facilities, would oscillate between 2.5% and 2% of GVA.

As mentioned, ground-rent is appropriated in two main ways: *1*) as the lease price for those who lease their fields to agriculture and livestock operations; *2*) as part of the profit if the farmers are in turn also the owners of their fields. It bears noting that the calculated rent is not the entire ground-rent that Uruguay appropriates as a national space in the global accumulation of capital, but rather just that which is appropriated by landlords. Ground-rent can (and in fact is) be diverted primarily to other social actors, meaning it may never reach the hands of the landlords, thanks to State intervention through the overvaluation of the exchange rate, taxes levied on agriculture and livestock exports, price-setting for agrarian goods, and other mechanisms (Iñigo Carrera, 2007).

To calculate ground-rent per hectare, this study began with the leasing price data that the DIEA has been publishing since 2007 by processing the leasing data reported by the General Directorate of Records from the Ministry of Education and Culture, which accounts for practically 100% of formal lease agreements. The figures published set national leasing prices, and also show how prices vary by productive destination. Based on this breakdown by sector, ground-rent was reconstructed, weighted by the totality of the productive surface area with land-use numbers taken from the General Agriculture and Livestock Census (DIEA), the surveys by sector administered by the DIEA, and sworn statements made to the Livestock Control Directorate (DICOSE). This adjustment is important because the national average conceals the problem that the magnitudes of surface area leased annually by sector are not equivalent to the total land used in productive surface area, in the sense that there are some sectors, like agriculture, where 70% of the surface area is under lease, but in livestock, the figure falls to 30%. Appendix 1 introduces the details of the surface area occupied, lease prices, total rent, and percentage leased by land-use type.

With this procedure, a weighted ground-rent was calculated, which, depending on the year in question, ranged between 55% and 82% of national average lease prices. With the weight from 2007 (76%), rent was adjusted for 2000-2006, when only national averages not discriminating by productive activity were available. Finally, the annual magnitude of rent

was calculated by multiplying the rent per annual average hectare by total national productive surface area obtained from the agriculture and livestock censuses (2000 and 2011), assuming the productive surface in the years without a census evolved at a constant rate between 2000 and 2011.

Labor income was estimated by adding wage-laborers' remunerations, from employers when they reported it as wages paid for consuming the workers' labor-power, and from direct-market producers, whose remunerations are booked in the national accounts as "mixed income." For the time period 2000 to 2005, the national accounts (BCU, 2016) summarize information about total wages and mixed income. This source adds the income from market producers to employer-paid wages. From 2006 to 2015, based on the microdata from the ECH, the total liquid wages earned by wage-laborers, the remuneration paid by employers, and mixed income numbers were obtained. In 2010, because the ECH overestimates the population of the sector in general, but in particular, the number of wage-laborers in the three branches, the total income was adjusted as shown in Appendix 2.

To construct the nominal wages of the wage-laborers, personal and employer contributions to social security were added together, along with state health insurance contributions (FONASA), based on the administrative data from BPS. For employer-paid income, personal contributions to BPS were added.

For the wage-laborers, and self-employed and employers alike, the tax on the income earned by individuals (IRPF), category 2, paid by people who earn above eight times the Benefits and Contributions Base (BPC, equivalent to a nominal monthly income of around 790 dollars in 2015) were not added to labor income, because these data were only available from 2009 to 2011. In any event, processing the data from the DGI, it emerges that in these three years, the category 2 IRPF accounted for 0.35% of the agriculture and livestock GVA.

Looking at the income of direct-market producers, theoretically, they represent the combination of various economic personifications or forms of value (wages, rent, and profit) in one figure. However, the mixed income calculated by the SCN was considered to fundamentally include the remuneration of labor-power and ground-rent appropriated by those who also own land. There is a chance that this calculation includes profits, but insofar as the majority of these producers only use family labor and exist in simple reproduction conditions, the choice was made to assume that they do not appropriate surplus in the form of profit. For this reason, to obtain the labor income of the market producers, the total wages appropriated by those who are owners, obtained by considering the percentage of surface area that these producers own, which was taken from the 2000 and 2011 agriculture and

livestock censuses conducted by Tommasino *et al.* (2014), were subtracted from the mixed income.

Finally, profits were calculated by subtracting rent and labor income from total GVA.

Distribution of Income Across Society

This level of abstraction dealt with the distribution of value across the social classes involved in the economic process, including the state appropriation of sectoral value, which Notaro (2012) conceptualizes as the social income distribution. At this level, various economic personifications overlap in a single figure. Thus, capitalists appropriate profit (by definition), but also rent, when they are landlords, and wages when they work (employer-paid labor income); landlords only appropriate ground-rent; direct-market producers appropriate wages as workers, rent when they own land, and eventually profit if they enter into an amplified accumulation process; and wage-laborers only earn wages for the sale of their labor-power. For its part, the State appropriates a part of the surplus via taxes that affect both profits and rent, and via ground-rent directly as a landlord through the National Colonization Institute (INC), a public agency that controls around 2% of the productive surface and leases plots of land to market farmers at subsidized prices.

Landlords appropriate value via the rent they collect the land they own less the land taxes levied on this land. The rent was obtained by weighting the total ground-rent in Uruguay as a function of the land under lease by land use, as summarized in Appendix 1, and land ownership taxes were taken from State tax returns, weighted as a function of the fraction of rent appropriated. It is worth clarifying that this method may overestimate the rent appropriated by landlords to the extent that many lease contracts last more than one year, so the rent does not continue to evolve and is only updated when the contract is renewed.

State income was calculated by adding together taxes collected on the agriculture and livestock sector and the taxes collected by the INC on the lease of its exploitations (see details in Appendix 3). The taxes collected in 2000-2015 were obtained from data published by the DGI (2016) and reports published every year by the Agriculture and Livestock Policy and Planning Office (OPYPA), under the auspices of the MGAP, based on DGI and its own estimates (Tambler, 2000, 2005, 2009, and 2015). These include taxes levied on ground-rent and paid only by the landlords, as well as taxes levied on production (including profits), paid only by the holders of the agriculture and livestock exploitations. The INC income was obtained from processing the balance sheets ("property exploitation" line item). The

assumption was made that 250,000 hectares were leased in 2005, and that in the period 2005-2015, another 10,000 hectares were acquired per year, with the INC's average lease price equivalent to approximately 35% of the weighted rent. Likewise, with these figures, the tax pressure, or state appropriation of relative value, was calculated, as total tax over agriculture and livestock GVA and state pressure on ground-rent as appropriated rent (via taxes and INC) over total rent.

The calculation of the value appropriated by wage-laborers and direct-market producers was summarized in the section above in the discussion of labor income as a whole, and arises from the SCN (2000-2005) and the processing of the ECH and social security contribution files (2006-2015). Finally, the capitalists' income was calculated by subtracting the remuneration paid to the other subjects from total GVA.

DISTRIBUTION OF AGRICULTURE AND LIVESTOCK VALUE
Distribution by Source of Remuneration: Wages, Rent, and Profit

Figure 1 summarizes the distribution of agriculture and livestock GDP in the period 2000-2015, expressed in billions of dollars. The overall trend for the GVA is one of growth, beginning in 2002, tied to the aforementioned transformations, and also related to Uruguay's emergence from the 1999-2002 economic crisis and the extraordinary rise in prices for products exported from the country. The only years when the product fell in any significant way were 2009, bound up in the international crisis that began in 2008 and the effects of the severe water deficit ("drought") of 2008, and 2014 and 2015, related to the beginning of the commodities price downswing.

The evolution of the distribution of labor income and surplus value (rent plus profits) points to two key moments. From 2000 to 2004, the surplus value grew in relative and absolute terms, while labor income followed an inverse trend. The former went from 61% to 80.5% of GVA, growing in absolute terms from 790 million to 1.182 billion dollars, while labor income fell from 39% to 20% of GVA, decreasing in absolute value from 506 to 287 million dollars.

Figure 1. Distribution of Agriculture and Livestock GVA in Labor Income,
Profit, and Ground-rent, 2000-2015, in thousands of USD
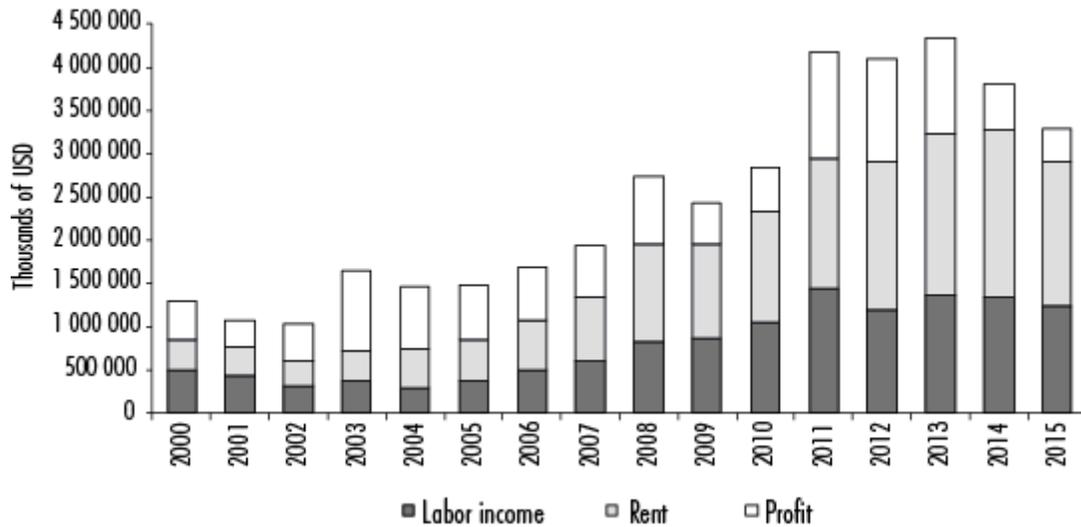
Source: Created by the authors.

On the contrary, in 2005-2015, labor income recovered in both absolute and relative terms, while the surplus value fell relatively but rose significantly in absolute figures. Labor income recovered in the time period, going from 20% to a peak of 38% of VGA in 2015, while the figure in absolute values mushroomed from 381 million to 1.250 billion dollars. For its part, the surplus value fell in relative terms, oscillating between 73% (2005) and 62% of GVA (2015), but grew in absolute terms, from 1.093 to 2.040 billion dollars, reaching a maximum of 2.965 billion dollars in 2013.

If the distribution of the surplus value across profits and rent is analyzed, it emerges that from 2000 to 2003, profit grew in a context of shrinking labor income and relative rent stability, while starting in 2004, against the backdrop of sectoral expansion hand in hand with the commodities boom, ground-rent rose both absolutely and relatively, going from 21.7% of agriculture and livestock GVA and 361 million dollars in 2003 to 50.4% of GVA and 1.658 billion dollars in 2015. On the contrary, in this same time period (2003-2015), the share of profits in GVA fell, fluctuating between 20% and 30% and reaching a ceiling of 11.6% in 2015, while also oscillating in absolute numbers, with a low of 486 and 383 million dollars in 2009 and 2015, and highs of 1.222 and 1.119 billion dollars in 2011 and 2012.

From this overall analysis of the three sources of remuneration arise various conclusions. First, it is clear that the period of economic crisis (2000-2003) prompted the devaluation of labor-power, expressed in the decline of total labor income, as a way for capital to recover its profitability, manifest in the significant expansion of the share of profit in GVA, while

rent remained relatively steady. In other words, the crisis was initially resolved by devaluing labor-power, rather than affecting total rent.

Second, 2003 ushered in an intense growth phase for the amount of value appropriated by the sector, changing the relative shares of remuneration sources. The commodities boom helped the relative share of labor income rise, expressed in a significant increase in the value of labor-power insofar as total labor income grew through the expansion of the real income of wage-laborers between 2006 and 2015 rather than through the number of people employed, which has remained relatively stable (see figure 2). When it comes to the other classes (self-employed and employers), it is remarkable that as a trend, the same number of employees and wage-laborers has been maintained, but unlike wage-laborers, real income for these other classes did not rise significantly, to the extent that between 2006 and 2015, real employer income fell 1.7%, while for the self-employed, it rose 9.6%, but if rent is removed from the equation, their real remuneration really fell 16.1%, becoming the class reporting the lowest income, which could explain the proletarization of the class, in the sense that between 2000 and 2011, family-type establishments (pursuant to the official definition) fell from 32,696 to 25,580 (Tommasino *et al.,* 2014).

Figure 2. Number of Workers (Left Axis) and Real Annual Wages (Right Axis) by Type of Social Figure from 2006 to 2015.
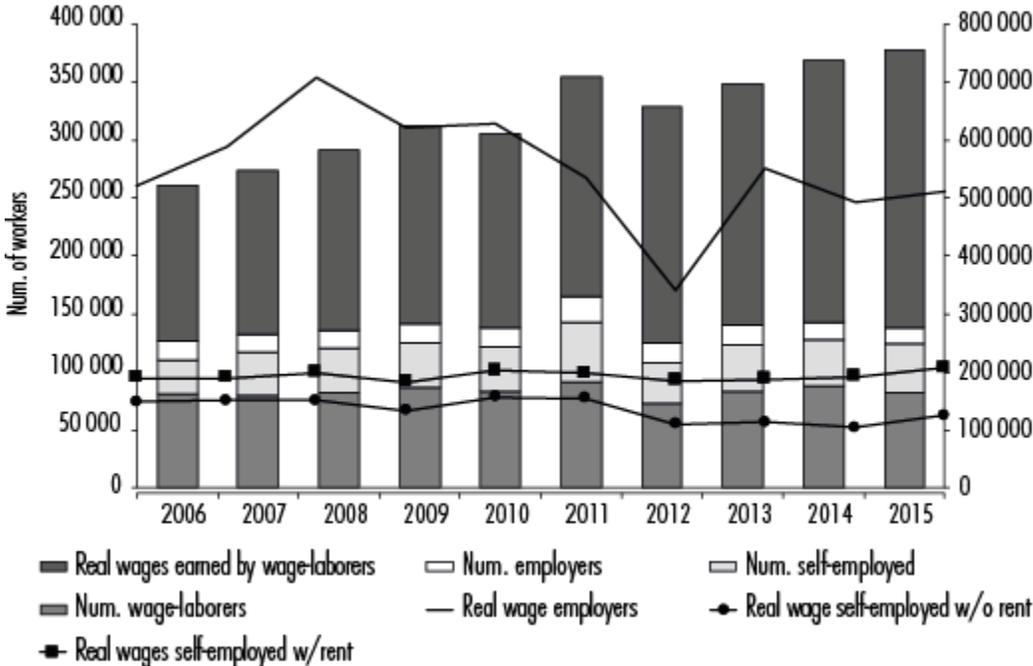
Source: Created by the authors.

However, the relative and absolute expansion of labor income did not affect the total surplus value, and on the contrary, coincided with its absolute expansion in the form of rent and profit. This is an expression of a virtuous phase in the process of capital valuation directly tied to the extraordinarily high international prices that enabled all sources of remuneration to rise. In the particular case of wages, it should be noted that 2005 brought with it a new age in regulating the capital-labor conflict in the agriculture and livestock sector with the arrival to power of the Frente Amplio administration. Some of the main measures enacted that enabled wage-laborers' wages to rise by 76.1% included the following: the invitation extended to the agriculture and livestock (rural) sector to form for the first time in history Wage Councils, the approval of the law limiting the workday to eight hours, and regulations on outsourcing (Carámbula *et al.,* 2012).

The extraordinary growth of ground-rent was the result of the expansion of highly dynamic agriculture and livestock branches like soy and forestry in a context of high international prices and high profitability for said crops, added to a growing stream of capital to land as a means of amassing and valuation via ground-rent in the context of a global financial crisis. From 2003 to 2015, the BCU (2016) reported an FDI flow to land of 1.962 billion dollars, 8.7% of total FDI to Uruguay in said period, a figure equivalent to 1.53 million hectares of land at average prices every year.

Profit seesawed, because wages and rent tend to be set prior to productive cycles and adjusted thereafter (up or down) as a function of the profitability obtained by the owners of capital. Viewed another way, rent and labor income were able to grow from 2004 onwards given the rising profitability of agrarian capital, to the extent that the significant decline in commodities prices experienced since 2014 was already expressed in the decline of 14% in total rent in 2015, and it is likely that this will translate into wage adjustments.

Social Distribution of Income

Turning our attention to the social distribution of agriculture and livestock GVA across the social classes involved in the productive process and the State that appropriates surplus value to reproduce the general conditions of accumulation, the trends appear to be congruent with those analyzed in the section above (see Figure 3). In the crisis years (2000-2003), the share of wage-laborers in the product fell from 31% to 17%, while the relative share kept by the State and landlords remained relatively steady (in the realm of 8-9% of GVA), and the share

of capitalists in the product shot up from 43% to 64%, expressing the process by which the conditions of accumulation were rearranged at the expense of the value of labor-power. From 2004 to 2013, total GVA increase significantly, translating into an absolute increase in the value appropriated by all of the actors involved, and in relative terms, the main transformation was progress for landholders at the cost of the capitalists, to the extent that the former went from appropriating 8% to 16% of GVA, while the latter saw their share fall from 61% to 50%. In those same years, the State share held steady in the realm of 7%, that of wage-laborers vacillated between 15% and 18%, and that of direct-market producers fluctuated between 7% and 10%. Finally, in 2014 and 2015, the commodities growth cycle appeared to run out of gas, affecting the share in the product held by capitalists at the cost of the growth in the share of wage-laborers, which reached 24% of GVA in 2015.

Figure 3. Distribution of Agriculture and Livestock GVA in
Thousands of USD from 2000 to 2015 by Type of Social Figure
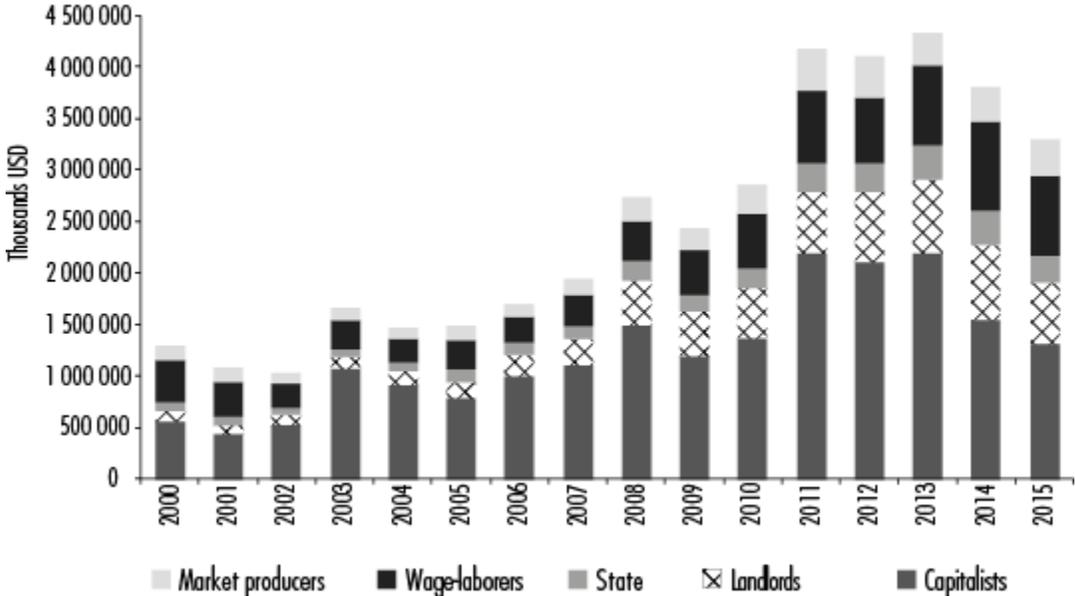
Source: Created by the authors.

Accordingly, in the 16 years under study, there was first (2000-2003) a process by which the conditions of accumulation were rearranged such that the share in the product held by capital owners rose as profit rates increased, then (2004-2013), a period of expansion in a context of high prices for agrarian goods and FDI flowing into land enabling landlords to increase their share in the product at the cost of the capitalists' income to the extent that the other subjects

did not see their own shares in the product affected, and, finally (2014 and 2015), the start of a period of stagnation/recession that significantly curbed capitalists' income, started to affect the income of landholders who saw their absolute but not relative share in the product fall, and enabled the relative expansion of the share of wage-laborers' income in the product. If capital reproduction were to follow its secular tendencies, it would be expected that profitability would recovery vis-à-vis rent and wage adjustments, which has already been expressed in the guidelines for 2015 and 2016 issued by the executive power in response to the Wage Councils.

Figure 4. Distribution of Ground-Rent in Thousands of USD
per Type of Social Figure from 2000 to 2015
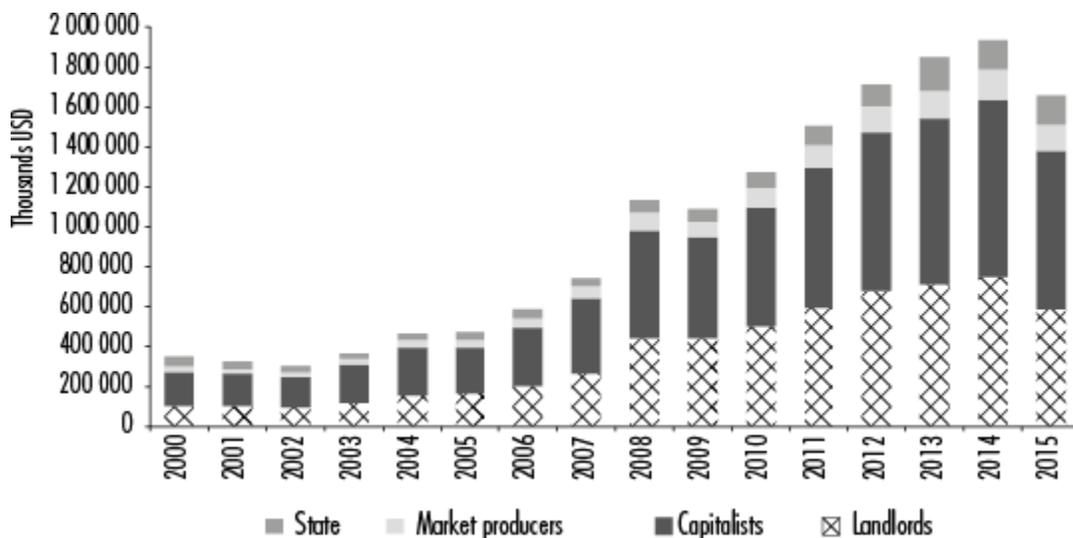
Source: Created by the authors.

Two aspects in this process are worthy of attention. First, the distribution of ground-rent across the subjects competing for pieces of the agriculture and livestock GVA pie and, second, the ways in which the State appropriates agriculture and livestock surplus value. The landowners appropriate ground-rent through lease prices for those who lease their fields (landlords) and as part of profit for producers who are in turn also landowners (capitalists). At this level of analysis, the appropriation of rent by subject was determined. Between 2000 and 2015, ground-rent went from 349 million to 1.658 billion dollars, peaking at 1.939 billion in 2014. Its distribution (see Figure 4) points to the burgeoning share of landlords, going from 29% to 35.6% with a maximum of 40.2% in 2009, while the capitalists' share oscillated

between 45% to 50%, and that of market producers hovered around 8%, and the share of the State first fell from 14.4% to 5% between 2000 and 2009, to later rise again to 8.6% in 2015. The numbers make it clear that rent distribution has stayed on a relatively stable track, with the main "adjustment variable" being the proportion of rent appropriated by the State by virtue of changes made to the tax policy.

The share of the State in agriculture and livestock GVA and in ground-rent followed the same pattern. In the years of crisis (2000-2003), the share of the State in GVA fell from 8% to 4% and from 14.4% to 5% for ground-rent, as a result of a set of policies that "alleviated" fiscal pressure[4] on the sector to accelerate the recovery of the capital gains rate. On the contrary, in 2004 and thereafter, economic growth was accompanied by a series of policies that raised fiscal pressure and with it the state appropriation of rent. In the first case, the changes made allowed for recovery to pre-crisis tax pressure in the realm of 7%-8%, with effective pressure not differing from other sectors of the economy (Olmos, 2015). In the second, state appropriation of rent stabilized at around 8%, in a time period when new taxes were approved to increase the State's share of rent, including the Rural Property Tax (2013), the elimination of the exemption for the Primary Education Tax (2015), and the 18% discount on Rural Real Estate contributions (since 2016). These measures ramped up pressure on rent by three percentage points and fiscal pressure by nearly two points in 2015.

CONCLUSIONS

Empirically, this research contributes three original findings for the period under study: the series of income distribution by source of remuneration and the social income distribution for the agriculture and livestock sector, the first systematic series of agrarian ground-rent appropriated by the sector. By analyzing the data as a whole, the following conclusions can be drawn:

1) This paper contributes to recent reflection in the academic literature surrounding the need to study income distribution trends and levels in Uruguay, incorporating as a novel element the ground-rent as a source of surplus value that should not be left out of distribution studies in light of its relevance to an agriculture- and livestock-based economy. From that viewpoint, a return to the critique of the political economy as a method of study can illuminate aspects of the reality that tend to escape the comprehension of marginalist theory, like the particularities of ground-rent.

The results show the quantitative (up to 50% of agriculture and livestock value) and qualitative relevance of agrarian rent as a form of surplus value in agriculture and livestock value to the degree that the sector "demands" an extra form of profit to remunerate landlords. Its absolute and relative value *in crescendo* between 2003 and 2014, tied to a context of high agrarian goods prices and thriving FDI flows into land, revives a discussion typical of the classical political economy, in the sense that the existence of rent is evidence of the particularities and limitations imposed by agrarian branches on "normal" capital accumulation, as it is necessary to pay rent to landowners. Likewise, this extra amount of surplus value is surely an explanation behind the relatively low weight of labor income in the agriculture and livestock product with respect to industrial branches.

2) The income distribution series point to a persistent trend observed in economic processes in recent decades in Latin America: the economic cycle's dependence on the value of labor-power. Thus, the economic crisis (2000-2003) was "resolved" in agro by a downward adjustment in the value of labor-power and the relative share of labor income, while the period of economic growth (2004-2013) enabled the value of labor-power and the share of labor income in the product to rebound, but not without the involvement of the State, which was active in pushing wages upward, in the context of an administration (Frente Amplio) that represented the possibility of a new class pact in Uruguay at the time.

3) The evolution of real income by class points the trend of the decomposition of the agrarian market production, to the degree that while real income of wage-laborers rose 76.1%, that of own market production barely grew at 9.6%, and fell 16.1% for non-landowners. With these trends, it is not hard to see why family-market type producers fell 22% between 2000 and 2011.

4) The actions of the State, although with a new orientation since 2005, throughout the entire study period seem to kowtow to the requirements of capital accumulation, insofar as during the years of crisis it reduced tax pressure and allowed the devaluation of labor-power, and in growth period, raised tax pressure and pushed wages upward. In fact, in spite of the constant challenges made to tax amendments and more stringent regulations on the capital-labor conflict on the part of the representatives of agrarian capital, Uruguay is not facing a relevant increase in the share of the state and labor income in the agriculture and livestock product.

What is certain is that the changes endured by the agriculture and livestock sector in the last 15 years led to the absolute and relative increase of income for capitalists and landlords in a context characterized by a new tax system and real wage growth policies. Thus state initiatives designed to improve the distribution of value managed to hold the share of wages and the State in GDP steady, but proved ineffective in modifying the distribution pattern. The

crossroads began with the start of a phase of retraction in the two years of analysis (2014-2015). The reduction reported in the share of profit in the product, just like the capital stock entails a reduction in the agrarian capital profit rate, already led to an absolute retraction of ground-rent in 2015, and started to put downward pressure on the share of labor income in the agriculture and livestock product. The dilemma for those running the State is if they will fully express the need to reduce taxes and lower wages or undertake a strategy to overcome the recurring crises of capital valuation.

In this sense, if the challenge is to articulate a capital accumulation process that does not run contrary to the conditions of labor-power reproduction, there seems to be no option but to advance via the source of surplus value that does not arise from the production process itself but rather from private monopoly on land: ground-rent. Whether through tax adjustments, regulating market transaction prices, or directly dealing with ownership, the State must redirect ground-rent towards the subjects directly participating in production and/or to its own coffers, rather than permitting private landowners to appropriate it.

APPENDIX 1

Tabla 1. Surface, Lease Price per Hectare (USD), Total Rent (USD), and Lease Percentages from 2007 to 2015

	Miles Has	USD /ha	Renta total miles USD	% Arr	Miles Has	USD /ha	Renta total miles USD	% Arr	Miles Has	USD /ha	Renta total miles USD	% Arr
Year			2007				2008				2009	
Natural fields	10817	34	367778	29	10817	42	454314	29	10517	41	433045	29
Improved natural fields	1002	34	34068	31	683	42	28703	31	683	41	28140	31
Artificial fields	1399	65	90935	35	934	138	128878	35	934	102	95539	35
Fodder crops (annual)	319	55	17556	35	592	92	54452	35	592	57	33965	35
Irrigated crops	950	137	130150	70	1165	251	292365	70	1365	239	326009	70
Rice	168	106	17840	80	181	145	26260	80	181	124	22495	80
Fruit, vineyards, gardening	58	138	8065	30	58	101	5897	30	58	346	20205	30
Plowed land and stubble-mulched land	196	75	14730	60	196	120	23568	60	196	119	23280	60
Forestry	750	85	63750	20	971	122	118507	20	1071	96	102731	20
Non-productive land	681				735				726		0	
TOTAL	16341		744872		16333		1132944		16325		1085408	
Average simple rent/ha	60.0				124				101			
Average weighted rent/ha	45.6				69.4				66.5			
Year			2010				2011				2012	
Natural fields	10517	52	542893	30	10517	62	652054	30	10517	71	742383	31
Improved natural fields	683	52	35278	31	683	62	42371	31	683	71	48241	31
Artificial fields	934	130	121497	35	934	139	129812	35	934	171	160106	35
Fodder crops (annual)	592	110	65398	35	592	102	60371	35	592	132	78232	35
Irrigated crops	1365	259	353227	70	1365	317	432642	70	1365	372	507941	70
Rice	181	130	23571	80	181	129	23362	80	181	48	8730	80
Fruit, vineyards, gardening	58	128	7452	30	58	89	5197	30	58	159	9306	30
Plowed land and stubble-mulched land	196	142	27932	60	196	163	32013	60	196	179	35106	60
Forestry	1071	94	100559	20	1071	123	131779	20	1071	115	123598	20
Non-productive land	718		0		710		0		710		0	
TOTAL	16316		1277806		16308		1509600		16308		1713643	
Average simple rent/ha	128.0				152.0				157.0			
Average weighted rent/ha	78.3				92.6				105.1			
Year			2013				2014				2015	
Natural fields	10400	75	780000	31	10300	80	824000	31	10300	77	795481	31
Improved natural fields	683	75	51256	31	683	80	54673	31	683	77	52781	31
Artificial fields	850	180	153000	35	850	196	166600	35	1015	154	156620	35
Fodder crops (annual)	592	175	103577	35	592	169	100026	35	592	143	84756	35
Irrigated crops	1550	347	537850	70	1650	331	546150	70	1485	230	341765	70
Rice	181	145	26260	80	181	160	28976	80	181	129	23373	80
Fruit, vineyards, gardening	58	184	10744	30	58	162	9459	30	58	176	10297	30

Source: Created by the authors.

APPENDIX 2

ECH AND BPS DATA PROCESSING; ADJUSTMENT WORKERS 2010

Personal contributions were prorated in each sector and type of worker (wage-laborer, mixed income, and employer salary income) pursuant to the relative share of formal workers. Employer contributions were prorated by number of workers per activity class.

The processing of ECH data considered that until 2011, the ISIC was in revision 3 and that each activity was defined as follows: Animal husbandry and livestock services, branches: 0121, 0122, 0123 and 0129; General crops and farm services, branches: 0111, 0112, 0113; Forestry, branch: 0200. Agriculture and livestock services in this revision are all together under code 0140. As such, for 2011 and prior, prorating was done as detailed below. For the ECH 2012 and 2013, activities were defined as: Animal husbandry and livestock services, branches: from 0141 to 0150 and 162; General crops and farm services, branches: from 0111 to 0130 and 0161; Forestry, branch; 0210, 0220, 0230, and 0240. In ECH 2012, the agriculture and livestock services can be identified in the branch to which they belong due to a change in the ISIC revision. As such, the weight of workers rendering services in the total of services was used. With this ratio, a drawing was conducted from a Bernoulli distribution of workers in each branch 0140 (agriculture and livestock services) for each activity (livestock, agriculture, and forestry) with the probability found in 2012. This reasoning was repeated until finding the draw that matches the mean of the distribution.

For employer contributions, the aggregate data were estimated for the entire agriculture and livestock sector published in BPS by productive area. To do so, the quantity of hectares used in each activity was employed, as well as the average CONEAT index for each activity to prorate the BPS administrative data. Finally, within each activity the quantity of wage workers, the self-employed, and employers was prorated. When it came to personal social security and health insurance contributions (FONASA), the BPS administrative data were prorated across the different types of workers and activity branches by relative amount of formal workers. In FONASA, there are no data published by collection by activity sector, so a rate of 3% was set if earning less than 3 BPC (taking the nominal construction with the personal contributions) over the formal. If over 3 BPC, 4.5% was applied plus an additional 1.5% if having children under care.

In 2010, the ECH overestimated the population of the sector in general and specifically the number of wage-laborers, something that was not true of average remunerations earned by wage-laborers, mixed income, and employer salaries. For that reason, the total number of

people in that year was adjusted by the average value of the total people in each of the branches in the period analyzed, excluding construction from the average in 2010.

APPENDIX 3.

STATE REVENUE

Taxes on land owners include the Rural Real Estate Contribution (1.25% of the registered value of the land, which is seven times lower than the market price), the Rural Property Tax (paid by 1,400 owners at a rate of between 0.7% and 3%), and the Primary Education Tax. Taxes levied on production include taxes on profit, indirect taxes, and drawdowns. Taxes affecting profit include the Tax on the Transfer of Agriculture and Livestock Assets (IMEBA), which taxes transferred production with a percentage varying between 0.1% and 2%; the Tax on the Income from Business Activities (IRAE), which levies a 25% tax on profit and employer contributions to the BPS. Indirect taxes include VAT costs and the Registration Tax and taxes on exportation, which pursuant to Law 17.780 from May 2004 are only charged with a rate of 5% on unprocessed leather.

For the INC, as the balances could only be obtained for 2010-2015, collections from 2000 to 2009 were estimated considering that in the period for which there is information, the INC subsided by 57.7% of the value of rent, comparing what was effectively collected with potential tax collection if all land under ownership obtained the weighted market rent.

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Notas

[2] From 2005 to 2014, FDI ballooned from 847 million to 2.187 billion dollars, peaking at 3.032 billion in 2013. Of the total invested in that date range, 19.853 billion dollars, 61.4% consisted of capital contributions (BCU, 2016). In 1983-2004, the weight of FDI in GDP was 0.8%, a number that rose to nearly 6% for the time period 2005-2014, practically double the Latin American average in the same years (Cepal, 2015).

[3] Direct-market producer refers to producers who control some of the means of production and use family labor. They use to be referred to as "small-scale farmers" or "peasants." Much of the academic world and public policymakers define them as "family farmers." They can be assimilated with what in the national accounts is defined as self-employed with a store, with a mixed income source.

[4] The property tax for the sector was done away with, rates for the Rural Real Estate Contribution tax fell, an exemption was made for employer contributions, and IMEBA rates dropped.