

The exchange rate in Orthodox, Keynesian and New Developmentalism theoretical models: a literature review

A taxa de câmbio nos modelos teóricos Ortodoxo, Keynesiano e Novo-Desenvolvimentista: uma revisão de literatura

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RESUMO: O principal objetivo deste artigo é apresentar as diferenças nas taxas de câmbio nos modelos macroeconômicos a partir das três visões teóricas atuais: Ortodoxa, Pós-Keynesiana e Novo-Desenvolvimentista. Para atingir esse objetivo, propõe-se fazer um levantamento bibliográfico da literatura sobre macroeconomia aberta e taxa de câmbio. As principais diferenças entre essas visões dizem respeito à determinação da taxa de câmbio, causas das variações da taxa de câmbio e determinação do equilíbrio da balança de pagamentos.

PALAVRAS-CHAVES: Taxa de câmbio; macroeconomia aberta; balança de pagamentos.

ABSTRACT: The main purpose of this paper is to present the differences in the exchange rates in macroeconomic models from the three current theoretical views: Orthodox, Post-Keynesian and New Developmentalism. To achieve this objective, it is proposed to make a bibliographic survey of the literature on open macroeconomics and exchange rate. The main differences among these views concerns to exchange rate determination, causes of exchange rate variations and balance of payments equilibrium determination.

KEYWORDS: Exchange rate; open macroeconomics; balance of payments.

JEL Classification: E12; E13; F41.

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INTRODUCTION

The discussion on New Developmentalism raised questions regarding a new structuralist macroeconomics aimed at developing countries, especially middle-income ones, placing the importance of the exchange rate for economic growth and development at the centre of the debate. New Developmentalism proposed creating a synthesis between the Structuralist Keynesian Macroeconomics (Taylor L., 2004) and the ECLAC (Economic Commission for Latin America and the Caribbean) Latin American Structuralism (Furtado, 2007). The main differences are listed in Bresser-Pereira et al. (2016).

Since the Keynesian models of the 1960s, the Mundell-Fleming model (Fleming, 1962; Mundell, 1961), and Triffin's considerations of exchange rate patterns (Triffin, 1972), the exchange rate has occupied a secondary role in macroeconomic models and economic theories in general. In the 1990s, it played a relevant role in the qualification of the external crises, the balance of payments (BP) or the currency crises of emerging countries, especially Asian and Latin American countries (Aldrichi and Cardoso, 2009; Prates, 2005).

However, traditional macroeconomics has incorporated these events as exogenous shocks that generate temporary imbalances (Taylor J. B., 1993). Indeed, traditional macroeconomics tends to treat all elements that cannot be incorporated into its general equilibrium model as temporary and transitory exogenous shocks without any long-term effect (Caiani et al., 2016).

In addition, in the Post-Keynesian macroeconomic view, until recently, the exchange rate occupied a secondary position in the export-led growth models (Thirlwall, 1979). In these models, the exchange rate appears to be a temporary effect capable of increasing the BP equilibrium growth rate due to the Marshall-Lerner condition. The Marshall-Lerner condition states that the devaluation of the domestic currency against other currencies or the increase in the exchange rate of domestic currency by foreign currency tends to increase the net export balance and, consequently, increase demand and aggregate income.

New-Developmental Macroeconomics does not disagree with the basic modelling of Thirlwall (1979) and its counterparts or with its essential premises and conclusions. However, it changes the impacts and effects of the exchange rate on the results of the macroeconomic model, from transitory to permanent, since exchange rate changes would also be responsible for changing the functional distribution of income between profits and wages, thereby affecting the process of accumulation and productivity growth, which is the essence of Structuralist thinking.

The main purpose of this paper is to conduct a literature review to demonstrate the main similarities and differences among Neoclassical, Post-Keynesian and New Developmentalism theories regarding the exchange rate and BP equilibrium. In New-Developmental Economics, the exchange rate is a strategic variable for achieving a long-term sustainable economic development pattern in peripheral economies in so far that growth depends on the investment rate, which depends on the expected

profits, which depend on the exchange rate in so far that connects or disconnects the capable companies (that use the best technology available in the world).

Authors such as Thirlwall (1979), Romer (2000) and Bresser-Pereira (2012, 2020a) present overviews of Post-Keynesian, Neoclassical, and New Developmentalism theories, respectively. However, none of these authors present the differences among their views on the open economy and the role of the exchange rate. Bresser-Pereira et al. (2016), Bresser-Pereira (2020a), Bresser-Pereira, Feijó and Araújo (2020) present the general ideas of the New Developmentalism model and its critiques of the orthodox and Post-Keynesian views. Thus, the present work fills a gap in the literature by presenting and differentiating the three existing views in current macroeconomics by highlighting the contribution of each to the specialized literature.

This paper focuses on the interactions between the BP equilibrium and the exchange rate changes and determination in the context of open economy macroeconomic modelling. In addition to this introduction and conclusion, this article includes two other sections. In the second section, the Neoclassical theory shows that the exchange rate is considered to be an endogenous variable and that the BP equilibrium is automatically realized by the domestic and external interest differential. In addition, exchange rate variations are considered exogenous shocks that generate transient imbalances. The Post-Keynesian view appears in the same section. This view defines the equilibrium of the BP as being dependent on the income elasticity differential of exports and imports, and it also considers the imbalances arising from exchange rate variations. In the third section, it is shown how each theoretical view perceives the functioning and role of the exchange rate and introduces the New Developmentalism view, which differs from the previous two regarding the BP equilibrium.

MACROECONOMIC MODELS AND OPEN ECONOMY: NEOCLASSICAL AND POST-KEYNESIAN

In this section, we will develop the general principles of the two macroeconomic models that are discussed in this article, Neoclassical and Post-Keynesian, and their implications in regard to open economies. It is important to highlight that the New Developmentalism model recognizes the Post-Keynesian model as a macroeconomic basis for its theoretical construction (Bresser-Pereira et al., 2016, p. 7). Thus, the Post-Keynesian model will also be addressed in the New Developmentalism model.

Orthodox theory is based on a set of basic assumptions: (i) the real equilibrium product is defined by the supply conditions and productivity shocks (Goodfriend and King, 1997; Romer, 2012), (ii) short-term fluctuations justify the use of monetary policy (Woodford, 2008, 2009), (iii) scepticism about the use of fiscal policy (Barro, 1974, 1989; Reinhart and Rogoff, 2010), and (iv) the BP balance is determined by the internal and external interest rate differential (Romer, 2000).

The real equilibrium product (Y_t) or natural product is defined by the aggregate production function:

$$Y_t = A_t K_t^\beta L_t^{1-\beta} \quad (1)$$

Where A_t represents the exogenous component of technology at time t , K_t represents the capital stock at time t , L_t is the amount of labour that is productively employed and compatible with the natural level of unemployment, $0 < \beta < 1$ represents the proportion of capital in the production function and, consequently, $1 - \beta$ is the proportion of labour that is productively employed.

Thus, output increases are justified by rising capital and labour stocks, which are caused by aggregate investment and population growth, respectively, and mainly by the exogenous increase in productivity due to disruptive random shocks. There are several attempts to make productivity growth endogenous by technological means with the main ones being related to the idea of human capital (Lucas, 1988; Romer P., 1986). In this perspective, factors that increase scientific knowledge and the transmission of new ideas among economic agents become the way to generate long-term growth (Jones and Romer P., 2010).

However, the elements that explain long-term growth are not the same as those that are responsible for short-term fluctuations. The expectations of the economic agents that are responsible for the realization of consumption and investment are fundamental to understanding such fluctuations. In this scenario, economic policy, especially monetary policy, is fundamental to anchoring expectations. A credible monetary policy to stabilize price levels is responsible for the stability of the real levels of consumption and investment spending, while a more flexible monetary policy would be responsible for a higher price level and a reduction in the real levels of consumption and investment spending (Taylor J. B., 1993).

The management of short-term fluctuations is reserved for the monetary policy of interest rate control (Woodford, 2008). Thus, if the current product is above its natural level – as defined by Equation 1 – then an interest rate hike will be necessary to reduce the level of aggregate spending and make current product converge to its natural level. On the other hand, if the current product is below its natural level, the interest rate must be reduced to expand the consumption and investment spending levels, thereby raising the current product level to the natural product level.

Monetary policy is preferable to fiscal policy because there is some scepticism about its use as an appropriate instrument to control aggregate demand (Blanchard and Summers, 2017). When defending this hypothesis, there are two essential arguments: the idea of the nullity of the effects of public spending on aggregate demand when an intertemporal element is added (Barro, 1974); and the possibility of long-term interest rate expansion due to the growth of public debt, which inhibits new private spending (Barro, 1989).

The first effect states that the expansion of the public debt cannot be considered to be an expansion of wealth since it does not represent an expansion of the real capital stock and, consequently, does not expand returns. Thus, in the presence

of perfect markets, the stock of public debt cannot be considered to be wealth itself and thus it can only be compensated for by tax increases, which in turn will reduce disposable income for private spending. The second effect states that the growth of the public debt that is caused by increased spending may cause government creditors to demand higher remuneration for carrying public debt, thereby raising interest rates, which in turn would inhibit the growth of private spending.

Finally, when considering an open economy model, none of the previous hypotheses would be hurt. The only difference is that the BP equilibrium is defined by the domestic and external interest differential (Romer D., 2000). Thus, a country in a current account (CA) deficit would have an internal interest rate that is above the external interest rate to attract capital and finance that deficit. On the other hand, a country with a CA surplus will have an internal interest rate that is below the external interest rate to finance the other countries.

Developing countries, which are often deficient in their CAs, would have the additional need to maintain greater fiscal balances as an instrument for combating inflation (Blanchard, 2004). These are countries with debt intolerance (Reinhart et al., 2003) and monetary inconvertibility (Bordo and Flandreau, 2001) that have a lack of financial deepening and a lack of economic policy commitment to low inflation (currency stability), which, as a consequence, affects their external credibility. For these countries, fiscal imbalances may create the perception that public debt is unsustainable, leading to capital outflows and the need for interest rate increases. However, capital outflows would cause the exchange rate to rise, thereby causing inflationary shocks that are unrelated to aggregate demand.

In a different way, Post-Keynesian theory does not start from a closed structure of hypotheses that consolidate a deterministic model such as that of Orthodox economics. Keynesian models start from the conception of history model approach (Davidson, 1978) or path dependence models (Arestis and Sawyer, 2009). In these models, the decisions that are made by agents over time have the characters of irreversibility and cumulativeness, and the results that are obtained in the present affect the decisions that are to be made in the future. There is a set of decisions that systematically reproduce themselves and they can be consolidated into a more consistent form of analysis: (i) the decision to employ and produce, (ii) the decision to invest and expand the capital stock, and (iii) the decision to allocate assets and issue debt (Davidson, 1978; Possas, 2008).

This decision structure culminates in the stock-flow consistent (SFC) theoretical-computational models (Godley and Lavoie, 2007). The essence of these models are the following: (i) to list the relevant economic agents to be modelled, which usually include households, firms, banks or the financial sector, the government and the central bank; (ii) to list the set of relevant assets and liabilities and to which agents they belong; (iii) to list the set of relevant expenses and revenues and to which agents they are associated; and (iv) formulate behavioural hypotheses (or behavioural equations), which shape the decisions of the economic agents within the three categories that were presented previously (Silva and Dos Santos, 2009).

SFC models are useful tools for economists (especially Post-Keynesian) who

are not convinced by Neoclassical (or Classical) long-term analyses and, at the same time, do not agree to limit themselves to short-term analyses. Despite their simplifying assumptions, they are admittedly modest attempts to shed light on the general aspects of the dynamic trajectories of capitalist economies over time (Silva and Dos Santos, 2009).

In regard to the exchange rate dynamics in capitalist economies, the Post-Keynesian literature on open macroeconomics has as its main reference the work of Thirlwall (1979), which seeks to understand the main generators of the growth differential among countries, and which incorporates the exchange rate. To this end, the author establishes the following relationship:

$$y_{B_t} = \frac{p_{d_t}(1 + \eta - \phi) - p_{f_t}(1 - \delta + \psi) - e_t(1 + \eta + \psi) + \epsilon(z_t)}{\pi} \quad (2)$$

Where y_{B_t} means the growth rate of domestic product at time t , p_{d_t} is the growth rate of domestic prices, η is the price elasticity of the export demand, ϕ is the cross-elasticity of imports, p_{f_t} is the growth rate of external prices, δ is the cross-elasticity of the export demand, ψ is the price elasticity of the import demand, e_t is the exchange rate growth at time t , ϵ is the income elasticity of the export demand, z_t is the growth rate of foreign product over time t , and π is the income elasticity of the import demand.

Eliminating the effects of prices and exchange results in Thirlwall's Law:

$$y_{B_t} = \frac{\epsilon(z_t)}{\pi} \quad (3)$$

The essential idea of Equation 3 is that the BP equilibrium growth rate equals the world growth rate weighted by the income elasticities of the demand for exports and imports. Thus, countries that export high income elasticity products and import low income elasticity products tend to grow above the world product growth rate, while countries that export low income elasticity products and import high income elasticity products tend to grow below the world growth rate.

In many aspects, Thirlwall's Law approaches the conclusions of ECLAC's Structuralist thesis (Furtado, 2007; Prebisch, 1962; Singer, 1975). Furtado (2007) stated that the income elasticity differential of exports and imports meant that developing countries, such as Latin America, were always at a disadvantage in international trade relations, which implied a reduction in their domestic demand.

However, in both Thirlwall's law and the Structuralist ideas, the exchange rate has a transitory effect on the economy. As seen from Equation 2, the BP growth rate will rise if the exchange rate increases since $|\eta + \psi| > 1$. If there are no further increases in the exchange rate and other price effects, the equilibrium domestic growth rate trends to the value that is defined by Equation 3, which does not consider any structural exchange rate effect.

It is at this point that the New Developmentalism theory differs from the conventional Post-Keynesian model without denying it. The short-term effects that are

defined by Equation 2 remain valid; however, the exchange rate generates changes in the long-term growth effects, changing the conditions of Equation 3. These elements will be further explained in the following section.

THE ROLE OF THE EXCHANGE RATE IN THE ORTHODOX, POST-KEYNESIAN AND NEW DEVELOPMENTISM VIEWS

Orthodox theory incorporates the exchange rate in its macroeconomic model as an endogenous variable. The implication of this assumption leads the Orthodox theory to advocate a fluctuating, aimless, policy-free exchange rate and growth that is largely financed by external savings (CA deficit). With these assumptions, McCombie and Thirlwall (2004, p.1) state the following: ‘if the exchange rate is endogenous at the present moment, the country’s deficit of payments can never be constrained on output growth because the depreciation of the currency will increase the value of exports and the value of imports’.

Through relative foreign and domestic price movements (real exchange rate changes), the perfect-competition currency market (perfectly fluctuating exchange rate) tends to self-balance since any deficit tends to disappear with exchange rate devaluations. Therefore, any surpluses are removed with the appreciation of the national currency: ‘the current deficit is merely the mirror image of a surplus on the capital account, and therefore current deficits are a sign of economic strength rather than underlying weakness, otherwise capital would not flow into deficit countries’ (McCombie and Thirlwall, 2004, p. 2).

A common approach to the Orthodox idea for modelling fluctuating exchange rates in macroeconomics is to assume that assets from different countries are perfect substitutes, that is, there are no barriers to capital flow – the BP is infinitely elastic relative to interest rates – and so the expected real exchange rate is static. With these assumptions, the domestic real exchange rate must match the real exchange rate of the rest of the world, making no difference that growth is financed with foreign or domestic savings (Romer D., 2000).

With the greater supply of foreign currency and due to being in a floating exchange rate regime, there is an appreciation of the national currency, as the Orthodox model says. However, if the increase in the real interest rate also comes with an increase in the likelihood of debt default due to increased risk, the effect may make government debt less attractive and lead to a depreciation of the currency due to an increased demand for foreign currency. This result will raise the initial debt level, the proportion of foreign currency denominated debt, and the risk premium (Blanchard, 2004). Thus, the BP may not self-balance, as proposed by Neo-classical theory.

Risk ratings and debt limits are associated with both default and inflation history, which defines each country’s debt intolerance (Reinhart et al., 2003). Domes-

tic inflation is responsible for the low credibility of the currency as a store of value. If there is no external credibility, the exchange rate is affected. A sudden reversal in agents' expectations can lead to capital flight and pressure to devalue the currency. This pressure, which is also known as a speculative attack, 'is always an attack on international reserves, regardless of the exchange rate regime' (Prates, 2005, p. 374). Should such an attack occur, to avoid foreign exchange shortages in the market, the central bank will have to carry out traditional type currency swaps, in addition to raising interest rates, which will encourage investors to look for other types of investments (Farhi, 2007).

Thus, the inflation target that is set by the central bank can have perverse effects. An increase in the real interest rate in response to high inflation may lead to a real depreciation of the currency and thereby further inflation since imports would be harmed by creating an external constraint. The low elasticity of inflation in relation to the interest rate and the strong impact of investment decisions question the effectiveness of controlling inflation only through an interest rate policy, as advocated in this targeting regime (Paula et al., 2017).

The Post-Keynesian approach to exchange rate determination is a valuable contribution to understanding its dynamics in the context of international finance and the monetary systems that emerged after the collapse of the Bretton Woods "regime". Foreign exchange under conditions of mobility and international capital flows is increasingly determined by global investor portfolio decisions and are more related to short-term prospects than to long-term economic fundamentals (Paula et al., 2017). Thus, in a monetary economy that is determined by the non-neutrality of money and the principle of effective demand, economic policy can affect the real variables of the economy in both the short and long terms. In other words, a nominal variable is capable of affecting a real variable because changes in interest rates have permanent effects on agents' investment decisions (Arestis and Sawyer, 2006a).

The portfolio demand for currency is a feature of the Post-Keynesian model of currency non-neutrality. Now, in addition to storing wealth, money becomes an alternative asset to capital accumulation in a context with uncertainty. All assets, including currency, have some specific attributes (Keynes, 1936): (1) the quasi-income, q ; (2) the loading costs, c ; (3) the liquidity premium, l ; and (4) the expected appreciation, a . The combination of these attributes determines the interest rate:

$$r_a = a + q - c + l \quad (4)$$

The expected return of a currency is expressed as a trade-off between the monetary returns ($a + q - c$) and the liquidity premium (l). The important thing about this equation is that it reflects how the agent will structure his portfolio, that is, how he will manage his stock of wealth over time. In times of great uncertainty, the value of (q) for all assets falls (except for the currency) and the increased demand for money as a security or in nearby surrogates causes the expected return of that currency to fall; therefore, less liquid securities should pay relatively higher

premiums. The preference for liquidity becomes a crucial determinant of the decisions of agents in a financial market (Prates and Andrade, 2013), where investors will decide whether to buy or sell foreign currency depending on the expected liquidity of securities and their expected returns. Thus, the exchange rate reflects the changes in the speculative positions of agents, which are driven by their expectations and which are strongly interconnected in foreign exchange markets (cf. Harvey, 1999).

The degree of liquidity, according to Andrade and Prates (2013), will be higher if the currency has the international ability to perform its three basic functions: (1) means of exchange, (2) unit of account (denomination of contracts), and (3) store of value (internationally). Thus, there is a rigid monetary hierarchy in which the top currencies have strengthened their international prerogatives while the bottom currencies – peripheral countries – are permanently in danger of being replaced, even in their domestic functions. Cohen (1998) calls this effect monetary inconvertibility.

As Keynes (1944) noted during the Bretton Woods debates, the main features of the international monetary system are the following: (1) the dollar as a key currency, (2) the floating exchange rate regime and (3) high capital mobility. In regard to liquidity, for (1), the dollar is at the top of the hierarchy when currencies are ranked according to their degree of liquidity, which is a Keynesian-Structuralist perspective (Paula et al., 2017). The currencies of other major countries occupy the middle position and are also liquid currencies that are used to denominate contracts on an international scale, as well as serving as a store of value for foreign investors. They pay higher premiums (l), but not as much as the dollar. Finally, there are the currencies of peripheral countries, which are not liquid currencies due to their inability to perform all three functions. These currencies have low liquidity premiums (l), although they may be required according to the expected changes in the values of attributes (a), (q) and (c) in equation (4).

This monetary hierarchy increases the structural volatility in peripheral economies, making them especially vulnerable to capital fluctuations and their money markets increasingly susceptible to volatility in short-term flows. If investors leave the country, this can deteriorate (l), putting pressure on policies to raise interest rates – with the aim of increasing (q) and (a) – and deepening financial openness by removing capital controls to reduce (c). If this policy succeeds, ($a + q - c$) will increase and then compensate for the low (l) (Prates and Andrade, 2013).

This defensive behaviour – raising interest rates – is manifested through attempts to reduce external vulnerability by accumulating foreign exchange reserves a “preemptive demand” for the purpose of meeting unforeseen requirements such as reverse capital flows and/or maintaining a competitive exchange rate under export-based growth policies (Aizenman et al., 2004; Dooley et al., 2005).

In regard to the New Developmentalism macroeconomics, the exchange rate is no longer considered a secondary variable when determining economic develop-

ment, but rather is a “key” variable. Unlike the Thirlwall (1979) model, its effects are no longer transitory but are permanent. The exchange rate can create an external constraint in both the short and long terms if it is not taken into account in the economic policies of the peripheral economies that have already reached the middle-income level.

Moreover, in addition to what was proposed by Andrade and Prates (2013) and Paula et al. (2017), the exchange rate is determined by capital flows and presents ‘a cyclical tendency to overpraise so that companies focused on cannot rely on the assumption that it will remain in relative equilibrium’ (Bresser-Pereira, 2012, p. 10). The policies behind this trend can be considered to be as follows: (i) growth policy with foreign debt, which ignores the high rate of substitution of domestic savings for foreign savings; (ii) the Dutch disease¹ in commodity production oriented countries; (iii) the adoption of a high interest rate level – around which the real exchange rate will fluctuate according to monetary policy – which is justified by the “need” to control inflation with the objective of attracting foreign capital; and (iv) the use of the exchange rate as an anchor to keep inflation on target. Therefore, the exchange rates in developing countries are volatile and they contribute to recurring financial crises and the reduced competitiveness of truly efficient domestic enterprises.

In (i), New Developmentalism opposes the policy of growth with foreign savings and argues that only at very special times, such as when the economy is already growing fast, the marginal propensity to consume falls and the high rate of substitution of internal and external savings is low, is it worth resorting to CA deficits (Bresser-Pereira, 2012). Otherwise, domestic savings can result in development because of the changes in the functional distribution of income, profits, and wages. The functional distribution of income will be better understood after the introduction of (ii).

The Dutch disease (ii) can be characterized as a competitive disadvantage that is associated with chronic exchange rate overvaluation and is caused by the exploitation of abundant and cheap natural resources (Bresser-Pereira et al., 2016). The Dutch disease is considered a market failure because it distorts the exchange rate and generates negative externalities for non-commodity traders, thus harming the development of the country.

Underdeveloped countries that specialize in commodities that suffer from the Dutch disease benefit by using the Ricardian rents from the export of abundant and cheap natural resources. In Ricardo’s model, rents benefit only the most pro-

¹ The model was proposed by Bresser-Pereira when analyzing the case of the discovery of natural gas by the Netherlands in 1960. The country significantly altered its specialization in the production of these goods and the use of such comparative advantages, which led to the appreciation of the exchange rate and the consequent deindustrialization of the gas sector and goods with higher added value in the long run.

ductive landowners, but in the case of the Dutch disease, if these rents are not neutralized and there is an unlimited supply of labour, they will only benefit those who can buy tradable goods cheaper than the prices that would prevail if the exchange rate were in equilibrium, which compromises long-term industrialization and productive sophistication (Bresser-Pereira et al., 2016).

Thus, the Dutch disease creates obstacles to industrialization due to the *spending effect*, which arises when a sharp – but possibly temporary – upward fluctuation in world commodity prices causes a strong appreciation of the local currency. The higher the appreciation, the higher the real salaries and wages and interests, dividends and real-estate rents received will be due to the lower prices of internationally tradable consumer goods relative to the prices of non-tradable services. As a result, corporate profits will fall, either because wages and salaries have risen or companies have lowered their profit expectations on export-oriented investments, and, thus, they will reduce investment. The elasticity of real wages in relation to exchange rate variations will be greater for each household due to the greater marginal propensity to consume and the greater sensitivity of exports and imports to the exchange rate. The profit rate is inversely related to wage rates such that increased wages decrease the profit rate. However, both the actual and expected profit rates depend on domestic and external demand and not just wages.

This is the main point at which Bresser-Pereira differs from Thirlwall, as he demonstrates that the exchange rate defines the BP equilibrium income and also implies a functional redistribution of income.

In (iii), the argument is for the country to keep its interest rate at a moderate level, just slightly above the international level, by carrying out its monetary policy with reference to this relatively low level of interest (Bresser-Pereira, 2016; Bresser-Pereira, Paula and Bruno, 2020). This is because although orthodox a search to legitimize a high *level* for the interest rate around which the central bank conducts its monetary policy, interest rates tend to be high in developing countries to mistakenly attract capitals.² Second, because, in the context of cyclical BP crises to which developing countries are subjected, the sharp rise in interest rates as a means of containing a crisis does not prevent the devaluation of the exchange rate. This situation ends up creating opportunities for speculative capital inflows and sets up the *carry trade*, which occurs when high gains can be acquired by a foreign buyer of domestic securities in a high interest rate framework combined with exchange rate appreciation (Bresser-Pereira et al., 2016).

In (iv), the policy of attempting to reconcile the benefits of low inflation in the long run with the temptation to receive short-term foreign exchange increases uncertainty and reduces the credibility of economic policy, which ultimately makes

² “Mistakenly” because new-developmental economics is critical of the growth with foreign indebtedness policy as it rejects the assumption that the capital inflows originated from the current accounts deficits will finance investment, when they actually finance consumption because, on one side, they reduce the competitiveness of the investment projects in the manufacturing industry, they increase the acquisitive power of consumers.

the exchange a more effective anchor for prices than monetary policy. For Bresser-Pereira (2016), the sum of policies (i), (iii) and (iv) represents exchange rate populism, which is nothing more than the renunciation of long-term economic development due to a preference for immediate consumption.

When there is the Dutch disease, as mentioned in (ii), there are two equilibriums for the exchange rate: the current, which is for commodities; and the industrial, which is for tradable goods and services. The current equilibrium ensures a reasonable profit rate for the producers of commodities, and intertemporally balances the country's TC. Conversely, the industrial equilibrium makes those companies that produce tradable industrial goods and services competitive.

The New Developmentalist model shows that the neutralization of the Dutch disease (making the current and the industrial equilibrium exchange rate to coincide, thus eliminating the competitive disadvantage represented by the disease) is a condition for growth. An import tax and an export subsidy or, alternatively, a variable tax on the exports of the commodities that originate the disease should be applied to neutralize their effects to make them equal (Bresser-Pereira, 2020b). In the case of the tax, commodity exporters would have steady incomes, regardless of the changes in the international price of their products.

In developing countries, the exchange rate, which follows a cyclical behavior, tends to be overvalued within the cycle. If, for that reason or for some other, the exchange rate is overvalued the government may decide to depreciate it by (i) rejecting the growth with foreign indebtedness policy thus eliminating the current account deficit; (ii) by reducing the interest rate; (iii) by the acquisition of reserves, and by (iv) the control of capital inflows.

The initial (short-term) impacts of these measures would be the following: (a) a decrease in real wages and salaries, of the real rentiers' revenues and consumption; (b) an increase in idle capacity; (c) an acceleration of inflation and (d) an increase in the unemployment rate. In the medium term, however, the resulting increase in exports and investment will accelerate the economy's growth rate, thus leading to decreased unemployment and idle capacity, respectively.

Because of the accelerating growth rate and the increase in the rate of capital accumulation – which almost always incorporates new technologies – labour productivity growth accelerates and contributes to a non-inflationary increase in real wages. At the end of the process, the middle-income economy will experience a higher gross domestic product (GDP) growth rate and per capita income, gradually narrowing the gap between its income and those of rich countries. Investment and savings as a proportion of GDP will be higher than before, inflation will remain stable and real wages will be higher than they would have been if the economy had continued the lower growth path (Bresser-Pereira et al., 2016). Figure 1 below summarizes and compares the main characteristics among the economic theories that have been presented so far.

Figure 1: Comparison of the Macroeconomic Views

	Neoclassical	Post-Keynesian	New Developmentalist
BP Equilibrium	Defined by the domestic and foreign interest rate differential. BP balances itself and so there are no restrictions on financing growth with foreign loans.	BP balance depends on the income elasticities differential of exports and imports.	The exchange rate not only defines BP's equilibrium income, but also implies a functional redistribution of income between earnings and wages, affecting the process of capital accumulation and productivity growth.
Equilibrium Exchange Rate when	The exchange rate when the current account is balanced.	When the current-account and the capitals account are balanced.	The exchange rate that makes competitive the capable companies.
Exchange Rate Determination	Endogenous.	Determined by international capital flows.	Determined by the current-account balance and ensuing capital flows; growth with foreign indebtedness policy; Dutch disease; terms of trade.
Exchange Rate Variations	Exogenous shocks generating transient imbalances without long-term effects.	Transitory effect of elevation or reduction of BP equilibrium product.	Permanent effects, with the exchange rate tending to be at lower levels.

Source: Own elaboration.

CONCLUSION

This paper's main purpose was to clarify the differences among the macroeconomic thinking of the Neoclassical, Post-Keynesian and New Developmentalism approaches, mainly concerning the BP equilibrium, the role of exchange rates and the impacts of exchange rate oscillations.

For the Neoclassical theory, the BP balance occurs according to the differential of domestic and foreign interest rates, and the deficit or surplus in TC always self-adjusts to capital movements. For Post-Keynesian theory, the same balance occurs because of a structural relationship between the income elasticities of exports and imports. On the other hand, for New Developmentalists, the result of the BP equilibrium, *i.e.*, the exchange rate, alters the functional distribution of income among

profits and wages, impacting domestic firms' investment capabilities and the productivity growth regime.

The exchange rate is viewed by Neoclassical theory as an endogenous variable resulting from the BP equilibrium; however, Keynesian theory states that this same variable is a result of capital movements. The New Developmentalism approach understands that there are two exchange rates – the current and the industrial equilibrium – that have distinct effects on the distribution of profits and wages, the investment capacity of domestic firms and the economic productivity growth regime. The industrial equilibrium rate is the rate that balances the BP and neutralizes the Dutch disease – an essential point for the healthy growth of these commodity economies.

Finally, exchange rate variations are viewed by Neoclassical theory as transient exogenous shocks with no long-term impacts. For Post-Keynesian theory, exchange rate changes are caused by capital movements and result in short-term BP changes, which may accelerate or reduce the growth rate of the equilibrium product of BP. On the other hand, for the New Developmentalism theory, exchange rate swings have permanent effects because they change firms' ability to invest, the productivity growth regime, whether these firms will have competitive access to international trade and whether they need foreign or domestic savings to finance their activities.

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