

Transnational Corporations and the ‘Restructuring’ of the Argentine Automotive Industry: Change or Continuity?

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Toward the end of the 1980s, the Argentine automotive industry had already experienced 15 years of stagnation and contraction following a peak of production in 1973. Nevertheless, a series of studies had begun to circulate that highlighted how its development might be revitalised following global production transformations (Jenkins 1985; Kosacoff et al. 1991; Todesca et al. 1989). In the 1990s, a new expansive phase of local automotive production prompted another series of studies that emphasised the transformations taking place during that decade (for example, Bisang et al. 1995), only for the limitations of such changes to be made

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evident by the long crisis experienced by the Argentine process of capital accumulation between 1998 and 2002. But the strong expansion of the last decade has once again revived discussion about the ‘restructuring’ of the Argentine automotive industry (Barbero and Motta 2007; López 2007; Pinazo 2013; Santarcángelo and Perrone 2012). Beyond the differences due to theoretical approach and date of publication, it is clear that research on the automotive industry over the last 25 years shares a common point of view. In effect, most studies propose that restructuring has qualitatively changed the dynamics of the sector with respect to the preceding era. More precisely, the development of the local automotive industry is considered to have passed through two great ‘models of development’. The first model, whose beginnings are located in the late 1950s and which ended at some point between the mid-1970s and late 1980s, is usually characterised by the orientation of production toward the domestic market, low levels of global productive integration, and limited international competitiveness. Owing to inward-oriented and relatively isolated production, this first stage of industrialisation is not seen as having been especially determined by the development of the international division of labour in this sector, but rather as part of the broader process of import substitution experienced by post-war Latin American economies. It is then usually argued that from the early 1990s the incorporation of the country into the new international division of labour (NIDL), through the reorientation of production toward external markets, put in place a second model of development. This new productive model permitted the overcoming—at least partially—of the shackles on growth deriving from the ‘inward-looking’ nature of the prior model.

A first aim of this chapter is to question this dominant account of the development of the Argentine automotive industry. In short, our argument seeks to highlight that the development of the NIDL in the global automotive industry did not result in a qualitative restructuring in the local automotive industry but, conversely, recreated it on the same bases as during the preceding period of the 1960s and 1970s. More precisely, we argue that even after the, so-called, restructuring of the sector, the valorisation of local subsidiaries of transnational corporations (TNCs) was based on the appropriation of a portion of ground-rent flowing into the Argentine space of capital accumulation as a result of its role in the classical international division of labour (CIDL) as an exporter of raw materials (see Chap. 3). In fact, we also argue that the development of the NIDL at global level did not appear ‘from out of the blue’ so as to qualitatively

transform the Argentine automotive sector from a backward and isolated industry into a modern link in the international division of labour. Instead, we will see that technological change at global level, and changing forms in the international division of labour that derived from it, were fundamental determining factors from the very origin of the local automotive industry, and not only of its alleged modernisation through restructuring during the last quarter of a century. In this sense, a second aim of this chapter is to offer an analysis of the Argentine automotive industry based on the general approach developed in this book, which emphasises the persistence of the CIDL in the present day and its complementarity with the NIDL.

To tackle these objectives, we first concentrate on an analysis of the main arguments put forward by those who support the account of the qualitative restructuring of the local automotive industry, outlined above. Subsequently, we address a question that is almost universally avoided in specific studies of the sector, namely, the analysis of the concrete conditions of the valorisation of 'foreign', or TNC, capital in Argentina and, above all, its sources of profit. Finally, the last part of this chapter returns to the question of the historical long-term evolution of the Argentine automotive industry as part of the global automotive industry.

THE, SO-CALLED, RESTRUCTURING OF THE ARGENTINE AUTOMOTIVE INDUSTRY

There is little doubt that the first stage in the development of the Argentine automotive industry—roughly from the mid-1950s to at least the mid-1970s—was characterised by its small scale, the use of backward technology by international standards, and the relatively low productivity of labour. In effect, the size of the domestic market proved insufficient for production under normal technological conditions prevailing in the most industrialised countries. For example, while production in Argentina reached a peak of almost 300,000 vehicles in 1973, annual output in the main European countries was between two to four million vehicles, that of Japan was more than five million, and that of the USA was some ten million vehicles. Due to the fragmentation of the domestic industry, in terms of both manufacturers and models produced, the technical difference in scale was even greater than that suggested by an international comparison of production levels. Even at its peak only a few models reached production

levels of 15,000 annual units (Asociación de Fábricas de Automotores 1996). By contrast, according to various estimates from the period (see Husan 1997), the ‘theoretical’ minimum efficient scale of production was at least 200,000 units, while real production runs of the most produced models in the USA and Europe were greater still. In addition to the small scale of production, there also exists a consensus concerning the use of productive processes that were far from the cutting edge of technology at that moment (Baranson 1969: 46–8; Nofal 1989: 89–94; Sourrouille 1980: 121). In effect, Argentine factories were designed for productive processes with a high participation of manual labour. For example, in the machine shops production lines were initially planned with single stations, and manually controlled machines that allowed for the machining of many different parts. This meant that in each station the worker had to manually load, position, operate, and unload the machine and, in some cases, change the cutting tools for each sequence of the process (Nofal 1989: 90). Also, the transfer of the object from one station to another was done manually (Harari 2011: 143–4). In the press shop, moreover, the high rotation of dies imposed by the low volume of production (Baranson 1969: 47) made it impossible to automate the unloading of the presses, technology that was already in use in the USA by the 1950s (White 1971: 21). And, in final assembly the differences in scale mainly affected the speed of the assembly line, which was much slower in Argentina than in the USA. This resulted in a lower degree of worker specialisation and therefore of the machinery used; consequently, manual instruments were used instead of the automatic machines used in the USA (Baranson 1969: 47). In summary, while the global automotive industry was advancing toward the automation and deepening of large-scale industry through *machinofacturing*, factories in Argentina were predominantly organised around a manufacturing system based on the manual division of labour and not on a system of machinery.

Likewise, it is clear that the small scale of production had important negative consequences for the productivity of labour and the costs of local industry. In effect, productivity throughout the 1960s was between two and three times lower than in Europe, and more than five times lower than in the USA (Asociación de Fábricas de Automotores 1969). The low productivity of the sector, and subsequently of the auto-parts industry, appeared to have strong repercussions for costs of production which, it has been estimated, were twice those of the USA in 1967 (Baranson 1969: 34).

For these reasons, the majority of researchers have been very critical of this first stage in the development of the Argentine automotive industry. Their criticism has been directed toward state policies, which are deemed to have been misconceived or poorly implemented (Remes Lenicov 1973); or, alternatively, toward TNCs for their oligopolistic, speculative, and/or absenteeist strategies (respectively Sourrouille 1980; Schvarzer 1993; Nofal 1989). These motives, it is argued, prevented the domestic automotive industry from reaching normal international standards of productivity and quality. This argument presupposes the idea—sometimes explicitly—that the Argentine automotive industry could (and should) have superseded a first, 'protected', stage in order to reach a second, 'competitive', stage. The failure of this transition would, for such researchers, ultimately explain the 15 years of stagnation and contraction in the industry from the mid-1970s as being due to a fall in domestic demand and the trade policy implemented by the state.

Nevertheless, and albeit after a prolonged delay, the Argentine automotive industry resumed its growth from the early 1990s, surpassing the 1973 level of production by 1994. The number of firms operating in the country, which had fallen during the 1980s, rose again with the re-entry of various TNCs that had withdrawn in the heat of the crisis, and with new entrants. As mentioned in the introduction, the argument that emphasised profound changes in the dynamics of the industry gained credence among scholars thereafter. Furthermore, the strong recovery of the industry after the crisis of 2001, which raised domestic production to levels that far exceeded pre-crisis levels, only appeared to vindicate the restructuring thesis. In effect, various recent studies argue that the Argentine automotive industry has left behind its inward-oriented character, so as to integrate itself in global value chains. From this perspective, this was possible because of the growth in the scale of production, the modernisation of factories, the multiplication of labour productivity, and the fall in real wages, which jointly contributed to increasing competitiveness by means of reducing costs. As a further consequence, it is underlined that foreign trade by the sector has noticeably increased (Barbero and Motta 2007; López 2007; Pinazo 2013; Santarcangelo and Perrone 2012).

The principal problem of these studies is that they tend to restrict their analysis to the domestic sphere, leaving international comparisons in the background. That is, they affirm the positive changes in national indicators with respect to their previous performance but without sufficiently taking into account that the industry was also 'restructured' at a global level.

Even if they do explain the domestic transformation by departing from global transformations, they overlook that the latter were much more profound than the former, such that all improvements within national parameters are dwarfed when compared internationally. As we show, this demonstrates once more the permanence and, indeed, the deepening of the long-standing gap between national and global production conditions.

To begin with, although it is true that the absolute growth in production was significant, especially in recent years, the domestic scale of production continued to lag considerably behind that of the rest of the world. Even in 2011, a record year for domestic production, output in Argentina only reached one per cent of world production (a level only marginally superior to the 0.76 per cent achieved in 1973). On the other hand, although the relative gap in scale was reduced with respect to the 'classic' producing countries in the automotive industry, the difference in 2011 remained significant: in that year Argentine production was 9.5 per cent of that in the USA; 13 per cent of that in Germany; and 9.9 per cent of that in Japan (the absolute gap in scale, of course, greatly increased). Further, in relation to emerging economies the evolution was markedly negative. While in 1973 between two and three times more vehicles were produced in Argentina than in South Korea and India, in 2011 production in both of those countries was five times that of Argentina. Even with respect to Brazil the relative size of domestic production decreased, going from 39 per cent to 24 per cent between 1973 and 2011. And further still, if we include China, the difference in scale between Argentina and the currently largest global producer remains at the same level as in the 1970s, that is, around a difference of twenty times in the level of production.¹

The persistence of high levels of fragmentation in the domestic industry, in contrast with a strong global tendency toward the centralisation of capital, tended to counteract any improvement that could have resulted from the increase in absolute scale at the national level. While during the contraction of the 1980s the number of firms in the automobile manufacturing sector had been reduced to three, the subsequent expansive phase was accompanied by an increase in the number of automotive firms, such that there are currently eight firms in the same sector. As a consequence, differences in scale by firm and by plant were greater than the aforementioned gap in national scales. Additionally, in spite of the specialisation derived from regional integration, the proliferation of models also maintained a characteristic limit to economies of scale in Argentina (see Tables 8.1 and 8.2).

Table 8.1 Largest automotive producer by country, 2013

<i>Country</i>	<i>Firm</i>	<i>Units produced (thousands)</i>
Japan	Toyota	4290
China	General Motors	3186
USA	Ford	2326
Korea	Hyundai	3125
Germany	Volkswagen	2471
France	PSA Peugeot Citroën	939
Argentina	PSA Peugeot Citroën	143 ^a

Source: Asociación de Fábricas de Automotores; Organisation Internationale des Constructeurs d'Automobiles, 'Production Statistics' (at <http://www.oica.net/>)

^a2011

Table 8.2 Automotive production by plant, selected cases (2013)

<i>Plant</i>	<i>Units (thousands)</i>	<i>Models</i>	<i>Production by model</i>
Hyundai in Ulsan, Korea	1513	13	116
Honda in Marysville, USA	734	4	184
Toyota in Georgetown, USA	504	3	168
Volkswagen in Wolfsburg, Germany	807	3	269
PSA in El Palomar, Argentina	143	7	20

Sources: Japan Automobile Manufacturers Association (2014), Asociación de Fábricas de Automotores; Volkswagen (2014); Hyundai Motor Company (<http://worldwide.hyundai.com/>)

As a consequence of the persistence of problems of scale, the modernisation of domestic plants was also limited in extent. During the 1990s, when the importation of machinery was made much cheaper by the strong overvaluation of the national currency (see Chap. 3) and facilitated by trade liberalisation, modernisation consisted fundamentally in the relative flexibilisation of the pre-existing electro-mechanic technical base, and not in its replacement with microelectronics. For example, a study of the changes implemented in the Ford factory shows that, instead of renewing machinery, old presses in the stamping section (in production since the 1980s) were adapted through the attachment of numerical control units. In a similar way, the introduction of robots was limited to specific tasks in certain sections (especially in welding), co-existing with traditional manual labour in other operations (Lascano et al. 1999). In fact, the largest innovations were applied to new forms of work organisation (especially team-work)

rather than to technical change; and even in this case the application was partial and by ‘hybridising’ methods used in parent companies with those being applied locally (Motta et al. 2007: 256). Therefore, by applying certain microelectronic components into old electromechanical machinery, and partially reorganising labour relations, capital could increase labour productivity without needing to comprehensively renew the equipment being used. As a result, the level of automation in Argentina, although higher than in previous decades, remained substantially lower than in Japan or the USA (Motta et al. 2007: 264). And the same could be said about the implementation of robotisation (López 2007: 43).

With regard to labour productivity, international comparison also brings into question the restructuring thesis based upon an analysis restricted to the national sphere. For instance, even at the peak of production in the years 2011–2013, output per worker was still two and a half times lower than in the most industrialised countries, and the productivity gap in absolute terms was more than twice that of the 1960s (see Table 8.3).² Moreover, if we consider the labour productivity of the best performing factories in different countries instead of national averages, the productivity gap increases notably (see Table 8.4).

Table 8.3 Vehicles per worker, selected countries

Japan (2013)	60
Spain (2013)	37
United Kingdom (2013)	61
USA (2013)	61
Argentina (2011)	26

Sources: Asociación Española de Fábricas de Automóviles y Camiones (2013); Japan Automobile Manufacturers Association (2013); Society of Motor Manufacturers and Traders (2014); Asociación de Fábricas de Automotores; Organisation Internationale des Constructeurs d’Automobiles, ‘Production Statistics’ (at <http://www.oica.net/>); Bureau of Labor Statistics (Current Employment Statistics)

Table 8.4 Vehicles per worker, selected plants

Nissan in Sunderland, UK (2002)	98
Renault in Valladolid, Spain (2002)	89
Honda in Greensburg, USA (2013)	105
Toyota in Blue Springs, USA (2013)	101
Renault in Santa Isabel, Argentina (2013)	36

Sources: World Markets Research Center (<http://www.wmrc.com/>); Japan Automobile Manufacturers Association (2014); Asociación de Fábricas de Automotores

A final argument put forward by defenders of the restructuring thesis rests on the increase in foreign trade. From this perspective, this rise demonstrates the definitive abandonment of the inward-looking model. Effectively, Argentina came to export, on average, 50 per cent of production between 1995 and 2013, with peaks of more than 60 per cent. This situation makes the development of the Argentine automotive industry resemble that of other 'emerging' countries that were fully incorporated within the NIDL, such as Spain, South Korea, or Mexico. However, to fixate on this indicator can be misleading. To begin with, exports as a proportion of total production in these latter countries is significantly higher, oscillating between 70 per cent and 80 per cent. Of more importance are the differences between the markets to which these other countries export and the destination market for almost all Argentine exports, that is the Mercosur (the common market of the Southern Cone).³ The latter is much smaller in comparison to other regional and even national markets, being half that of the Japanese domestic market, almost a quarter of the European, and more than five times smaller than the US market. Furthermore, it is highly protected, as is shown by the continued dependency of Argentine industry on the Mercosur's limitations on foreign competition.⁴ But, above all, the principal restriction on the Argentine external market is due to the limited character of regional integration. In effect, far from being a complete integration of national markets within a larger regional market, the regime of automobile foreign trade between Argentina and Brazil was structured around rules of compensated exchange. As a consequence, access to the protected Brazilian market is conditional upon the proportional opening of the domestic market to imports from Brazil. Therefore exports, and as a consequence domestic production, remain limited by the size of the internal market, however much regional integration has permitted an increase in the specialisation of each country in terms of models produced.

In summary, international comparison allows us to conclude that the majority of characteristics usually deemed specific to the Argentine automotive industry in the 1960s and 1970s are, in fact, reproduced today, namely: production restricted by the size of the domestic market; a substantially smaller scale of production than in the principal producing countries; technology that is way behind the frontier of technical innovation; and, finally, relatively low labour productivity. Yet, alongside these limitations, another important characteristic is also reproduced, that is, the operation in the country of the principal automotive TNCs. And, furthermore, it is the case that the TNCs in Argentina have consistently

obtained rates of profit equal to, or even higher than, those existing in the sector at global level, at least during the expansive stages of the industry (Sourrouille 1980; Fitzsimons 2014; Pinazo 2013). This begs a question that has not received the attention it deserves, despite it being crucial for an understanding of the development of the automotive industry at the domestic level, namely, how do TNCs manage to obtain normal (and sometimes extraordinary) rates of profit with small scales, backward technology, and generally obsolete systems of production?

SPECIFIC SOURCES OF PROFIT FOR AUTOMOTIVE TNCs IN ARGENTINA

In order to reemphasise its importance, let us reformulate the problem. The normal source of profit for any industrial capital is the surplus labour of the workers it employs. However, the achievement of a normal rate of profit is conditional upon those workers producing under the normal technical conditions for the sector. Otherwise, the lower relative productivity of labour would result in a smaller quantity of physical production per unit of labour-time and, therefore, in greater 'individual values' of the commodities produced (Marx 1976: Chap. 12); or, more precisely, in greater individual prices of production relative to those that correspond to average social conditions. But, given that the social determination of value (price of production) depends precisely upon these average or normal conditions, the greater values or individual prices of production are not recognised in the market. In other words, backward capitals waste (surplus) labour-time by producing under suboptimal technical conditions, which results in their immediate incapacity to valorise normally due to their higher costs of production. Consequently, those capitals that operate in technical conditions inferior to normal capitals can only obtain normal profits if they regularly access other compensatory sources of profit, sources that are distinct from the appropriation of normal surplus-labour carried out by their own workers. In this sense, we argue that automotive TNCs in Argentina compensate for the relatively low productivity with which they operate, and for its corresponding effect on costs, on the basis of the existence and possibility of appropriation of extraordinary sources of profit.⁵ What, therefore, were the extraordinary sources of profit in the Argentine automotive industry?

It is immediately obvious that greater costs of production can be compensated for either by selling at prices superior to those of socially

existing prices of production, or by the payment of below normal wages.⁶ Indeed, the two main existing responses in the literature to the problem we have posed (even if this problem is not clearly formulated in those studies) revolve around these two situations. On the one hand, the most widespread position has focused on the oligopolistic and/or speculative behaviour of TNCs, which would have allowed them—together with state policies—to focus their valorisation strategy on the imposition of abnormally high prices, instead of technical innovation, thereby perpetuating the inefficiency of the sector (Jenkins 1984; Nofal 1989; Schwarzer 1993; Sourrouille 1980). On the other hand, more radical approaches—and in particular those related to dependency theory—have placed greater emphasis on low domestic wages in relation to those in the more industrialised countries, which they immediately interpreted as a form of the 'super-exploitation' of the domestic working class (Cimillo et al. 1973; Marini 2007). We think, however, that both analyses have focused only on the superficial manifestations of the valorisation of TNCs, and have failed to identify the precise sources of social wealth which the latter appropriate via high prices and low wages.

Let us begin with the question of prices. The vast majority of scholars tend to agree that during the, so-called, inward-looking stage internal prices were set above international prices as a result of the prohibition on imports of finished vehicles (Jenkins 1984: 46; Sourrouille 1980: 81). Although barriers to imports were lifted after 1975, other restrictions replaced them, such as quota systems, compensated exchange, and tariffs. The difference between international and domestic prices was therefore maintained, allowing for the continuity of local sales of both domestically produced and imported vehicles at high prices, as has been repeatedly shown in the specialised literature (CENDA 2008; Guevara 2010; Llach et al. 1997; López 2007). But it is often overlooked that this means that, throughout the history of the Argentine automotive industry, there has been sufficient solvent demand to validate domestic prices that were consistently set above global prices of production. As a result, one must explain the sources of this exceptional purchasing power on the part of Argentine consumers relative to those of other countries.

A first explanation may be found in the market destination of automotive production. It is the case that in Argentina there is demand for vehicles for use as means of production and/or for the transport of agricultural commodities. The greater costs that agrarian capital must incur in paying for its automotive means of production above its price of production can be trans-

ferred upwards toward the rent of the landowning class. Consequently, the social wealth that flows to TNCs via the sale of their product at commercial prices superior to those of production is, in the corresponding proportion, a part of the agrarian ground-rent whose appropriation determines the specificity of capital accumulation in Argentina (see Chap. 3). In this sense, it is worth noting that, in the period 1960–1975, the Argentine automotive industry was especially oriented to the production of commercial vehicles (see Table 8.5). Although the proportion of commercial vehicles to total output later fell, the specialisation in the production of commercial vehicles grew considerably in the period of expansion after the crisis of 2001 (see Table 8.6). On the other hand, although it is difficult to estimate its importance quantitatively, another portion of production was certainly destined for the personal consumption of landowners. As is evident, the source of this purchasing power is also ground-rent. The existence of a sumptuary component in the consumption of vehicles in Argentina is obviously consistent with the relative importance of large cars in domestic automobile production in comparison with Europe and, further still, with Japan, especially in the 1960s and 1970s, when mainly small and medium vehicles were consumed in those countries (Table 8.7). In summary, both characteristics of the ‘product mix’ of the Argentine automotive industry appear to indicate that an important portion of the vehicles produced is linked to the cycle of agrarian capital, or with landowners’ consumption, and that therefore overpricing acts as a vehicle for the appropriation of ground-rent on the part of TNCs.

Agrarian ground-rent also generated growing demand for automotive vehicles in general (and not only for those directly consumed by agrarian

Table 8.5 Commercial vehicles as percentage of all vehicles (1960–1975)

<i>Country</i>	
Argentina (1960–1975 average)	29.7
USA (1961–1975 average)	17.3
UK (1970)	21.8
Germany (1970)	18.5
France (1970)	10.6
Italy (1970)	7.3
World (1970)	23.5

Sources: Organisation Internationale des Constructeurs d’Automobiles, ‘Production Statistics’ (at <http://www.oica.net/>); and Asociación de Fábricas de Automotores

Table 8.6 Commercial vehicles as percentage of all vehicles (2003–2013 average)

<i>Country</i>	
USA	62
Mexico	40
Argentina	35
China	29
World	24
Spain	20
Japan	14
Korea	9
Germany	5

Sources: Organisation Internationale des Constructeurs d'Automobiles, 'Production Statistics' (at <http://www.oica.net/>); and Asociación de Fábricas de Automotores

Table 8.7 Percentage of vehicles by engine size, selected countries (1964–1965)

	<i>Argentina</i>	<i>Italy</i>	<i>France</i>	<i>Germany</i>	<i>UK</i>	<i>Japan</i>
Below 1000 cc.	37	68	51	9	18	86
1000–2000 cc.	25	31	43	87	69	14
Over 2000 cc.	38	1	6	4	13	0

Sources: Pratten and Silberston (1967: 377); Asociación de Fábricas de Automotores

capital and landowners). It did so because one of the normal courses followed by agrarian ground-rent in Argentina has been its primary appropriation by the national state and its subsequent conversion into public spending.⁷ In this way, agrarian rent augmented the demand for industrial commodities in general, including that of the automotive industry. Consequently, the overpricing of vehicles destined for general domestic consumption was also sustained, at least partially, by agrarian ground-rent.

In summary, the existence of ground-rent was, directly or with the mediation of state policies, a source of growing demand for automotive vehicles. This explains the setting of domestic sale prices above international prices of production. Without this extraordinary source of social wealth that validated those relatively high prices, the fixing of protectionist measures—at national or regional levels—would simply have contracted the consumption of vehicles, instead of expanding it, as happened in Argentina, in every one of the growth phases of the industry.

As we saw, the second main response offered to the question of the sources of valorisation of automotive capital in Argentina is linked to the payment of low wages, in international terms. Usually, any ‘advantage’ derived from the hiring of cheap labour-power is interpreted simply as a reduction in costs (Barbero and Motta 2007; Jenkins 1985; Santarcángelo and Perrone 2012), without identifying the reasons for existing wage levels nor the source of the advantage in question. Dependency theory, for its part, simply asserts that this amounts to the ‘over-exploitation’ of labour-power; that is, the source of profit in the ‘periphery’ lies in the greater degree of extraction of the surplus labour from workers than in ‘core’ countries (Cimillo et al. 1973: 55–6, 95–7; Marini 2007: 124–31). We think, however, that the question of the conditions of the hiring and exploitation of labour-power deserves a deeper analysis.

To uncover the source of the advantage obtained by TNCs through cheapened purchase of labour power, it is crucial to transcend the simple comparison of wages by means of existing official exchange rates, as is usually the case in the aforementioned studies. In Argentina the official valuation of the currency (through diverse instruments of economic policy) has been a recurring form of the appropriation of social wealth. This distorts any effective comparison based on this variable. It is clearly necessary, therefore, to correct deviations in the official exchange rate with respect to the parity corresponding to the real capacity of the national currency to represent value. This allows us to capture more adequately the magnitude of value represented in the monetary wage received by Argentine automotive workers in relation to other countries. Taking the method of relative purchasing power parity over a base period (Iñigo Carrera 2007: 31–3),⁸ it can be concluded that, in terms of value, the Argentine automotive wage has historically been between three and four times lower than its US counterpart (see Fig. 8.1). This means that, in order to put an automotive worker into production, TNCs must disburse as much as three to four times less variable capital than if they had to hire labour-power in the socially normal conditions of exploitation of labour-power prevailing at the global level.⁹

Nevertheless, this cheapening of labour-power does not necessarily imply a greater exploitation of labour-power. Leaving aside questions relating to the extension of the working day and the intensity of work,¹⁰ the comparison of real wages shows that the Argentine automotive worker was capable of consuming between one half to three quarters of the levels of consumption reached by a US worker (see Fig. 8.1).¹¹ This means

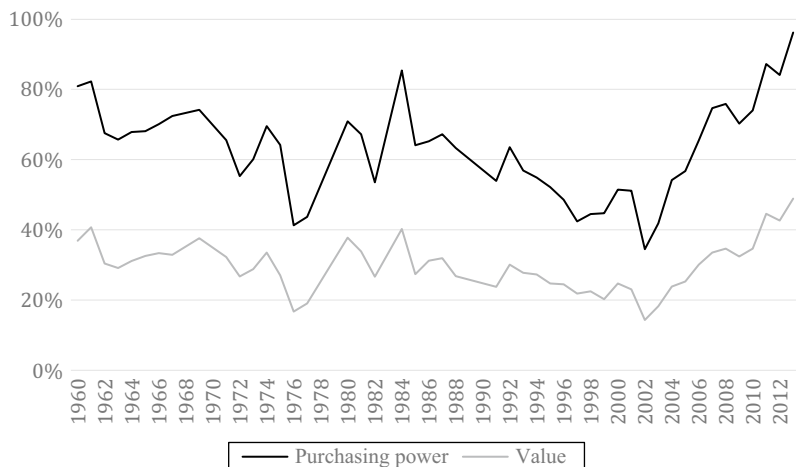


Fig. 8.1 The automotive wage in Argentina as percentage of the US wage. *Sources:* see Appendix

that the Argentine worker's ability to consume was much closer to that of the American's than is indicated by the value of her or his wage; or, put another way, that the Argentine worker could purchase more use values per unit of value than their American counterpart. The explanation for this situation resides in the domestic prices of wage goods for the working class. In effect, within the Argentine space of capital accumulation agrarian commodities circulate more cheaply than in the world market. Given that the domestic sale of these commodities below their normal price of production is only possible because of the existence of agrarian ground-rent, the cheapening of labour-power constitutes a vehicle for the appropriation of this rent by industrial capital and, in our case, by automotive capital. In brief, the process of appropriation of ground-rent by industrial capital explains, to a large extent, the relative cheapness of labour-power in Argentina. Quantitatively, this determination explains half of the difference between the Argentine and American automotive wage in the period 1960–2013. We see in the next section that, especially in periods of a relative contraction of ground-rent, this relative cheapening of labour-power has been complemented by a direct fall in real wages. In other words, what is at stake is not only the cheapening of the means of subsistence but also a fall in consumption on the part of the working class.

In conclusion, the preceding analysis shows that the fundamental basis for the valorisation of TNCs in Argentina has been the appropriation of a portion of the agrarian ground-rent circulating in the country, both through the purchase of cheapened labour-power and through selling at prices that have been set above those of production.¹² In this way, automotive TNCs have compensated for the backward technical conditions in which they operated. However, to do so they have had to complete their cycle of valorisation within the national (or regional) market. This is for two reasons: first, because the maintenance of those higher sale prices required tariff protection; and second, because the extraordinary profit gained from the cheapening of labour-power would have been more than offset had they oriented production toward exports. In effect, we have seen that a tendency to overvalue the currency has been a defining trait of the Argentine process of capital accumulation, precisely because of its role as one of the most powerful mechanisms for the appropriation of ground-rent.

However, while this specific form of the valorisation of capital explains to a large extent the main characteristics of the development of the automotive industry in Argentina (that is, the presence of the main TNCs, the orientation toward the domestic market, backward technology, and so on), we must also explain its historical evolution. In particular, the diverse phases through which the industry has passed at the domestic level, and the transformations involved, even though the most fundamental form of valorisation has remained essentially unchanged.

CHANGE AND CONTINUITY IN THE ARGENTINE AUTOMOBILE INDUSTRY

A first challenge is to explain the precise moment of the establishment of TNCs in the country, which took place toward the end of the 1950s. The mere possibility of appropriating agrarian ground-rent is obviously not sufficient, since this possibility was present in its general form long before then. From our point of view, to be able to answer this question it is crucial to focus on the global development of the post-war automotive industry, so as to identify the determinations of the international expansion of TNCs in those years.

It is worth pointing out that the automotive branch of production was one of the pioneers, toward the mid-twentieth century, of the development of the automation of the productive process of capitalist large-scale

industry. Before then, its system of production was based on a combination of the manufacturing division of labour and the mechanised assembly line (Grinberg 2011: 133–4; Coriat 1982: 27–43). The introduction of transfer machinery and, above all, its mechanical connection in an automated production line (a system known as fixed automation), triggered a spatial reorganisation of the global automotive industry. In enabling the incorporation of less-skilled labour-power as an appendage to the system of machinery, technical changes boosted the automotive industrialisation of East Asia; first in Japan, later in Korea, and later still in other countries of the region. In fact, the link between the development of automation and the emergence of East Asia as a region of industrial production for the world market has been at the core of the classic NIDL thesis. But the link between this technical revolution and Latin American industrialisation—including, of course, Argentina—has been frequently overlooked in the literature. We think that this point is key to understanding the process in the latter.

To begin with, the technical revolution took the concrete form, as always happens in the capitalist mode of production, of the intensification of competition between individual capitals for the appropriation of surplus profits related precisely to the innovation process (Marx 1976: 433–6; 1981: 279, 300–1). In turn, this competition imposed the need to discard increasingly obsolete machinery by virtue of what Marx called 'moral depreciation' (Marx 1976: 528; 1992: 250, 264), even if this machinery remained useful in the technical sense. This general determination was intensified in the case of US firms, which were widely dominant in the world market up to that point, due to the fact that automation had made possible the accelerated development of capital accumulation by European and, especially, Japanese firms (Pratten and Silberston 1967: 81). In effect, the relative cheapness of the labour-power in these latter regions made them more adequate for the incorporation of the new technical base, which required less-skilled labour-power. US firms, in contrast, were facing a double obstacle to technical change. On the one hand, labour-power was relatively expensive, owing to its higher qualifications (Grinberg 2011: 136–8); on the other hand, they were stuck with a large magnitude of fixed capital, corresponding to the antiquated technical manufacturing base, whose material form was increasingly obsolete (Wilkins and Hill 2011: 408). In summary, this was a period in which the automotive TNCs, especially US firms, faced a strong need to discard machinery so as to accelerate technical change in their home countries.

It was, in fact, this antiquated capital, obsolete for the new normal technical conditions, which was relocated to Argentina.¹³ US firms principally [which were responsible for 60 per cent of foreign direct investment (FDI) in Argentina], but also European firms, found in Argentina a highly profitable alternative to the scrapping of obsolete machinery. In fact, the initial FDI in the Argentine automotive industry was directly made to a large extent in the form of machinery, equipment, and dies, with little or no investment in the form of money-capital (Sourrouille 1980). Also, there exists abundant evidence, as much qualitative as quantitative, attesting to the second-hand character of a good part of this machinery.¹⁴ It is therefore especially significant that the sectors with the greater proportion of antiquated equipment were the machining, painting, and stamping sections (Asociación de Fábricas de Automotores 1969)—the very phases of the labour process in which automation had made more progress at the global level.

This antiquated machinery, already obsolete for the level of technical development prevailing at the global level, could be put into production in Argentina as a result of the specific form of valorisation centred on the appropriation of ground-rent. On this basis, the automotive TNCs increased their production in the country between 1960 and 1974. However, this ‘strategy’ had a very definite limit. In effect, the reproduction of this form of valorisation depended upon a sufficient quantity of ground-rent as a source of compensation for the lower productivity of labour. In other words, the reproduction of capital accumulation in the automotive industry was dependent upon the TNCs being able to access agrarian rent so as to obtain the normal rate of profit. But it so happened that the quantitative necessity for ground-rent as a source of compensation was growing, since technical change continued at global level. From the mid-1970s in particular, the development of microelectronics tended to widen the productivity gap between normal conditions of production at global level and those prevailing in the Argentine process of accumulation.¹⁵ For its part, after the strongly cyclical movements of the 1970s, ground-rent stagnated in the 1980s at levels similar to the 1960s (see Fig. 8.2). Following a similar movement to the process of capital accumulation as a whole in Argentina, the combination of a growing necessity for sources of compensation and the stagnation of ground-rent brought the local automotive industry to a period of crisis and contraction between the end of the 1970s and the beginning of the 1990s.

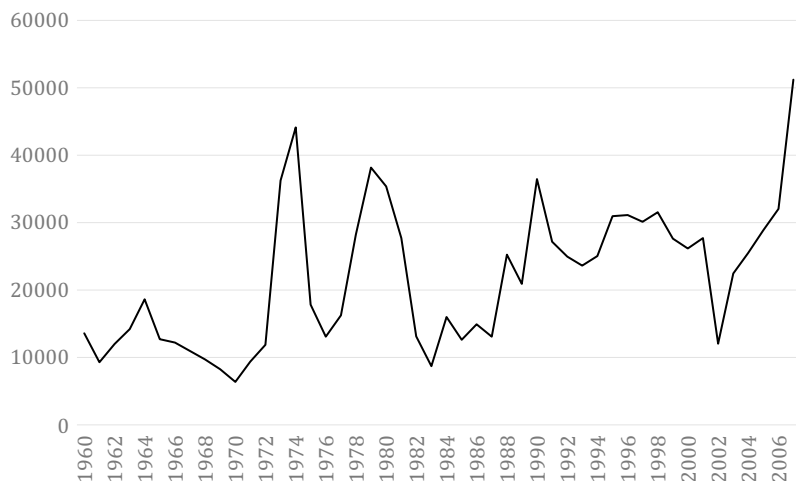


Fig. 8.2 Total agrarian ground rent (millions of 2004 ARS). *Source:* selected data from Iñigo Carrera (2008)

Various determinations combine to explain the recovery of the Argentine automotive industry during the last 25 years. First, the availability of agrarian ground-rent recovered from the contraction of the 1980s and stabilised in the 1990s at levels superior to those reached previously (with the exception of the relatively isolated peaks of 1974 and 1979; see Fig. 8.2). This increased source of extraordinary profit was appropriated by TNCs through the already analysed mechanisms linked to high domestic prices and the cheapened purchase of labour-power, to which could be added, in the latter decade, the remission of profits abroad with a sustained overvaluation of the currency.

However, and second, the conditions of purchase and exploitation of labour-power had worsened sharply as an expression of the general crisis in the national sphere of capital accumulation from the mid-1970s. In effect, the consumptive capacity of the automotive wage fell strongly from 1995, reaching levels in 2003 that were comparable with the most repressive years of the last military dictatorship (1976–1978).¹⁶ In a comparative perspective with the USA, the wage fall in Argentina was of a greater size; in 1996–2003, the consumptive capacity of the Argentine automotive worker was 45 per cent that of the US worker, in contrast to almost

70 per cent in 1984–1988 (see Figs. 8.1 and 8.3, and Appendix). This divergence in the conditions of reproduction of the working class does not seem to derive from differences in productive attributes demanded from automotive workers in each country. If anything, the lower degree of automation of production in Argentina compared with the USA, and therefore the lower degradation of the productive attributes of the worker in the former country, would indicate an inverse relation to that which actually developed. Therefore, this absolute and relative fall in the Argentine real wage shows that the wage was, at least in this period, clearly lower than the value of labour-power. In this way, a second explanation for the recovery of the automotive industry is based on the emergence of a new source of extraordinary profit, namely, the appropriation of a portion of the value of labour-power. This fall in the level of the consumption of the working class adds to the cheapening of agrarian commodities seen earlier, increasing further still the wage difference (in terms of value) between Argentina and the USA.

Certainly, the pronounced recovery of the automotive real wage from 2004 tended to erode this new source of profit for automotive capital. But, simultaneously, the agrarian ground-rent grew abruptly, reaching levels much higher than those of the 1990s.¹⁷ In this way, ground-rent

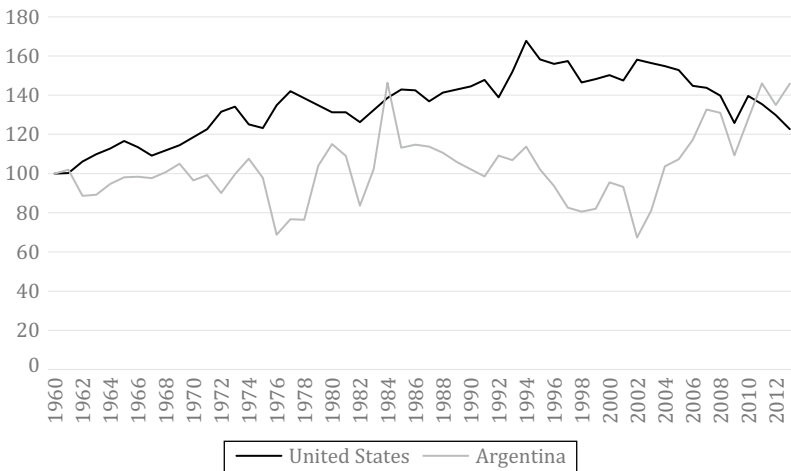


Fig. 8.3 The real automotive wage in Argentina and US (1960 = 100). *Sources:* see Appendix

resumed its leading role as a source of extraordinary profit for automotive capital, displacing the centrality of the sale of labour-power below its value. In effect, at least according to the data offered by the automotive firms, the recovery of the real wage in the years of the greatest boom in the sector (2011–2013), brought the consumptive capacity of Argentine workers to levels close to those of US workers. Despite this virtual equalisation in consumption levels, the relation between Argentine and American wages was 45 per cent in terms of value, demonstrating the full validity of the appropriation of ground-rent via the cheapening of the consumption bundle of labour-power in Argentina. Another element that demonstrates the renewed importance of ground-rent in the valorisation of automotive capital is the resurgence of specialisation in the production of commercial vehicles destined for use in the production and circulation of agrarian commodities (see Table 8.6).

The above perspective on the evolution of the forms of valorisation of automotive capital in Argentina allows us to put forward a novel point of view on the content of the, so-called, restructuring of the local automotive industry. In effect, far from implying qualitative changes in the functioning of the sector, the changes that took place over the last 25 years can be seen as the concrete form through which capital has been able to reproduce its form of valorisation by means of the appropriation of agrarian ground-rent. The increases in the scale of production, the relative modernisation of the factories, regional integration, and so on, allowed for the partial counteracting of the increase in the technical gap and of the scale that had emerged out of the deepening of the automation of large-scale industry by means of the development of electronics. In turn, this permitted capital to take advantage of the increase in extraordinary sources of profit available in the Argentine space of accumulation. However, this 'restructuring' did nothing more than reproduce, at the same time, the specific limit of this form of capital valorisation, that is, its dependence upon the magnitude of those same extraordinary sources of profit and, most especially, of the magnitude of ground-rent.

CONCLUSION

In this chapter we offered a general vision of the development of the automotive industry in Argentina. Our principal argument was that global technical change, and the corresponding forms of the international division of labour, determined the modes of valorisation of the automotive

TNCs from the origins of the local industry up until the end of the 1950s, and not only from the, so-called, restructuring of the 1990s. Concretely, we claimed that the participation of the Argentine space of accumulation in the CIDL as a producer of agrarian commodities was complemented by the global dispersion of industrial production most associated with the NIDL. This combination of both forms of participation of the Argentine space in the global accumulation of capital took the concrete form, in the case of the automotive industry, of the development of a specific modality of the valorisation of the capital of TNCs. Namely, these firms managed to valorise normally despite operating on a small scale and with obsolete technology, through the appropriation of a portion of the abundant (albeit strongly fluctuating) ground-rent and, in certain periods, a part of the value of labour-power.

This perspective also allowed us to explain the diverse phases in the historical development of the Argentine automotive industry. In this sense we argued that the development of the integral manufacturing of vehicles in the 1960s was linked to the development of automation at the global level, due to the necessity for the TNCs to relocate their older capital in order to accelerate technical change in their home countries. In the same way we argued that the crisis confronted by the Argentine automotive industry in the 1980s was principally determined by an increase in the technological gap resulting from the deepening of global technical change, together with the relative stagnation of ground-rent. Lastly, we explained the recent expansion of the industry through global transformations in the international division of labour. On the one hand, we showed that certain general elements related to the NIDL allowed for the counteraction of the increasing insufficiency of agrarian ground-rent; for example, the way in which the regionalisation of markets allowed for a relative increase in the scale of production, or how the worsening of the conditions of exploitation of the working class provided a new extraordinary source of profit for automotive capital. We also showed that these transformations combined with the survival of aspects linked to the CIDL (in particular, the expansion of agrarian exports and, as a consequence, of ground-rent), to enable the reproduction of the 'old' form of valorisation of automotive TNCs in Argentina.

APPENDIX: MOTOR VEHICLE INDUSTRY WAGES IN ARGENTINA AND THE UNITED STATES

	Nominal wage in Argentina (current ARS)	Real wage in Argentina (2005 ARS)	Nominal wage in USA (current USD)	Real wage in USA (2005 USD)	Absolute PPP (ARS/USD)	Wage domestic power (ARG as % of USA)	Relative PPP (ARS/USD)	Value represented in wage (ARG as % of USA)
1960	1.90E-08	45261	6676	47044	3.51E-12	80.9	7.70E-12	36.9
1961	2.20E-08	46131	6756	47130	3.95E-12	82.3	7.98E-12	40.7
1962	2.44E-08	40112	7229	49922	5.01E-12	67.6	1.11E-11	30.4
1963	3.05E-08	40383	7583	51683	6.13E-12	65.7	1.38E-11	29.1
1964	3.96E-08	42833	7884	53041	7.39E-12	67.9	1.61E-11	31.2
1965	5.27E-08	44404	8281	54833	9.35E-12	68.1	1.95E-11	32.6
1966	6.97E-08	44511	8289	53360	1.20E-11	70.1	2.52E-11	33.4
1967	8.95E-08	44225	8221	51334	1.50E-11	72.4	3.31E-11	32.9
1968	1.07E-07	45591	n/a	n/a	1.68E-11	n/a	3.57E-11	n/a
1969	1.20E-07	47540	9476	53851	1.71E-11	74.2	3.38E-11	37.6
1970	1.26E-07	43667	n/a	n/a	1.84E-11	n/a	3.60E-11	n/a
1971	1.74E-07	44943	11201	56049	2.37E-11	65.5	4.82E-11	32.2
1972	2.50E-07	40735	12406	60152	3.64E-11	55.3	7.53E-11	26.8
1973	4.44E-07	45098	13432	61310	5.49E-11	60.1	1.15E-10	28.8
1974	5.94E-07	48661	13905	57161	6.15E-11	69.6	1.28E-10	33.5
1975	1.53E-06	44276	14954	56332	1.59E-10	64.2	3.78E-10	27.1
1976	5.86E-06	31153	17315	61673	8.19E-10	41.3	2.02E-09	16.7
1977	1.80E-05	34705	19407	64902	2.12E-09	43.7	4.87E-09	19.1
1978	4.94E-05	34572	n/a	n/a	5.44E-09	n/a	1.28E-08	n/a
1979	1.75E-04	47087	n/a	n/a	1.27E-08	n/a	2.49E-08	n/a
1980	3.88E-04	52039	24391	57809	2.24E-08	70.9	4.21E-08	37.8

(continued)

(continued)

	Nominal wage in Argentina (current ARS)	Real wage in Argentina (2005 ARS)	Nominal wage in USA (current USD)	Real wage in USA (2005 USD)	Absolute PPP (ARS/USD)	Wage domestic power (ARG as % of USA)	Relative PPP (ARS/USD)	Value represented in wage (ARG as % of USA)
1981	7.52E-04	49356	26912	57820	4.15E-08	67.2	8.26E-08	33.8
1982	1.52E-03	37807	27488	55629	1.04E-07	53.5	2.08E-07	26.6
1983	8.28E-03	46298	n/a	n/a	4.46E-07	n/a	9.02E-07	n/a
1984	0.0862	66250	32481	61054	3.10E-06	85.4	6.59E-06	40.3
1985	0.51	51248	34695	62973	2.31E-05	64.1	5.42E-05	27.4
1986	0.99	51960	35203	62728	4.32E-05	65.2	9.04E-05	31.2
1987	2.27	51504	35085	60316	9.64E-05	67.2	2.03E-04	31.9
1988	9.79	50068	37702	62241	4.10E-04	63.3	9.69E-04	26.8
1989	297.98	47915	n/a	n/a	0.0124	n/a	0.0297	n/a
1990	n/a	n/a	42580	63625	0.28	n/a	0.73	n/a
1991	18182	44582	45394	65091	0.74	53.9	1.69	23.8
1992	25153	49380	43953	61182	0.90	63.6	1.90	30.0
1993	27253	48369	49506	66909	0.97	56.9	1.98	27.7
1994	30237	51513	56058	73872	0.98	54.9	1.98	27.2
1995	28042	46213	54414	69730	0.99	52.2	2.08	24.7
1996	25777	42414	55207	68717	0.96	48.6	1.91	24.5
1997	22830	37368	56975	69328	0.94	42.4	1.83	21.8
1998	22493	36494	53857	64528	0.94	44.5	1.86	22.5
1999	22620	37117	55694	65287	0.91	44.8	2.00	20.3
2000	26109	43249	58347	66173	0.87	51.5	1.81	24.8
2001	25188	42173	58913	64966	0.84	51.1	1.85	23.1
2002	22911	30477	64142	69632	1.04	34.5	2.49	14.4
2003	31266	36662	64937	68925	1.15	41.9	2.64	18.3
2004	41780	46919	65963	68199	1.17	54.2	2.65	23.9

2005	48547	48547	67341	1.27	56.8	2.85	25.3
2006	58830	53049	63775	1.36	65.5	2.97	30.1
2007	75361	60093	63333	1.50	74.7	3.34	33.6
2008	91138	59258	67828	1.77	75.8	3.88	34.6
2009	87354	49454	60889	2.04	70.3	4.42	32.4
2010	128591	57846	68671	2.53	74.1	5.41	34.6
2011	181971	66094	68715	3.04	87.2	5.95	44.5
2012	208114	61136	67266	3.68	84.1	7.26	42.6
2013	283146	66064	64486	4.56	96.2	8.99	48.9

Sources and methodology

(1) 'Payroll' divided by 'all employees', data from Asociación de Fábricas de Automotores (various years). Calculated as average between total number of employees on 31/12 of corresponding year and total on 31/12 of previous year. Asociación de Fábricas de Automotores data excludes the parts and components industry

(2) 1960–2006: Consumer Price Index (CPI) published by Instituto Nacional de Estadísticas y Censos (<http://www.indec.mecon.ar/>); 2007–2013: CPI published by Dirección Provincial de Estadísticas y Censos, Provincia de San Luis (<http://www.estadistica.sanluis.gov.ar/>)

(3) 1960–1988: 'Payroll' divided by 'all employees', 'motor vehicles and equipment' industry, data from Bureau of the Census; 'Statistical Abstract' (<http://www.census.gov/compendia/statab/>). In order to estimate motor vehicle manufacturing wages only, we have added to the source data 3 per cent for 1960–1969, 6 per cent for 1970–1979 and 10 per cent for 1980–1989, based on the wage differential between 'motor vehicles' and 'motor vehicle parts' reported by Lewis and Bauer (1964), and Bureau of Labor Statistics (1976 and 1991). 1990–2013: 'Average hourly earnings for production workers', multiplied by 'weekly hours' worked, 'motor vehicle manufacturing' (NAICS code 3361), data from Bureau of Labor Statistics 'Current Employment Statistics'; we added 4 per cent to estimate 'all employees', based on differential between 'production workers' and 'all employees' reported in Bureau of the Census 'Statistical Abstract', various years

(4) CPI published by Bureau of Labor Statistics

(5) Absolute purchasing power parity (absolute PPP) between Argentine peso and US dollar for the year 2005 is taken from World Bank (2008). 1960–2013 series calculated with previously mentioned CPIs. For the distinction between 'absolute' and 'relative' PPP, see Balassa (1964) and Officer (1978). For the justification of the utilisation of absolute PPP for the comparison of national real wages, see Inigo Carrera (2007: 31–2)

(6) = (1)/(5)/(3) × 100

(7) Relative purchasing power parity (relative PPP) between ARS and USD calculated with the base period of 1960–1972, using previously mentioned CPIs. See Inigo Carrera (2007: 31–5) for the justification of the utilisation of relative PPP for the estimation of parity exchange rates between national currencies

(8) = (1)/(7)/(3) × 100

NOTES

1. Data from Organisation Internationale des Constructeurs d'Automobiles (<http://www.oica.net>).
2. Note the distortion introduced by the greater proportion of workers dedicated to existing R&D activities in the core countries, which implies an underestimation of the productivity of labour effectively applied in direct production in those countries.
3. During just a few years, the automotive TNCs located a significant part of their production in the Mexican market. For example, in the period 2004–2005, 45 per cent of automobile exports were destined for Mexico. However, note that these exports are carried out in a market of preferential agreement (Acuerdo de Complementación Económica N°55) that regulates trade exchange without tariffs in the process of a regime of compensation on imports and exports, similar to that which is in effect for the regional market.
4. The Mercosur tariff is 35 per cent. The tariff is 2.5 per cent in the USA, 0 per cent in Japan and 10 per cent in the EU (López 2007: 35).
5. This term is not synonymous with 'surplus profits' (Marx 1991: 279, 300–1), insofar as the obtaining of extraordinary profits is not necessarily expressed in above normal profits, but fundamentally in obtaining normal profits despite producing in backward conditions.
6. We are assuming, for the moment, that automotive firms must purchase their means of production at least at prices of production, discounting at this level of analysis the possibility of the reduction of costs related to constant capital.
7. From 1960 to 2007 the Argentine state annually appropriated, on average, 20 per cent of the total ground-rent that flowed out of agrarian production, with peaks of 50 per cent in some periods (see Iñigo Carrera 2008).
8. See Appendix for methodological references.
9. We take the US sphere of capital accumulation as the most immediate expression of normal conditions of the exploitation of labour-power. Automotive wages in the USA were historically the highest in international terms. Other countries, as in Europe and Japan, had lower wages in the 1960s and 1970s. But these lower salaries corresponded with less qualified labour-power. In fact, Japanese and European labour-power was put into production on a massive scale only when automation simplified the labour process and enabled the incorporation of these lesser-qualified workers. Progressively (although slowly), the wage difference between the 'classic' European countries (Germany, France, and the UK) and Japan compared with the USA was reduced, as the attributes of their respective working classes tended to converge. If one takes into account that the Argentine

automotive industry tended to be backward in terms of the incorporation of technical innovations relative to all the classic industrial countries (ruling out the skill-level of labour-power as a possible explanation of Argentine lower wages), it is therefore adequate to take the US wage as an expression of the norm in the payment of labour-power or, in other words, as an indicator of the value of automotive labour-power.

10. There is insufficient data on the working day, and there are complications inherent in the separation between intensity and productivity.
11. Using the method of absolute purchasing power parity (see Appendix).
12. There certainly exist other complementary forms of the appropriation of rent by TNCs, such as direct subsidies, tax exemptions, and lines of cheap credit, all of which resulted from different regimes of promotion of the sector implemented by the national state. For reasons of space, the examination of these other forms of transfer of ground-rent to automotive capital falls outside the focus of this chapter.
13. Other Latin American countries, and Brazil especially, show similar characteristics. In contrast, the automotive industry in East Asian countries (Japan and South Korea especially) were based on the development of more modern systems of production and the emergence of new individual capitals. See Grinberg (2011) for a comparison between Brazil and Korea.
14. The transfer of complete production lines by Kaiser Motors from the USA to Argentina (and Brazil) has been well studied and documented (see MacDonald 1988, for instance), as has the use of second-hand machinery on the part of General Motors and Ford (Jenkins 1984: 52). On the other hand, a study by the Asociación de Fábricas de Automotores shows that until 1967 a quarter of the total machinery used was over ten years old, which implies that it was second-hand when the first plants were established. Other evidence which supports the same conclusion can be found in a government survey from the early 1970s (reproduced in Sourrouille 1980, Table 27), in which Ford, General Motors, Chrysler, Fiat, Citroen, and Mercedes Benz are confirmed as having built their Argentine plants through the adaptation of existing technology from their countries of origin. The most prominent studies of the industry also agree on this point (Jenkins 1984: 52; Nofal 1989: 90–1; Schvarzer 1993; Sourrouille 1980: 169).
15. Note that the productivity of labour in the Argentine automotive industry remained practically unaltered for decades (in 1990 it was only 12 per cent greater than in 1960, according to the Asociación de Fábricas de Automotores 1996).
16. It should be noted that this regression in the real wage coincided with the moment in which the automotive TNCs deepened the relative modernisation of the productive process and the reorganisation of labour relations. Between

1994 and 1998, new automotive production plants were opened and the first collective labour agreements were signed that incorporated new—more flexible—forms of the organisation of the labour process (Guevara 2010: 123).

17. According to calculations by Iñigo Carrera (2011: 56), the annual average of agrarian ground-rent between 2003 and 2010 was 53 per cent greater than between 1991 and 2001, and 83 per cent more than in 2002.

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