

# Income distribution and the balance of payments: a formal reconstruction of some Argentinian structuralist contributions

## Part I: Technical dependency\*

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*In this two-part paper, we explore the interaction between income distribution and the balance of payments, by assessing the contributions of three Argentinian exponents of the Latin American Structuralist School: Oscar Braun, Marcelo Diamand and Adolfo Canitrot. With this aim, we introduce a two-sector model inspired by the classical tradition. Part I of the article examines the implications for prices and quantities of the phenomenon of ‘technical dependency’. That is, the inelastic demand for imported inputs observed in peripheral economies, a true constraint to growth during the Bretton Woods era. We leave until Part II of the paper the assessment of the implications of ‘financial dependency’, namely the influence exerted on the profit rate of peripheral economies by the international profit rate.*

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**JEL codes:** *B22, B31, E2, E3*

## 1 INTRODUCTION

The interaction between income distribution and the behaviour of the balance of payments is not subject to general rules; rather, it depends on the historical and social context under analysis. The present paper examines this complex issue, through the contributions of three Argentinian economists, all of them exponents of the Latin American Structuralist School: Oscar Braun (1968 (with L. Joy); 1973; 1981), Marcelo Diamand (1972; 1978; 1985) and Adolfo Canitrot (1975; 1980; 1981; 1982; 1983).<sup>1</sup>

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1. In this sense, it continues and develops the line of research initiated in Dvoskin and Feldman (2015a; 2015b).

These authors identify two basic structural characteristics of Latin American economies. First, that their *productive structure* is featured by the existence of two markedly different sectors: a primary sector (agriculture, in the case of Argentina), which is able to produce and export to the world market, and an industrial sector of consumption goods, which not only is unable to compete internationally, but, perhaps more importantly for our purposes, also demands large amounts of imported inputs. In the second place, they believe that market forces cannot resolve this structural heterogeneity by affecting the rates of real wages and profits, since they recognize the major influence that social, political and historical factors exert on the level of distributive variables. They deny, therefore, that changes in the level of real wages can generally allow the achievement of external equilibrium with full employment.

To formalize this rich view, we shall adopt throughout this work the classical notion of ‘free competition’, which exclusively refers to the tendency that is constantly at work, of prices to gravitate around ‘prices of production’ (prices that yield a uniform riskless rate of return on capital), a notion that is sufficiently general as to accommodate persistent situations of unemployment (see Garegnani 1984), and, as we shall argue, external imbalances too.

To stress the central role of institutional and political factors in our framework, we divide the analysis into two historical phases, presented in two successive articles: in Part I, we examine those contributions that cover the period from the end of the Second World War to the demise of the Bretton Woods system (Braun and Joy 1968; Diamand 1972; 1978; Canitrot 1975; 1980, first part; 1981). In times of strong capital controls, these essays emphasize what M.C. Tavares (2000) calls ‘*technical dependency*’. That is, the need of developing countries to import the means of production required to elaborate final goods from central economies, due to the existence of ‘black holes’ in their input–output matrix. On this basis, they explain the interaction between income distribution and the balance of payments through the *flows of trade*, which are at the heart of those recessive and inflationary adjustments known in the literature as ‘stop-and-go cycles’.

Part II explores the writings that examine the period following the progressive abandonment of capital controls (Braun 1973; 1981; Canitrot 1980, second part; 1981; 1982; 1983; Diamand 1985), and which enrich the analysis of dependency by adding to the picture the consequences of what, in this case, Tavares (2000) denominates ‘*financial dependency*’. The country that issues international money is able to regulate the level of the rate of interest, and, hence, to determine the evolution of the rate of profits. This phenomenon therefore shows the relationship between income distribution and the balance of payments through the dynamics of both *trade* and *capital flows*.<sup>2</sup>

Part I of this article is structured as follows: in Section 2 we present the general analytical framework, which, albeit only in textual form, Braun and Joy develop in their seminal contribution, ‘A model of economic stagnation’ (1968). This will be the basic framework to account for the interaction between distribution and the balance of payments, either along the business cycle (as is the case in the contribution of Braun and Joy), or within longer-term horizons (as in the remaining contributions we will assess here). By means of this model, Section 3 analyses, in particular, the phenomenon of technical dependency during the Bretton Woods era. Some provisional conclusions are drawn in Section 4 while, as may be anticipated, the assessment of

2. While the terms ‘technical’ and ‘financial dependency’ are first introduced by Tavares, they are further developed by Vernengo (2006). Although with a different scope, the conceptual framework presented here is, in fact, closer to this latter work.

those studies that focus on the phenomenon of financial dependency will be presented in Part II.

## 2 BASIC FRAMEWORK

The basic model presented in Braun and Joy (1968) is a two-sector model:<sup>3</sup> sector *A* produces primary commodities and sector *I* elaborates industrial consumption goods. Two different features characterize each sector: (i) the *methods* of production and (ii) the *destinations* of production.<sup>4</sup> Let us explore feature (i): while *A* needs labour and domestic inputs, *I* requires, besides labour, imported inputs of capital goods (*M*). If, for the sake of simplicity, we abstract from domestic means of production, we can represent the prices of commodities *A* and *I* in the following way:

$$p_A^s = wl_A(1 + r) \quad (1)$$

$$p_I^s = (wl_I + bEp_M^*)(1 + r), \quad (2)$$

where  $p_A^s$  and  $p_I^s$  are, respectively, the *supply prices* (or prices of production) of commodities *A* and *I*. In other words, they represent the minimum amount of money that domestic producers must regularly (that is, under ‘normal conditions’) receive in order to deliver both goods to the market. In addition,  $w$  is the money wage,  $r$  is the rate of profits,  $l_A$  and  $l_I$  are the unitary labour requirements of *A* and *I*,  $b$  is the unitary requirement of the imported and entirely circulating capital goods *M*,  $p_M^*$  is the price of *M* in foreign currency, and  $E$  is the nominal exchange rate, defined as the domestic price of foreign currency, which means that  $E$  goes up with a depreciation.

Before we proceed, a second notion of price should be introduced: the *demand or selling price*, which represents the maximum price that consumers are willing to pay for a commodity.

Although these two notions are not explicitly introduced by the authors who are the object of the present enquiry, they will allow us to explain more accurately the determinants of income distribution under conditions in which commodities *A* and *I* are also produced abroad, and their respective international prices are given for the (small open) peripheral economy.

Demand prices of commodities *A* and *I* are:

$$p_A^d = Ep_A^* \quad (3)$$

$$p_I^d = Ep_I^*, \quad (4)$$

where  $p_A^d$  and  $p_I^d$  represent, respectively, the demand prices of commodities *A* and *I*, and  $p_A^*$  and  $p_I^*$  denote their international values. Since we assume given international

3. Strictly speaking, Braun and Joy also consider a third sector, ‘services’, which we exclude from our presentation because it will not modify the main results of the article.

4. In the work of Braun and Joy, the sectors are differentiated by a third and final feature: it is assumed that sector *A* works under conditions of full employment of land, while the supply of commodity *I* is infinitely elastic at the current demand. This assumption holds to the fact that the authors focus on short-term economic fluctuations, when the land supply can be taken as given.

prices, then demand prices are univocally determined once the level of the exchange rate is given.

Equations (1)–(4) are all we need to represent the classical notion of competition adopted by these authors: a situation in which the riskless rate of return on capital is uniform across sectors. The four equations have seven unknowns:  $E, r, w, p_A^s, p_I^s, p_A^d, p_I^d$ . If we measure the price of commodities in wage units,

$$w = \bar{w}, \tag{5}$$

there are two degrees of freedom left. Before we eliminate the first of them, let us consider the abovementioned feature (ii), that is, the destinations of production.

Notice, however, that it is not possible to ascertain which sector will be internationally competitive *before* the relationship between the demand and the supply prices for each commodity  $j = A, I$  is determined; hence, before distribution is known. Therefore, the pattern of specialization will be regulated by the following conditions:

$$p_j^d \leq p_j^s \quad j = A, I. \tag{A}$$

Commodity  $j$  will be produced and (potentially) exported only if  $p_j^d = p_j^s$ , while if  $p_j^d < p_j^s$  the sector will not be viable *without protection*.<sup>5</sup> We can therefore derive for each commodity  $j$  an  $E/w - r$  relationship that determines, for each  $E/w$  ratio, the maximum rate of profits affordable by each sector under given technical conditions. This is obtained by equalizing supply and demand prices for each commodity  $j = A, I$ . Consider sector  $A$  first. From (1) and (3) we obtain:

$$r_A = \frac{(E/w)p_A^*}{l_A} - 1. \tag{6}$$

And from (2) and (4) we get, for sector  $I$ :

$$r_I = \frac{(E/w)p_I^*}{l_I + b(E/w)p_M^*} - 1. \tag{7}$$

Figure 1 (left-hand side) represents the shape of these curves.<sup>6</sup> Notice first that there is only one level of the  $E/w$  ratio,  $\hat{E}/w$  (or the rate of profits,  $\hat{r}$ ), that allows the coexistence of the two productive sectors, while for any  $E/w < \hat{E}/w$  ( $E/w > \hat{E}/w$ ) there will be full specialization in the production of  $I$  ( $A$ ). In effect, we are faced with a particular problem of choice of technique. If, for instance,  $E/w = \bar{E}/w$  ( $< \hat{E}/w$ ) in Figure 1, then  $\bar{r}_I > \bar{r}_A$  and there will be no incentive to invest in sector  $A$ , while specialization in sector  $A$  will occur if  $E/w > \hat{E}/w$  – and, only by a fluke,  $E/w = \hat{E}/w$ . The outer envelope of the curve (solid line on the right-hand side) depicts the economically relevant  $E/w - r$  configuration.<sup>7</sup>

5. Actually, there is the further possibility that  $p_j^d > p_j^s$ , which holds under the presence of differential rent. This case will be explored in Section 3.1.2 below.

6. We would like to thank an anonymous referee for his suggestion of presenting the results in this way.

7. Notice that, with more than two commodities, in general there will be no rate of exchange which allows the coexistence of all sectors. On this point, see Steedman (1999, p. 272), and Baldone (2001).

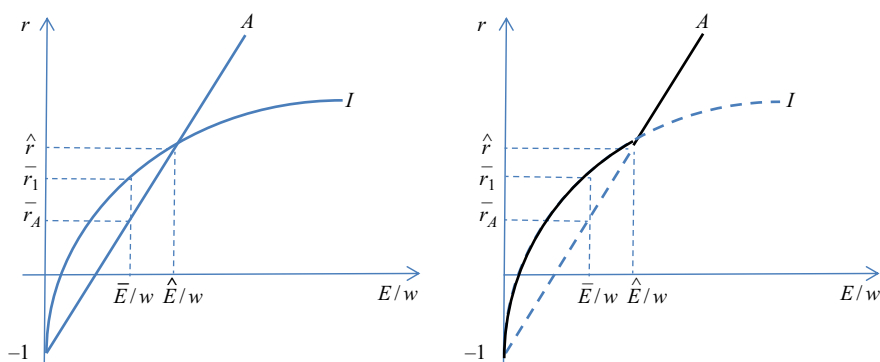


Figure 1 Wage curve for the small open peripheral economy

$$r = \begin{cases} r_I & \text{if } E/w < \hat{E}/w \\ \hat{r} & \text{if } E/w = \hat{E}/w \\ r_A & \text{if } E/w > \hat{E}/w \end{cases} \quad (8)$$

In this regard, the authors examined here assume that, while *A* is produced both for the domestic and international markets, commodity *I* is not competitive abroad. In terms of the model, this implies that  $E/w > \hat{E}/w$  (or  $r > \hat{r}$ ). This allows us to eliminate the second degree of freedom by setting:

$$p_A^s = E p_A^* \quad (9)$$

with  $(p_I^s > p_I^d)$ . Full specialization in sector *A* will occur if  $r > \hat{r}$  with:

$$\hat{r} = \frac{P_I^*}{b p_M^*} - \frac{P_A^* l_I}{b p_M^* l_A} - 1. \quad (10)$$

Hence, from (10) one can observe that the condition  $r > \hat{r}$  will be more likely to be verified the lower the relative labour requirement by the agrarian sector, and the more severe the technical dependency of industry. On this basis, one may conclude that there is a reduced range of values for which the condition  $r \leq \hat{r}$  holds, and hence that the structure of production adopted by the authors examined here, and resumed by condition (9), is justified.

The last degree of freedom will not be eliminated at this point, since this would directly imply committing ourselves to a particular distributive closure. To see this, let us define the level of the real wage ( $\omega$ ) for a given consumption basket  $(c_A; c_I)$  as:

$$\omega = \frac{w}{P} \quad (\text{with } P = E \sum_{j=A,I} c_j p_j^*). \quad (11)$$

Then,  $\omega$  is univocally determined once the  $E/w$  ratio is known, and shows an inverse relationship with it. Hence, we can think of the outer envelope of Figure 1 as a sort of ‘real wage-rate of profits curve’ for the small open peripheral economy. And therefore the last degree of freedom will be eliminated once the rate of profits, or the  $E/w$  ratio (hence the real wage), is set from outside the system in the economically relevant part of condition (8) (namely,  $E/w > \hat{E}/w$ ).

Before ending this section, two observations are worth making. First, the level of the exchange rate *may not be compatible with equilibrium of the current account of the balance of payments (nor the full employment of labour)*. We shall return to this point in the next section, when we discuss the views on economic fluctuations offered by Braun, Diamand and Canitrot.

Second, the existence of sector  $I$ , despite its non-viability under free trade, implies some sort of economic (that is, a tariff) or extra-economic barrier that prevents imports of commodity  $I$  from entering the domestic economy, an assumption that will be adopted in all the writings examined within the present paper. In formal terms, we may add an additional variable,  $\tau$ , an import tariff, whose role is to allow sector  $I$  to earn the normal rate of profits by ensuring the equality between the selling price of  $I$  and its supply price. This implies re-expressing (4) as:

$$p_I^d = (1 + \tau)Ep_I^*, \quad (4')$$

with  $\tau$  an endogenous variable that fulfills the following condition:

$$p_I^s(r) = (1 + \tau)Ep_I^*. \quad (12)$$

In sum, the productive structure of the economy is represented by seven equations: (1)–(2)–(3)–(4')–(5)–(9)–(12) in the following eight variables:  $E, r, w, p_A^s, p_I^s, p_A^d, p_I^d, \tau$ . As argued before, the last degree of freedom will be eliminated once we adopt a specific distributive closure by choosing either the exchange rate or the rate of profits in the economically relevant part of the  $E/w - r$  curve described by (8) ( $E/w > \hat{E}/w$ ).

### 3 CAPITAL CONTROLS AND TECHNICAL DEPENDENCY

The writings to be explored in the current section employ the basic framework presented above to analyse the interaction between income distribution and the balance of payments in Argentina during the period that followed the Second World War. Although a more detailed analysis of the developments of the Argentine economy during the 1950s and 1960s is beyond the scope of the present paper,<sup>8</sup> it is relevant to briefly mention the main aspects of the international context of the epoch. During those years, the international financial system was organized around the rules of the Bretton Woods system, which implied the widespread adoption of fixed exchange rates and *capital controls*, both in already developed as well as developing countries.<sup>9</sup> Therefore, external imbalances faced by Latin American economies, despite being of short magnitude and persistence – and financed, whenever possible, via multilateral

8. For a detailed analysis of the distinctive features of the Argentine economy, see Rapoport (2008).

9. Cf. Serrano (2003).

credit institutions (typically the IMF) – tended to manifest themselves as *current-account deficits*, which emerged as a result of the incomplete process of industrialization in those countries.

### 3.1 Braun and Joy (1968)<sup>10</sup>

Let us now employ the model to examine Braun and Joy's approach to economic fluctuations. As we've seen, the model developed in the previous section still exhibits one degree of freedom. In this respect, the authors only stress that *nominal* wages arise from the bargaining process between labour unions and capitalists (Braun and Joy 1968, p. 594); and although they disregard the possibility that, through market adjustments, wages would eventually tend to a level compatible with the full employment of the labour force, they do not offer an explanation for the *normal real wage*. This is presumably due to the fact that they focus essentially on the interaction between the balance of payments and income distribution along the business cycle. Specifically, they explore the negative effects of devaluations on real wages (both in their level and composition) in the short run. To see this, it is enough to explore how the rise in the  $E/w$  ratio affects workers' real income.

Braun and Joy argue that the agrarian commodity can be considered as a necessary good, whose level of consumption,  $c_A$ , is determined by, say, 'physiological' conditions. Hence, they argue that the respective price-elasticity of demand is low (*ibid.*, p. 869) (or eventually zero, see p. 872). This means that, for a given  $E/w$  ratio, the quantity  $c_I$  emerges as a residual variable in equation (11). If we recall that, under protection, the selling price of  $I$  is determined by the domestic supply price, we can repress this condition as:

$$c_I = \frac{w/E - p_A^* c_A}{p_I^S/E}. \quad (13)$$

Notice that  $c_I$  decreases with the  $E/w$  ratio since, for given money wages, a rise of  $E$  positively affects the selling prices of  $A$  and  $I$ .<sup>11</sup>

Finally, let us write the equation of the balance of payments ( $BP$ ). The context of limited or null capital mobility authorizes the authors to exclusively focus on the trade balance, and hence:

$$BP = p_A^* X_A - p_M^* b Q_I, \quad (14)$$

where  $X_A$  is the level of primary exports,  $M = bQ_I$  represents the level of imports employed by the industrial sector, and  $Q_I$  denotes the level of production of  $I$ . It is assumed that '[t]he value of agricultural exports is insufficient to cover the cost of imported inputs at full employment' (*ibid.*, p. 869). This condition is, according to the authors, the 'key assumption' behind the main outcomes of the model (*ibid.*, p. 597).

10. The quotations herein reproduced, except those from Braun and Joy (1968) and Diamand (1978), have been translated into English by the authors.

11. In the case of commodity  $A$ , the effect is straightforward, since the selling price is determined by (3). For commodity  $I$ , the effect works through the rise of both the cost of imported inputs and normal profitability. Formally, from (2) and (6) we can rewrite the denominator of (13) as  $\frac{p_I^S}{E} = \frac{p_A^S}{I_A} I_A + \frac{E}{w} \frac{p_M^S}{I_A} p_M^* b$ . It is easy to see now that this expression positively depends on  $\frac{E}{w}$ .

### 3.1.1 *Effects on the quantities produced*

Braun and Joy (1968) consider an economy whose level of industrial production has been progressively growing, thereby promoting a rise of imports ‘that is no longer covered by the value of exports’ (ibid., p. 869). Eventually, ‘a balance-of-payments crisis leads to devaluation’ (ibid.). Devaluation increases the selling price of  $A$  (condition (3)), while the assumption of a low price-elasticity of demand implies that, if at all possible,  $c_A$  is reduced only in a very small proportion: the overall expenditure of workers in primary commodities increases. This is easy to grasp from equation (13): given the nominal wage,  $w$ , the numerator on the right-hand side of the equation decreases. In addition, devaluation raises the domestic price of imports, thereby increasing the cost of production of  $I$  ( $p_I^*$ ), and through (10) its demand price as well, thereby prompting a subsequent rise of the denominator of (13). Both effects go in the same direction, causing a reduction in the demand for consumption goods,  $c_I$ .<sup>12</sup> In addition, the contraction of aggregate demand will induce a subsequent fall of production and employment levels.<sup>13</sup>

One might believe that a sufficient rise in the  $E/w$  ratio would increase the level of industrial exports, thus compensating, at least partially, the reduction in internal demand caused by the fall in the real wage. However, ‘in practice, this has not happened except to a small extent’ (ibid., p. 875). Our model in Section 2 may provide a rationalization of this, since, as can be seen in Figure 1, for  $E/w > \hat{E}/w$ , devaluation cannot alter the pattern of specialization. Moreover, since devaluation implies a fall in the real wage, its magnitude might face an objective limit defined by the minimum level of the real wage tolerable by workers.<sup>14</sup>

In sum, on the one hand, technical dependency is responsible for the external imbalances driven by output growth. On the other hand, these imbalances will be reversed through the recessive effect that a fall of real wages (following devaluation) exerts on the level of economic activity, rather than via a rise of exports.

Devaluation might bring a country into external balance either because it causes exports to rise to a greater degree than imports or because exports fall less than the fall in imports.

Where the elasticity of supply of exports is low equilibrium requires the contraction of imports. (Braun and Joy 1968, p. 874)

The overall implication is therefore that equilibrium in the balance of payments is restored through the contraction of economic activity (and imports), hence at a level that is below full-employment.

12. ‘In so far as we assume that money wages in all sectors remain constant, then the impact effect of the devaluation which results in a fall in real incomes of wage-earners is likely to affect the demand for manufactured wage goods more seriously than it will affect the demand for agricultural wage goods. This is simply an assumption that the demand for agricultural wage goods is more inelastic than the demand for non-agricultural wage goods. If we assume that the level of consumption of agricultural wage goods stays more or less constant, then the wage spending remaining for purchases for manufacturing of service sectors must be substantially reduced’ (Braun and Joy 1968, p. 872).

13. ‘But it is unreasonable to assume in these circumstances that employment in manufacturing will remain constant while demand falls and costs have risen. Increasing unemployment will aggravate the fall in internal demand without, on our assumptions, leading to falls in the prices of agricultural and manufactured products’ (Braun and Joy 1968, p. 873).

14. All this might have important implications for both the New Developmentalist and New Structuralist positions. We hope to explore them in a future contribution.



### 3.1.2 Redistributive effects of devaluation

We can appreciate that devaluation increases the level of income of the primary sector. Due to the assumption of unchanged nominal wages, Braun and Joy (1968, p. 872) argue that these higher incomes will be generally appropriated by landlords and/or the capitalists of sector A.<sup>15</sup> If we analyse this phenomenon through our price equations, we find that, given the levels of the rate of profits ( $r_0$ ) and the nominal wage ( $w_0$ ), the initial effect of the exchange-rate increase from  $E_0$  to  $E_1$  implies that:

$$E_1 p_A^* > w_0 l_A (1 + r_0). \quad (15)$$

Therefore, there emerges an extraordinary rent per unit of output A,  $\rho$ , whose magnitude is given by:

$$\rho = E_1 p_A^* - w_0 l_A (1 + r_0). \quad (16)$$

Unfortunately, in the short run, it is not possible to univocally ascertain how  $\rho$  will be distributed between landlords and capitalists; this will depend on the (potentially infinite) accidents that determine the dynamics of the interaction between these two social classes along the business cycle (for instance, on the kind of rental contract signed in the past). On the other hand, although it is beyond the scope of Braun and Joy's article, the assessment of the redistribution of rent in the long run can be easily disentangled by means of the basic framework developed in Section 2. In fact, as we have seen, for given nominal wages, devaluation implies a rise in the *normal* level of profitability. In contrast, if labour unions do manage to raise nominal wages to fully recover their former purchasing power, the initial extra profits in (16) will disappear, that is, they will be reabsorbed by real wages. This second alternative is, according to Braun and Joy (*ibid.*, p. 877), the one observed in the postwar Argentine economy, due to the strong organization of labour unions that characterized the country in the 1950s and 1960s. Finally, the authors note that other social classes may attempt to preserve this rent, thus triggering a process of inertial inflation, even under recession.<sup>16</sup>

In this regard, it should be stressed that the rise of real wages to their former level will eventually imply a subsequent increase in the demand for  $I$  (equation (13)), thereby raising the levels of production and employment, and thus the demand for imports. If, on the one hand, the initial recessive effects of devaluation will be counteracted, on the other, a *renewed balance-of-payments crisis* will be engendered. This is the case because it is assumed that, before reaching full employment, the demand for foreign exchange to finance imports will exceed its supply. In Braun and Joy's explanation one can therefore identify the chronic scarcity of foreign exchange as the force driving the business cycle; fluctuations that will be later known in the literature as '*stop-and-go cycles*'. This fact allows us to understand the authors' claim that the foreign-exchange scarcity at the full-employment level of output is the 'key foundation of the model'.

15. '[I]t seems realistic to assume that the distribution of these increased incomes within the agricultural sector will be primarily to landowners and marketing firms and that little immediate effect is likely to be felt in agricultural wages' (Braun and Joy 1968, p. 872).

16. 'In Argentina increases in the cost of living have been so severe that the unions have successfully negotiated for increases in their nominal wages in spite of growing unemployment. In our model increasing wage-rates would have the effect of further raising the prices of manufactures and services, and thus initiating a wage/price spiral' (Braun and Joy 1968, p. 878).

Before we finish this section, it might be useful to discuss how the possibility of *differential rent*, in a small open economy (internationally given prices), alters our conclusions over the interaction between the normal rate of profits and the exchange rate depicted in Figure 1. This will be useful, since Braun and Joy assume the full utilization of land (see fn 4), and stress the role of landowners in the distributive conflict. Under these circumstances, the magnitude of  $\rho$  in (16) will persist over time and will be fully appropriated by landowners. The reason is that the international price is regulated by the marginal land (the foreign one), while domestic production, though more ‘efficient’, cannot be increased since domestic land is assumed to be fully employed.<sup>17</sup> Therefore, the increase in the rate of land rent implies that either the normal real wage or the rate of profits (or both) will decrease. Formally, we divide condition (16) by  $Ep_A^*$  to obtain:

$$1 = \rho_A + \omega_A l_A (1 + r), \quad (17)$$

where  $\rho_A$  and  $\omega_A$  stand, respectively, for the real rate of rent and the real wage measured in terms of commodity *A*, and hence an increase in  $\rho_A$  occurs at the expense of a decrease in  $\omega_A$  or in  $r$ . In other words, the possibility of land rent breaks the inverse (positive) relationship between the rate of profits and the real wage (exchange rate) depicted by Figure 1.

### 3.2 Diamand (1972; 1978)

In his works of 1972 and 1978, Diamand develops the notion of ‘*unbalanced productive structure*’, a concept that precisely captures the two features – (i) and (ii) – that we have employed to characterize the basic two-sector model presented in Section 2. It is, then, not surprising that Diamand arrives at similar conclusions to Braun and Joy’s. Since Diamand’s thought has already been examined and formalized in Dvoskin and Feldman (2015b), we shall only stress here that Diamand’s contribution offers a plausible route to eliminate the remaining degree of freedom of the system presented in Section 2.

In the first place, Diamand explains why standard devaluations provide only a transitory solution for balance-of-payments crises: this is due to the fact, he argues, that over a long period the real wage is not ‘an equilibrating variable to be adjusted according to market forces’ (Diamand 1978, p. 21). It is, rather, a variable ‘whose preservation is of fundamental relevance’ (ibid.); in other words, it is mainly determined by political, institutional and historical conditions, rather than by market factors. These factors make the real wage ‘a standard of reference’ (ibid., p. 22), which can be known *before* relative prices are determined.<sup>18</sup>

In the second place, Diamand clearly identifies that the exchange rate can, borrowing an expression by Keynes (see also Vernengo 2001), be considered as a

17. On this point, see Birolò (1981).

18. ‘In the real world, any attempt to diminish real wages runs into great resistance. The social pressure which always appears in support of higher real wages becomes multiplied in intensity when it finds opposing measures designed to lower them. Psychologically, the level once achieved by real wages becomes a “normal” standard of reference and its reduction is felt as an attempt against acquired rights. Therefore, *while economic thought treats real wages as an equilibrating variable to be adjusted according to the forces of the market, to modern society their preservation is a fundamental objective*’ (Diamand 1978, p. 22, emphasis in the original).

‘conventional variable’, being therefore ‘a totally free choice that implies, consciously or unconsciously, certain economic objectives’ (Diamand 1972, p. 40). In Argentina, Diamand argues, the exchange rate has been historically set at a level that only allows sector *A* to be internationally competitive.

These two ideas can be easily formalized within the basic framework developed in Section 2. First, given the money wage by (5), the real wage is univocally determined when the exchange rate is fixed by the monetary authority. And, second,  $E$  is set at any level higher than  $\hat{E}$  in Figure 1, so that only *A* will be competitive at world prices without protection.

In this regard, Diamand concludes that it is incorrect to assume that the industrial sector is, by its own *nature*, inefficient; conversely, this inefficiency must be interpreted as a *historical and political* outcome, that is, as a decision of the monetary authority to set the exchange rate at a particular level.

Moreover, the explicit idea (which was only implicitly stated by Braun and Joy) of a real wage mainly influenced by non-economic factors allows us to understand why contractionary devaluations are not a plausible solution for balance-of-payment crises driven by technical dependency. Eventually, workers will manage to raise their nominal wages, thus increasing the demand for *I*, and thereby the need for imports. This is why Diamand suggests, as a more persistent solution to ‘technical dependency’, a system of multiple exchange rates; one relatively ‘high’ for industry and another relatively ‘low’ for the primary sector, since this arrangement may avoid the income transfers from workers to producers of primary commodities associated with standard devaluations.

The idea can be briefly presented by means of Figure 2. Given the level of the exchange rate  $E = E_A$ , we know from Figure 1 that only sector *A* can compete in the world market and earn the corresponding normal rate of profits  $r_A$ . Then, to allow sector *I* to earn this same rate per unit of output, the sector must face a higher exchange rate,  $E_I$ .<sup>19</sup> And the level  $E_I$  can be found by equalizing demand and supply prices of the sector (without protection) at the rate  $r_A$ :

$$E_I = \frac{wl_I(1 + r_A)}{p_I^* - bp_M^*(1 + r_A)}. \quad (18)^{20}$$

### 3.3 Canitrot (1975; 1980; 1981)

Canitrot employs the same analytical framework developed in the previous sections<sup>21</sup> to address, in three different works, ‘The populist experience of income redistribution’ (1975), ‘Discipline as the central objective of economic policy’ (1980, first part) and ‘Theory and Practice of Liberalism’ (1981), additional channels of interaction between income distribution and the balance of payments under conditions of low or null

19. A more formal treatment of this issue can be found in Dvoskin and Feldman (2015b).

20. If the rate of profits were the exogenously given variable, and fixed at  $\bar{r}$ , one could obtain the levels of the exchange rates that allow each sector to earn the rate  $\bar{r}$  by equalizing their respective supply and demand prices at  $\bar{r}$ . The graphical representation would, of course, be the same as the one shown in Figure 2, but the distributive closure would be a different one.

21. Canitrot (1975) mentions as an immediate precedent to his work the contribution by Braun and Joy (1968). However, he omits mentioning Diamand (1972), perhaps because this author does not belong to academic circles (see Dvoskin and Feldman 2015a).

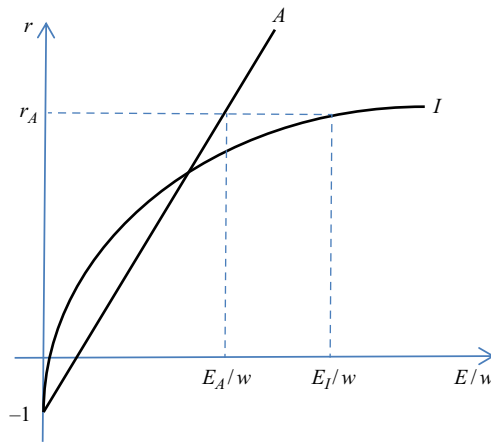


Figure 2 *Diamond's unbalanced productive structure*

capital mobility across countries. A distinctive feature of the 'semi-closed economy',<sup>22</sup> Canitrot asserts, is that the producers of industrial consumption goods are able to establish, with a relatively high degree of freedom, the rate of profits of the sector. As a result, the agrarian rate of return will emerge as the residual distributive variable. Canitrot thus emphasizes the possible *association of interests* between industrial capitalists and workers (as opposed to the interests of capitalists and landlords in the primary sector) that could arise when, due to protection from external competition, industrial production finds the local market as its main destination.

Let us inspect this closely. Canitrot considers that two different mechanisms of price setting apply to industries *A* and *I*, a feature that is 'essential to any analysis of the Argentine economy' (Canitrot 1980, p. 927, fn 15). In the case of the industrial consumption goods, prices are set 'according to their basic costs plus a mark-up determined by the conditions of the internal market' (*ibid.*, p. 920; see also Canitrot 1975, pp. 338–339). 'It is precisely the existence of a margin of protection', the author further clarifies, 'which permits industrial concerns to price, according to their costs, independently (within limits set by the tariff level) of international prices' (Canitrot 1980, p. 927, fn 15). On the other hand, the price of *A* is determined in a different way: given the international price and the exchange rate, the internal price of *A* is to be determined. And since the nominal wage and production costs 'are data for the sector', he concludes, 'agricultural profits emerge as the residual magnitude' (*ibid.*).

To illustrate this view, we can make use of the following equations:

$$Ep_A^* = wl_A(1 + r_A) \tag{19}$$

$$Ep_I^*(1 + \tau) = (wl_I + bEp_m^*)(1 + r_I) \tag{20}$$

$$w = \bar{w} \tag{5}$$

$$E = \bar{E}(\text{with } \bar{E}/w > \hat{E}/w). \tag{21}$$

22. Nevertheless, it should be noted that the 1981 article is mostly concerned with the implications of free capital mobility.

These conditions are equivalent to those presented in Section 2, with two differences. First, the equality between demand and supply prices has already been incorporated into conditions (19) and (20). Second, and more relevant, it is assumed that the *gross* rates of profits ( $r_j$   $j = A, I$ ) can differ across sectors. Let us note, however, that this fact does not contradict the notion of competition assumed throughout this paper, since the riskless rate of return,  $i$ , which is susceptible to being determined by the monetary authority (see Panico 1985; Pivetti 1991), can still be the same in both industries. This can easily be formalized by means of two additional equations:

$$r_A = i + \mu_A \quad (22)$$

$$r_I = i + \mu_I, \quad (23)$$

where  $\mu_A$  and  $\mu_I$  represent the sectorial net rates of profits, and  $i$  is an exogenously given variable.

The previous six equations have, in principle, seven unknowns:  $r_A, r_I, w, \mu_A, \mu_I, E$  and  $\tau$ . To eliminate the remaining degree of freedom, notice that, given the  $E/w$  ratio (conditions (5) and (21)), condition (20) establishes a positive relationship between the import tariff ( $\tau$ ), and the gross rate of profit ( $r_I$ ). And, hence, by (23), a positive relationship is established between  $\tau$  and  $\mu_I$ . We can, therefore, find for any desired profit margin,  $\bar{\mu}_I$ , the corresponding level of  $\tau$  that allows the sector to earn the amount  $\bar{\mu}_I$  per unit of output. We therefore close the system by fixing:

$$\mu_I = \bar{\mu}_I. \quad (24)$$

For a given  $E/w$  ratio, the real wage in terms of commodity  $A$  is exogenously given while its level in terms of  $I$  is endogenous to the profit target, and hence it is determined once the tariff is set.

It is evident from this scheme that  $\mu_A$  – and, thus, the gross rate of profits of the agrarian sector  $r_A$  – is the residual variable: given the  $E/w$  ratio, equation (19) determines  $r_A$  and, given the riskless rate of return,  $i$ , equation (22) solves for  $\mu_A$ .

### 3.3.1 Association of interests between industrial capitalists and workers: case I

The consideration of  $r_A$  as a residual magnitude allows understanding of the potential association of interests between capitalists of the industrial sector and workers, as opposed to the interests of agrarian producers. Canitrot (1980, p. 918) remarks that, since protection allows fixing  $r_I$ , any rise of the real wage in terms of the primary commodity, either due to higher nominal wages or reductions of the selling price of  $A$  (for instance, through the implementation of export duties or the establishment of maximum prices), will reduce the net profit margin  $\mu_A$ .<sup>23</sup>

The negative impact of a rise in nominal wages on the profit margin  $\mu_A$  is evident from conditions (19) and (22). Let us call  $\tau^{exp}$  for export duties in order to explore their effect on  $\mu_A$ . Therefore, from condition (19) it follows that, after taxes,  $Ep_A^*(1 - \tau^{exp}) < wl_A(1 + i + \mu_A)$ , which, given  $w$  and  $i$ , will induce a fall in  $\mu_A$ . Finally,

23. ‘The imposition of protective tariffs for industry permitted firms to profitably absorb higher labour costs. Industrial wages and prices rose in relation to farm prices. ... In parallel, the methods used to reduce farm prices (IAPI, export duties) implied a transfer from rural incomes to urban public expenditures’ (Canitrot 1980, p. 918).

if we recall that the demand for  $A$  is highly inelastic with respect to changes in relative prices, then workers' higher real income will almost exclusively boost an increase in the demand for consumption goods (see equation (13)). This fact will not only promote a subsequent increase in the levels of production and employment (hence, in the wage bill), but also in the amount of profits of the industrial sector. '[T]he increase in wages in relation to agricultural prices', Canitrot explains, 'gave urban workers additional purchasing power that stimulated demand for industrial goods, thus providing the main motor of expansion' (ibid., p. 918). In sum, if, on the one hand, protection allows sector  $I$  to pay higher wages without having to reduce its profit margin, then, on the other hand, the rise of the real wage induces, in turn, an increase in the demand for these goods. Canitrot thus concludes,

[t]his is the economic rationale for the association of interests between management and industrial wage earners that lies at the base of populist political alliances. Tariff protection may increase economic freedom and political power in the whole industrial sector. (Ibid., p. 920)

### 3.3.2 Association of interests between industrial capitalists and workers: case II

But, of course, the framework allows for different kinds of interactions among social classes, and hence one may explore alternative distributive closures. Consider, in fact, what Canitrot himself documents in his later work, 'Theory and practice of Liberalism' (1981):

[T]he system of the semi-closed economy prevailing in the country between 1930 and 1976, was accompanied by a control of the capital market by the State. The different institutional schemes applied exhibited three basic features: 1) the closure of the market to capital outflows; 2) the fixing of official interest rates in the banking system; and 3) credit rationing. These characteristics resulted in the utilization of the banking system as a mechanism of forced transfer of income required for the strategy of industrialization. (Canitrot 1981, p. 142)

All this suggests that one may consider a different closure by assuming that profits of enterprise in each sector are given, and the interest rate, although determined by the Central Bank, accommodates to give consistency to the price system. In formal terms, let us define  $q_i$  as the credit coefficient of firms in sector  $j = A, I$ , and  $i^C$  as the interest rate on commercial loans. Equations (19) and (20) can be re-expressed as:

$$Ep_A^* = wl_A(1 + \mu_A) + q_A i^C \quad (19')$$

$$Ep_I^*(1 + \tau) = (wl_I + bEp_m^*)(1 + \mu_I) + q_I i^C. \quad (20')$$

But now, the banking sector must be explicitly considered. Banks set their price,  $i^C$ , in order to cover their labour costs and fund-raising, the latter being mainly based on the Central Bank finance window, since deposits are typically nationalized. The monetary authority provides funds to financial institutions at a rate  $i^{BC}$ , which sets the floor of the remaining interest rates of the system. Thus,

$$i^C = wl_B(1 + \mu_B) + q_B i^{BC}. \quad (25)$$

In this case, to 'validate', so to speak, an increase in the level of money wages, it would be necessary, for given profit margins in all sectors (in the banking system

too), that the Central Bank reduces the reference rate,  $i^{BC}$ . This ‘cheap-money’ policy would in turn induce banks to reduce the interest rate on commercial loans, thereby allowing firms to compensate the rising labour costs with decreasing financial costs.

In sum, notice that the conflict over income distribution is now focused on the association of interests between industrial capitalists and workers as opposed to those of the financial rentiers, and not against the agrarian sector.

### 3.3.3 The influence of the balance of payments on income distribution

We finish our assessment of Canitrot in this Part I by briefly noting that his explanation of the influence of the balance of payments on output, employment and income distribution is the same as we found in the previous Structuralist works. ‘What sets an upper limit of expansion’, he claims, ‘is the economy’s capacity to run external trade deficits’ (Canitrot 1980, p. 920). Nevertheless, Canitrot (1975, p. 347) adds an element that is not explicitly mentioned either by Braun or by Diamond: the idea that there is *a maximum level of the real wage* (or minimum real exchange rate) that the domestic economy can tolerate. Given the autonomous components of demand (and the consumption basket of workers), this threshold is the one compatible with external equilibrium.<sup>24</sup> This level of the real wage can be obtained from equation (14), by setting the result of the balance of payments equal to zero and considering explicitly the influence of the real wage on the determinants of the external balance.

$$BP = p_A^* X_A \underbrace{\left( \frac{E}{w} \right)}_{+} + -p_M^* b Q_I \left( \underbrace{\frac{E}{w}}_{-}; \underbrace{Aut}_{+} \right) = 0 \quad (14')$$

If we consider that a rise of the real wage (a decrease in  $E/w$ ) boosts production and employment, and, thereby, the consumption of primary commodities, then, for a given supply of agrarian goods, the effect on exportable quantities will be negative;<sup>25</sup> in addition, due to its positive effect on the demand for industrial goods, the impact on imports will be positive. On the other hand, *Aut* represents the autonomous demand for consumption goods (for example, public expenditure). *Ceteris paribus*, a rise of *Aut* increases the demand for *I*, and restrains the ability to raise wages, since it reduces the availability of foreign exchange to import inputs that are required to produce consumption goods for workers.

24. ‘If autonomous demand is assumed to be given, the model allows distinguishing two completely determined functions. First, a supply-of-imports function that grows for increasing values of the relationship that goes from the exchange rate to the nominal wage. This function is the same that has already been mentioned in the general case. In addition, a demand-for-imports function that decreases when this relationship grows. That is, the fall of the real wage reduces the level of economic activity in the industrial sector and, thereby, the demand for imports. Both functions determine a unique equilibrium point. At this point, the relationship from the exchange rate to the nominal wage that maximizes the volume of employment – and the real wage – is defined, respecting the restriction imposed by foreign trade’ (Canitrot 1975, p. 347).

25. If we assume that the supply of *A* increases *pari passu* with its demand, then this term will not be negatively affected by the increase in real wages. Since the second term is still a positive function of the real wage, equation (14') is still a positive function of  $E/w$ . In the main text we assume the first term to be a negative function of the real wage in order to remain close to Canitrot’s reasoning.

#### 4 SUMMARY AND CONCLUSIONS

Throughout this paper we have had recourse to a two-sector model inspired in the classical tradition (exogenous distribution) to explore the view of three Argentinian Structuralist scholars on the interaction between income distribution and the balance of payments. Our analysis in this Part I has focused on the contributions that cover the years from the end of the Second World War to the demise of Bretton Woods, a period characterized by strong controls on the capital account of the balance of payments.

The distinctive feature of this institutional framework is the phenomenon of *technical dependency*. In fact, behind all three Argentinean scholars' explanations, one finds a common idea: as the economy expands over time, the increasing demand for foreign exchange forces authorities to constrain the level of economic activity by inducing changes in income distribution with the only aim of improving the current-account balance.

Undoubtedly, technical dependency emerges as a pillar of all the contributions examined here. Yet we have seen that Braun, Diamand and Canitrot derive from this feature alternative but complementary conclusions about the trajectories of prices and quantities, since the richness of their theoretical framework allows them to emphasize different aspects of the interaction between the balance of payments and income distribution.

We will leave for Part II the exploration of the writings that examine the period that followed the progressive abandonment of capital controls, in which a new phenomenon, 'financial dependency', may alter the interaction between income distribution and the balance of payments.

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