



Contributed Article

Ground-Rent and Capital Accumulation in Australia

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Abstract

This paper presents an original estimation of the size of the ground-rent appropriated by competing social subjects in the Australian economy over the long term, and of several economic variables necessary to accomplish that measurement. The paper also assesses the relative importance of ground-rent in total surplus-value and the Australian process of capital accumulation, finding that it constitutes a significant portion. Finally, the paper estimates the determinants of the ground-rent yielded by mining lands used to produce iron ore and mineral coal during the recent 'commodities price boom', stressing the importance of the location factor.

1. Introduction

It is widely recognised that Australia is well-endowed to produce primary commodities. Between the mid-nineteenth and late-twentieth century, the Australian economy was the largest producer of wool, especially of fine merino fibres. During the mid- and late-nineteenth century it also enjoyed several gold rushes and the beginning of a base-metal mining industry. Since the 1960s, it has been undergoing a seemingly never-ending mineral-resource boom. Unsurprisingly, Australia is often called the 'lucky country'. Yet, despite the obvious importance that so-called natural resource rents have played in the national economy, few attempts have been made to measure them by heterodox economists. Available measurements are based on neoclassical economic theory, thereby leaving out of the estimation portions of those rents appropriated through market deviations not picked up by neoclassical price theory. All are focused on the extractive industries, thus overlooking portions of those rents not considered as such by neoclassical production theory. Against this backdrop, this paper has three main goals. First, to present an estimation of the long-term evolution of the size of the Australian 'resource' rent based on Marx's theory of ground-rent. Second, to estimate the portions respectively appropriated by the owners of the natural conditions of production and by other social subjects. Third, to estimate the main determinants of the Australian 'resource' rent during the recent period of high primary-commodity prices. In measuring

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those variables, the paper will also offer a novel estimation of sectoral rates of profit in Australia through large parts of the period studied.

The paper is organised as follows. Section 2 discusses the determination of the capitalist ground-rent. Section 3 discusses the possible state-mediated forms taken by the process of ground-rent appropriation by others than the owners of the natural conditions of labour in national economies specialised in the production of primary commodities. Section 4 offers an estimation of the ground-rent appropriated in Australia by different social subjects and of its relative weight in the national economy between 1922 and 2014. Section 5 presents an estimation of the determinants of the rent accruing to mining lands used for iron ore and coal production in Australia during 2002–2015. The paper closes with a brief conclusion.

2. The Capitalist Ground-Rent

In order to measure the size of the so-called ‘resource’ rents it is first necessary to ascertain their social content; in other words, the quality of this type of income as a social relation that allocates a portion of the product of privately performed social labour. For neoclassical economics, rents are income above the supply price or cost of any ‘factor of production’. For all ‘factors’ that can be reproduced, this would only arise if competitive dynamics are somehow restricted by non-market forces. But, (virgin) land cannot (yet) be produced; its supply is thus ‘fixed’. Hence, according to the theory, its supply price is zero, and its retribution is pure rent. Yet it can only command a price because it is monopolised. Nobody would pay anything for something that costs nothing to be produced and is freely appropriable. Accordingly, to account for the obvious differences in the size of rents paid for the use of equally monopolised portions of land, the theory needs to include a measure of productivity. But, marginal productivity does not determine prices under monopoly. As always, the reason behind this contradictory logic is found in neoclassical economic theory's inversion of the issue; by transforming the

specifically human activity of consciously and voluntarily appropriating nature to produce objects useful for social reproduction, labour, into a process of production through the combinations of different ‘factors.’ Moreover, it transforms the non-produced *natural conditions of human labour* into one such factor, ‘land’ (Marx 1981, pp. 953–1016; Iñigo-Carrera 2017, pp. 32–6). From there to mixing ‘land’ with natural ‘resources’ and considering these as a stock of wealth with an intrinsic value, as most measurements do, there is only a short step.

A different starting point is thus advisable. As with any other type of income, the rent earned by landowners thanks to their monopoly over natural conditions of production is contained in the prices of the commodities produced with this means of production. However, as Ricardo (1996[1817]) discovered and Marx (1981[1894]) elaborated, the prices of primary goods (that is, agrarian, mining fishing and forest commodities) are not regulated, as are those of non-primary commodities (that is, goods and services), by normal conditions of production, but by marginal ones; that is, by the least favourable natural conditions that need to be used by industrial capital to satisfy solvent social demand for such products.¹ The prices of primary commodities must allow the normal valorisation of capital invested in those marginal natural conditions of production or portions of land. Therefore, capital operating in intra-marginal lands—allowing higher levels of labour productivity and lower production costs—obtains extraordinary profits. Competition to appropriate that extraordinary surplus-value transforms it into income for the owner of the monopolised, non-reproducible natural conditions of production; ground-rent. In the case of agrarian commodities, where the labour process consists of multiplying the potentiality of a biological organism, and each aliquot part of capital investment operates on the same portion of (unchanged) land, differential rent also arises in relation to the intensive application of capital whenever equal-size investments yield a differential (increasing or decreasing) output. Moreover, differential rent (‘extensive’ type) also arises in relation to the geographical location of non-reproducible natural conditions required to carry out primary

production. The working time (directly and indirectly) spent on transportation adds up to the direct production costs. Insofar as natural conditions affect transport costs, through the distance to markets and the quality of the terrain, primary-commodity-producing industrial capitals would compete to rent those most favourably located relative to consumer markets. In brief, landowners' monopoly over a non-reproducible means of production is a necessary social form taken by the process of intra- and inter-sectorial competition to equalise profit rates amongst capitals with similar valorising capacities (that is, size). In other words, the self-regulation of capital's valorisation determines a portion of surplus-value as rent, land as a legal private monopoly, and landowners as the personification of landed property.

Marx also noted in his critique of Ricardo's theory of rent that owners of marginal lands also require the payment of a fee to allow private capitals to use them. The prices of primary commodities must thus rise above those which allow the normal valorisation of capital applied in the least favourable natural conditions of production, to include a rent for their absolute monopoly by private social subjects. As the rent arising from landowner monopoly over differentially favourable natural conditions, that arising from their absolute monopoly of a non-reproducible means of production is, ultimately, paid for by the total social capital. This, Marx argued, derives from the fact that the increase in primary-commodity prices necessary to include absolute monopoly rent (that is, rent paid on marginal lands and through competitive pressures also on intra-marginal ones) results in a reduction of the contribution of primary-sector's capital to the general pot of surplus-value, in the cases where its labour-intensity is higher and/or turnover speed faster (and, hence, surplus-value production capacity greater) than the economy-wide average, absolute ground-rent, or from *simple* monopoly power ("a genuine monopoly price"). In either case, the actual magnitude of this part of the ground-rent is determined by market strength; it thus tends to be proportionally higher in mining than agrarian commodities. Mining landowners can, unlike their agrarian counterparts, withdraw from production

their privately-owned natural conditions of production without reducing the quantity of primary commodities potentially produced with them; this amount is simply spread throughout a longer period. It goes without saying that it makes no difference for the quantitative determination of the ground-rent whether the primary-sector capitalist also owns the land used (for a rent on the land would also need to be earned to cover for the capital invested in buying up the land) or if it is owned by a subject not related to the process of production such as a rentier landowner or the state (Iñigo-Carrera 2017, pp. 3–125).

In sum, in addition to the cost of inputs and labour-power and the normal profits of capital advanced, the (international) prices of primary commodities include a portion of social wealth that becomes rent (of varying size) for those who monopolise the natural conditions of production. This value is paid for by industrial and commercial capitals who consume rent-bearing primary commodities, either directly as productive inputs or indirectly through the private consumption of the workforce they employ, and through profit-rate equalising pressures by the total social capital. Insofar as these goods are exported, the rent is paid for by industrial and commercial capital operating in different national spaces of accumulation than landowners, thus deducting from the surpluses available for their valorisation. Hence, though, on the one hand, the development of primary-commodity production in favourably-endowed locations outside the national spaces of accumulation consuming them results in lower-cost raw materials and, therefore, in relative surplus-value (that is, it directly or indirectly reduces the cost of reproducing labour-power of a given quality and expands the size of economy-wide surpluses), on the other, it results in a loss of surplus-value flowing, at first instance, to the pockets of landowners (Marx 1976, p. 474; Iñigo-Carrera 2014).

3. The National State and Ground-Rent Appropriation

The capitalist ground-rent is extraordinary surplus-value appropriated, *ceteris paribus*,

by landowners, either private or public. Yet, because it originates in a monopoly against capital, and is paid for something that is not the product of wealth-creating human labour, ground-rent reduces the surpluses available for accumulation.² Capital has every incentive to attempt to recover as much as possible of that surplus-value to feed its valorisation process, especially in national economies specialising in the production of rent-bearing primary commodities. Appropriation of ground-rent by others than landowners, however, requires state regulation of economic processes, redirecting the flow of the surplus-value that, on its simplest world-market determination, constitutes ground-rent. This can take several forms, which either intervene in the turn-over cycle of primary-sector capital separating a portion of that surplus-value before it becomes ground-rent or act upon it after it has taken such social form.³

First, the state can influence the determination of domestic prices in a way such that a portion of the ground-rent materialised in the international prices of exported and potentially exportable primary commodities flows to private capital rather than to landowners' pockets; that is, by making domestic prices diverge from their market-determined equilibrium levels.⁴ This mechanism can take different forms such as exchange-rate overvaluation, export taxes, and direct trade regulations. These can be implemented independently or simultaneously, either complementing or compensating each other.

The rate of exchange between two national symbols of world or commodity money transforms prices quoted in one currency into prices quoted in another. Hence, if a national state manages to set the exchange rate of the national currency at levels above its capacity to represent value in the world market, the social wealth expressed in domestic prices would depart from that expressed in world-market prices. For the value added/materialised in the commodities that are produced only for domestic markets this type of state regulation of economic processes would be neutral. But this is not the case for internationally traded commodities. Here, exporters would be forced to lose a fraction of the

value of the goods sold on world markets. In other words, exchange-rate overvaluation acts as a tax on exports, and for that reason it can only be sustained beyond the short run if the exported commodities are bearers of extraordinary surplus-value; ground-rent. Conversely, exchange-rate undervaluation would have the opposite effect, and for that reason would not be sustainable in national economies exporting raw materials.⁵

At the first instance, the effect of exchange-rate overvaluation falls on the profits of commercial capitals selling in export markets. However, to the extent that this dynamic affects their normal valorisation, competition amongst commercial capitals would tend to transfer that reduction to industrial capitals producing primary commodities (for example, agrarian and mining capitals) and these to landowners through lower rental prices. As social subjects who consume a portion of social wealth that they did not contribute to the production of in any sense whatsoever (that is, as social parasites), landowners can be deprived from the rent income without affecting social reproduction through capital accumulation. Nor can the 'distribution' effect of exchange-rate overvaluation fall on primary-sector wages. If labour-power was paid below its value (that is, full cost of physical, mental and moral reproduction), workers would offer their labour 'services' elsewhere; unless the same occurred in other sectors or inter-sectoral mobility was precluded.⁶

Part of the ground-rent retained in the foreign-exchange market is normally appropriated by capitals importing foreign-made inputs (to the extent that import taxes do not fully compensate for exchange-rate overvaluation); for example, 'import-replacing' industrial capitals invested in manufacturing production. Another portion usually goes into the profits of capitals that invest profits outside the national economy (for example, 'international' capitals) as they purchase foreign currency at prices (rates) below its (relative) capacity to represent value in world markets. Yet another portion of this surplus-value follows, on a first instance, its course to the treasury in the form of import taxes paid for

with an overvalued currency that first reduced the price of imported commodities (goods and services).

The effect of exchange-rate overvaluation on the appropriation of social wealth, however, is not limited to the surplus-value materialised in internationally traded primary commodities; it also affects the prices of exportable commodities sold in the domestic markets. That is because competition brings domestic prices in national currency to the levels of exported commodities. In this way, another portion of the ground-rent is appropriated by capitals consuming rent-bearing commodities in the domestic market at prices that express less social wealth than international prices; either directly or through the private consumption of their workforce.

In all cases, either through indirect profit-rate-equalising dynamics or direct state expenditures, the extraordinary surplus-value under the form of ground-rent that eschews landowners' pockets through exchange-rate overvaluation tend to be distributed proportionally to their participation amongst the different aliquot parts of the total social capital operating in the national economy. Individual capitals are nothing but organs of the underlying subject of social reproduction, namely, the product of privately performed social labour under the *form* of an autonomous power that organises social production and consumption with the only purpose of its boundless self-valorisation, capital (Marx 1981, pp. 117–306).

In order to measure the degree of exchange-rate over/undervaluation this study uses the method of *relative purchasing parity* correcting the evolution of domestic prices with the inverse of the evolution of labour productivity, as expressed in the formula below.⁷

$$PER_i = ER_b * [(CPIaus_i \div CPIaus_b) \div (CPIusa_i \div CPIusa_b)] * [(LPusa_i \div LPusa_b) \div (LPaus_i \div LPaus_b)]$$

Where,

PER is the parity exchange rate;

ER is the commercial exchange rate;

CPI is the Consumer Price Index;

LP is the Labour Productivity Index;

i is the current year;

b is the base year.

As exchange-rate overvaluation, export taxes are paid by commercial capitals, which then pass the burden to industrial capitals in the primary sector and these onto landowners. If export taxes fell on the normal profits of commercial and industrial capitals, these would contract their scale of accumulation and thus the demand for land rentals. As exchange-rate overvaluation, the impact of this policy extends beyond the revenue collected by the public treasury. Competition amongst primary-sector capitals to sell in non-taxed domestic markets tends to extend the impact of export taxes to non-exported portions of the primary productions covered by the tax, which could be bought domestically at prices below world-market levels (Piermartini 2004). As in the case of exchange-rate overvaluation, either through indirect profit-rate-equalising pressures or direct state expenditures, when export taxes are in place the ground-rent that escapes landowners is distributed proportionally amongst the different aliquot parts of the total social capital operating in the national economy. The same result is obtained in cases where the state monopolises external trade and buys the exported primary commodities below world-market selling prices.

State regulations on the domestic trade of primary commodities, such as price ceilings and negative 'effective' protection, and on their international trade, such as export quotas and outright bans, result, *ceteris paribus*, in ground-rent being appropriated by social subjects other

than landowners as they lead to national-market terms-of-trade of primary commodities becoming lower than world-market levels. As in the case of exchange-rate overvaluation and export taxes, the ground-rent thus appropriated tends to be distributed proportionally to their participation amongst the different aliquot parts of the total social capital operating in the national economy. Conversely, state regulations of primary-commodity trade, such as minimum or support prices and positive tariff protection, can rebalance domestic-market relative prices to compensate for other measures that negatively affect the normal valorisation and reproduction of agrarian/mining capital (for example, exchange-rate overvaluation). Alternatively, this could be done through direct subsidies that compensate, partly or fully, for the circulation of agrarian/mining means of production (for example, tractors and machinery) at prices above world-market levels thanks to the tariff protection afforded to them being higher than the degree of exchange-rate overvaluation.

In addition to the indirect forms of ground-rent appropriation by those other than landowners as outlined above, the national state can operate over the surplus-value that effectively takes the form of landowners' rent, redirecting it later to private capital. For this purpose, the state can tax private landowners' ground-rent and transfer the revenue, through its current expenditures and investments programs, to private capitals (that is, by funding them with rent-fed receipts). This could take the form of taxes on rent income, 'super' profits, or landed property.⁸ Being levied on one specific type of private income or asset, these taxes are discriminatory in the sense that they do not respect the principle of fiscal equity and, hence, could only be paid on the basis of the extraordinary surplus-value that land monopoly allows its owner to appropriate: ground-rent.⁹

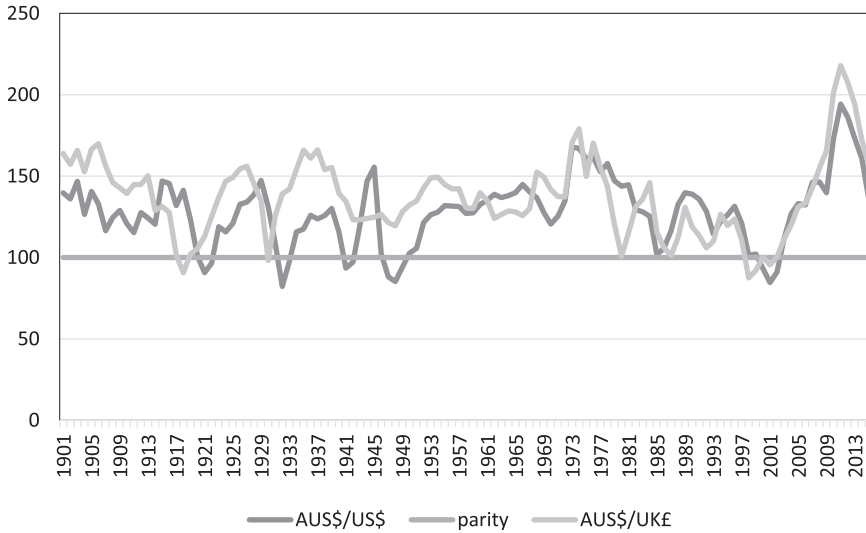
Finally, the national state could channel to private capital the ground-rent it appropriates in its condition as collective/public landowner either by spending the income raised through land rentals/sales or by allowing land-renting and/or land-buying capitals to appropriate ground-rent by waving rental/fee payments (that is, by not charging a lease/sale price equal to the rent's present value). Alternatively, the state can

directly manage industrial capital producing primary-commodities on state-owned lands and transfer the ground-rent flowing to its turn-over cycle through over-priced purchases, subsidised sales, profit contributions, and/or extraordinary taxes.

Conversely, the state can avoid most of the policies discussed in this section and allow private landowners to appropriate the entire ground-rent, as is normally the case in national economies where, not being specialised in primary-commodity production, ground-rent does not constitute a relative large portion of the surplus-value available for appropriation.

4. The Evolution of the Australian Ground-Rent: Its Appropriation by Competing Social Subjects

The previous sections identified the surplus-value that constitutes the capitalist ground-rent as well as the possible courses that its appropriation might follow within a national economy specialised in the production of rent-bearing primary commodities for world markets. This section identifies the main state-mediated forms of appropriation of the Australian ground-rent by landowners and by other social subjects, and measures their absolute evolution and relative importance in the process of capital accumulation in the Australian economy between 1922 and 2014. The methodological strategy followed here departs from mainstream measurements (see, for example, the Australian Bureau of Statistics and the World Bank) which, based on neoclassical economic theory, strongly underestimate the size of the Australian 'resource rent', especially that appropriated by capitals outside the primary sector. First, because the model developed here does not represent the turn-over-cycle of mining capital by that of interest-bearing capital, and its profitability by the rate of interest, thereby correctly estimating the size of the 'resource rent' appropriated by mining capital.¹⁰ Second, because it includes the 'resource rent' yielded by agrarian lands, thus stressing the long-term importance of ground-rent in the Australian economy. Third, because it includes the portion

Figure 1 Exchange-Rate Over/Undervaluation (1998–2004 = 100)

Sources: Australian National University Clio Database (ANU); Federal Reserve Economic Database (FRED); A millennium of macroeconomic data for the UK, Office of National Statistics (ONS); Australian Bureau of Statistics (ABS); and, International Historical Statistics. Methodological note: For the AU\$/US relationship, economy-wide labour productivity was used. For the AU\$/GBP relationship, industrial-sector labour productivity was used. Though industrial-sector labour productivity is a more accurate proxy than economy-wide labour productivity to reflect the determination at stake (since it is relatively unaffected by climatic conditions and economic fluctuations), the sharp deindustrialisation of the Australian economy *vis-à-vis* the US economy since the mid-1980s renders this variable unsuitable to adjust the AU\$/US\$ relationship thereafter.

of the agrarian and mining rents appropriated indirectly by others than (private and public) landowners through state policies that affect relative prices (including exchange rates) in the domestic markets, thus uncovering the extent of the rent-dependence by capitals valorising outside the land-using sector. It should be noted from the outset that, though it is included in non-primary sectors' value added, this last portion becomes invisible to mainstream economists since in the national accounts output it is valued at current prices expressed in national currency without regard for inter-sectoral transfers of social wealth effected through changes in the domestic terms-of-trade of various commodities.

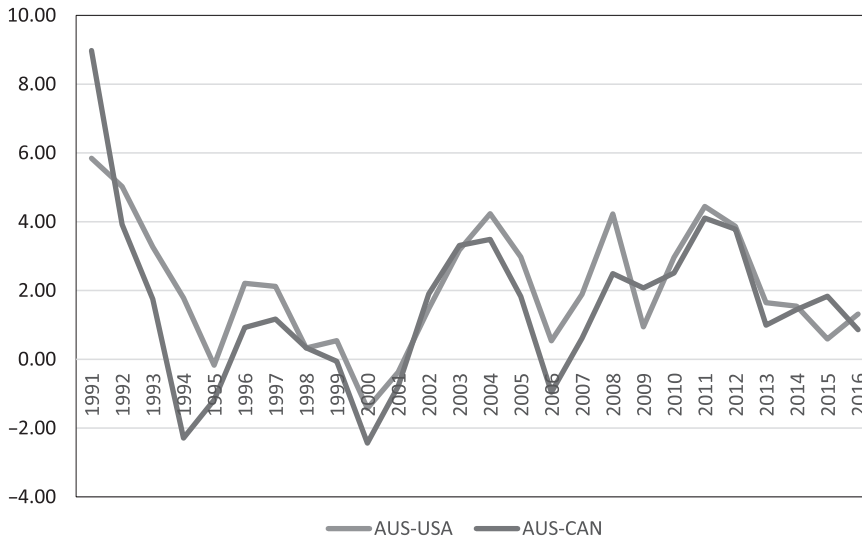
4.1 *Ground-Rent Appropriated through Exchange-Rate Overvaluation*

During most of the period before the mid-1980s, the Australian state, through the agency of the

Reserve Bank of Australia (RBA), set the commercial exchange rate of the Australian pound/dollar at levels higher than its capacity to represent value relative to national currencies circulating in international markets as world money. Figure 1 plots the evolution of the overvaluation of the Australian currency relative to the British pound and the US dollar. The average of 1998–2004 is used as a base. During that period, the international prices of primary commodities were at historically low levels and, therefore, the bases for the overvaluation of the Australian currency were greatly reduced. Royalties allowing the state to appropriate the meagre ground-rent were then in effect (see below).

As can be seen in Figure 1, during 1901–1983, before the foreign-exchange market was liberalised, and when the Australian 'import-substitution' industrialisation (ISI) program was in place, the overvaluation of the

Figure 2 Spread of Interbank Rate in Real Terms



Source: FRED.

Australian dollar averaged 34 per cent against the British pound and 24 per cent against the US dollar. It can also be observed that increases in the international prices of raw materials, and hence in the ground-rent contained therein, gave rise to a strengthening currency overvaluation through a combination of active (exchange-rate fixing) and passive (money-supply loosening) actions of the monetary authority that channelled the growing ground-rent into capital's profits, especially that invested in manufacturing production.

In December 1983, however, the RBA liberalised the foreign-exchange market. Since then, it ceased to formally intervene in the determination of the exchange rate of the Australian dollar. It has only done so at specific times to avoid sharp fluctuations (Macfarlane 1993). Nevertheless, the monetary policy followed by the RBA has continued indirectly to influence the determination of market exchange rates, through its regulation of domestic interest rates under the argument of being a policy aimed at controlling the inflation rate (Bell and Quiggin 2008). Figure 2 shows the evolution of the real-term call rate in Australia relative to the evolution of equivalent rates in the United States and Canada, economies with a nation-state enjoying similar

'credit risk', and in Japan, where much of the funds that have participated in the *carry trade* related to the Australian dollar have originated. Figure 3 subsequently plots the evolution of the real yield of 10-year public bonds in Australia relative to similar variables in those three countries.

It can be seen from Figures 2 and 3 that, during periods of increasing international primary-commodity prices and related ground-rent expansion, the Australian state, through the agency of the RBA, has tended to raise the interest rate to control domestic price increases related to the exports-led expansionary process and to finance growing fiscal deficits. As can be seen in Figure 4, this measure has attracted substantial amounts of loanable capital. The accelerated inflow of these funds has tended to increase the supply of foreign exchange faster than its demand, thereby pushing its price below its capacity to represent value relative to the Australian dollar. These interest-bearing capitals valorise at particularly high rates, which are paid for, directly or indirectly, with ground-rent. Whenever the trend in the evolution of international prices of raw materials reverses, the interest-rate spreads regulated by the RBA

tend to fall, thus slowing the pace of loanable-capital inflows. The exchange rate, then, is devalued and the Australian currency tends to be traded for amounts of other national currencies closer to their relative capacities to represent value in world markets. As a result of this monetary policy, during 1984–2014, when the ‘freely floating’ exchange-rate policy was in place, and the Australian economy increasingly replaced the ISI programme with a ‘resource-based’ growth strategy, the overvaluation of the Australian dollar averaged 32 per cent against the British pound and 30.5 per cent against the US dollar (see Figure 1).

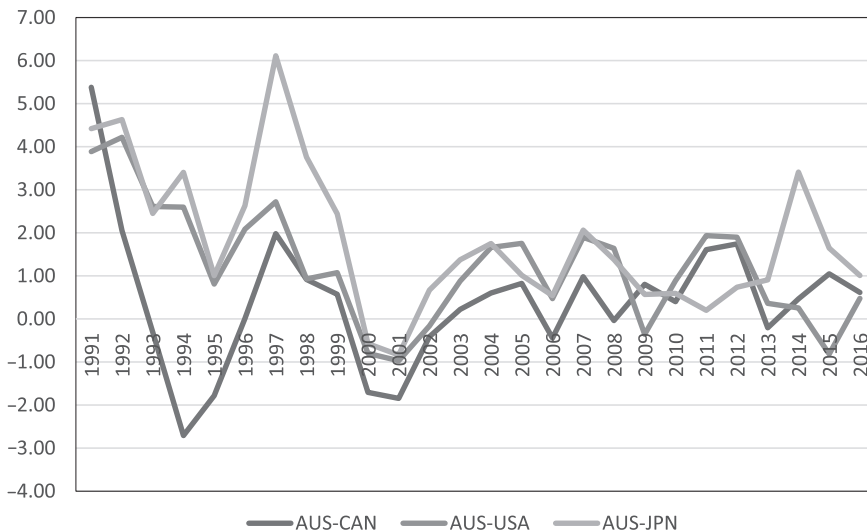
The measurement of the portion of ground-rent appropriated by capital through the overvaluation of the national currency is estimated by applying the rate of exchange-rate overvaluation against the US dollar to the total value of primary-commodity production at export or international prices. For this work, it was computed for wheat, wool, beef and cattle, lamb and sheep, sugar, gold, coal, copper, iron ore, bauxite, lead, silver, zinc, petroleum, gas, nickel and uranium.¹¹ Base data was obtained from the US Geological Survey, the ANU Clio

Database, the IMF Primary Commodity Prices Database (IMF-PCD), Food and Agricultural Organization of United Nations Statistics Database (FAOSTAT), and the ABS (Yearbook of Australia and Historical Selected Agricultural Commodities).

4.2 *Ground-Rent Appropriated through Export Taxes*

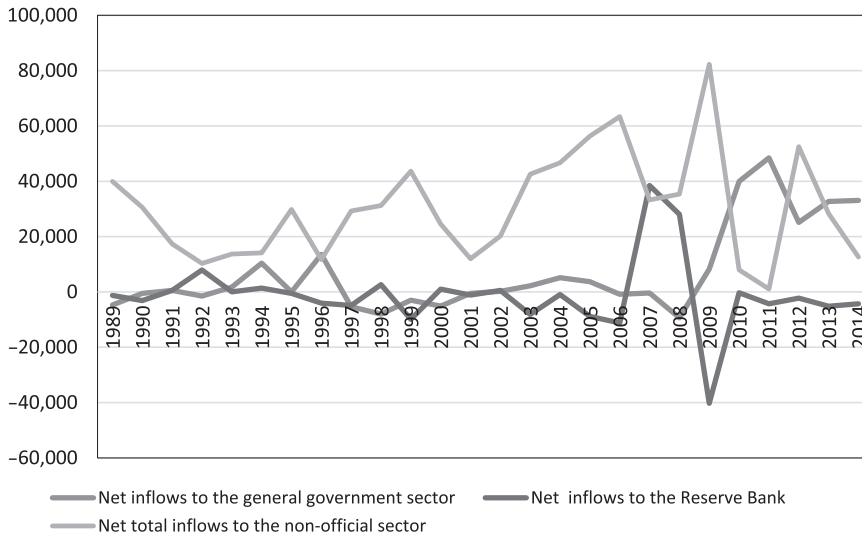
During most of the pre-Federation period, primary-commodity taxation in Australia took the form of export taxes. These fiscal contributions, mostly levied on agrarian commodities and gold, added to the normal taxes paid, directly or indirectly, by other portions of the total social capital in the British colonies of Australasia (Reinhardt and Lee Steel 2006, pp. 4–5). Nevertheless, throughout the first decades of the Australian Commonwealth, primary-commodity export taxes became increasingly earmarked to different expenditures in the rural industries affected by the specific levies. These included marketing, research and price stabilisation programs. Given the extended presence of

Figure 3 Spread of Annual Real-Term Yield of 10-Year Treasury Bonds



Sources: FRED; Reserve Bank of Australia Historical Data (RBA-HD).

Figure 4 Net Inflow of Loanable Capital in Million US\$2014



Sources: RBA-HD.

small capitals in agrarian productions, state or quasi-state institutions tend to centralise those activities; Australia was no exception to that general capitalist trend (Iñigo-Carrera 2017, pp. 333–40). Yet, contrary to what occurred in the industrially advanced countries of Western Europe and North America, in Australia resources for such purposes came from the sectors themselves and added to the normal fiscal contributions falling on capital and labour. Moreover, since they have been proportional to output, and this has depended on natural conditions of production, while those services have not, levies have continued falling on ground-rent.

Nevertheless, to minimise measurement errors, for the period covered in this study, only export taxes applied to wool production and the Second World War ‘flour tax’ were included in this estimation of the Australian ground-rent appropriated by others than landowners. Direct data of wool levies (published in the Public Finance chapters of the Yearbook of Australia published by the ABS) exists only for 1936–1980. The rest of the time-series was estimated using the prevailing tax rates: 8 per

cent of the value of output for the 1980s, 4 per cent for the 1990s and 2 per cent thereafter.

4.3 Ground-Rent Appropriated through State Regulation of Primary-Commodity Terms-of-Trade

In addition to the exchange-rate policy, there were periods when the Australian federal state directly influenced the local prices of primary commodities through its management of foreign trade; for example, wheat from 1948 to 1999 (Longworth 1967), sugar between 1937 and 1991 (Industry Commission 1992), and wool during world wars and the Korean war boom (Bradsley 1994). In general terms, these policies acted as a form of ground-rent appropriation by capital when the exchange rate was not overvalued (for example, the 1930s and, to a lesser extent, during military conflicts) or when international primary-commodity prices were particularly high (for example, 1953–1955, 1972–1974, and 1979–1981). In other periods, conversely, they added to the myriad of *ad-hoc* commodity-specific subsidies implemented to

compensate for the impact of exchange-rate overvaluation on agrarian capital's profits.

The Australian state has also influenced the determination of the domestic prices of primary commodities through direct international trade regulations. This was the case when iron-ore exports were banned (1938–1961) according to the idea that the availability of this natural resource was not enough to supply the world market and should only be saved for Australian industrialisation (Blainey 1963). By limiting demand relative to potential supply, this policy helped to keep the domestic prices of iron ore, a key raw material in the metal-mechanic industries, below rent-bearing international prices, thus transferring the difference to steel-producing and steel-consuming capitals and, through profit-rate-equalising competition, to the total capital invested in the Australian economy.¹²

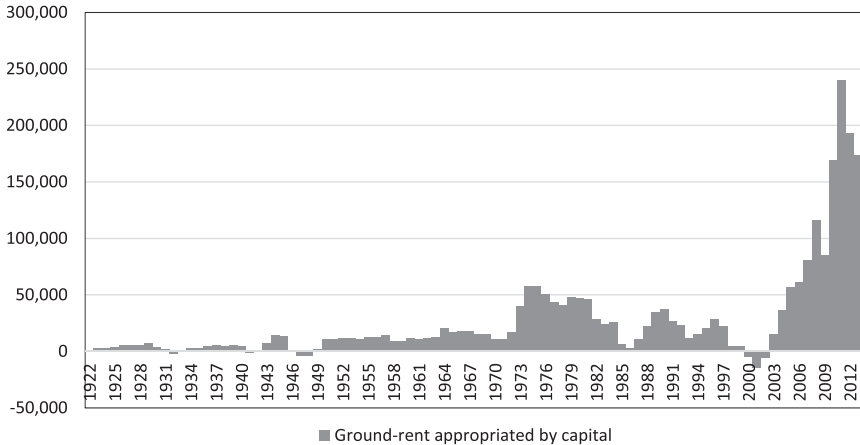
In the present study, the movement of social wealth realised through direct trade regulations (that is, trade boards) is estimated only for the cases of sugar and wheat between 1948 and 1990. This is done by comparing domestic prices received by agrarian capitals with international or 'free market' prices expressed in Australian dollars at the official exchange rate since that effect of exchange-rate overvaluation was estimated separately in the preceding section. Domestic and international prices of sugar and wheat estimated, respectively, by Stalley (1963), for 1948–1960, and Longworth (1967), for 1948–1963, were indexed, to complete the time-series, using the evolution of the index of Prices Received by Farmers produced by the Australian Bureau of Agricultural and Resource Economics and of Producers' Prices by FAOSTAT, and the time-series of international prices published in the IMF-PCPD. The difference between the two sets of prices was multiplied by the total production of sugar and wheat in Australia.

For reasons of data availability, the portion of ground-rent appropriated by capital through above-market prices of agrarian and mining means of production (for example, machinery, tractors, chemicals) could not be estimated in this study.¹³

4.4 Ground-Rent Appropriated through Special Taxes and Royalties Levied on the Primary-Commodity Industry and Through Sales of State-Owned Land

In addition to export duties, prior to federation, taxes on landed property, both rural and urban, began to be levied by the self-governing colonial states. A decade after the Commonwealth was formed, the federal state added its own land tax, largely replacing sub-national state levies. This federal tax, however, was withdrawn in 1952 because of its low yield relative to administrative costs. Thereafter, only state land taxes remained in place. As taxes on urban landed property began to overshadow rural land taxes, while industrialisation accelerated, rural properties used for primary production and residential properties not exceeding 1,200 square metres were increasingly exempted from the remaining land taxes until becoming fully exempted in 1970 and 1973, respectively (Smith 2005, pp. 1–4). For the purposes pursued in the present study, total land-tax collection until 1970 is included in the measurement. The time-series is included in the Public Finance chapters of the Yearbook of Australia.

A different pattern occurred in relationship to Australian mining production. Unlike in other countries with legal systems based on the Anglo-Saxon tradition of common law, the Australian state owns the subsoil on the mainland and in the territorial sea. In the first case, the sub-national states that form the Commonwealth are the direct owners and as such are the recipients of the royalty or income paid by industrial capital invested in mining production to exploit these resources. In the second case, which mostly includes offshore hydrocarbon production, the federal state is the owner and direct recipient of the exploitation rights (Reinhardt and Lee Steel 2006, pp. 23–4). In both cases these fiscal contributions are paid by industrial capital invested in mining production with ground-rent that flows into its turn-over cycle. In all cases, the landowning Australian state, the political representative of the process of capital accumulation in its national-level unity, passes this surplus-value to industrial capital (including that invested in mining and agrarian production) and its

Figure 5 Ground-Rent Appropriated by Others than Landowners in million AU\$2014

Sources: See text.

partners (i.e., commercial capital invested in commodity and money trade) through the public-sector budget. In times of high international prices of raw materials (for example, 2011–12) the Australian federal government has levied additional special taxes on the extraordinary (supernormal) profits earned by capital invested in mining production which, again, can only fall on the expanded ground-rent. The portion of ground-rent ultimately appropriated by capital through these taxes is given by the fiscal resources collected through them by both the federal administration and state governments. The data included in this time-series is published by the ABS (5206.0).

Finally, the landowning sub-national states have, since the pre-1901 colonial period, also raised income through landed-property sales. The time-series is included in the Public Finance chapters of the Yearbook of Australia; it is added to the estimation.

4.5 Total Ground-Rent Appropriated by Social Subjects Other than Private Landowners

Figure 5 below presents the results of the estimation of the portion of the Australian

ground-rent appropriated, through the above-described state-policy mediations, by capital irrespective of its sector of investment. As noted, it includes the mining rent appropriated by the state in its conditions as landowner, which is passed on to capital's valorisation through public-sector activities.¹⁴ It does not include ground-rent appropriated by land-renting mining capitals by means of low-rate taxation and low-rate leasing of public lands, especially during high-price periods. This portion is estimated in the next section.

The following trends can be observed in Figure 5. First, capital's appropriation of ground-rent has been a general characteristic of its accumulation process in Australia, both when it took the form of 'import-replacing' industrialisation or ISI (from the 1920s to the mid-1980s) and when it took the form of 'resource-based' growth (since around the mid-1980s). Second, as expected, the amount of ground-rent appropriated by the total social capital grew during periods of high international primary-commodity prices and contracted during periods of world-market crises. Third, the ground-rent appropriated by other than landowners during the 2005–2012 'commodities super-cycle' increased by an order of magnitude with respect to that appropriated during previous

‘commodities booms’ (1950–1953 and 1973–1974). Not only were price increases sustained for a longer time; by then, the combination of higher prices and rapidly growing East Asian demand for Australian raw materials manifested itself in a massive expansion of mining investments and rent-bearing output (Connolly and Orsmond 2011).

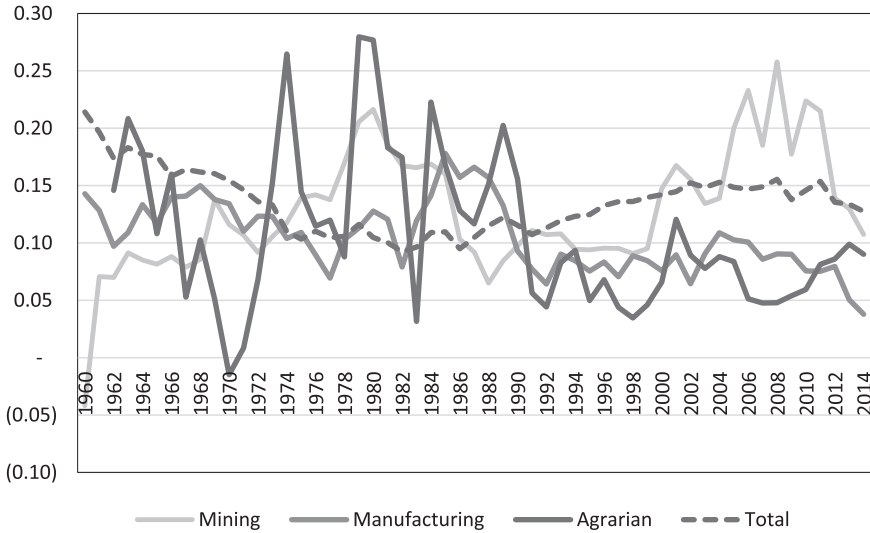
4.6 *Ground-Rent Appropriated by Private (Agrarian) Landowners and by Land-Renting (Mining) Capitals*

The ground-rent remaining in the hands of private and public landowners is part of the sectoral surplus-value over and above that appropriated by agrarian and mining capitals as profits in proportion to their investments. As noted above, however, these industrial capitals may manage to appropriate a portion of the surplus-value over and above what constitutes their normal profits; that is, competition does not transform that surplus-value into ground-rent. Above all, this happens when the movements that determine the extraordinary profits are of a short-term and sharp nature and adjustments on lease prices do not take place. Regardless of this point, the key issue is to define what constitutes a normal profit for capital invested in the primary sector. In general terms, these are obtained by industrial capital that achieves a degree of concentration necessary to set in action the most advanced technical conditions of production compatible with the maximisation of its rate of valorisation in the sector in which it operates. Competition amongst this type of capitals tend to equalize the rate at which they valorise. On the other hand, those capitals of insufficient degree of concentration, which as such may not put into production the normal technical conditions and set in action the normal levels of labour productivity, constitute small capitals, the valorisation process of which are regulated by the rate of interest which is normally lower than the general rate of profit, or, in the limiting case, by the salary that their owners would be paid if employed by a normal capital (Marx 1981, pp. 938–50; Iñigo-Carrera 2017,

pp. 100–104). In this paper, the average rate of profit of industrial capital in the manufacturing sector (which includes ground-rent appropriated there) is used as a proxy for the profitability of mining capital and the interest rate for term deposits as representative of the profitability of the agrarian capital. These two rates are applied to the capital advanced for valorisation in the mining and agrarian sectors, respectively, to obtain a measure of their normal profits. While normal-size capitals tend to prevail in the Australian mining industry, participating in the appropriation of ground-rent through state policies as any other industrial capital, small-size ones tend to do so in the agrarian sector.¹⁵

To measure the evolution of the rate of profit, it is necessary to compare the net surplus-value in the form of profits and interest available for appropriation against the total capital advanced for valorisation regardless of its ownership; that is, whether it is owned or borrowed capital. The first is obtained by subtracting from value-added the direct and indirect wage costs (including those imputed to working proprietors) and the consumption or depreciation of fixed capital. The second is obtained by adding the fixed to circulating capital. Fixed capital is composed of the means of production consumed in more than one annual period and with value that is transferred *pro rata* to the value of output; that is, capital with a turn-over speed lower than one. Circulating or working capital is comprised of the means of production that are entirely consumed during an annual period and their value transferred entirely to that of output; that is, capital with a turn-over speed equal to or greater than one.¹⁶ Figure 6 presents the results of the measurement of the rates of profit of the total capital invested in the Australian economy and of the portions invested in the manufacturing, mining and agrarian sectors. The estimation covers the 1960–2014 period.¹⁷ It should be noted that, in this first approximation, the surplus-value calculated for the agrarian and mining sectors includes ground-rent appropriated by capitalists or landowners and therefore the ‘rates of profit’ in these sectors overestimate the

Figure 6 Surplus-Value Over Capital Advanced for Valoriation



Sources: Fixed-capital stock (ABS Cat. no. 5204.0); Fixed-capital consumption (ABS Cat. No. 5206.0); Value added (ABS Cat. no. 5206.0); Inventories (ABS Cat. no. 5676.0, the RBA Australian Economic Statistics (RBA-AES)); Labour costs (ABS Cat. no. 5206.0, ABS Cat. no. 6302.0, ABS Manufacturing Industry Yearbook, ABS Mining Industry Yearbook, RBA-AES).

relationship between the profits obtained and the capital advanced for valorisation.

Several observations can be drawn from Figure 6. First, that the annual average ‘profit rate’ on the total social capital (which includes ground-rent in the total surplus-value) declined strongly during the crisis of the mid-1970s and 1980s to recover thereafter. Second, that the average profit rate of manufacturing capital moved broadly in parallel to the former rate though at a lower level, except during the 1980s when the sector’s real wages contracted, and fell behind during the post-2004 ‘commodities boom’ and even more so when this ended in the early 2010s. Third, that the average ‘rate of profit’ of agrarian capital (which includes land-owner ground-rent in the ‘profit’ but does not include ‘mixed income’ and salaries of working proprietors) followed a more erratic pattern around the manufacturing sector’s profit rate. It increased sharply when international agrarian prices shot up and when the Australian dollar remained undervalued, and *vice versa*. Fourth, that the ratio of surplus-value to capital in the mining sector (which includes ground-rent

appropriated by the landowning state and by land-renting capitals in the numerator) has evolved in a similar fashion though starting from lower absolute levels. It increased strongly in the period following the liberalisation of iron-ore exports and the surge of East Asian demand for base metals and mineral coal; it declined during the 1980s and 1990s, when primary-commodity prices collapsed; and, shot up strongly during the 2005–2011 ‘commodities boom’ to drop thereafter.

Figure 7 compares the evolution of the interest rate for fixed-term deposits with the relationship (ratio) between the total surplus-value appropriated in the agrarian sector (profits plus rent) and capital advanced for valorisation there. It can be observed that the second ratio was above the first one only during periods when wages paid to rural Indigenous workers were particularly low (before the late 1960s),¹⁸ of high international agrarian prices (the early and late 1970s) and when the Australian dollar was strongly undervalued (1999–2001). It is clear from the above that, as all small capitals, the

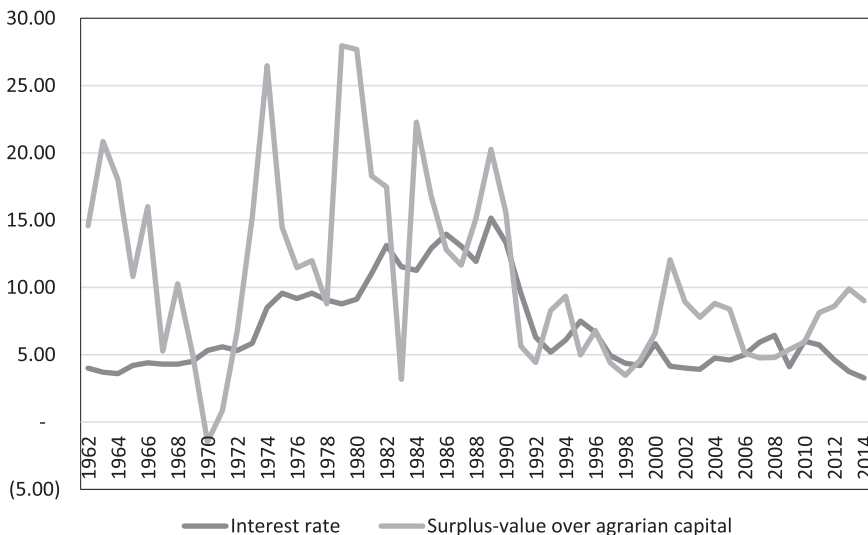
valorisation of agrarian capital has been regulated by the rate of interest, and that the rent appropriated by them in their condition of owners of agrarian land has been comparatively small in the post-1980 period. The post-mid-2000s experience of mining capitals in their condition of tenants of state-owned mining lands has been different. These, largely foreign-owned, capitals have managed recently to appropriate a portion of the strongly expanded Australian ground-rent. Previously, most of the ground-rent remaining in the sector was appropriated by the landowning state in the form of royalties and taxes (see Figure 8).

With the data used for the last three figures, the amount of ground-rent appropriated by landowning agrarian capitalists and by land-renting mining capital, in their condition of private owners of land and private renters of public land, is estimated; by deducting normal profits from the net sectoral value added.¹⁹ The ground-rent appropriated, on a first instance, by the landowning state through royalties and resource taxes is subtracted from

sectoral surplus-value and showed independently. The results are plotted in Figure 8.

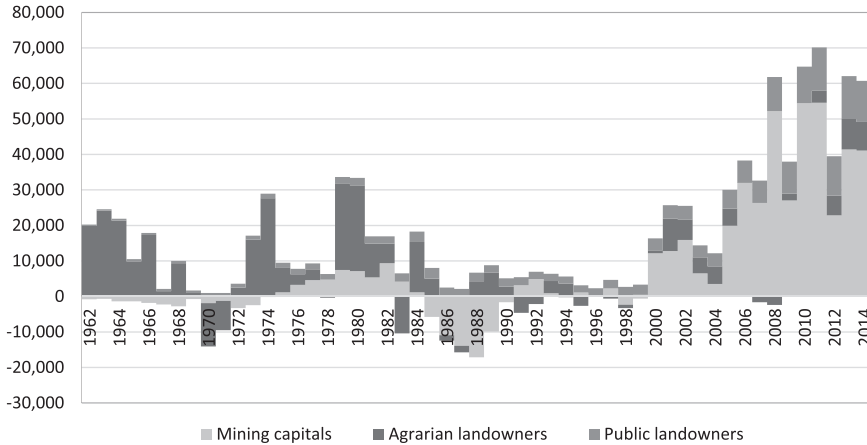
It can be seen in Figure 8 that during periods of high international primary-commodity prices, as well as when the Australian dollar was briefly undervalued, landowning agrarian capitals and land-renting mining capitals managed to appropriate a substantial portion of the ground-rent; that is, of surplus product over and above what constitutes capital's normal profits in those sectors. This was particularly true during the post-2004 primary-commodities price boom when mining capitals managed to appropriate a large chunk of the growing ground-rent despite the half-hearted attempts of the federal government to avoid that. Conversely, during periods of low international 'commodity' prices and slow-growing global demand, as in the 1980s bust that followed the short-lived 1979–1981 'resource boom', mining capitals tended to valorise at rates lower than those at which they normally (as defined above) regulate its process of accumulation, as reflected in the negative

Figure 7 Nominal Interest Rate



Sources: RBA-AES; Figure 6.

Figure 8 Ground-Rent Appropriated in the Primary Sector in Million AU\$2014



Source: Figures 5–7.

values plotted in the figure (Connolly and Orsmond 2011).

4.7 Absolute and Relative Size of the Australian Ground-Rent

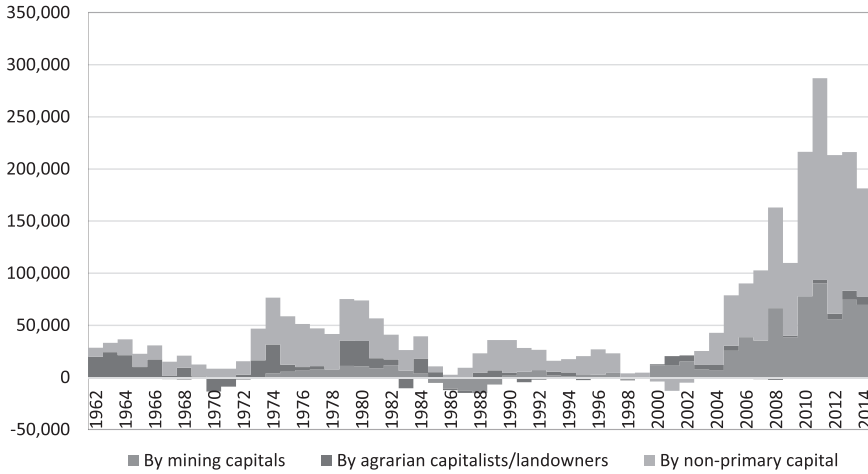
As stated above, the total ground-rent available for appropriation in a national economy is composed of the portions appropriated by social subjects (economic actors) other than the (private and public) owners of the natural conditions of production and that appropriated by the latter. To show the relative evolution of both portions, Figure 9 combines the results displayed in Figures 5 and 8 to show the total size of the Australian ground-rent. It can be seen there that the first portion has been substantially larger than the second one throughout the entire period analysed in this paper. In other words, the Australian ground-rent has been mostly appropriated by capital outside the primary sector. Before the 1980s, when the Australian economy developed through a process of ISI, like those pursued by most primary-commodity producing national economies, small landowning agrarian capitals became the main partners of

manufacturing-sector capital in the business of ground-rent appropriation.²⁰ Since the 2000s, as the ‘resource-based’ growth model consolidated, mining-sector capital has taken over the former while service-sector capital incipiently replaced the latter. After the late-1980s neoliberal reforms, the Australian economy, like most other primary-commodity producing national economies, abandoned its inwards-oriented industrialisation program (Bell 1993).

Finally, to provide a more complete assessment of the real weight of the ground-rent in the process of capital accumulation in Australia, Figure 10 shows the evolution of the portions of ground-rent appropriated by social subjects other than landowners or primary-sector capitals in their conditions of owners and tenants (that is, by ‘capital’) and the total ground-rent, both as a percentage of the total surplus-value appropriated in the Australian economy net of expenses for the depreciation of fixed capital and of income imputed to dwellers/owners of the housing stock.

It can be deduced from the figure above that during the so-called labourist-protectionist

Figure 9 Ground-Rent Appropriation in Millon AU\$2014

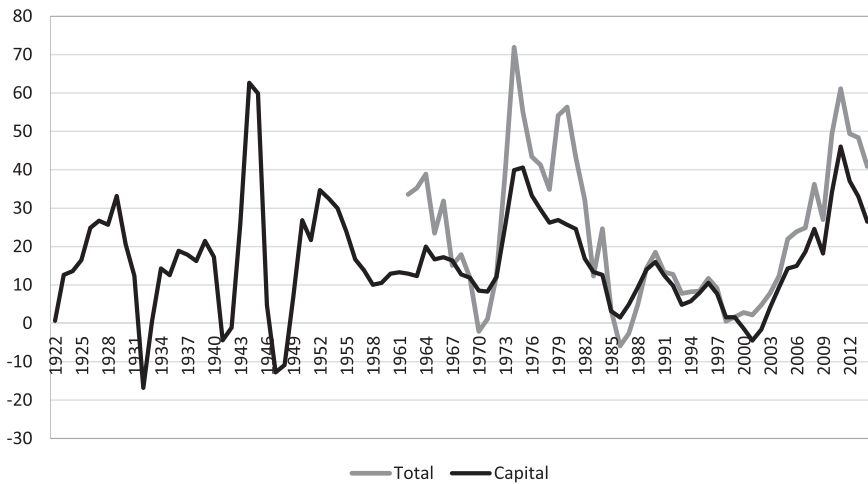


Source: Figures 5–8. Note: ‘By mining capitals’ and ‘By agrarian capitalists/landowners’ includes the portion of the ground-rent that capitals in the mining and agrarian sector appropriate as any other industrial capitals pro rata of their participation in the total capital advanced for valorisation in the national economy.

period of ISI-based growth (1922–1984) the ground-rent appropriated by social subjects other than private landowners/state tenants averaged around 18 per cent of the total

surplus-value they appropriated. During the so-called neo-liberal period of resource-based growth (1985–2014), that ratio averaged approximately 13 per cent, approaching to

Figure 10 Ground-Rent over Surplus-Value by per cent



Source: Figures 5–9.

30 per cent average during 2005–2014 when the prices of raw materials increased strongly. When the portion appropriated by landowners or primary-sector capitals in their condition of tenants of state-owned lands is added, the ground-rent appropriated in the Australian economy by different social subjects averaged around 32 per cent of the surplus-value appropriated in the form of profit or rent between 1962 and 1984 and approximately 17 per cent during 1985–2014, increasing to 42 per cent during 2007–2014.

5. Determinants of the Size of the Australian Ground-Rent: The Cases of Iron Ore and Mineral Coal During the Commodities ‘Super-Cycle’

The ground-rent available for appropriation in a national economy is composed of two parts: one that springs from private monopoly over differentially favourable natural conditions of production and the one that springs from the absolute monopoly of such conditions. The first part, in turn, consists of a portion that arises from lower direct production costs and another from lower transportation costs than those that determine world-market prices (that is, the marginal conditions of production and valorisation). The second part is paid for the use of all lands irrespective of their quality and location. This section presents an estimation of these various parts of the rent accruing to Australian lands used to produce iron ore and mineral coal for export markets. This estimate covers the 2002–2015 period.

5.1 *Differential Ground-Rent Due to the Location of Australian Productions in Relation to Consumer Markets*

In order to estimate the ground-rent arising from the lower transport costs enjoyed by Australian mining capitals producing iron ore and mineral coal due to their relative proximity to consumer markets in East Asia, Australian export prices need to be compared with those received by producers operating in the world's marginal lands in terms of location. For iron ore, the average Free on Board (FOB) price at

Australian ports, was compared with the FOB price to China in Brazilian ports. The value thus obtained was then corrected for the difference in the average ferrous content of iron ore exported by Australia and Brazil (62 and 67 per cent, respectively). The results were multiplied by the total amount of Australian exports of iron ore. To express the ‘location’ rent in national currency, the US dollar values were multiplied by parity exchange rates. These were computed by correcting nominal exchange rates with the degree of exchange-rate over/undervaluation presented in Figure 1. Table 1 presents the results of the estimation.

Because of data availability, a different methodology was used for the case of mineral coal. The difference between the average cost of transport from producers in the United States to consumers in Asia (Japan, China, South Korea and India, the four largest importing countries) was compared with the transport costs from Australia to those markets. These values were estimated for 2015 by National Energy Resources Australia (NERA 2016). The difference in question was then indexed using the values obtained for the case of iron ore, assuming the cost of ocean freight from the United States to Asia evolved in parallel to the costs from Brazil to China. The location rent per ton of coal was multiplied by the exported quantities to obtain the total rent, which was then expressed in national currency using parity exchange rates. Table 2 presents the results of the estimation.

From observation of Tables 1 and 2 it can be quickly concluded that the ground-rent arising from transport costs lower than those incurred by mining capitals producing at locations farthest away from consumer markets has been of significant magnitude during 2005–2015, when the cost of international shipping increased strongly along with the global demand for raw materials.

5.2 *Differential Ground-Rent due Lower-than-Marginal Costs of Production and Absolute Monopoly Rent*

The following methodology was used to estimate the differential rent arising from

Table 1 Determinants of the mining rent (iron ore)

	<i>Cost plus normal profits</i>			<i>Exports</i> mill. TN	<i>Price</i> US\$/TN	<i>Cost rent</i>			<i>Location rent</i>		
	US\$/TN	AU\$/TN	US\$ par.			US\$/TN	mill. US\$	mill. AU\$	US\$/TN	mill. US\$	mill. AU\$
2002	16.00	29.45	17.56	176.75	16.00	-0.01	-0.9	-1.5	0.0	0.9	1.5
2003	19.29	29.74	17.27	200.13	16.59	-2.02	-403	-695	-0.68	-137	-236
2004	22.71	30.88	17.91	223.89	20.25	-3.13	-701	-1,208	0.67	151	260
2005	25.95	33.98	19.48	255.33	33.08	2.02	515	897	5.12	1,306	2,278
2006	27.59	36.64	20.85	264.81	40.89	2.34	619	1,087	10.97	2,904	5,104
2007	31.54	37.69	21.56	285.24	47.85	1.15	328	574	15.16	4,323	7,559
2008	34.42	41.04	23.50	331.17	76.63	12.55	4,155	7,256	29.66	9,824	17,156
2009	31.41	40.27	22.46	389.76	60.53	12.18	4,747	8,512	16.94	6,604	11,841
2010	37.66	41.06	21.76	427.69	106.21	43.24	18,492	34,898	25.31	10,825	20,428
2011	45.46	44.07	23.39	465.22	142.33	65.91	30,662	57,763	30.97	14,407	27,141
2012	47.66	46.03	25.58	523.37	108.39	33.59	17,580	31,636	27.13	14,201	25,554
2013	45.77	47.27	26.45	611.19	109.96	40.60	24,813	44,343	23.60	14,421	25,772
2014	42.81	47.39	26.62	755.07	79.69	20.48	15,463	27,531	16.40	12,383	22,048
2015	33.77	44.89	24.87	809.68	45.37	-1.53	-1,240	-2,239	13.14	10,636	19,200

Source: UN Comtrade Database.

production costs lower than those incurred by capitals operating in the least favourable natural conditions. In the case of iron ore, it was considered that the average Australian FOB price in 2002, historically the lowest in real terms, represented the cost of production plus the normal profits on capital invested in mining production. This means that it was assumed that the price of the iron ore in 2002 did not include ground-rent above normal profits. To estimate the evolution of the cost of production in

Australia, that value was expressed in Australian dollars (using the official exchange rate) and the rest of the time-series was generated using the Producer Prices Index: Input to the Coal mining industry estimated by the Australia Bureau of Statistics. The annual values thus obtained were expressed in US dollars using parity exchange rates estimated in this paper. In the case of mineral coal, NERA's estimation of production costs (including interest on advanced capital) was used for 2015.

Table 2 Determinants of the mining rent (coal)

	<i>Cost plus normal profits</i>			<i>Exports</i> mill. TN	<i>Price</i> US\$/TN	<i>Cost rent</i>			<i>Location rent</i>		
	US\$/TN	AU\$/TN	US\$ par.			US\$/TN	mill. US\$	mill. AU\$	US\$/TN	mill. US\$	mill. AU\$
2002	20.61	37.94	22.63	204.66	34.18	9.34	1,912	3,206	2.21	452	757
2003	24.85	38.32	22.24	216.27	32.68	9.56	2,068	3,562	0.88	189	326
2004	29.25	39.78	23.07	225.32	43.65	16.96	3,821	6,588	3.61	814	1,404
2005	33.43	43.77	25.10	234.32	71.05	33.67	7,890	13,758	12.28	2,878	5,018
2006	35.54	47.20	26.86	237.60	73.84	26.65	6,331	11,126	20.34	4,832	8,491
2007	40.63	48.56	27.77	251.44	69.31	12.36	3,108	5,435	29.18	7,337	12,828
2008	44.35	52.87	30.27	261.91	149.87	68.84	18,031	31,488	50.75	13,293	23,213
2009	40.47	51.89	28.94	275.09	112.58	56.27	15,480	27,758	27.37	7,528	13,499
2010	48.52	52.90	28.03	301.91	130.92	54.01	16,305	30,771	48.89	14,760	27,854
2011	58.56	56.77	30.14	281.47	171.37	91.81	25,841	48,682	49.42	13,911	26,207
2012	61.41	59.31	32.96	316.45	134.93	60.01	18,988	34,170	41.97	13,282	23,900
2013	58.97	60.90	34.08	359.28	106.94	32.98	11,849	21,176	39.89	14,331	25,611
2014	55.16	61.06	34.29	387.47	88.86	30.89	11,970	21,312	23.68	9,174	16,333
2015	43.50	57.83	32.04	387.85	73.27	20.84	8,081	14,588	20.40	7,912	14,283

Source: NERA (2016); UN Comtrade Database.

The original values in US dollars were transformed into Australian dollars using the parity exchange rate for that year. The rest of the time-series was estimated as in the case of iron ore.

The difference between production prices thus obtained and market prices (FOB Australia) were considered as an approximation to the total ground-rent included in the market price (that is, differential rent by means of cost and location plus rent due to the absolute monopoly of the natural conditions of production). The values estimated for the location rent were then deducted from the total rent per ton of output in order to obtain an estimate of the ground-rent arising from the impact of favourable natural conditions on the level of labour productivity, and thus production costs of production, plus the rent obtained due to landowners' absolute monopoly of the natural conditions of production; that is, rent paid for the use of all the lands irrespective of their particular characteristics. The results were multiplied by the total amount of coal and iron ore exported.

Tables 1 and 2 present the estimations. It can be seen there that, as expected, the rent springing from differential production costs plus the absolute monopoly rent grew strongly in the period 2006–2014, when primary-commodity prices shoot up.

Since the difference between the average production cost in Australia and those incurred by capitals operating in the world's least favourable natural conditions of production suffered no such abrupt changes during the period at stake, is to be expected that an important part of the increase in the amount represented in the tables as 'cost rent' corresponds to absolute monopoly rent (that is, beyond the *differentially* favourable natural conditions of production and earned even in marginal lands).

5.3 Relative Importance of the Different Components of the Ground-Rent in the Australian Economy

To conclude this analysis of the determinants of the ground-rent materialised in Australian exports of iron ore and mineral coal, Table 3 presents the previous estimates in relation to the net surplus-value available for appropriation in the Australian economy and to gross domestic product net of fixed-capital consumption and housing expenses imputed to owner-occupiers.

The results presented in Table 3 confirm the estimation advanced in the previous section. Ground-rent has constituted a substantial portion

Table 3 Ground-rent over GDP and total surplus-value

	<i>RCI/SV</i> %	<i>RCI/GDP</i> %	<i>RLI/SV</i> %	<i>RLI/GDP</i> %	<i>RCC/SV</i> %	<i>RCC/GDP</i> %	<i>RLC/SV</i> %	<i>RLC/GDP</i> %
2002	0.00	0.00	0.00	0.00	1.34	0.44	0.32	0.10
2003	-0.28	-0.09	-0.10	-0.03	1.44	0.46	0.13	0.04
2004	-0.44	-0.15	0.09	0.03	2.39	0.80	0.51	0.17
2005	0.31	0.10	0.78	0.26	4.73	1.55	1.73	0.56
2006	0.34	0.11	1.62	0.53	3.53	1.16	2.69	0.89
2007	0.16	0.05	2.16	0.72	1.55	0.52	3.67	1.23
2008	1.83	0.64	4.32	1.51	7.93	2.76	5.85	2.04
2009	2.30	0.74	3.19	1.03	7.49	2.41	3.64	1.17
2010	8.50	2.80	4.98	1.64	7.49	2.47	6.78	2.23
2011	12.67	4.31	5.95	2.03	10.68	3.64	5.75	1.96
2012	7.41	2.29	5.98	1.85	8.00	2.47	5.60	1.73
2013	9.84	3.11	5.72	1.80	4.70	1.48	5.68	1.79
2014	6.02	1.88	4.82	1.50	4.66	1.45	3.57	1.11
2015	-0.49	-0.15	4.20	1.29	3.19	0.98	3.12	0.96

Note: GDP = Gross domestic net; RCC = Cost rent coal; RCI = Cost rent iron ore; RLC = Location rent coal; RLI = Location rent iron ore; SV = Total surplus-value. *Source:* Figure 6 and Tables 1 and 2.

of the total surplus-value appropriated by capital in Australia, both in the primary-commodity-producing sectors and in other economic sectors via the regulatory action of the federal government and states. During 2002–2015, ground-rent accruing to iron-ore and mineral-coal producing lands amounted to 15 per cent of surplus-value appropriated in the Australian economy; rising to 22.5 per cent, or around 53% of all the rent available for appropriation, in 2007–2014.²¹ It can also be seen that, contrary to what had happened in earlier periods, when most of the demand for Australian raw materials came from Western Europe, during the most recent period, the location rent has constituted an important part of the ground-rent that flows to the Australian economy.

6. Concluding Remarks

This paper put forward an estimation of the size of the Australian ground-rent and of the portions appropriated by different social subjects. The paper also estimated the relative importance of the ground-rent appropriated by capital in its process of valorisation between 1922 and 2014. It was shown that, though in different degrees across periods, the Australian process of capital accumulation has been highly rent-dependent, as most other national economies specialised in raw materials production and unlike the industrially-advanced countries or the East Asian late-industrialisers. The paper also presented a quantitative analysis of the main determinants and components of the rent accruing to state-owned Australian lands used to produce iron ore and mineral coal, Australia's two largest exports. This analysis covered the period 2002–2015 and showed the key importance in the Australian economy not only of differential rents but also of the 'location' rent resulting from the close distance to rapidly-growing consumer markets in East Asia, especially China.

Databases Used

- 1) Australian Bureau of Statistics.
- 2) Australian Bureau of Statistics, Historical Selected Agricultural Commodities, by State (1861 to Present), 2010

- 3) Australian National University, Department of Economic History, Research School of Social Sciences Clio Database
- 4) Food and Agricultural Organization of United Nations Statistics Database
- 5) Federal Reserve Economic Database
- 6) International Historical Statistics, Palgrave-Macmillan
- 7) Office of National Statistics, A millennium of macroeconomic data for the UK
- 8) Reserve Bank of Australia, Historical Data
- 9) Reserve Bank of Australia, Australian Economic Statistics 1949–1950 to 1996–1997
- 10) IMF Primary Commodity Prices Database
- 11) United States Geological Survey Database
- 12) United Nations Comtrade, International Trade Statistics Database

Endnotes

1. Industrial or productive capital refers here to all capitals involved in the production of use-values (goods and services) bearers of value and surplus-value regardless of the sector of investment. Conversely, commercial or merchant capitals are those invested in the trade of value either in the form of commodities or money.
2. It goes without saying that the reference throughout is to the natural conditions of labour; that is, unimproved land.
3. See Iñigo-Carrera (2017) for the original discovery in the Argentinian experience of the forms of state mediation in the process of ground-rent appropriation.
4. As a historically specific mode of human-life production, where the social division of labour is organised indirectly through the exchange of products of independent self-valorising capitals, the laws of capitalist (re)production realise themselves through the constant self-correcting deviation of privately undertaken actions from their underlying social norms. In other words, 'equilibrium' levels of economic relations that take the form of quantities of money (for example, prices, wages, profits, rents) assert themselves through a constant 'disequilibrium' or the gravitation of 'empirical' values around their regulating norms, which express their multiple determinations. For a discussion of this from Marxist and Sraffian perspectives, see Freeman (2006) and Martins (2019).
5. It should be noted here that the issue at stake is not directly related to the so-called Marshall–Lerner condition (MLC). The latter measures the 'elasticity' conditions under which an exchange-rate depreciation (appreciation)

has a positive (negative) impact on the current account of the balance of payments. The matter here concerns the effect of the *prevailing* exchange-rate over/undervaluation on the appropriation of the value materialised on the exports *effectively* made. Yet, the issues at stake are indirectly related to the so-called MLC in that exchange-rate overvaluation, like all forms of state-mediated appropriation of ground-rent by others than landowners that do not fall directly on it but intervene in the turn-over cycle of primary-sector capital, result in domestic primary-commodity prices being lower than those that prevail in the global market and thus negatively affect the intensive and extensive application of capital to primary-commodity production *via-a-vis* the levels that, for a land of a given quality, regulate world-market prices. For that reason, exchange-rate overvaluation does not necessarily, and most likely will not, result in importing capitals appropriating what exporting capitals 'lost' if by that is meant what they could have earned in a situation where no such overvaluation obtains.

6. If labour-power of a given productive quality was paid only in the primary sector wages that were below its value, the extraordinary surplus-value would be competed away and transformed into rent for the owners of the natural conditions of production necessary to employ that labour force (Marx 1981, pp. 763). As explained below, this might have been, to a certain extent, the case in certain areas of rural Australia with respect to aboriginal labour before the 1970s.

7. This methodology considers that the evolution of national currencies' purchasing power (measured by the inverse of domestic prices) underestimates the evolution of their capacity to represent value (i.e., to act as symbols of 'commodity' money) whenever increases in labour productivity are compensated for by increases in money supply (that in the limiting case keep prices constant) and *vice versa* (Marx 1981, pp. 221–27). It also assumes that the evolution of national prices is jointly determined by that of national-level labour productivity and domestic money supply. For this reason, the slower the growth of labour productivity relative to world-market norms (represented here by UK and US developments), the more the national price index (which measures the domestic purchasing power of the national currency) underestimates the loss of the capacity of the national currency to represent value relative to those considered as representative of world market conditions and *vice versa*. Hence, a correction accounting for the differentiated evolution of labour productivity is introduced in the relative purchasing power methodology (Iñigo-Carrera 2017, pp. 310–3).

8. The price of land, it should be noted, is nothing but the future stream of rent capitalised at the current rate of interest (Marx 1981, pp. 908–16).

9. To the extent that industrial and commercial capitals buy the urban land they use, land taxes result in lower land prices. To the extent they rent it, in lower urban

rents. In all cases, the surplus-value materialised in the tax revenue flows from urban landowners' income to capital's valorisation by means of state's expenditures.

10. See Tsokhas (2017) for an exceptional account of Australian mining booms in terms of the evolution of differential ground-rent.

11. Beef/cattle and lamb/mutton are from 1950 onwards.

12. According to Wills (1963), BHP, Australia's private steel monopoly, rapidly managed to sell steel in Australia at internationally low prices.

13. See Bernasek and Kubinski (1963) and Parry (1974) for the characteristics of the agricultural machinery and chemical industries, respectively, during the peak of the Australian import-substitution process.

14. Direct assistance to wheat-growers during 1931–1946, as reported by Lloyd and MacLaren (2015), and direct producer support reported by the OECD (2020) for 1986–2014 are deducted from the total.

15. Despite the various transformations taking place in the Australian economy throughout the period studied here, the manufacturing sector has counted with the presence of fragments of industrial capitals that, on the global market, lead the development of society's productive forces. Their rate of profit in Australia, where they have constituted one of the main partners in the business of ground-rent appropriation, is thus considered here as representative of normal valorisation. Conversely, the agrarian sector has, despite notable exceptions, been populated with smaller-size, national capitals. For instance, in 2011, the national average flock per farm in the sheep industry was 1,730 sheep, while 55% of the 72 million head was owned by farms with less than 4,000 specimens (Curtis 2014). Valued at the 2019 average price of AU\$178 per head of merino sheep (Meat & Livestock Australia 2019) this constitutes an average capital AU\$307,940. Even the inclusion of the value of buildings, fences and circulating capital would make that a small capital. The value of land should not be included in comparisons of this type because the land is landowners' property; it is not part of the capital advanced for production and valorisation, only the rental fee is. And, if for any reason the primary-sector capitalist acquires the land to be used, the income earner on that part of investment would yield only the interest rate; the price of land is the future stream of rent capitalised at the current rate of interest.

16. See Marx (1992, pp. 236–61) for the analysis of the process of turn-over of industrial capital. For this work, the stock of inventories plus one month of labour costs was used as a proxy of circulating capital. Inventories include raw materials in reserve and in process as well as unsold commodities.

17. Periods before 1960 were not included in the measurement because of problems with data availability. See Mohun (2002) for a previous estimation of the

average 'Marxian' profit rate in the Australian economy during 1965–2001. There are two key differences between this author's methodology and that used here. First, this author does not include circulating capital in total capital advanced for valorisation. Second, he excludes government's value added under the untenable argument that its services are not marketed.

18. See Hartwig (1978); Curthoys and Moore (1995).

19. This adds to, or deducts from, the ground-rent appropriated as any other industrial capital. *Strictu sensu* a portion of the rent appropriated on a first instance by agrarian landowners (whether they act as capitalists or not) and land-renting mining capitals ends in the public treasury in the form of regular income taxes. However, these are not taxes falling specifically on the ground-rent but are taxes falling proportionally (save for differentiation according to capitals' size) on all types of surplus-value; that is, on all the antagonistic partners that take part in the business of capital's valorisation. They are sustained on the principle of fiscal equity amongst income earners to contribute to the running of the state.

20. This period, known for the 'all-round protection' policy, was governed by an alliance between the Liberal Party, representing the industrial capital, and Country Party, representing landowning agrarian capitals.

21. Note that this underestimates the real magnitude because it does not include the rent materialised in domestic consumption of iron ore and mineral coal and it considers the 2002 iron-ore prices as containing no rent; hence, the negative values of 2003 and 2004 in tables 1 and 3.

References

- Bell, S. 1993, *Australian manufacturing and the state: The politics of industry policy in post-war era*, Cambridge University Press.
- Bell, S. and Quiggin, J. 2008, 'Beyond stop/go?: Explaining Australia's long boom', *Journal of Australian Political Economy*, vol. 61, pp. 71–87.
- Bernasek, M. and Kubinski, Z. M. 1963, 'Agricultural machinery and implements', in A. Hunter ed, *The Economics of Australian Industry*. Melbourne, Melbourne University Press.
- Blainey, G. 1963, *The Rush that Never Ended: A History of Australian Mining*. Melbourne, Melbourne University Press.
- Bradsley, P. 1994, 'The collapse of the Australian wool reserve price scheme', *The Economic Journal*, vol. 104, no. 426, pp. 1087–105.
- Connolly, E. and Orsmond, D. 2011, 'The mining industry: From bust to boom', Research discussion paper – RDP 2011-08, Reserve Banks of Australia.
- Curthoys, A. and Moore, C. 1995, 'Working for the white people: An historiographic essay on Aboriginal and Torres Straitislander Labour', *Labour History*, vol. 69, pp. 1–29.
- Curtis, K. 2014, *Stocktake of the Australian Sheep Flock*, Department of Agriculture and Food of Western Australia, Meat & Livestock Australia Limited.
- Freeman, A. 2006, 'An invasive metaphor: The concept of centre of gravity in economics', MPRA Paper No. 6812. <<http://mpra.ub.unimuenchen.de/6812/>>
- Hartwig, M. 1978, 'Capitalism and aborigines: The theory of internal colonialism and its rivals', in E. L. Wheelwright and K. Buckley eds, *Essays in the Political Economy of Australian Capitalism, Volume Three*. Brookvale, Australia and New Zealand Book Company.
- Industry Commission 1992, *The Australian Sugar Industry*, Australian Government Publishing Service, Canberra.
- Iñigo-Carrera, J. 2014, 'The historical determination of the capitalist mode of production and of the working class as the revolutionary subject', *Critique: Journal of Socialist Theory*, vol. 42, no. 4, pp. 555–72.
- Iñigo-Carrera, J. 2017, 'La renta de la tierra', *Formas, Fuentes y Apropiación*. Imago Mundi, Buenos Aires.
- Longworth, J. 1967, 'The stabilization and distribution effects of the Australian wheat industry stabilization scheme', *The Australian Journal of Economics*, vol. 11, no. 1, pp. 20–35.
- Lloyd, P. and MacLaren, D. 2015, 'Assistance to Australian agriculture from Federation to World War II', *The Australian Journal of Agricultural and Resources Economics*, vol. 59, no. 3, pp. 317–33.
- Martins, N. O. 2019, 'The Sraffian *Methodenstreit* and the revolution in economic theory', *Cambridge Journal of Economics*, vol. 43, no. 2, pp. 507–25.

- Macfarlane, I. 1993, 'The exchange rate, monetary policy and intervention', *Reserve Bank of Australia Bulletin*, December, pp. 16–25.
- Marx, K. 1976, *Capital, Volume I*, Penguin, London.
- Marx, K. 1981, *Capital, Volume III*, Penguin, London.
- Marx, K. 1992, *Capital Volume II*, Penguin, London.
- Meat & Livestock Australia. (2019), Store report—sheep and lamb Market information provided by MLA's National Livestock Reporting Service.
- Mohun, S. 2002, 'The Australian rate of profit', *Journal of Australian Political Economy*, vol. 52, pp. 83–112.
- National Energy Resources Australia 2016, *Coal Industry Competitiveness Assessment*, Department of Industry, Innovation and Science, Australian Government, Canberra.
- OECD 2020, *Agricultural support (indicator)*, viewed August 2020. <<https://doi.org/10.1787/6ea85c58-en>>
- Parry, T. G. 1974, 'Plant size, capacity utilization and economic efficiency: Foreign direct investment in the Australian Chemical Industry', *Economic Record*, vol. 50, no. 2, pp. 218–244.
- Piermartini, R. 2004, 'The role of export taxes in the field of primary commodities', WTO Discussion Paper 4, World Trade Organization, Geneva.
- Reinhardt, S. and Steel, L. 2006, 'A brief history of Australia's tax system' presented to the 22nd APEC Finance Ministers', Technical Working Group Meeting, Khanh Hoa, Vietnam, 15 June 2006.
- Ricardo, D. 1996, *Principles of Political Economy and Taxation*. London, Penguin Books.
- Smith, S. 2005, 'Land tax: An update', Briefing Paper No 5/05, NSW Parliamentary Library Research Service.
- Stalley, D. J. 1963, 'The sugar industry', in A. Hunter ed, *The Economics of Australian Industry*. Melbourne, Melbourne University Press.
- Tsokhas, K. 2017, 'Review of Malcolm Knox, *Boom: The Underground History of Australia, from Gold Rush to GFC*, Melbourne, Vic.: Viking, 2014', *Journal of Australian Political Economy*, vol. 79, pp. 140–49.
- Wills, N. R. 1963, 'The basic iron and steel industry', in A. Hunter ed, *The Economics of Australian Industry*. Melbourne, Melbourne University Press.