

The New Developmentalism and productive sophistication

Novo Desenvolvimentismo e sofisticação produtiva

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RESUMO: O objetivo deste artigo é apresentar a escola macroeconômica do Novo Desenvolvimentismo e sua produção sobre a sofisticação produtiva. Os procedimentos metodológicos técnicos priorizados pela pesquisa foram bibliográficos e documentários. A metodologia é predominantemente descritiva, de modo que a pesquisa objetivou estruturar e definir o modelo teórico do Novo Desenvolvimentismo, mapeando-o. O artigo está dividido em duas seções. A primeira seção apresenta os principais preceitos do Novo Desenvolvimentismo; a segunda seção enfoca a produção da escola sobre sofisticação produtiva. Por fim, a conclusão contextualiza e explica os estudos descritos, expondo algumas hipóteses e questões.

PALAVRAS-CHAVE: Economia do desenvolvimento; Novo Desenvolvimentismo; sofisticação produtiva.

ABSTRACT: The purpose of this article is to present the New Developmentalism school and its production about productive sophistication. The technical methodological procedures prioritized by the research, in this way, were bibliographical and documentary. The methodology is predominantly descriptive, so the research aimed at structuring and defining a theoretical model, mapping it. The article is divided into two sections. The first section presents the main precepts of New Developmentalism; the second section focuses on the production of the school about productive sophistication. In conclusion, the research sought to contextualize and to explain the described studies, exposing some hypotheses and questions.

KEYWORDS: Development economics; New Developmentalism; productive sophistication.
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INTRODUCTION

From the rise of Getulio Vargas to the presidency (1930-1945), Brazil initiated a national development strategy which the first studies of the economic development of the Economic Commission of the United Nations for Latin America and the Caribbean (ECLAC-UN) confirmed be the right choice. Brazil and in several other countries of the region there was a large process of import substitution industrialization justified with the nascent industry argument. As Brazil had a weak accumulation of capital, then the State should be the main catalyst for the development of the economy. During this period, customs taxes that neutralized the Dutch disease and guaranteed a competitive exchange rate, and a strong State investing in the infrastructure and in the production of basic inputs represented an expressive saving effort that coordinated the entire development process.

This process began, without a built theory, in the 1930s, and consolidated with ECLAC, in the 1950s; gained support with the studies of *Instituto Superior de Estudos Brasileiros (ISEB)* in the same period; it was rethinking – with the studies of Dependency Theory – in the 1960s; and collapsed in the mid-1980s with the fiscal and external crisis of Latin American countries. According to Bresser-Pereira (2016a), the developmental State's presence in Brazil went through different stages: (i) The National People's Pact (1930-1960); (ii) The Authoritarian-Modernizing Pact (1964-1985); (iii) The Liberal-Dependent Pact (1989-2003), iv) The attempt of a People-Democratic Pact (2003-2016).

It is verified that during the periods without an established pact, Brazil always goes through political-social disruptions. At present, the country is without a national project agreement. Since 2000, however, the development studies in Brazil have been trying to present a new theoretical-argumentative foundation for the establishment of this new developmental pact. Among the proposals presented¹, the theory that is most well-structured, due to the academic production around macroeconomic dynamics, is the New Developmentalism.

The purpose of this paper is to present the school of New Developmentalism and the role of productive sophistication within the strategy. The present paper sought to perform an analytical investigation on the various studies of New Developmentalism, seeking to present the main precepts of the theory. The technical methodological procedures prioritized by the research, in this way, were bibliographical and documentary. The methodology is predominantly descriptive, so the research aimed at structuring and defining a theoretical model, mapping it. There-

¹ The main developmental currents in Brazil today are: New Developmentalism and Social Developmentalism. The first one is represented, especially, by the research developed at the *Centro de Estudos do Novo Desenvolvimentismo da Fundação Getulio Vargas (FGV)*. The main authors, to date, are: Bresser-Pereira, Nelson Marconi, Paulo Gala, Yoshiaki Nakano and José Oreiro. The second is concentrated in the economics school of the *Universidade Estadual de Campinas (Unicamp)* and has as main articulators, Marcio Pochmann, Guido Mantega, Pedro Paulo Zahluth Bastos, Ricardo Carneiro, Ricardo Bielschowsky, Luciano Coutinho, André Biancarelli and Aloizio Mercadante.

fore, it was not sought to answer questions or test hypotheses, but rather to measure the academic and scientific production on the proposed theme. The proposal is to enable a more unified vision of the universe and productive scope of New Developmentalism, generating hypotheses or ideas by virtue of logical deduction and providing opportunities for future work and contributions.

The article is divided into two sections. The first section presents the main precepts of New Developmentalism; while the second section focuses on the production of the school about productive sophistication. In conclusion, the research sought to contextualize and explain the studies, exposing some hypotheses and questions.

NEW DEVELOPMENTALISM: INVESTMENT AND EXPORT-LED GROWTH STRATEGY

The New Developmentalism has its mark with the studies of Luiz Carlos Bresser-Pereira, former finance minister and emeritus professor at Getulio Vargas Foundation (FGV). The first time the term New Developmentalism was presented to the public by Bresser-Pereira was in the publication of the paper entitled *O Novo Desenvolvimentismo* in the newspaper *Folha de S.Paulo*, on September 19, 2004. However, the thought was presented in a structured way in 2006 in the article: *O novo desenvolvimentismo e a ortodoxia convencional* by Bresser-Pereira. The New developmentalism presents itself as a new national development project with equity and social justice, based on the recovery of the nation concept and combined with the Keynesian and structuralist theoretical foundation.

According to Bresser-Pereira (2016a; 2018), New Developmentalism can be thought in two different ways: (i) as a school of economic thought with origins in the classical political economy, the Keynesian economic theory, and the classical developmentalism; and (ii) as an economic and political organization, corresponding economic management style as an alternative to the economic liberalism. As an economic theory, it is concerned with explaining development, in the sphere of organization it endeavours to execute economic policies, aiming for the development of a nation.

While Celso Furtado, Maria Conceição Tavares and many other structuralist-Cepalist writers debated the relevance of the internal market in the incentive to investment, the New Developmentalism starts from the Keynesian assumption that growth and full employment are related to rigidity of aggregate demand, being necessary to take advantage of the available resources to increase the country's supply capacity. For the New Developmentalism, growth in the periphery is not limited only by the deterioration terms of trade, but by two structural tendencies: (i) tendency to overvaluation of the exchange rate, and (ii) tendency of the wage rate to grow less than productivity. The New Developmentalism differs from National Developmentalism by: greater openness of international trade, greater private

investment in infrastructure, and greater concern for macroeconomic stability (Bresser-Pereira, 2016b).

Furthermore, the New Developmentism also incorporated the negative experience of growth based on external indebtedness (i.e., debt-led or two-stage approach), a model adopted in Brazil at the end of the 20th century, which caused exchange rate instability and the balance of payments crisis. Economic growth in New Developmentalism must be financed by internal savings (public and private). Fiscal policy can be used to stabilize the level of economic activity since it respects the inter-temporal solvency of public accounts and the autonomy of the government against the financial rentiers. Regarding the distribution of income, the government can act directly by investing in human capital, expressive taxation in the transfer of wealth between generations and the expansion of social benefits (Bresser-Pereira & Gala, 2010).

For Mollo and Amado (2015), the New Developmentalism can be divided into two groups of thinkers: the precursors of Structuralist development macroeconomics and the post-Keynesians². The first one is represented, especially, by developed researches at the *Centro de Estudos do Novo Desenvolvimentismo* of FGV. The main authors, until the moment, are: Bresser-Pereira, Nelson Marconi, Paulo Gala, Yoshiaki Nakano and José Oreiro. They defend orienting the economy towards the external market, by increasing the investments, decreasing the interest rates and, above all, by establishing a competitive exchange rate. The second one has its base on the *Instituto de Economia da Universidade Federal do Rio de Janeiro*. The main names are: João Sicsú, Fernando José Cardim de Carvalho, Luiz Fernando de Paula and Renaut Michel. The latter group agrees with the exchange rate issue, which is the main focus of the precursors of the Structuralist development macroeconomics, though their studies emphasize the interest rate. While the precursors are looking at the external market, the post-Keynesians are researching about Brazilian economic vulnerability due to the volatility of inflow and outflow of capital (Mollo & Amado, 2015).

For the precursors of the Structuralist development macroeconomics, the external market is the best way to maintain sustainable long-term growth, so that potential output would be the result of investments driven by export demand. According to Bresser-Pereira, Oreiro, and Marconi (2016), the rate of expansion of exports is the one that defines the rate of growth of the availability of production factors and the pace of technological progress.

The second group of the New Developmentalism, the post-Keynesian school, has as its central concern the flow of capital and the external vulnerability of an open economy. The key variable for post-Keynesian New Developmentalism is the interest rate and the role of uncertainty in the functioning of the Finance-Invest-

² Paulani (2017) places post-Keynesians closer to Social Developmentalism than to New Developmentalism. However, we believe that the key value for categorizing Social Developmentalism is the wage-led growth model. For post-Keynesians the interest rate is the key variable and not the wage.

ment and Saving-Funding circuit (FISF). The two strands of New Developmentalism accept the Keynesian conception of complementarity between State and market. It takes a coalition among the productivists, the State bureaucracy, the middle sectors and the workers to reassume the front of the State that was left secondary by rentier capitalism.

The concern with macroeconomic stability, on both counts, goes beyond the maintenance of a responsible fiscal and monetary policy, covering uncertainties related to future demand and the maintenance of aggregate demand. The two groups argue that macroeconomic prices should remain balanced since their misalignments necessarily influence all sectors and investment decisions in an economy. The main contrast between the two New Developmentalism schools is the priority between the exchange rate and the interest rate as the primary source of investment expansion. In addition, the precursors of the Structuralist development macroeconomics have until now, a more solidified, mature and accentuated theoretical-methodological and argumentative construction. The section thus attributed greater distinction to precursors.

Markets are fundamental to the process of economic development and excellent coordination institutions in competitive environments, being efficient in defining prices and quantities produced for private goods and services in this case. However, the achievement of a market equilibrium value for so-called macroeconomic prices, so-called because they affect without exception all sectors and investment decisions in an economy, will not necessarily imply greater economic growth with equity. The new development theory classifies five prices in this category: the exchange rate, the interest rate, the wage rate, the inflation rate, and the profit rate, the latter being strongly influenced by the previous ones (Marconi, 2017, p. 100).

Therefore, the New Developmentalism of the Structuralist Macroeconomics does not support the protectionism of the trade balance as the *cepalinos* preached and neither does the increase of the demand with the valorization of the salaries above the productivity. The argument is that this can cause: a reduction in profits, a drop in investments, unemployment and inflation. The New Developmentalism proposes an active exchange rate policy and the strengthening of the internal market through the promotion of exports, that is, they adopt an investment and export-led growth strategy aiming at the competitive integration of the country into the world system (Bresser-Pereira 2016a, 2018).

The basic diagnosis of New Developmentalism strategy is that peripheral countries with abundant natural resources present a chronic tendency to overvaluation of the real exchange rate. This happens due to the export of commodities; at the same time, that differential of domestic and international interest rates promotes financial instability. The model, with a significant influence from the experience of Southeast Asia, a region that had countries catching – up recently, understands,

therefore, that macroeconomic stability is related to a moderate interest rate and a competitive, floating and managed exchange rate (with the Central Bank associated with the Ministry of Finance), to ensure control over public accounts and over external accounts, respectively.

For the New Developmentalism, the variation in commodity prices in peripheral countries makes the industrialization process unfeasible due to the Dutch disease. According to Bresser-Pereira (2016a, 2018), Dutch disease can be characterized when a country suffers from the long-term overvaluation of the exchange rate. This occurs because their commodities are benefiting from Ricardian rents and/or subject to price booms, so they can be exported with a profit at an exchange rate (industrial equilibrium) that is substantially more appreciated than the exchange rate necessary for companies of non-commodity goods. With the Dutch disease, the nominal or market exchange rate fluctuates around a lower balance, the current one, impeding or hindering the industrial sector to be competitive.

This tendency towards the appreciation of the exchange rate in peripheral countries is structural. In developing countries, it does not vary in a well-behaved manner in the orbit of a natural equilibrium rate, as conventional theory assumes, nor in a volatile manner, as stated by Keynesians. It is not the market, but the balance of payments crises that are responsible for its economic cycles. Bresser-Pereira and Gala (2010) argue that the cycle of the balance of payments crises begins with a crisis that depreciates the exchange rate violently. This one that was below the current equilibrium, when the cycle began, depreciates categorically, and then begins to appreciate mainly by two structural factors: first, the Dutch disease takes it to the level of current equilibrium, and, then, the capital flows – attracted by the differential of rate of return and internal and external interest rates – continue the path of appreciation to a current account deficit.

For that reason, the Structuralist Macroeconomics of New Developmentalism claims that without the neutralization of the Dutch disease, the country does not industrialize or suffers from constant periods of deindustrialization, forcing the regressive specialization of production. Development, therefore, would only be feasible with the adoption of measures to combat the Dutch disease. To Bresser (2016a, 2018), the main action in this attempt is: the imposition of variable tax on commodity exports. The tax must be equal to the difference, in national currency, of the two equilibrium exchange rates.

This tax increases the cost of foreign currency (thereby increasing the value of foreign currency), and makes it equal to industrial equilibrium, thus neutralizing the Dutch disease. In other words, the tax shifts the supply curve in relation to the exchange rate (not relative to the international price that is assumed constant) up to the industrial level, as the commodity producers will only now be willing to produce the same that demand was absorbing if the exchange rate were correspondingly depreciated (Bresser-Pereira, 2016, p. 228).

Furthermore, there is a distinction in the New Developmentalism literature between the current equilibrium exchange rate and the industrial equilibrium exchange rate. For Bresser-Pereira and Marconi (2010), the first is defined as the rate that intertemporally balances the country's current account and the second as the rate that enables the profitability and competitiveness of other productive arrangements that are not the cause of the Dutch disease. This current equilibrium exchange rate is possible because of the Ricardian rents exported by the commodities sector and that acts as an obstacle to the development of sectors that do not have the same economic Ricardian rents. Thus, a new equilibrium exchange rate is required, the so-called industrial equilibrium exchange rate, which would be more devalued than the previous one. As a consequence, the severity of the Dutch disease can be methodologically defined by the difference between the current and industrial-equilibrium exchange rate and divided by the commodity export price. According to Bresser-Pereira (2012):

$$g = (e_i - e_c)/x$$

e_i = industrial equilibrium exchange rate

e_c = current equilibrium rate

x = the export price of the commodity

Consequently, the New Developmentalism established a methodology for calculating the industrial equilibrium exchange rate. According to Marconi (2012), the necessary condition for this to occur is that there is an equality of its marginal income (from industry) with that of its competitors. In manufacturing production, the main cost of production is labour, differing from the production of primary goods which are more natural-resource intensive and less labour-intensive. To Marconi (2012):

$$P_{TRAD} = M + AVC \tag{1}$$

Assuming that: $m = \frac{M}{P_{TRAD}}$

$$P_{TRAD} \frac{1}{1-m} * AVC \tag{2}$$

$$AVC = \frac{W}{\lambda} \text{ or unit labor cost (ULC)}$$

P_{TRAD} = price of tradable manufactured goods

m = markup on the average unit cost, calculated as a percentage of the price

AVC = average unit cost

W = wage rate

λ = labor productivity

For Marconi (2012, p. 660), “A key condition for producers to continue to compete in foreign markets is that $ma = mb$, where a = all other competitors in the international market. b = producer (exporter) in the country in question”.

According to Marconi and Rocha (2012), the level and fluctuations of the exchange rate affect the competitiveness of a country in foreign markets, the rate of return of several sectors, the composition of aggregate demand, investments, and finally the growth rate. This happens because, according to the authors, the exchange rate is a relationship between the prices of tradable and non-tradable goods. A competitive exchange rate, in this way, is fundamental for economic development because it places the whole external market at the disposal of genuinely competent national companies from an administrative and technological point of view. If economic development is a function of the investment level, a competitive exchange rate stimulates export-oriented investments and a consequent increase in domestic savings. Besides encouraging the investments of companies that incorporate technology into the production process, which would not be competitive internationally if the exchange rate is chronically overvalued.

It is important to mention that, according to Oreiro and Marconi (2014), the exchange rate devaluation of the new-developmental strategy, at first, would involve a redistribution of income in favour of profits, worsening the share of wages and the functional distribution of income. As investments raised trade surpluses, they would also continue to contribute to raising domestic savings. The fall in interest from higher domestic savings would promote a decrease in financial expenses, reducing income concentration. In turn, the concentration promoted by the exchange rate adjustment to the level of industrial balance, if lasting, would favour a shift in the productive structure toward more complex and sophisticated sectors, leading to an acceleration of the pace of growth in labour productivity and consequently of workers' wages.

For Bresser-Pereira (2018), by lowering interest rates and making the exchange rate competitive, workers will, in the short term, lose their purchasing power over wages. However, in the medium term they will be rewarded with increased employment, and in the long run with increasing productivity and hence wages. The adjustments proposed by New Developmentalism are not intended to fall only on workers, such as the adjustments of conventional orthodoxy, they aim, above all, to reach rentier capitalists and promote productivist capitalism. The devaluation of interest and exchange reduces the purchasing power of interest, dividends and rent, thus reducing the value of its wealth and the rate of return of the rentiers and the financial market. “So the heterodox economists, who defended the short-term interests of employees, and liberals, representing rentiers and financier interests, end up forming a tacit political coalition ‘against devaluation’” (Bresser-Pereira, 2018, p. 57).

Presumably, it is suggested that for the New Developmentalism of structuralist macroeconomics, a competitive exchange rate that guarantees conditions of the competition is fundamental for technological and economic development. The model highlights that the counterproductive effects of currency devaluation can be

offset by progressive income taxes and distributed profits. The improvement in the trade balance of goods and services would expand the demand for labour and contribute to the increase in wages and the households saving rate afterwards. The industrial exchange rate and the consequent concentration of income on profits would be the starting point for increasing the supply of savings, promoting, as a result, the promotion of investment, technological advancement, and then recovering employment and wages in order to increase collective well-being (Bresser-Pereira, Oreiro & Marconi, 2016).

It is possible to affirm the New Developmentalism is a growth and development strategy geared, above all, to countries that have already passed the first phase of the industrialization process, have average income levels and a certain balance of payments, that is, nations that must overcome the middle-income trap. In this scenario, Thirwall (1979) shows how the medium-term growth depends on the ratio between exports and the income elasticity of imports. Long-term growth, in turn, is determined by the expectation and expansion of aggregate demand driven by exports. The aggregate demand consists of two components: the autonomous demand and the induced demand. The first consists of that part of the aggregate demand independent of the level/variation of income, employment and production. The second, on the contrary, depends on these levels. In the long term, the growth rate is determined by the autonomous demand, since the induced demand adjusts to the expansion of the level of income and production (Oreiro, 2012).

In open economies, autonomous demand is constituted by government spending and exports as a result of fixed capital investments being determined by the agents' future expectations and institutional confidence factors. Considering also the limitation of bank credit present in the peripheral countries, consumption does not integrate the autonomous demand, because, basically, it depends on the wages, the level of income and the level of employment. The growth rate of consumption, in this way, is equal to the income growth rate, as well as in the Solow neoclassical model. It is therefore defined that the long-term growth rate will be a weighted average between the rate of growth of government spending and the rate of growth of exports.

In relation to globalization, for the New Developmentalism, it can be an opportunity to boost wealth creation. Global financialization, however, is capable of interfering harmfully for middle-income countries, because it generates the loss of exchange rate control, so the New Developmentism does not defend the opening of the capital account. The model advocates integration with the world market, but is attentive to State solvency and external vulnerability. The insertion of these countries in the world system should be through the exports of manufactured goods and not mainly through the export of commodities (Bresser-Pereira, Oreiro & Marconi, 2016).

For that reason, Bresser-Pereira and Gala (2010) affirm that the orthodox thesis, that the developing countries need to use external savings to reach growth, is false. For the authors, capital inflows cause the substitution of the domestic savings by the external one when provoking the appreciation of the local currency. This has as consequences: an artificial increase in wages and consumption, national

companies are disconnected from world demand, foreign companies become more competitive in the domestic market, increase foreign debt, deindustrialization occurs, ergo reproduces and deepens dependency. According to Bresser-Pereira (2016a), developing countries lack the technologies of central countries, this knowledge is welcome, but not the flow of foreign capital. The foreign indebtedness policy interest rich countries, rentier capitalists and financiers. As a result, the author advocates the importance of a fiscal surplus policy that guarantees the levels of domestic savings necessary to promote investment in export industries.

Another fundamental aspect in the New Developmentalism is it believes that industrialization *per se* does not provide the economic development of peripheral countries. In fact, the problems of social inequalities have not been softened by peripheral industrialization. Thus, a strategy of both productive transformation and social equity is needed to reconcile sustainable productivity growth with an improvement in income distribution (Sicsú, Paula & Michel, 2007).

A quick examination of reality is able to prove this inseparability between state and market so that one can promote a life in society with happiness. [...] It is also part of a development strategy that the government should implement macroeconomic policies capable of generating a sense of security for entrepreneurs to be stimulated to undertake large investments that are profitable and generate income and jobs (Sicsú, 2008, p. 146).

This does not mean that the State should not have an industrial policy or make direct investments. The economic and political organization of Capitalism, for Bresser-Pereira (2017a, 2018), has to be neither in the Liberal model nor in the State model. A Developmental model is needed. For the New Developmentalism, the State must make investments in the infrastructure and basic input sectors. Bresser-Pereira (2018), moreover, does not rule out that the State has to intervene in competitive sectors also to promote, for example, an industrial infant capable of generating productive sophistication.

The industrial policy of the New Developmentalism must not be a purely protectionist policy. Industrial policy, according to Bresser-Pereira (2018), has to stimulate strategic industrial sectors or tradable services for the country, with the capacity to generate productive sophistication and aiming at external demand. Thus, the State does not only have the function of guaranteeing property and contracts, as defended by orthodoxy. The State, for New Developmentalism, has to ensure the general conditions for the good growth of the economy such as promoting investments in Research and Development (R&D), planning and investing directly and indirectly in infrastructure and basic inputs, establishing a strategic industrial policy that helps companies to become competitive in the foreign market and defends a relatively high tax burden to finance the extensive social services of the welfare state. It is important to emphasize that the New Developmentalism rejects fiscal deficit and also defends public management and managerial reforms.

In other words, the State has to make possible both expansionary macroeconomic policies – for example, the promotion of full employment in recessive contexts – and defensive policies – such as reducing sensitivity to exchange rate crises. The other policies (industrial, commercial, tax) should also stimulate insertion and international competitiveness but also seek to alleviate income inequalities through progressive taxation. Sicsú, Paula and Michel (2007) warn, however, that minor inequalities must remain both in the rate of profit and in compensation for work, after all, companies and individuals have different capabilities.

We can say that New Developmentalism defends an investment and export-led growth strategy, which that impact positively in the innovation capacity and productivity of the economy, and turns it able to export of manufactures in the “state of the art”. In the meantime, wages must grow together with increased productivity, thus not compromising the external competitiveness of exporting companies. According to Bresser-Pereira (2018), developing countries need to take advantage of low wages relative to rich countries. Encourage the export of manufactured goods as you defend from the unilateral occupation of the domestic market by multinational companies attracted by the appreciated exchange rate and that promote current account deficits.

With regard to the macroeconomic tripod, the New Developmentalism suggests some modifications. It presents the contributions of post-Keynesian monetary and fiscal policy with the objective of full employment, financial stability and prices. Fiscal policy must be guided by the rules of the balanced public budget and governed by the inflation targeting regime. According to the authors, chronic fiscal deficits constitute fiscal populism. Developmental macroeconomics value the long-term balance of public spending, countercyclical action, and the maintenance of public debt at a reasonable level.

Thenceforward, the New Developmentalism focuses on the equilibrium of the five macroeconomic prices: exchange rate, interest rate, wage rate, inflation rate and profit rate. For Bresser-Pereira (2015, 2016, 2018) the level of the exchange rate must guarantee the entrepreneurs’ access to internal and external aggregate demand; the interest rate must provide financing costs and opportunities that are lower than their profitability; the wage rate has to accompany productivity; the rate of inflation must remain at levels that avoid the reduction of society’s purchasing power and economic disorganization; finally, the profit rate, strongly influenced by the previous ones, must allow the amount of investment necessary for the growth process, varying according to the stage of the development process of each society.

It is verified that instead of monetary stability, a major goal of orthodox policies, the New Developmentalism focuses on “stable development macroeconomics.” This includes State regulation of interest rates, exchange rates and wages, allowing the reduction of uncertainties regarding future demand. The imposition of capital controls is also necessary to reduce external vulnerability to external shocks and the volatility of foreign capital flows. These objectives require complementarity among monetary, fiscal, exchange and wage policies and their respective influences on interest rates, exchange rates, wages and inflation. In addition to the inflation

target, the Central Bank should pursue employment and foreign exchange targets. It would be incumbent upon the State, through its economic policies, to promote the increase of internal savings at first, replacing sources of external financing. By maintaining inflation targets while proposing an investment and export-led growth strategy, the New Developmentalists attribute inflation control to State savings, primary surpluses, and payment of the external debt. In this strategy, the degree of productive specialization and the technological content of exports are what define the dynamism of the export sector and the pace of growth in the long term.

In consequence of all explain, we can suggest that for, the New Developmentalism, the State needs to be managed efficiently and responsibly to align the five macroeconomic prices (exchange rate, interest rate, wage rate, rate of inflation, and rate of profit, the latter being strongly influenced by the former), thus combating the Dutch disease and the excessive inflow of foreign capital. The State must be strong in order to regulate the economy, stimulating an equally strong market and a financial sector that is at the service of development, not of speculative (rentier capitalist) activities. The State must also adopt a progressive tax system that reduces income inequalities and promotes the improvement of industrial competitiveness and Brazilian foreign insertion.

PRODUCTIVE SOPHISTICATION IN THE NEW DEVELOPMENTALISM

Strategies on economic development can be summarized – with all the risks implicated in one summary – in two major ones. The first places Institutions as the basic cause of economic development; the main formulators of this Institutional current are Thorstein Veblen, Ronald Coase, Oliver Williamson, Douglass North, Daron Acemoglu and James Robinson. The second strategy of economic development is based on the Productive structure, so it is necessary to adopt an economic policy capable of providing structural change. The main authors are Rosenstein-Rodan, Arthur Lewis, Gunnar Myrdal, Hans Singer, Michael Kalecki, Albert Hirschman, Raúl Prebisch, Celso Furtado, Dani Rodrik, Ha-Joon Chang, Mariana Mazzucato, Erik Reinert and Bresser-Pereira.

According to Bresser-Pereira (2016), economic development necessarily implies industrialization or structural change or productive sophistication. For the author, the three expressions are practically synonymous, he, also, uses the terms “industrialization in the broad sense” and “productive technosofistication” (Bresser-Pereira, 2016, p. 113). Thus, the strategy of economic development via a structural transformation of the economy can be defined as the strategy of productive sophistication.

Productive sophistication, for the New Developmentalism, is the process of increase in productivity and of the value-added per capita associated to the use of the best technology in the world, which requires more educated workers and engineers and, correspondingly, higher wages and salaries. Therefore, productive sophistication is beyond industrial diversification. Sophistication is related to the

improvement in the quality of products and processes, thus involving investment and R&D, marketing, logistics, design, services and production engineering. The goal is to stimulate productivity enhancements or expansion of related activities and tasks, for example, the evolution of a primary specialization to the primary processing industries, technological leaps and/or expansion of the creative sector.

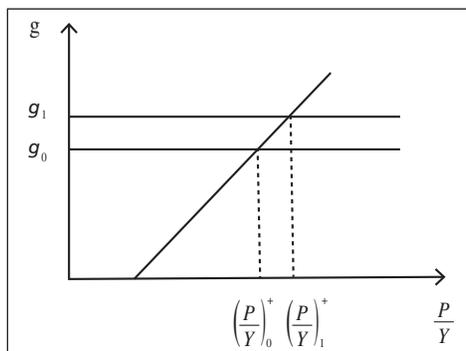
To Bresser-Pereira, Oreiro and Marconi (2016), this movement is the key to the process of economic development, since the increase in per capita income is not only guaranteed by increasing the intra-sectoral productivity (production of the same goods and services). Per capita income is strongly driven by the increase in the average productivity of the economy through productive structural change, that is, the direction of production to sectors that generate greater added value. For the authors, these sectors are: manufacturing (industrial transformation) and technologically sophisticated services.

In other words, the State needs to stimulate the sophistication of production through an economic and industrial policy capable of transferring productive resources and labour force from the traditional or subsistence sector to service and manufacturing sectors that are on the technological frontier. The positive spillover of productive sophistication (spillover effect) in an economy generates accelerated growth in labour productivity and long-term economic development.

According to Oreiro (2016), the ratio between the income-elasticities of exports and imports depends on the level of productive specialization of the economy. Central economies of original development have a ratio among the elasticities in question that is higher than that prevailing in peripheral economies of national-dependent and primary-exporting development. For the author, one way of measuring the productive specialization of an economy is the participation of the industry in the Gross Domestic Product (GDP)³. In general, the greater the share of manufacturing in GDP, the greater the degree of productive sophistication, hence the greater the ratio among income elasticities. Consequently, as productive sophistication materializes greater will be the participation of manufacturing in the country's GDP, increasing the ratio between the income-elasticities of exports and imports and raising the growth rate. With the growth of autonomous demand intensified by the greater dynamism of the export agenda, resulting from the greater productive sophistication of the economy, entrepreneurs would expand their investments. In addition to the expansion of investments, there would be a propensity to save from an increase in profit margins. This shift in the distribution of income in favour of profits would result in an increase in the saving rate, allowing the adjustment of the guaranteed rate of growth in the long term.

³ Another possible way to measure production sophistication could be by distributing the total value added of a product between the involved production and marketing activities. However, this information is not available and there are only specific industry analyzes.

Figura 1: Effects of Industrialization on Growth and Income Distribution



Source: Oreiro, 2015, p. 96.

New Developmentalism seeks to reorient productive structure through a recovery of foreign competitiveness and, consequently, by increasing the productive sophistication and the profitability of the sectors producing tradable goods. According to Marconi (2015) and Marconi and Brancher (2017), the path to productive sophistication necessarily involves the establishment of five macroeconomic prices at adequate levels and the recovery of public savings. Among the five macroeconomic prices, interest rates and exchange rates, for the authors, influence the profitability of all tradable goods and the trade balance of manufactured goods. Therefore, the State should focus on administering these rates “would be a first step for the country to retrace its path for long-term development” (Marconi, 2015, p. 63).

Further, for the developmental macroeconomics, technical progress or increased productivity in the same goods and services already produced would not be able to promote catching-up. The specialization in low value-added sectors does not result in real wages increases and improved living standards. Besides, the sophistication, according to Bresser-Pereira (2017b, 2018), is not only in productivity but also in the labour force employed in production. More skilled workers and technicians would provide increased value-labour as the cost of reproducing the workforce increases, causing sophistication to occur. Because of this, investment in human capital is so important to economic development when thought of on the supply side.

While conventional orthodoxy defends the theory of comparative advantage developed by the economist David Ricardo and the Heckscher-Ohlin model – as main strategies of international trade – the New Developmentalism asserts that integral development only occurs with the transfer of labour for more technologically sophisticated goods and services that pay higher wages, implying higher per-capita added value. According to Bresser-Pereira (2016):

Strictly speaking, the law of comparative advantage in international trade is mere economic reasoning, is not a law confirmed by the histori-

cal experience of the countries in its international trade relations. [...] It is an elegant reasoning, but it is not a law or an economic trend that can guide the economic policy towards the attainment. Besides not cope with the Prebisch thesis, is a short-term thinking, and therefore, is worse than useless, it's harmful to the understanding of the economic development process (Bresser-Pereira, 2016, p. 113).

For Kaldor (1966), the industry is the engine of long-term growth due to four fundamental characteristics of the industrial sector: i) increasing returns to scale; ii) linkage effects forward and backwards in the production chain; iii) receiver and diffuser of technological progress and iv) higher income elasticity of exports. Along the same lines, Oreiro and Marconi (2014) affirm that the industry plays an extremely strategic role. When analyzing the value-added/employment ratio – the relevant measure of productivity in a modern economy – it is found that the value of this ratio for the manufacturing industry is approximately three times greater than that prevailing in the production of agricultural and extractive commodities. When a transfer of productive factors from the manufacturing industry to the primary sector is observed, a regressive specialization typical of countries suffering from deindustrialization caused by Dutch disease, a process of reducing the average productivity of the entire economy, and hence of the level of their investment and growth happens.

According to Bresser-Pereira, Oreiro and Marconi (2016), in a first phase, poor and pre-industrial countries usually developed when local or foreign entrepreneurs exploit and export abundant natural and cheap natural resources, taking advantage of Ricardian rents that they provide. In this first phase, commodity exports enable the primitive accumulation of capital and the construction of infrastructure for the flow of production. Even at this stage, the State fining as an entrepreneur can boost industrialization by taxing exports, neutralizing the Dutch disease and adopting a strategy of import substitution industrialization, thus guaranteeing the demand for intermediate products.

This import substitution phase should be brief because it implies that productive efficiency is declining as more and more sectors are protected. It tends to start with the protection of manufacturing industries, where the country can achieve satisfactory productivity, but over time the substitution extends to increasingly sophisticated and capital-intensive industries and, as a consequence, there may be a fall in the rate of profit and the near stagnation of the economy [...] (Bresser-Pereira, Oreiro & Marconi, 2016, p. 21).

In the second phase, the country has subsistence or traditional sectors with modern sectors. It is a “dual” society, where traditional sectors, usually concentrated in agriculture and rudimentary services, coexist with the more advanced sectors present, especially in the manufacturing and technologically sophisticated

services sectors. In this way, the country becomes a middle income and a semi-periphery. In this phase, according to Bresser-Pereira, Oreiro and Marconi (2016), there are problems of insufficient demand. This is because there is a concentration of income due to an unlimited supply of labour and wage increases below productivity. The shortage of buyers, in a short period of time, can be compensated by the demand of the techno-bureaucratic middle class and liberal professionals. These demand for luxury consumer goods, boosting the domestic market, further intensifying the concentration of income. Entrepreneurs' profit rates are high, but the level of aggregate demand is still insufficient to stimulate savings and investment.

It is at this stage that, according to the authors, the country can no longer depend solely on protected domestic demand to continue to grow and industrialize. The country needs to seek foreign markets for its manufactured products via an investment and export-led growth strategy. The flow of capital coming from exports would make it possible for the formation of domestic savings and private investments in productive sophistication. The State, in turn, has the role of providing a safe environment for the adoption of such a strategy, as well as increasing its investments in social policies, education and research, indirectly increasing wages by sophisticating labour-value.

I propose, however, that there is a third and powerful argument for real wages to grow in capitalist development: the argument of the labor-value law. [...] In rich countries, average wages continue to reflect the labor reproduction cost to a large extent, but today it is substantially higher than the level of subsistence due to the increasing sophistication of the production and distribution of goods and services. [...] We already know that companies can pay their workers a salary higher than subsistence level without compromising a satisfactory rate of profit. But what salary will you pay, and why will you pay your workers, technicians, and managers different wages? The reason is simple and obvious: because wages correspond to the labor value needed to reproduce each type of work. Because the salary is proportional to the qualification or sophistication of the workforce. Because the cost of reproduction or the labor-value of the various types of work-investment in health and especially in education-it is all the greater the more technologically and administratively sophisticated the work is (Bresser-Pereira, 2017b, p. 13).

As a result, for the New Developmentalism, the manufacturing exports and, subsequently, the increase in household income would change the composition of supply, leading to productive sophistication. Changes in the composition of supply would stimulate investment in innovation and training, ensuring increasing scale incomes in accordance with the Verdoorn Law (1949)⁴. Thus, new gains in terms

⁴ Verdoorn's Law states that in the long term productivity usually grows proportionally to the square

of productivity would arise due to the impact on prices and the quality of products and services and the continuity of investments in the productive sector to the detriment of speculation ones. This would strengthen the influx of demand for technologically sophisticated manufactures and services. Demand and offers would interact in order to contribute continuously and jointly to raising income and to productive sophistication. Demand changes according to Engel's Law⁵, giving a change in the composition of production, hence supply and positively pressing demand (Marconi, 2015).

The New Developmentalism adopted the concept of productive sophistication to make clear that to produce sophisticated services, which pay higher salaries, is as good as to produce sophisticated manufactured products. For Marconi (2015), there are two types of services: outsourcing and the "servitization". The first is associated with activities of reduced productivity, while the second is correlated with greater technological content, providing greater sophistication, requiring more qualified labour and generating higher added value per capita, for example, those linked to the Creative Economy. For the New Developmentalism, although rudimentary services are relevant to many Latin American countries, they do not have the capacity to leverage growth due to their reduced technological content and per-capita added value. On the other hand, the more complex services, linked to creative and technologically sophisticated sectors present an essential role for increasing productivity and generating higher added value, because it comes from the use of sophisticated machines and equipment that are developed by the transformation industry as demonstrated by Triplett and Bosworth (2001) and Djellal and Gallauj (2010).

On what depends on economic growth for New Developmentalism? It depends, on one hand, on capital accumulation, and, on the other, of the technological capacity of the workers in producing more sophisticated goods capable of competing for external and internal demand. However, such capacity is not independent of the public and private investment process. In addition to ensuring the general conditions for good economic growth, the State must plan and invest directly and indirectly in infrastructure and basic inputs, maintain the equilibrium of the five macroeconomic prices, establish a strategic industrial and R&D policy and expand the welfare state services.

root of production. That is, the rate of growth of production would cause changes in the productive structure and composition of demand, making possible the reformulation of production processes, as well as the implementation of new products. The result of these transformations would translate into significant productivity gains. Mathematically represented: $\rho = \alpha + bQ$. Where ρ is the growth of labor productivity, Q is the product growth (value added), b is the Verdoorn coefficient and α is the growth rate of exogenous productivity.

⁵ Engel's Law describes how the pattern of household consumption in a particular good or service changes according to family income. The income elasticities of household demand are distinct and vary as income changes. For example, the poorer a family is, the larger the portion of the budget allocated with food (Chái & Moneta, 2010).

CONCLUSION

Initially, the New Developmentalism took prominence in the academic debate from the diagnosis of Dutch disease, its impact on the process of the deindustrialization of the Brazilian economy and its respective posology related to the exchange rate of industrial equilibrium. Recently, the advances of the structuralist development macroeconomics have reinforced the developmental proposal based mainly on the equilibrium of the five macroeconomic prices (exchange, interest, wages, inflation and profits). However, as presented throughout the paper, productive sophistication is essential for the success and sustainability of an investment and export-led growth strategy. To have the industrial equilibrium as a target for exchange rate policy only makes sense if the country counts with manufacturing companies whose productivity is in the “state of the art”.

The New Developmentalism, moreover, has managed to put the spotlight on the importance of a democratic developmental project in Brazil nowadays. The text sought to better understand the vision of this economic current. In the first section, it can be verified that the theoretical structuring of New Developmentalism is still under construction, and the areas of International Economics and Microeconomics are still poorly developed. Nevertheless, some important points of the theoretical framework are already with well-founded studies, such as the issue of the exchange rate and interest rate. The significant observance of the instability of the five macroeconomic prices given by the New Developmentalism, particularly the work carried out at the *Centro de Estudos do Novo Desenvolvimentismo*, makes this the best-structured field of the proposal so far. This explains the concentration of research in the studies coming from this Center.

In the second section, the research operationalized the concept of productive sophistication according to the authors of the New Developmentalism. By collecting the bibliographic data for the research, it was evidenced that industrial policy is placed as a subsidiary, but strategic, role by the school. The administration and dynamization of macroeconomic policies are prioritized to achieve productive sophistication. These, for the New Developmentalism, are responsible for generating more qualified, higher-paid and formalized jobs, energizing the economy, increasing per capita income, allowing Brazil to break with underdevelopment and overcome the middle-income trap.

The second section, also, demonstrated that industrial policy would be constituted much more through implicit policies derived from this sphere of macroeconomic stability than as a priority sector. An economy is only able to turn increasingly sophisticated if it creates good opportunities for investment – if its expected rate of profit is satisfactory to the business entrepreneurs. That is the reason why New Developmentalism so much importance of a macroeconomic policy that keeps the five macroeconomic prices at adequate levels; that is why it attributes the semi-stagnation of the Brazilian economy since 1990 to the exchange rate-interest rate trap. However, the State has to plan and invest directly and indirectly in infrastructure and basic inputs, in education and R&D and expand social security.

The pursuit of increased productivity is related to industrialization since Kaldor (1966) highlighted its impacts on increasing returns to scale, productive linkages, technological progress, and greater income-elasticity of exports. Recent experiences of technological catching-up have shown the need for an active industrial policy, which directs the efforts of productive sophistication to the most dynamic sectors. The productive sophistication, also, has to occur not only in production but also in work. Consequently, in order for the process of capital accumulation and the incorporation of technical progress to result in structural changes in the economy and in the increase of consumption patterns of a nation-state, we can suggest that it is necessary to advance on which industrial sectors would benefit from the economic policies proposed by New Developmentalism, what its needs and its limits.

Recently, the Structuralist development macroeconomics has advanced enough in the debate about macroeconomic policies from the post-Keynesian models of growth and income distribution regime. This literature allowed to quantitatively measure the importance of technology-related productivity advancement, especially in the export manufacturing sector. However, the productive sophistication still has a qualitative character, that is, even with an industrial equilibrium exchange rate, which sectors of the domestic industry are able to compete in the international market increasingly financialized, globalized and integrated by global value chains? How will the technological advance take place? The New Developmentalism theory indicates that the State would play an important role, but it does not categorize in detail how this would be. How and where would the State act in industrial policy and in the promotion of technology research and development?

Innovation is by nature unpredictable, but the recent history of modern industrialization shows us the need for certain basic capacities that allow the economy to at least participate in the technological race. In this sense, evolutionary economics and its concepts of cumulative circular causation, innovation and technological paradigms can be very useful in the investigation of which industrial sectors are most feasible in the current stage of industrialization of the Brazilian economy. Institutional controls are another necessary tool to police the use of public money and generate confidence in society. Last but not least, the advances in Creative Economy, with its concern for sustainability and building creative cities, as well as the precepts of production organization and social technology of Solidarity Economy, can be of great value if incorporated into the rhetoric of the New Developmentalism.

In consequence of all explain, one of the hypotheses raised by the article is that the New Developmentalism has a theoretical framework relatively consolidated in the macroeconomic issue, but an abstract view in politics of productive sophistication. Neo-Schumpeterian and institutionalist literature, as well as studies in Creative Economy and Solidarity Economy, can be a way to help the New Developmentalism in the elaboration of a public policy aiming at productive sophistication.

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