Financial Rentiers and Public Debt in the Periphery

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1. Introduction

This chapter presents an extension of Robert Blecker's neo-Kaleckian model for an open economy with a focus on some of its implications for peripheral economies. The extension relates to two aspects that Blecker addressed in different works.

First, the idea that markups over unitary costs applied by domestic firms can vary in response to the intensity of international competition. Blecker (1989, 2011) points out that an appreciation of the domestic currency—because of either a reduction in the price of foreign goods or short-term capital inflows that dampen the nominal exchange rate (more on this below)—puts more pressure on industrial firms, which will have to compete with cheaper imported goods. Those firms will therefore be forced to reduce markups to remain competitive in domestic and foreign markets.

Second, Blecker and Setterfield (2019, p. 333-337) present a model with financial rentiers, which captures key insights of several Kaleckian models in which a class of rentiers share the gross margin with capitalists' profits. In the Blecker and Setterfield model, higher interest rates imply higher financial costs (thus rents) that are detracted from the gross profit rate in the argument of the investment function. The net impact of a higher interest rate on aggregate

demand will depend on the relative importance of the negative effect on investment versus the positive effect on rentiers' consumption. If the propensity to consume of the rentiers is not high enough, then the rise in the interest rate will be contractionary.

We will combine those insights to advance in two directions. Firstly, we consider the impact of the domestic interest rate in attracting short-term foreign capital and therefore in either appreciating or depreciating the domestic currency (changes in the real exchange rate) through capital inflows or outflows, respectively, assuming that the peripheral economy has an open financial account. There is considerable evidence that periods of high interest rates in the periphery, as compared with the interest rates in the international financial markets, are associated with phases of appreciation of the real exchange rate (Bresser-Pereira, 2019). Ocampo (2016) has called the subordination of the short-term macroeconomic dynamics to external shocks as the Balance-of-Payments dominance of the macroeconomic regime. While shocks in the terms of trade are relevant, a larger role has been played by short-term capital flows since the emergence of financial liberalization in the late Seventies and especially since the Nineties. To keep the model simple and highlight the key messages regarding the fiscal space, it is assumed that the government issues debt in the domestic currency and hence foreign capital inflows are basically associated with carry trade (arbitrage across interest rates differentials in various currencies).

Secondly, we stress an increasingly important dimension in the global economy, namely the fact that governments are heavily indebted. Public debt has become a problem and a heavy burden for the public sector, especially in peripheral economies (UNCTAD, 2023), which may hamper the ability of governments to pursue expansionary policies (Hein and Truger, 2012; and Hein, 2019). The interest rate matters because it sharply reduces the fiscal space of a highly indebted public sector. This, in turn, limits the ability of the government to fulfill two of its critical roles in the economic system, namely: a) a productive role, associated with investments in education and in the National Systems of Innovation (NSI) to sustain competitiveness (Freeman, 2004; Dosi et al. 2010, 2015); and b) a cohesion role, through income redistribution to ensure social cohesion and political stability (Katzenstein, 1985; Evans and Heller, 2015; Doner and Ross-Schneider, 2016).

Both roles of public policy—productive and redistributive—are more demanding in the economies of the periphery, which are technological laggards and where poverty and inequality are widespread (Faberberg and Verspagen, 2002; ECLAC, 2020). In these economies, the NSI and the welfare state are very fragile—and therefore the process of institution building is more difficult than in the central economies (or many of them). The fiscal space and the role of the state are still more central when the economy needs to escape from a development trap than when it counts with a solid institutional and technological base.

In this paper we present a model in which a development trap emerges because of the fiscal constraint imposed by the public debt. The long-run rate of growth depends on both price and non-price competitiveness, which determine the rate of growth compatible with equilibrium in the current account, as in the tradition of the Balance-of-Payments-constrained growth models (Thirlwall, 2011; Blecker, 2016; Spinola, 2020). Price competitiveness is limited by the resistance of capitalists and workers to reduce their income shares in GDP, and by high interest rates that appreciate the domestic currency, reducing the real exchange rate. Non-price competitiveness is limited by the fiscal constraint on public expenditure in the NSI, as argued by several authors that have shown the importance of industrial policy and public investment in supporting innovation and the diffusion of technology (Cimoli et al., 2009; Chang and Andreoni, 2020).

In these conditions, the equilibrium rate of growth—consistent with both fiscal balance and external balance—will be low out of two reinforcing mechanisms. Sluggish economic growth generates low profits, leading the industrial capitalists to allocate resources in the financial market instead of investing in the industrial sector. In this sense, low economic growth and low profits gradually cause capitalists to become rentiers, depressing industrial capital accumulation. In parallel, the rentier class has a strong interest in keeping the public debt and the interest rate at a high level (compatible with solvency), which reinforces the low profitability of the industrial sector in two ways: by the appreciation of the real exchange rate, which curbs price competitiveness and industrial exports; and by reducing the fiscal space to invest in the NSI, which compromises non-price competitiveness.

The paper highlights the potential conflicts and alliances that may emerge between labor, industrial capitalists and rentiers. Both labor and the propertied class are divided. This creates a fragmentation of interests and power that helps explain the development trap.

Labor is divided between formal and informal workers, who show large differences in income and productivity—what Furtado (1961) and Pinto (1970) called "Structural heterogeneity". Informality in the labor market is the result of slow capital accumulation, characteristic of peripheral economies, where private and public investments are insufficient to generate the labor demand that would be required to absorb all the workforce in the formal labor market (see also Ros, 2001, chapter 3). As a result, a large portion of the population remains in subsistence conditions and therefore will require monetary transfers and public support to remain above the poverty line. The propertied class in turn is divided between rentiers (in our model, the holders of debt securities issued by the public sector) and industrial capitalists (whose focus is capital accumulation in the industrial sector).

An alliance may be formed between labor and industrialists in favor of rapid industrial accumulation, but there are challenges for its sustainability. Capitalists and workers could agree on a deficit-financed agenda of public investments and income redistribution, but over time the growing burden of public debt will limit the stability of such an alliance. On the one hand, if rentiers and industrial capitalists are increasingly mixed in a single "propertied" group whose members at the same time receive profits from production and rents from government bonds, they may support a higher interest rate in spite of the depressing effect this has on competitiveness (Stockhammer, 2004; Dávila-Fernández and Oreiro, 2023; Palma, 2023; Botta et al., 2023). On the other hand, if the markup falls when the real exchange rate is appreciated and this leads to fairer functional income distribution within the industrial sector, formal workers will favor appreciation. Because of lower price competitiveness, there will be less formal employment; but those who remain employed in industry benefit from a higher wage share in industrial GDP. This creates a cleavage between formal and informal workers as the former become—in an indirect way—second-class beneficiaries of the appreciated real exchange rate associated with high interest rates.

2. The model in the short run

2.1. Sectors and behavioral rules

In our model there are two sectors in the economy: an informal sector that only uses labor, and a formal (industrial) sector that employs both labor and capital:

(1) $$P^T Y^T = P^I Y^{INF} + P\,Y$$

where Y^{INF} is the real product of the informal sector and Y that of the formal sector, expressed in units of the industrial output. We define $\beta = \left(\frac{P^I}{P}\right)$ the terms of trade between the informal and the formal sector. To keep the model simple, the terms of trade are assumed constant.

Industry is more technology-intensive while the informal sector is subordinated to the formal sector regarding technology, income and employment. Informal workers produce and consume a subsistence good: productivity in the informal sector is a fraction of industrial productivity but increases due to externalities arising from industrial production. Specifically, we assume that the real output of the informal sector (in units of the industrial good) is $Y^{INF} = \beta a Y$, with $0 < a \ll 1$, where a captures the productivity connection between industry (formal) and low-productivity (informal/subsistence) activities. The higher is a, the higher the technological and employment externalities flowing from industry to the informal sector. Straightforwardly, $Y^T = (1 + \beta a)Y$.

In the formal sector, the rate of utilization of the stock of capital is:

$$u = \frac{Y}{Y^P} < 1 \qquad (2)$$

where $Y^P = vK$, with v average productivity of capital (assumed to be constant) and K the stock of capital. Therefore:

$$Y = vKu \qquad (3)$$

Capital and labor enter in production in fixed proportions: $Y = vKu = bL^M$ where b is average labor productivity in the industrial sector; we normalize total labor supply to unity and hence L^M is the share of the formal sector in total employment: $L^M = \frac{Y}{b} = \frac{vKu}{b}$. Labor productivity increases pari passu with the stock of capital ($\hat{b} = \hat{K}$), making L^M a function of the rate of capacity utilization of the stock of capital only. Employment in the informal sector $(1 - L^M)$ expands or contracts in response to the demand for labor in industry so that there is no unemployment. The total income of the subsistence sector, aY, is equally distributed among the informal workers, hence the average real wage in the informal sector is $W^{INF} = \frac{aY}{1-L^M} = \frac{aKvu}{1-vKub^{-1}}$.

Prices are formed by applying a variable markup, $z > 1$, over unitary variable costs (effectively, the unit cost of labor, W/b, where W are nominal wages). The real exchange rate is $q = \frac{P^*E}{P} = \frac{P^*E}{z\frac{W}{b}}$, and we assume that the mark up increases with the real exchange rate—that is, $z(q)$, with $z_q > 0$—because, as mentioned, high levels of the latter give protection to local firms from international competition. Note that the profit share in the industrial sector GDP is $\pi = \frac{z-1}{z}$. Since π increases with z, and z increases with q, there is a positive (negative) association between the real exchange rate and the profit share (the industrial sector wage share).

The real exchange rate is determined in this model by two forces. The first is arbitrage in short-term international capital markets: a rise in the domestic interest rate attracts foreign capital and this leads to a fall in the nominal exchange rate (see mathematical appendix). The fall in E is compensated only partially by a relative fall in P (which arises due to the decrease in the mark-up) which respect to P^*, and therefore the real exchange rate appreciates (q falls). The second are unitary labor costs (W/b): a rise in nominal wages is transferred to prices, reducing q given the nominal exchange rate. In both cases, price competitiveness is compromised. Formally:

$$(4) \quad q = \varphi[P^*E(i - i^*); z; W/b],$$
$$\varphi'(E) > 0,\ \varphi'(P^*) > 0,\ \varphi'(z) < 0,\ \varphi'(W/b) < 0,\ E'(i - i^*) < 0$$

where i represents the domestic interest rate and i^* represents the exogenous international interest rate. In the appendix we provide an exact formulation for the case of linear functional relations.

In the discussion that follows we assume that nominal wages increase with labor productivity ($\widehat{W} = \hat{b} = \widehat{K}$) and P^*E changes due to changes in E for a given P^*. This reflects the dominant role that capital flows play in shaping the real exchange rate when the financial account is fully open. In the short run, the current account may show deficits or surpluses associated with inflows or outflows of capital, but in the long run the current account will be balanced, as discussed below.

The focus of this work is on the association between changes in the interest rate and changes in the real exchange rate: a rise in i leads to a fall in q that in turn leads to a fall in z, which improves income distribution. The fall in z does not necessarily mean deflation, but just that a rise in E and/or W would be only partially translated into a rise in P. It is also assumed that the fall in z does not fully compensate for the rise in E. To simplify notation, the real exchange rate will be written as a function of the interest rate differential, $q = q(i - i^*)$, where the function $q(\cdot)$ captures the net effect of the rise in E and the fall in z, with $q'(i - i^*) > 0$ (see appendix).

The government imposes taxes on wages in the formal sector (t^W) and on the income of capitalists (t^K) and rentiers (t^R), but not on workers in the informal sector—either because they do not earn enough to be taxed or simply because their activities are outside the reach of the government. Workers in the industrial sector save a share s^W of their wages, while informal workers do not save. There is also an indirect tax on consumption, including public consumption.

Government primary expenditure G^T, that is, net of interest payments on the accumulated public debt, is assumed to be a constant fraction of the industrial GDP. The rationale for this is that the government obeys a fiscal rule by which expenditures should not drift too much apart from taxable income, with primary expenditure on industrial GDP: $g^T = \frac{G^T}{Kvu}$. The government allocates its resources with two broad objectives, as mentioned. One is building systemic competitiveness through the NSI (to which it allocates a value per unit of industrial GDP equal to g; and the other is to build social and political stability through monetary transfers to the informal sector worth, per unit of industrial GDP, j), to alleviate poverty and increase equality. Primary expenditure per unit of industrial GDP is therefore $g^T = g + j$.

The term g represents expenditures in education, science and technology, incentives to technological diffusion and, in broad terms, strengthening the National System of Innovation; j represents monetary transfers to those below the poverty line or, more generally, public expenditure in the welfare system such as public health or social protection. While the income of informal workers, aY, is of mere subsistence (therefore it is consumed by the same workers), monetary transfers allow them to demand the output produced by industry.

The total consumption of workers (formal and informal) per unit of capital will be:

$$(5) \quad \frac{C_W}{PK} = \underbrace{avu}_{cons.\ subsistence} + \underbrace{jvu}_{ind.\ cons.\ informal\ workers} + \underbrace{[w\,(1 - t^W)(1 - s^W)]vu}_{ind.\ cons.\ formal\ workers}$$

In equation (5), w is the wage share in the industrial sector; the first term on the right-hand-side is the consumption of the subsistence workers; the second term is the consumption by

informal workers of the industrial sector goods; and the last term is the consumption of industrial goods by formal workers.

Capitalist and rentiers respectively save shares s^K and s^R of their income after taxes on profits (t^K) and on rents (t^R). We assume that both capitalists and rentiers have a higher propensity to save than workers, but we cannot assume anything concerning which one is the highest. Capitalists receive total πY profits, where π is the profit share in the industrial sector; rentiers receive interest payments iD, where D is public debt in units of the industrial good. For simplicity, we assume that public debt is represented by perpetual securities. The saving rates of capitalists and rentiers are different, as it is assumed that they have different interests — with the industrialists more focused than the rentiers on being competitive in the international markets. Nevertheless, as mentioned, it is likely that over time both groups begin to blend into a more homogeneous group with a diversified portfolio of investments (including industrial assets and financial assets), in which case their saving rates would tend to converge.

The consumption of capitalists and rentiers per unit of capital in the industrial sector will be:

$$(6)\ \frac{C_K}{PK} = (1 - t^K)(1 - s^K)\ \pi vu$$

$$(7)\ \frac{C_R}{PK} = (1 - t^R)(1 - s^R)\ id$$

In equation (7), $d = D/K$ is the ratio between public debt and the stock of capital (which is a proxy of the public debt to potential industrial GDP ratio).

2.2. The short-run equilibrium

Total savings per unit of capital in the private sector will be:

$$(8)\ \frac{S_W + S_K}{K} = [s^W w(1 - t^W) + s^K \pi(1 - t^K)]vu + s^R id(1 - t^R)$$

The public sector collects direct taxes on wages, profits and rents, and indirect taxes o consumption (t^G). Therefore, public sector net lending/borrowing will be:

$$(9)\ \frac{S_G}{K} = (t^K \pi + t^W w)vu + t^R id + t^G vu[w(1 - t^w)(1 - s^W) + \pi(1 - t^K)(1 - s^K) + j] + t^G id(1 - t^R)(1 - s^R) - (g + j)vu - id$$

Capitalists invest in accordance with the following Kaleckian investment function:

$$(10)\ \frac{I}{K} = g_K = g_0 + g_1 \pi vu$$

In this equation g_0 is the autonomous component of investment that reflects the animal spirit of capitalists, and $\pi vu = \frac{\pi Y}{K} = r$ is the rate of profit in the industrial sector. Note that the interest rate is not detracted from profits because the industrial sector is not indebted (indeed, under the assumptions of the model, only the government carries a debt).

Finally, the current account per unit of capital is defined as:

$$(11)\ \frac{CA}{K} = x[h\,(g), q(i - i^*)] - q(i - i^*)m[h(g), q(i - i^*)]u, \quad x_h > 0\ x_q > 0, m_h < 0, h_g > 0$$

In equation (11), exports and imports are a function of non-price competitiveness h, and price competitiveness captured by the real exchange rate q, which is in turn a function of the interest rate differential. Blecker (2023) challenges the frequent assumption that only non-price competitiveness is relevant, and notices that especially in the short to medium run the real exchange rate can have an impact on exports and output growth. Of course, this does not imply that non-price competitiveness is irrelevant: in equation (11), $h_g > 0$ expresses the positive impact of investments in the NSI on non-price (or structural) competitiveness. Finally, we assume that workers in the informal sector do not consume imported goods.

The current account balance, therefore, reflects the composition of the country's exports and imports. According to Blecker (1989), the composition of trade is related to capital accumulation. For the author, an increase in workers' consumption will lead to a higher degree of capacity utilization, depending on the magnitude of the trade balance. This effect will be positive when the trade deficit is small or there is a trade surplus, meaning that the country depends little on imports, and an increase in consumption would lead to greater use of domestic productive capacity with minimal leakage abroad. Thus, equation (11) highlights the importance of innovation spending in the country's competitiveness, affecting not only the composition of exports but also the dependence on imports.

The short-run equilibrium is attained through changes in the rate of utilization of the stock of capital. When $u = u^*$, the desired level of capacity utilization, total savings will be equal to total investment plus the current account balance. Employing equations (8) to (11), and recalling that q is a function of the interest rate differentials, we obtain:

(12)

$$\underbrace{s^W wvu^*(1-t^W)}_{workers' savings} + \underbrace{s^K \pi vu^*(1-t^K)}_{capitalists' savings} + \underbrace{s^R\, id(1-t^R)}_{rentiers' savings} + \underbrace{wvu^*[t^W + t^G(1-t^W)(1-s^W)] + \pi vu^*[t^K + t^G(1-t^K)(1-s^K)] + id\,[t^R + t^G(1-t^R)(1-s^R)] + (g+j)\,(t^G-1)uv^* - id}_{public\ savings}$$
$$= \underbrace{g_0 + g_1\pi(1-t^K)vu^*}_{Investment} + \underbrace{x[h(g), q(i-i^*)] - q(i-i^*)m[h(g), q(i-i^*)]vu^*}_{current\ account}$$

To keep the model more tractable, we assume that $s^W = t^W = t^G = 0$, i.e. there are no indirect taxes, no taxes on wages and workers do not save. With these assumptions, the degree of capital utilization will be in equilibrium when the following condition holds:

$$(13)\ u^*(g,i) = \frac{1}{v}\left\{\frac{g_0 + x[h(g),\ q(i-i^*))] + id[1 - s^R(1-t^R) - t^R]}{\pi(1-t^K)(s^K - g_1) + \pi t^K + q(i-i^*)[h(g), q(i-i^*)] - (g+j)}\right\} =, u'(g) > 0, u'(i) < 0.$$

The usual stability condition applies (positive denominator in equation 13). Interest payments will have an expansionary effect depending on the propensity to save of the rentiers and the taxes paid by the rentiers. In the extreme case in which all rents are saved, $s^R = 1$, the term multiplying id in the numerator of equation (13) will be 0 and hence the income of the rentiers represents a unambiguous leakage of aggregate demand.

We may rewrite the investment function in the industrial sector in equilibrium as:

$$(14)\ g_K = g_0 + g_1\pi vu^*(g,i) = \theta(g,i), \quad \theta'(i) < 0, \theta'(g) > 0$$

In equation (13), the response of u^* to a rise in public investment is positive because such a rise directly increases aggregate demand and improves non-price competitiveness and hence exports. The sign of the derivative with respect to the interest rate, on the other hand, is ambiguous. A growth in the interest rate appreciates the real exchange rate that leads to a fall in the markup and hence in π (a rise in w). Since formal workers have a lower propensity to save than the capitalists, such an effect is expansionary. But we assume that the expansionary effect is more than compensated by: i) the redistribution of income towards the rentiers, whose saving propensity could be equal or higher than that of the capitalists; and iii) a fall in international price competitiveness and the ensuing worsening of the current account balance due to a fall in q (assuming that Marshal Lerner condition holds).

3. The long-run equilibrium and the political economy of public debt

3.1. Monetary and fiscal policy: reaction curves

In the long run, the economy should attain a stable or non-growing public sector debt as a ratio to capital, d, as well as a balanced current account. These conditions prevent the government and the country from facing explosive and unstainable growth of the public and/or external debts. The public sector has two instruments—the interest rate and public expenditure—and two policy objectives—to finance its deficit while keeping the debt to capital ratio stable; and to help keep the external sector in equilibrium. First, we discuss the dynamics of the debt to capital ratio, and subsequently that of the current account balance.

The growth of public debt when the economy is in its short-run equilibrium is:

$$(15)\ \dot{D} = (g + j)Kvu - [t^K \pi v K u^* + t^W w v K u^*] + (1 - t^R) iD$$

Note that $\dot{d} = \frac{d(D/K)}{dt} = \frac{\dot{D}}{K} - d g_K$, where g_K is the rate of capital accumulation in the industrial sector. Therefore, under the simplifying assumptions set forth above, the change of the debt to capital ratio is:

$$(16)\ \dot{d} = vu^*(g, i)(g + j - t^K \pi + t^W w) + [(1 - t^R) - g_K] id$$

The partial derivatives of $\dot{d}$ with respect to i and g are positive. The debt to capital ratio increases with the interest rate and with public expenditure. A higher interest rate increases the burden of the public debt and reduces growth via exchange rate appreciation, which reduces the revenues from taxation. Higher public expenditure (for given taxes) implies higher government borrowing requirements and hence a rise in the public debt.

When the debt to capital ratio increases ($\dot{d} > 0$), public bonds become riskier. Thus, if there is an increase in public expenditure (given the tax rates), the interest rate should increase to attract the funds to finance the new expenditures. At the same time, the governments' reaction curve should include a negative feedback from the level of the interest rate to the deficit, in order to prevent the rise in d from becoming explosive. This gives the following reaction curve, considering the consolidated public sector (without distinguishing the central bank and the government):

$$(17)\ \frac{di}{dt} = \rho(g^T, i), \rho'(g^T) > 0, \rho'(i) < 0$$

The reaction curve gives a positively sloped curve for the isocline $(di/dt) = 0$, as shown in Figure 1. There is a set of values of g^T and i that stabilizes the interest rate, which at the same time allows for financing the government but keeps the debt to capital ratio under control.

Equation (17) gives the condition for stabilizing the public debt to capital ratio, but it does not necessarily imply a balanced current account. While interest rate policy aims to help balance the budget deficit (if the central bank cooperates with the government, or if there is fiscal dominance), fiscal policy helps curb the external deficit. If there is a surplus in the external sector, fiscal policy becomes more expansionary, while the government is bound to tighten its belt in the face of a trade deficit:

(18) $\hat{g}^T = \theta[x(h(\epsilon g^T), q(i - i^*)) - q(i - i^*)mu(g^T, q(i - i^*))], \theta'(g^T) < 0, \theta'(i) < 0$

The burden of adjustment to the current account deficit does not fall only on the government's shoulders. Through the multiplier, government spending decisions necessarily affect the private sector. The negative impact of fiscal austerity on aggregate demand curbs private investment and consumption, which add to the adjustment process. Therefore, although the focus is on government expenditures, the fiscal response described in equation (18) should be read as a proxy for the general contractionary effect that a rising deficit in the external sector would eventually have on aggregate demand.

The partial derivative $\theta'(g^T) < 0$ assumes that the direct effect of public spending on aggregate demand and imports exceeds its positive indirect effect on competitiveness and exports; the derivative $\theta'(i) < 0$ reflects that exchange rate appreciation associated with a higher interest rate penalizes exports and boost imports, thus forcing the economy to reduce spending. As a result, the isocline $x^n = 0$ is negatively sloped: higher spending requires a lower interest rate, so that a higher exchange rate makes possible the expansion of exports that matches that of imports demanded by faster growth.

Figure 1: The effect of a fall in tax rates: less fiscal space, higher interest rates

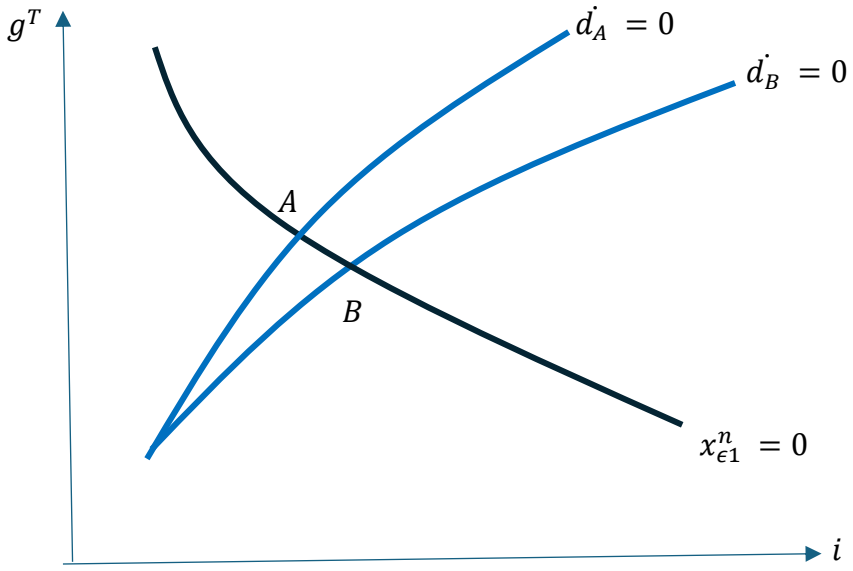


Figure 1 shows the combinations of public spending and interest rates that ensure external ($x^n = 0$) and fiscal equilibrium ($\dot{d} = 0$). At point A the government has no reason to reduce spending, and rentiers have no reason to demand a higher interest rate, while the level of imports associated with public and private spending decisions is consistent with the competitiveness of the economy (price competitiveness, given by q, and structural competitiveness, given by h). The equilibrium is locally stable (see appendix).

3.2. A fall in the tax rate

If the tax rate is reduced and the government loses fiscal space, then the interest rate moves up for the same level of public spending. This is represented in figure 1 by the shift of the $\dot{d} = 0$ iscoline, with equilibrium moving from A to B, which features a contraction in public expenditure and a rise in the interest rate. The distributive consequences of this shift may be different depending on the distribution of profits and rents (i.e. whether rentiers and capitalists are different groups of people) and whose taxes are reduced. Assume there is a similar reduction in the taxes paid by the propertied class (rentiers and industrialists) as a whole. If those who have financial wealth and those who invest in industry are different people, point B means a relative setback for the industrialists vis-à-vis the rentiers. Competitiveness will be compromised for two reasons: a) the increase in the interest rate tends to appreciate the currency; b) the fall in g reduces spending on activities that potentially favor technological absorption. On the other hand, if both industrialists and capitalists own a diversified portfolio

made of bonds and capital goods, then both groups are not markedly different, and the change would not have significant redistributive effects between them.

At the same time, the cleavage between labor and capital becomes more acute after the shift. On the one hand, point B implies lower structural competitiveness and a lower level of activity—and consequently, a lower employment rate. Point B is also a point at which total public spending per unit of capital has fallen, and if the distribution of public spending between welfare and competitiveness is the same as in point A, then monetary transfers will fall too, at a time when it would be most necessary to offset rising underemployment and poverty (i.e. a movement to the subsistence sector of the economy).

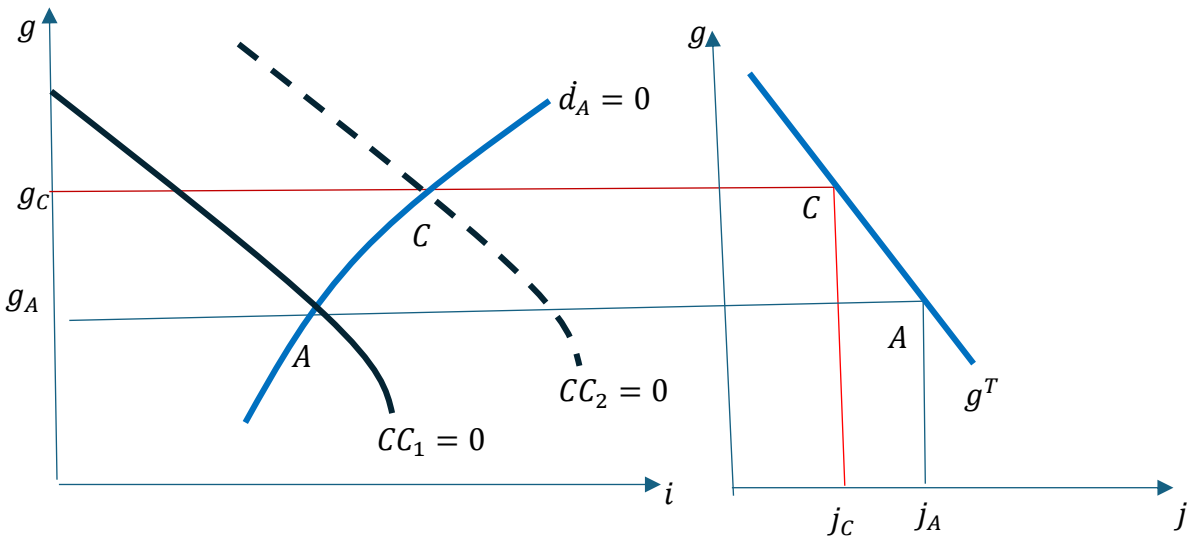
A move in the opposite direction (from B to A) will occur if taxes increase and the government is able to finance a higher level of expenditure without having to get more indebted with the rentiers.

3.3. Change in the composition of public expenditure

The case of a change in the composition of public expenditures is represented in figure 2. The graph on the right shows the different combinations of g and j for a given level of total public expenditure (since $g^T = g + j$, the slope is minus the unity). An increase in the proportion of spending devoted to structural competitiveness without changing total public expenditure implies a rise in g and a fall in j with g^T constant (from A to C).

The graph on the left in figure 2 show the isoclines for stability in the labor market and the external sector. Assume that the economy is initially in point A. A rise in structural competitiveness—thanks to the reallocation of public resources towards competitiveness-enhancing activities—shifts the $CC = 0$ curve to the right (from $CC = 1$ to $CC = 2$). The easing of the external constraint allows for an expansion of aggregate demand, including the expansion of total public expenditure, which (with constant taxes) leads to an increase in the interest rate. Although the exchange rate appreciation associated with a higher interest rate partially offsets the improvement in non-price competitiveness, the economy will still reach a higher rate of capital accumulation in point C.

Figure 2. The effect of a redistribution of public expenditures towards competitiveness



Those who have financial and productive assets will benefit from this expansion. But the impact on workers is ambiguous: if the increase in competitiveness and growth after the increase (fall) in g (j) does not offset the reduction in monetary transfers, then the outcome for (formal and informal) labor will be less favorable than before the reallocation of fiscal resources. If the workers in the formal market can save and invest in public bonds (which means lifting the assumption that $s^W = 0$), then the income gap between formal and informal workers will be on the rise too.

3.4. Political economy and the development trap

The political economy dynamics will be rather different in the cases discussed above. The move from A to B in figure 1 (lower taxes on the propertied classes) is one in which a contraction in the fiscal space and a high interest rate reduces the rate of growth on the economy. The outcome seems counterintuitive, because lower taxes should imply higher aggregate demand. While this is valid in the short-run, in the long run growth depends on price and non-price competitiveness. To the extent that in B there will be less support to the NSI, structural competitiveness will suffer; and price competitiveness will be reduced as well because of the appreciation of the real exchange rate.

The formal workers still employed may be contented with a better income distribution in the industrial sector (because of the Blecker-type flexible-markup effect, the wage share increases with the fall in q), but they will resent the slower rate of growth of the economy. Rentiers will support the outcome because they collect high interest payments from the public debt, while industrial capitalists will have mixed feelings. On the one hand, capital accumulation in the industrial sector is weak. On the other hand, if they have become rentiers themselves and hold a more diversified portfolio including public debt securities, they will not necessarily oppose high interest rates. The economy will show very low levels of public and private investment as well as low levels of monetary transfers to the poor. The labor market will show high

polarization, the economy will exhibit high inequality and the discussion of the fiscal deficit, price competitiveness and high interest rates will be the dominant theme in macroeconomics.

In sum, scenario B in figure 1 is a development trap, dominated by rentiers and "real exchange rate" populism associated with a powerful rentier sector, a higher wage share in a slim formal sector, and some minor (perhaps clientelist) monetary transfers.

Conversely, the higher-taxes scenario described by equilibrium in point A is one in which a rise in taxes allows for the expansion of public investment while at the same time reduces the interest rate. This scenario may combine redistribution (expressed in a high j and high taxes on rents and profits) along with industrial transformation steered by a higher g. This scenario is clearly favorable to labor and less favorable for the rentiers, but not necessarily bad for the industrial capitalists (assuming rentiers and industrialists are separate groups). The lower i penalizes rentiers and the higher t^K penalizes industrial capitalists, but at the same time the improvements in price and non-price competitiveness raise the long-run rate of capital accumulation. In this sense, it is closer to a kind of traditional social-democratic scenario, in which the redistributive process and public intervention in fostering high-tech sectors may favor win-win pacts between formal labor and industrial capitalists.

Point C in figure 2 represents a different avenue to improve non-price competitiveness, by reallocating fiscal resources from redistribution to the NSI. In this scenario social transformation lags behind industrial transformation. The reduction in poverty will be more related to the expansion of formal employment and the absorption of subsistence workers in higher-productivity activities than to redistribution, and it could remain incomplete. In particular, a dynamic economy that retains high levels of poverty or inequality may loose its momentum because of social and political tensions, rising uncertainty and the negative feed-back on innovativeness that arises from a highly unequal distribution of the benefits of economic growth.

4. Concluding remarks

This paper extended the Kaleckian open-economy model to include consideration for the fiscal space in a peripheral economy as a constraint on economic growth. In these economies, public expenditure in the NSI and social protection are even more central to economic and political stability than in center economies—given structural heterogeneity in the labor market and technological backwardness in the productive sector. At the same time, tax rates tend to be too low in the periphery, which compounds the challenge of the reduced fiscal space.

The paper argues that a development trap may emerge due to the burden of public debt. Two types of variables mutually reinforce to produce such trap. On the one hand, poor international competitiveness (especially too low non-price competitiveness) reduces the expected profit rate in the industrial sector and compromises capital accumulation, making the financial sector more attractive vis-à-vis industrial production. On the other hand, high interest rate to finance the public debt reduces the fiscal space and the possibility of investing in both the NSI (to foster international competitiveness) and social protection (to eliminate poverty). An equilibrium marked by slow growth, a narrow formal labor market, a larger rentiers group, and industrialists whose interests are mixed up with those of the rentiers, may emerge. The poor dynamism of this economy is sustained in a political economy in which rentiers and industrialists count on the support of a small medium strata that benefits from a higher wage share in the formal sector.

It is not possible to discuss remedies to escape from the development trap in this paper. But two directions that have been discussed in the literature should be highlighted. The first is a strengthening of the NSI as a necessary counterpart of a more expansive redistributive policy. Industrial and technological policies are not at odds with social policies; they should go hand in hand. The second is the urgent need in many peripheral economies of a major restructuring of the tax system and fiscal policies to make them much more progressive and comprehensive than what is nowadays in place in most countries. It goes without saying that if there were greater forms of coordination among tax systems to prevent tax elusion and to impose minimum levels of taxation on international corporations and high worth individuals, it would benefit both central and peripheral economies by enlarging the fiscal space for both.

Mathematical appendix

A linear model of determination of the wage share and the real exchange rate in an economy with an open financial account

The mark up is a positive function of the real exchange rate:

(i) $z = cq$

Prices follow the markup rule:

(ii) $P = z(\frac{W}{b})$

The real exchange rate is therefore:

(iii) $q = \frac{P^*E}{P} = \frac{P^*E}{z(\frac{W}{b})}$

Combining (i) and (ii) in (iii) gives the following result for the real exchange rate:

(iv) $q = \left(\frac{P^*E}{c(\frac{W}{b})}\right)^{1/2}$

The nominal exchange rate responds to the interest rate according with the following differential equation:

(v) $\dot{E} = E - d(i - i^*)$

In equilibrium (which is assumed to obtained very fast in the market of foreign exchange) the nominal exchange rate will be:

(vi) $E = d(i - i^*)$

Therefore, the real exchange rate can be expressed as:

(vii) $q = \left(\frac{P^*d(i-i^*)}{c(\frac{W}{b})}\right)^{1/2}$

With given P^*, c, d and a constant unit labor cost (W/b), then the exchange rate will depend solely on the interest rate differential, hence $q = q(i - i^*)$, $q'(i - i^*) > 0$.

The stability of the dynamic system for equilibrium in the labor market and the external sector

The two differential equations are reproduced below for clarity.

$$(17)\ \frac{di}{dt} = \rho(g^T, i), \rho'(g^T) > 0, \rho'(i) < 0$$
$$(18)\ \hat{g}^T = \theta[x(h(\epsilon g^T), q(i)) - mu(g^T, i)], \theta'(g^T) < 0, \theta'(i) < 0$$

The Jacobian is:

$$J = \begin{vmatrix} \rho'(i) < 0 & \rho'(g^T) > 0 \\ \theta'(i) < 0 & \theta'(g^T) < 0 \end{vmatrix}$$

The trace is $[\rho'(i) + \theta'(g^T)] < 0$ and the determinant is is $[\rho'(i)\theta'(g^T) - \theta'(i)\theta'(g^T)] > 0$ computed at the equilibrium values of i and g^T , which implies that the equilibrium is locally stable.

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