Structuralist Development Macroeconomics Research Group

DEVELOPMENT MACROECONOMICS BULLETIN

2022 | VOL 2 Nº 1

PRESENTATION

To contribute to the international economic debate, guided by the plurality of ideas, the Structuralist Development Macroeconomics Research Group (SDMRG) organized the **Development Macroeconomics Bulletin (SDMB)**. This bulletin is a periodic electronic publication with the objective of presenting a technical analysis of the main themes related to the study objectives of the SDMRG, such as:

- Growth and Distribution in Post Keynesian Models

- Growth, Infrastructure and Convergence Clubs

- Financial Gragility and Business Cycles

- Developmental Macroeconomics

- Stock-Flow Consistent Models

- Monetary Policy, Exchange Rate Regime and Sustainability of Public Debt

Formally, the publications will be divided into two main axes, macroeconomics, and development. the articles will be more objective in relation to a traditional scientific paper. In this way, the analyzes will be more in-depth than a newspapers article, however, adding readers who are not specialists in economics.

SUMMARY

EDITORIAL

The year 2021 lights up the hope of a new direction with the positive result of vaccination in the fight against Covid-19, which brings comfort to humanity, and even tranquility for governments to implement actions for this resumption period. However, the military conflict between Russia and Ukraine has been generating a global impact on the economy since both countries play a role in the world economy with a significant share in the production of oil, wheat, and corn, among other products. The projections of the IMF's World Economic Outlook (WEO) report are that in 2022 the global Gross Domestic Product growth will be lower and inflation higher than was projected at the end of last year.

The SDMRG, aiming to contribute to the international economic debate, presents the second edition of the Development Macroeconomics Bulletin (DMB). The bulletin is divided in two main axes, macroeconomics, and development.

The macroeconomic axis account with three articles, the first of which discusses public debt in the euro zone, written by Jesus Ferreiro and Carmen Gomez. The second one presents and discusses the impacts of the Russia-Ukraine conflict on the dollar hegemony, written by Júlia Leal and Luiz Fernando de Paula. And the third one argues about the structure of the external sector 40 years after the beginning of the Latin American debt crisis, by Carlos Carrasco.

The research axis on development consists of four articles. The first discusses neoliberalism in the Brazilian economy focusing on the profit rate and institutional change, written by Adalmir Marquetti, Eduardo Filho, Alessandro Miebach and Henrique Morrone. The second one argues about the vulnerability of the industry in Brazil, especially in the health complex, as it depends on technology and basic industrial raw materials from other countries, written by Eliane Araújo and Samuel Peres. The third paper analyzes the profitability of large non-financial companies and brings policy recommendations to resume growth and reduce the financialization of companies, written by Carmem Feijó and Leandro Monteiro.The fourth paper questions whether it is possible to explain uneven development through misallocation or inefficient allocation of resources, written by José Oreiro.

Therefore, in a comprehensive way and with the collaboration of several leading researchers in their areas, we make public the second edition of the Development Macroeconomics Bulletin, based on the main themes related to the objectives of the investigation of the Structuralist Development Macroeconomics Group (SDMRG).

We wish everyone a good reading!

Mateus Boldrine Abrita
Development Macroeconomics Bulletin's Editor

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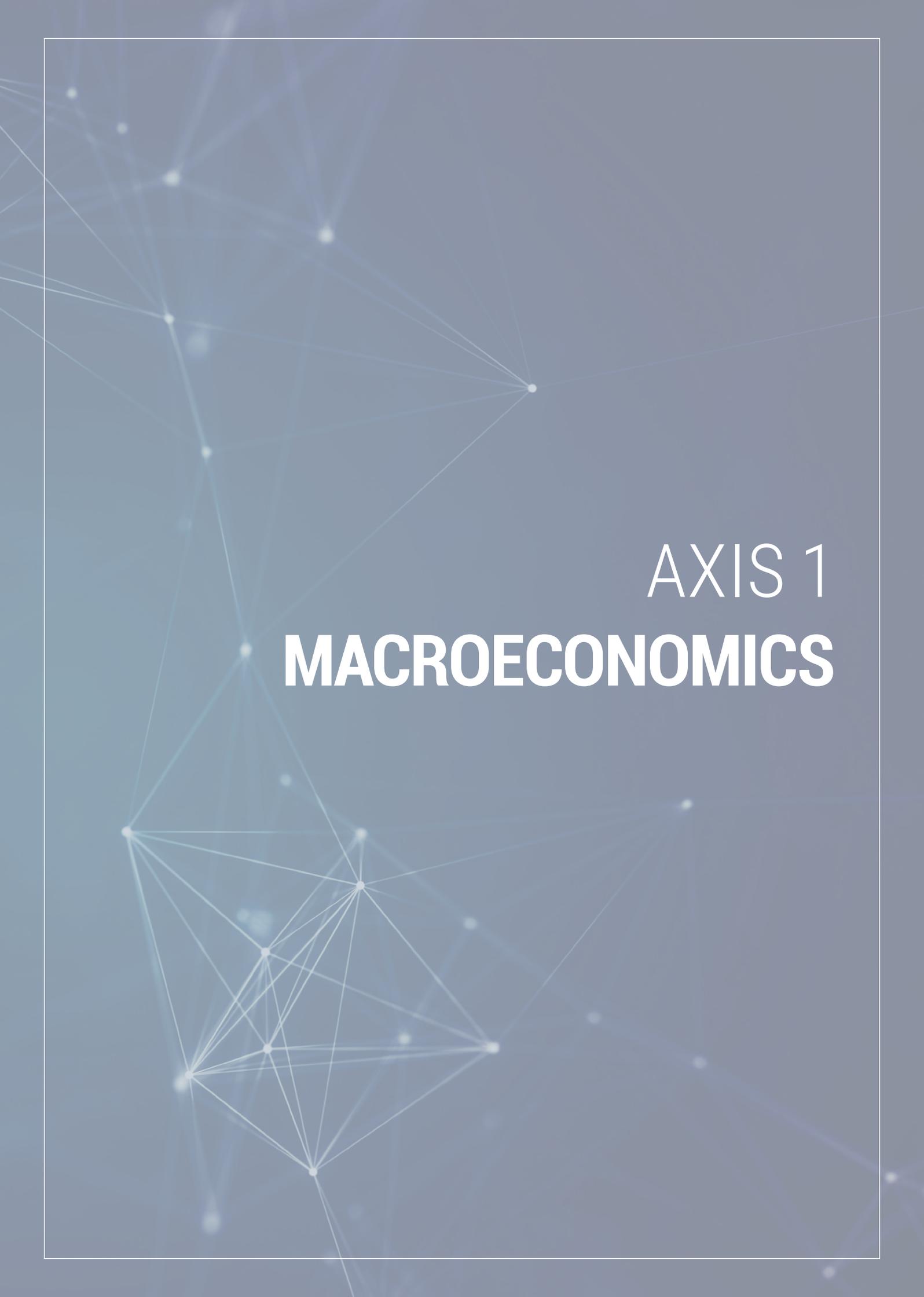
AXIS 1
MACROECONOMICS

THE PROBLEM OF RULES ON THE SIZE OF PUBLIC DEBT IN THE EURO AREA

Jesus Ferreiro Aparicio and Carmen Gomez[1]

As it is well known, the fiscal rules governing the European Monetary Union were established in the Maastricht Treaty (signed in 1992) and in the Stability and Growth Pact (signed in 1997), as well as in the subsequent measures approved by the European Union in the past decade: the Directive on Requirements for budgetary frameworks of euro area countries (known as the "Six Pack") approved in 2011, the Treaty on Stability, Coordination and Governance in the Economic and Monetary Union (of which the so-called "Fiscal Compact" forms part) approved in 2012; and, finally, the so-called "Two Pack" (two regulations that regulate the procedure for the supervision of budgetary plans and measures for the adjustment of excessive deficits in the euro area countries) approved in 2013[2].

Although most of the fiscal rules refer to the control and supervision of budget balances, with the aim of preventing government deficits from exceeding the 3% of GDP limit, the fiscal rules also set limits on the maximum size of general government gross debt. Thus, the Maastricht Treaty included among the nominal convergence requirements to be met by the candidate countries for membership of the European Monetary Union or euro area, that the size of government debt should not exceed the threshold of 60% of GDP. However, public debt above this reference value did not automatically mean that this imbalance would be defined as an excessive deficit and, therefore, being subject to sanctions, since the Treaty itself stated that if the size of public debt was in a process of being reduced "at a satisfactory pace towards the reference value" of 60% of GDP, this situation would not be classified as an excessive deficit. On the other hand, the assessment of government deficit and debt data was also to take into account "whether the government deficit exceeds government investment expenditure as well as all other relevant factors, including the medium-term economic and budgetary position of the Member State" (Article 104C of the Treaty on European Union).

The lack of specificity and ambiguity of the concept of a "satisfactory pace" of government debt adjustment to the reference level led the Stability and Growth Pact (SGP) to specify that a government debt above 60% of GDP would not imply an excessive deficit if the difference between the existing debt and reference value is reduced by 1/20th per year (or on average over a 3-year period).

The Stability and Growth Pact also introduced elements of flexibility in assessing the budgetary situation of euro area member states that allowed for adverse and unexpected economic factors to be taken into account. In this regard, within the framework of the "Two Pack", the "Regulation 473/2013 on common provisions for the monitoring and assessment of draft budgetary plans and for the correction of excessive deficits of euro area member states" adopted in 2013, established that a debt above 60% of GDP would not be considered an excessive deficit as long as this imbalance was generated by a severe economic downturn. Furthermore, it was established that a state did not

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breach the criterion of approaching the size of debt to the 60% of GDP reference value set out in the SGP as long as this occurred "solely because of unfavourable cyclical conditions".

Figura 1. Gross public debt (percentage of GDP at market prices, excessive deficit procedure)
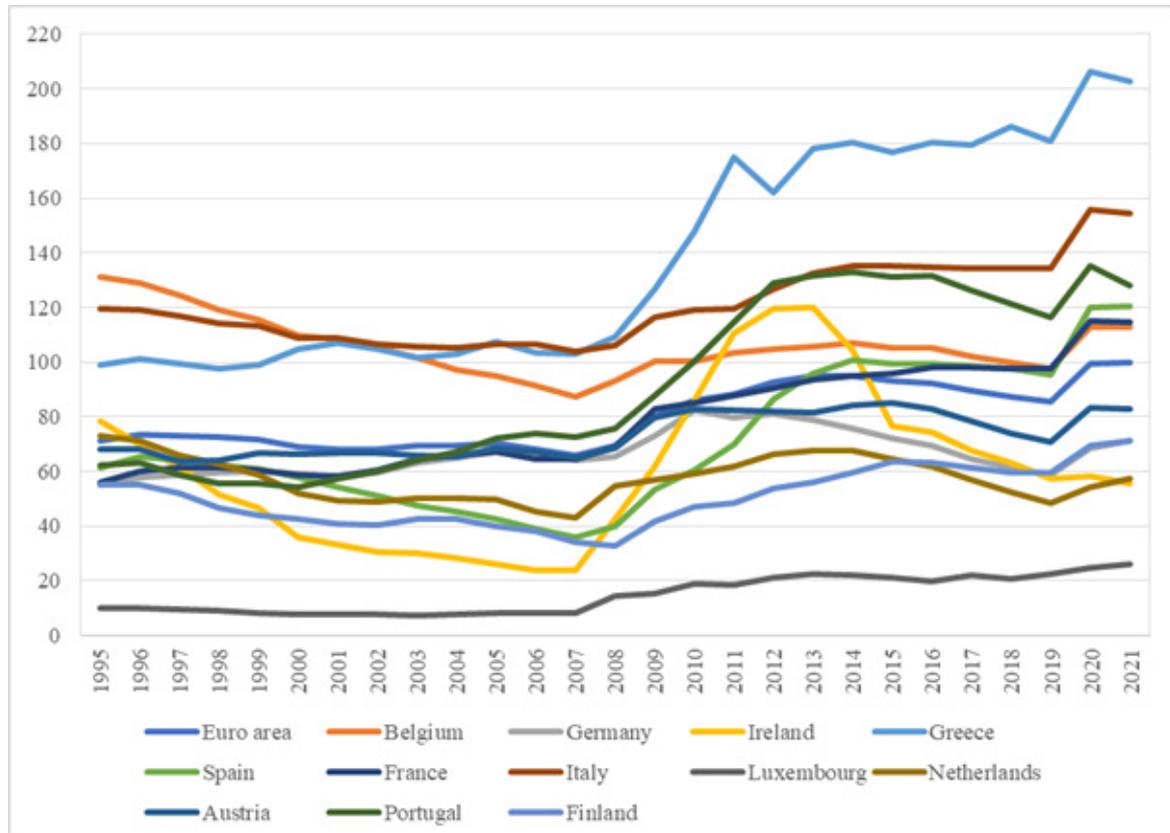
Source: AMECO Database.

The flexibility established in the Maastricht Treaty and the Stability and Growth Pact when assessing the criterion of the size of public debt made it possible for most of the countries that joined the euro area in 1999 and 2001 to do so even though their public debt exceeded the reference value (see Figure 1). Thus, only five out of the first twelve countries to join the euro area (Germany, Ireland, Luxembourg, Finland and Portugal) had a public debt below 60% of GDP in the year prior to joining.

The creation of the monetary union led to a process of reduction of public debt in the euro area, so that public debt in the euro area fell between 1999 and 2007 from 71.5% to 65.9% of GDP, with a particularly significant decline in countries such as Belgium, Spain, Ireland, the Netherlands and Finland. However, the outbreak of the Financial Crisis in 2007-2008 and the subsequent Great Recession gave way to a generalised increase in the stock of public debt, in all cases entering a situation of unsustainability or explosiveness. In 2014, the stock of public debt in the euro area peaked 95.1% of GDP, with Belgium, Ireland, Greece, Spain, Italy, Cyprus and Portugal recording public debt stocks above 100% of GDP.

Although almost all euro area countries started in the middle of the last decade, albeit to a small extent, to reduce their debt levels, the outbreak of the Covid-19 pandemic and its huge economic impact caused public debt to reach its historical peak in 2021, reaching 100% of GDP in the euro area, with seven countries above that figure (Belgium, France, Greece, Spain, Italy, Cyprus and Portugal), and with only five (Ireland, Latvia, Lithuania, Luxembourg, and Netherlands) registering a debt stock below the reference value of 60% of GDP.

As discussed in Ferreiro and Gomez (2021), at the beginning of 2020, the European Union embarked on a process of reviewing its macroeconomic policy strategy and economic governance framework. Behind this review process was a growing consensus on the need to review the general macroeconomic policy framework in force in the European Union, both the monetary policy strategy designed by the European Central Bank as the fiscal rules in force in the euro area. Although the review of the monetary policy strategy finished in July 2021[3], the review of the fiscal policy strategy process was early suspended because the outbreak of the Covid-19 pandemic[4]. The crisis generated by the pandemic led to the suspension of the fiscal rules in force in the European Union in view of the imperative need to tackle the economic effects of the pandemic through the unprecedented use of fiscal stimulus measures. The aim was to finish this review process by 2023, although the current uncertainty generated especially by the war in Ukraine is likely to delay the finalization of the review process.

It should be noted that before the process of revising the overall macroeconomic policy framework was launched, there was already an intense debate between those in favor of maintaining the fiscal rules in force and adopting reforms to ensure compliance and those who defended the need for a substantial reform of these rules. Thus, the latter argued that a large part of the economic problems of the European Union, in general, and the euro area especially the low economic growth, were a direct consequence of the austerity policies derived from those rules.

At present, the substantial increase in fiscal imbalances resulting from the effects of the Covid-19 pandemic, as well as a growing consensus on the need for, and effectiveness of, active fiscal policy measures, especially in contexts of deep economic crisis, seem to tip the balance in favor of a reform of the current fiscal rules that would provide national fiscal policies with greater flexibility.

This includes the proposal made by the French President and the Italian Prime Minister in December 2021, as well as the proposal made in April 2022 by the Spanish and Italian Finance Ministers, both of which seem to call for a far-reaching reform of the current fiscal rules. The goal would be to reconcile the objectives of economic growth and job creation with the long-term sustainability of public finances, trying to avoid the mistakes made during the financial crisis when the austerity policies generalized in Europe from 2010 onwards ended up generating a new economic recession. But in what direction can a reform of the fiscal rules affecting the behavior of European public finances go, both as regards the rules on government deficits and the rules on the size of government debt?

It is reasonable to think that the new fiscal rules on government deficits would imply a looser interpretation about the circumstances that allow for a deviation of budget imbalances (whether measured in real or structural terms) from the reference values to be set for government deficits that should be generated under "normal" circumstances. This greater flexibility in the interpretation of the circumstances (and duration) that allow government deficits to deviate from the reference values (regardless the maximum possible size of government deficits or the level of the budget balance that should be generated in normal circumstances), would provide fiscal policy in the euro area with the necessary flexibility to act in a counter-cyclically way, without necessarily changing the current reference values.

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3   See the European Central Bank's website: https://www.ecb.europa.eu/home/search/review/html/index.en.html

4   See the European Commission's website: https://ec.europa.eu/info/business-economy-euro/economic-and-fiscal-policy-coordination/economic-governance-review_en

Figure 2. Number of years with gross public debt being above 60% of GDP (1999-2021)
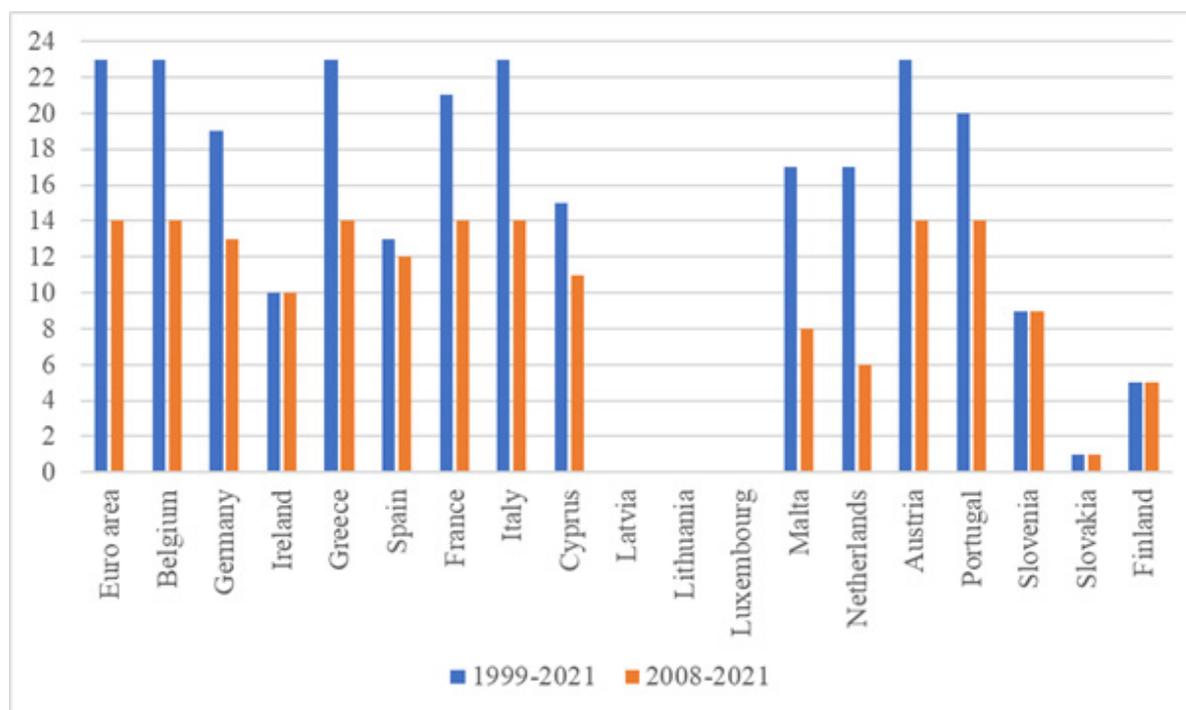
Souce: our estimations based on AMECO Database.

A different issue concerns the rule of public debt. As figure 2 shows, non-compliance with the rule has been widespread in practically all euro area countries, a non-compliance that has been accentuated since 2008. In fact, only three countries (Latvia, Lithuania, and Luxembourg) have complied with the public debt criterion since 1999. The dimension of this non-compliance is even more evident if we calculate the percentage of years in which the debt exceeds the reference value with respect to the total number of observations (number of countries times number of countries) excluding the three compliant countries. Thus, in these 16 countries during the period 1999-2021, public debt has exceeded 60% of GDP in 71% of the cases, while in the period 2008-2021 this percentage would have reached 77% of the cases.

It is clear that the current situation of public debt in the euro area is unsustainable in the long term[5], hence the need to adopt measures to ensure its sustainability and to reduce its current levels. However, this need must not jeopardise the economic recovery. As the European Commission acknowledges, "the Commission is of the view that starting a gradual fiscal adjustment to reduce high public debt as of 2023 is advisable, while a too abrupt consolidation could negatively impact growth and, thereby, debt sustainability" (European Commission 2022).

The problem, therefore, that arises about the public debt rule is that of maintaining the current reference value of 60% of GDP. On the one hand, experience clearly shows how difficult it has been for euro countries to comply with it. On the other hand, there are doubts as to whether this criterion can serve as a reference for the future or whether, on the contrary, another different reference value for the size of public debt, higher than 60% of GDP, should be approved.

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5   The situation would be highly worrying in a scenario of slowing economic growth and rising interest rates, as seems at the time of writing (April 2022) given the pick-up in inflation rates and the deterioration in growth prospects, resulting, among other factors, from the war in Ukraine.

Figure 3. Projections of the size of gross public debt (% of GDP)
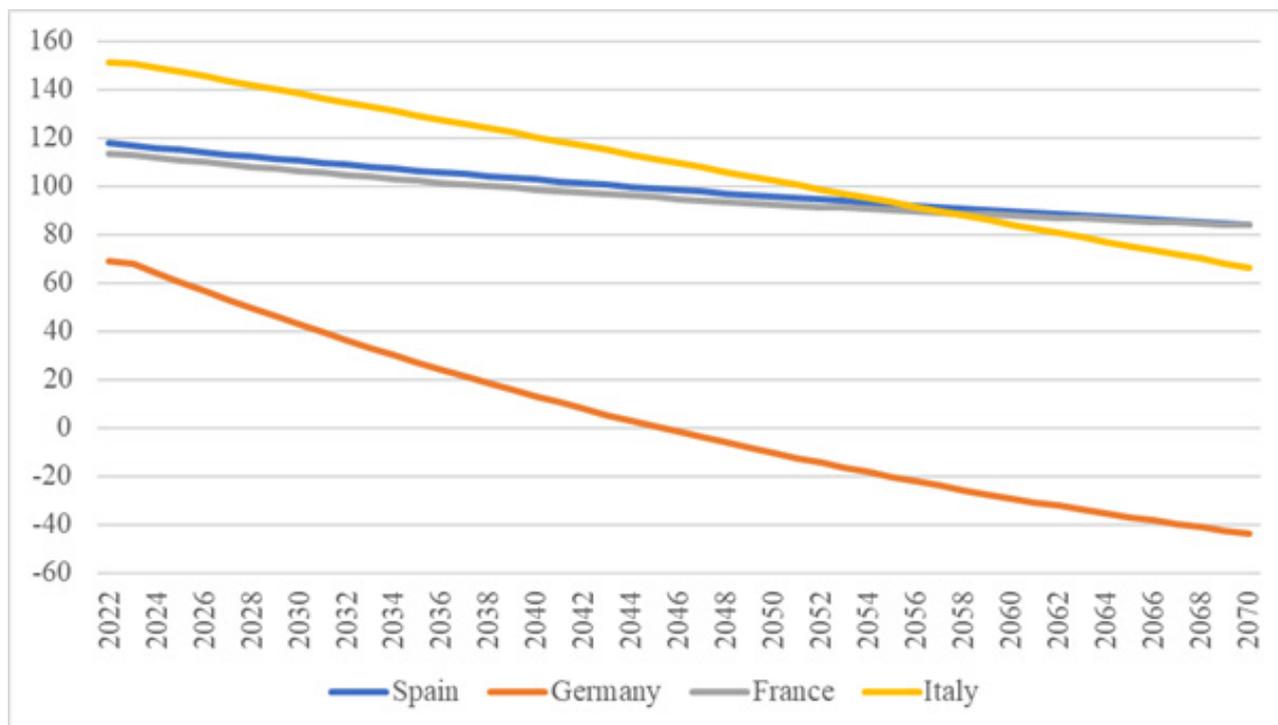
Source: our calculations.

Figure 3 shows a projection of the evolution of the size of the gross public debt of the four largest euro area economies up to 2070. The data for the years 2022 and 2023 are those included in the European Commission's Autumn 2021 European Economic Forecast (the latest available to date). Developments from 2024 onwards have been estimated on the basis of the formula that determines the growth of public debt (as a percentage of GDP):

$$\Delta B_t = (G_t - T_t) + (r_t - y_t)B_{t-1}$$

Where ΔB_t is the increase of gross public debt in year t, (G_t-T_t) the primary deficit in year t; (r_t-y_t) the difference between the implicit real interest rate of public debt and the growth of rate of real GDP in year t, and B_{t-1} the stock of gross public debt in year t-1.

To make this projection, we have assumed that the economic growth rate over the entire period 2024-2070 will be that recorded in 2019, before the outbreak of the covid-19 pandemic, that the budget balance will be that recorded in 2019, and that the implicit real interest rate on public debt will be that which would have been recorded in 2013. Table 1 shows the starting data for the projections for the years 2024 to 2070.

Table 1. Data used in the projections of the evolution of public debt

	Spain	Germany	France	Italy
GDP growth rate (%)	2.1	1.1	1.8	0.4
Primary budget balance (% of GDP)	-0.6	2.3	-1.6	1.8
Real implicit interest rate of public debt (%)	0.8	-1.2	-0.5	0.4

Figure 3 shows that, according to our projections, only Germany would meet the 60% of GDP public debt criterion from 2026 onwards. On the contrary, neither France, Italy nor Spain would reach that figure in the period under consideration. These projections would make it unfeasible to maintain the figure of 60% of GDP as the reference value for the size of public debt in a foreseeable reform of the fiscal rules, as this would mean accepting the effective non-compliance of three of the four largest economies in the euro area.

It could be assumed that such a non-compliance might not be considered an excessive deficit if countries were on a path of reducing the size of public debt, for example, if under the current criterion, states were to reduce annually by 1/20 the difference between the current size of public debt and the 60% of GDP reference value. However, to fulfil this criterion would require a considerable fiscal adjustment, with uncertain economic, social and political consequences.

Figure 4 shows, assuming we maintain the economic growth and debt interest rate figures used in our projections (see table 1), the projected primary budget balance that would need to be generated each year to ensure that the excess of public debt over the reference value of 60% of GDP is reduced by 1/20 per year.

Figure 4. Primary budget balance required to annually reduce in a 1/20th the excess of public debt
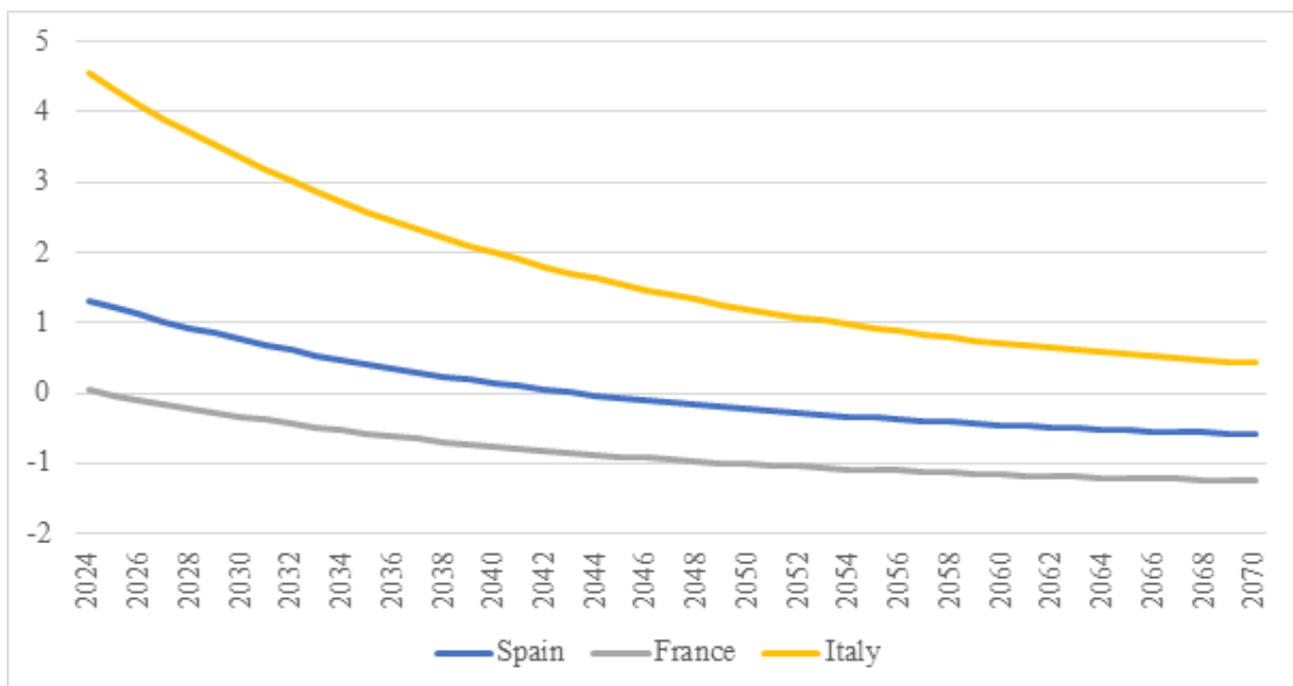
Source: our calculations.

Our projections show that Italy should record permanent primary surpluses, which should be above 2% until 2040. In the case of Spain, primary surpluses should extend until 2043, while France could run primary deficits until 2050 but below 1% of GDP. To assess the magnitude of the fiscal effort this would entail, suffice it to point out that for 2022 the European Commission forecasts a primary deficit in Spain of 3.1% of GDP, 4.2% of GDP in France, and 2.9% of GDP in Italy. In any case, it should be noted that all three countries would have public debt stocks above 60% of GDP in 2070.

Consequently, the reference value of 60% of GDP should be discarded, and, in any case, a value should be set that is realistic and achievable by all states. A figure equal to or close to 100% of GDP would be reasonable. However, this figure, according to our projections, would not be reached in Spain until 2044, in France until 2039, and in Italy until 2052 (see Figure 3). Thus, the fiscal rule on public debt should be accompanied by the necessary flexi-

bility, both to ensure that countries can comply with them over a long-term time horizon, and to take into account the possibility of external shocks that could push public debt above the reference values over relatively long periods.

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THE IMPACTS OF THE RUSSIA-UKRAINE CONFLIT FOR THE DOLLAR HEGEMONY

Júlia Leal[1]
Luiz Fernando de Paula[2]

1. Introduction

The current International Monetary System (IMS) has a hierarchical character, in which the dollar is the main currency, and its supremacy has been uncontested until now, even though its participation in transactions between countries and as a store of value has declined in recent years. The United States still holds military, cultural, and financial dominance over the rest of the world. As a result, it is able to formulate policies according to domestic objectives and its actions reverberate over other nations, taking advantage of the fact that it is the issuer of an internationally accepted currency, in what has become known as "exorbitant privilege".

On the other hand, China, as the world's second largest economy, plays a crucial role in trade flows and has been increasing its relevance in financial markets. After the 2008 financial crisis, the Chinese government decided to boost the internationalization of its currency. Renminbi ('the people's currency') is the official name of China's currency, while the yuan is its unit of account. There was a strategy to gradually establish another reserve currency that could compete with the dollar and restructure the IMS. Thus, the systemic instability caused by the financial crisis that started in the United States in 2007/08 was the gear needed to expand the use of the renminbi (RMB).

To reduce dependence on US-controlled financial payment systems, China launched in 2012 the CIPS - "Cross-border interbank payment system" - which reached US$7.1 trillion in transactions in 2021, aggregating 1,200 participants, a volume still low compared to the SWIFT system, which has 11,000 members from more than 200 countries.

In 2019, the U.S. dollar had an 88.3% share of global foreign exchange market turnover, followed by the euro (32.3%), Japanese yen (16.8%), and pound (12.8%). The RMB, on the other hand, accounted for 4.3%[3]. In terms of the world's foreign exchange reserves, in Q4 2021, the US dollar accounted for 58% of total reserves (up from 71% at the end of the 2000s), while the euro 20%, yen 0.7%, pound 0.6% and RMB only 0.3%[4].

2. Recent Episodes: the Russia-Ukraine Conflit

The current conflict between Russia and Ukraine appears to be yet another standoff between the White House and the Kremlin. Since the beginning of the invasion of Russian troops into Ukrainian territory, US President Joe Biden has been leading a series of sanctions, with economic impacts observed not only in Russia, but also

throughout the global economy. Among the economic sanctions adopted by the United States against Russia are the freezing of part of the foreign exchange reserves (about US$ 300 billion of the country's US$ 630 billion reserves) and the exclusion of Russian banks from SWIFT, the system of payments between financial institutions coordinated by the central banks of the ten largest economies in the world. Between 2/28/22 and 3/1/22, the ruble depreciated about 30%, forcing the Russian central bank to raise its interest rate from 9.5% to 20% p.a.[5]

China has close relations with Russia, particularly with regard to the adoption of an antagonistic stance towards the United States. In terms of foreign trade, China has established itself as the main destination for Russian exports (about 15% in 2019), and Russia is the second most important source of oil for China. Among the partnerships between these two countries, one can highlight the Shanghai Cooperation Organization (SCO), which was established in 2001 with the aim of strengthening regional integration among member countries (China, Russia, Kazakhstan, Kyrgyzstan, Tajikistan, and Uzbekistan) by promoting political, economic, commercial, technological, and cultural cooperation. In addition, the organization seeks to establish a new international political and economic order[6]. In effect, the SCO represents a protection against U.S. influence.

Initiated in 2013 by Chinese President Xi Jinping, the Belt and Road Initiative (BRI) is a program that seeks to deepen economic integration among countries along the Silk Road. Although the BRI is a global initiative, the primary focus is on countries in Asia, East Africa, Eastern Europe, and the Middle East. In economic terms, the participating countries account for more than a third of the world's GDP[7]. China has important interests in this regional integration, as the BRI could be an important step towards Chinese dominance. Indeed, the United States is concerned about possible joint actions between China and Russia.

However, there are some practical operational aspects that must be considered. Most Russian exports to China are denominated in dollars or euros. This poses an important question: What would China do with the rubles related to its trade surpluses with Russia if it were to accept Russian currency in the transaction between the two countries?[8]

The sanctions imposed by the United States and Europe have been criticized by the Chinese government, which has maintained a certain neutrality regarding the Ukraine War. On March 2, the chairman of the China Banking and Insurance Regulatory Commission, Guo Shuqing, said that the country does not agree with the financial sanctions, classified as unilateral and illegal[9]. Thus, China's position is clear: it will not adhere to the penalties imposed on Russia, even if it does not approve of the invasion of Ukraine. For Posen (2022)[10], the effectiveness of the sanctions is related to the strong international alliance that has been formed, composed of the major financial institutions, except for Chinese banks. According to this author, a more profound change in the current international financial and monetary system is unlikely since its foundations remain the same. It is worth noting that the European Union is the main destination of Chinese exports and, therefore, China's attitude towards the current conflict can generate some discomfort with its trading partners. In other words, China is in a delicate situation, since it has important economic, commercial, and financial ties with both sides.

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5   https://agenciabrasil.ebc.com.br/internacional/noticia/2022-03/congelamento-de-reservas-externas-ameaca-economia-russa

6   http://eng.sectsco.org/about_sco/

7   Further information about the BRI: https://www.beltroad-initiative.com/belt-and-road/

8   https://www.ft.com/content/dec25b43-3548-4be6-9a7c-57286b266dcc

9   https://www.cnbc.com/2022/03/02/china-will-not-join-sanctions-against-russia-banking-regulator-says.html

10   https://www.foreignaffairs.com/articles/world/2022-03-17/end-globalization

3. Possible Impacts on Dollar Hegemony

Another important point is whether China will use this moment to deepen the internationalization of its currency, as happened after the 2008 crisis. The internationalization of the RMB was a Chinese economic policy objective as a response to the 2008 crisis and a possible weakening of the dollar's supremacy. Among the many peculiarities of China, one can also highlight the way it has been promoting the internationalization of its currency, as it has a capital market that is not very diversified, with state control over the financial account and the exchange rate. As Torres Filho and Pose (2018)[11] note, the banking sector, particularly public banks, play a vital role in China's financial system, while the private bond and equity market remains limited. This concentration of activities in the banking sector characterizes the undiversified domestic financial system observed in China. Nevertheless, the RMB has been increasing its share in the volume of international trade, in financial flows, and as the official reserve currency of other central banks.

Looking at the BIS Triennial Report (2019), the RMB has been increasing its share in global foreign exchange market turnover. In 2004, the RMB's share was only 0.1%, ranking 29th. In 2007 it became 0.5% (20th position) and in 2010 it was 0.9% (17th position). As a result of the advancement of measures to promote its greater international use, the RMB corresponded in 2013 to 2.2%, occupying the 9th position, rising to 4.0% in 2016 (8th position), to finally in 2019 correspond to 4.3% and remain in the 8th position[12]. This trajectory shows that, in fact, the RMB started to be more used in the global foreign exchange market, rising its position in the ranking analyzed currencies.

In November 2015, the IMF executive board approved the inclusion of the RMB as an 'emerging forex trading currency' in the Special Drawing Rights (SDR) basket, which is an international reserve asset made up of a basket of reserve currencies. In addition to the RMB, officially included at the end of 2016, the basket includes the US dollar, the euro, the Japanese yen, and the British pound. The inclusion of the RMB reflects the increasing importance of the Chinese currency in global finance.

For Zoltan Pozsar, former official at the Federal Reserve and the US Treasury Department and currently global head of Short-Term Interest Rate Strategy at Credit Suisse, the dollar will be weaker after the crisis generated by the current conflict. According to Pozsar, a new world order will emerge, based on commodity-backed currencies. This new monetary configuration will have negative impacts on the Eurodollar system[13]. For Posen (2022), in the current scenario it will not be easy for the Chinese currency to become an alternative to the dollar. Although global financial structures may undergo changes and/or adaptations, there is no room for the rise of an alternative currency to the dollar, at least in the short and medium term.

It is worth noting that some important movements are taking place. Saudi Arabia is in the process of negotiating with China to fix part of its oil sales in yuan, the unit of account of the Chinese currency. As a result, oil futures contracts could be denominated in yuan[14]. This is a clear attempt to reduce the predominance of the dollar in the oil market, since Saudi Arabia - the largest exporter of oil to China - is not satisfied with the geopolitics adopted by the Americans. The effectiveness of this initiative may deepen the greater use of the Chinese currency and will be another space of direct competition with the dollar. However, this approach will still be far from overturning the dollar's favoritism in global negotiations. In addition, in response to the sanctions imposed on Russia, Vladimir Putin

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11 TORRES FILHO, E.; POSE, M. A internacionalização da moeda chinesa: disputa hegemônica ou estratégia defensiva? **Revista de Economia Contemporânea**, v. 22, n. 1, p. 1-23, jan./abr. 2018. DOI: 10.1590/198055272215.

12 Since exchange transactions are made using two currencies, the sum of the holdings is 200%.

13 https://www.credit-suisse.com/about-us-news/en/articles/news-and-expertise/we-are-witnessing-the-birth-of-a-new-world-monetary-order-202203.html

14 https://valor.globo.com/mundo/noticia/2022/03/16/em-guinada-historica-sauditas-avaliam-vender-petroleo-em-yuan-a-china.ghtml

decided that international payments for the purchase of Russian gas can only be done in rubles, which particularly affects European countries, that are highly dependent on Russia for gas supplies.

In fact, despite being a good bet to consolidate itself as an international currency, the RMB still has a limited role. The paradox of the internationalization of the RMB is characterized by China taking measures to increase the international use of its currency while maintaining capital controls and a government-controlled financial system. The RMB has been widely used in international transactions, , but the Chinese economy has some obstacles to consolidate the internationalization, such as the structure of its financial system and the implementation of capital account regulation, which imposes restrictions on the entry and exit of foreign financial flows. Therefore, the Chinese currency may be able to overtake others such as the pound and the yen, but the dollar will still be, for some long time, the dominant currency of the current international monetary and financial system. Having the Chinese currency as a global reserve currency would require its full convertibility of its currency and consequent financial account openness. However, the Chinese government seeks to strike a balance between long-term growth objectives and financial stability, given its characteristic of still being an emerging economy. In this context, it is unlikely that it will relinquish control over its financial system and its capital and financial account of the balance of payments[15].

4. Final Remarks

In summary, China has adopted gradual and moderate changes to promote the internationalization of the RMB, which is becoming an important currency in global dynamics, both in commercial and financial transactions. In addition, it has been widely used as an official reserve by central banks of other countries. The RMB has great potential to compete with the major currencies of the current SMI, however, weakening the supremacy of the dollar will be a more complex task. The RMB internationalization project is linked to significant changes in the Chinese macro-structure and in the capital and financial account management model. To advance in the internationalization of its currency, China would need to further relax its rules on capital controls and the government's control over the financial system, in addition to reviewing its exchange rate policy, among other measures, which is unlikely to be done in the medium term. In conclusion, there is a long way to go for the Chinese currency to dispute the hegemony with the dollar!

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15 https://www.ft.com/content/dec25b43-3548-4be6-9a7c-57286b266dcc

THE STRUCTURE OF THE EXTERNAL SECTOR 40 YEARS AFTER THE BEGINNING OF THE LATIN AMERICAN DEBT CRISIS

Carlos A. Carrasco[1]

1. Introduction

In August 1982, the Mexican government announced a sovereign default due to the impossibility of servicing the public debt. In previous years, the Mexican economy grew at high rates and experienced strong and sustained foreign exchange inflows in the context of international liquidity and high oil prices. The Mexican economy benefited from oil exports due to the discovery of important oilfields in the Gulf of Mexico. Extraordinary oil revenues made it possible to maintain a level of public spending that was higher than sustainable.

Circumstances changed radically in the early 1980s. With higher interest rates, lower oil prices, and a high level of indebtedness, the Mexican government had to declare a moratorium on public debt payments and begin a deep restructuring process. The sudden stop of capital flows spread to other Latin American economies and the region entered a period of economic stagnation known as the Lost Decade (Moreno-Brid & Ros-Bosch, 2010).

During the 1980s and early 1990s, Latin American economies were involved in a profound process of economic transformation. As a central part of the process, Latin American economies increased their levels of trade and financial openness (McKinney, 2021). The international financial institutions that promoted the restructuring process argued about the advantages that international trade would bring in terms of increasing exports and economic growth within an export-led growth strategy.

In 2022, it will be 40 years since the sovereign default of the Mexican government, triggering the restructuring process of Latin American economies. In this brief article, we make a general review of the restructuring of the external sector in a select group of Latin American economies. At 40 years of distance, it is necessary to consider where we are and where we should go.

2. The Restructuring of the External Sector in Latin America

The process of reforms in Latin America brought a change in the growth strategy from a model focused on the domestic market to an export-led growth strategy. This change was not unique to Latin America. The world economy is on average more open today than it was in the 1980s (Wacziarg & Welch, 2008).

The restructuring of Latin American economies combines common features with the particularities of each country. Thus, the trade openness, the beginning of the reforms, and the post-reform export specialization depended on the circumstances of each economy.

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Figure 1 shows data on trade openness, exports, and imports as a share of GDP for a select group of Latin American countries in the period 1960-2020. The selection of countries is based on the availability of data, the size of the countries, and the space limitations of this brief article. For most Latin American countries, the level of trade openness increased substantially in the 1980s and early 1990s. In the case of Chile, the opening process began earlier, that is, in the 1970s. Moreover, Mexico has had a growing trend without significant interruptions. All in all, Latin American countries are more trade open today than they were before the reform process.

Figure 1. Trade Openess in Selected Latin American Countries
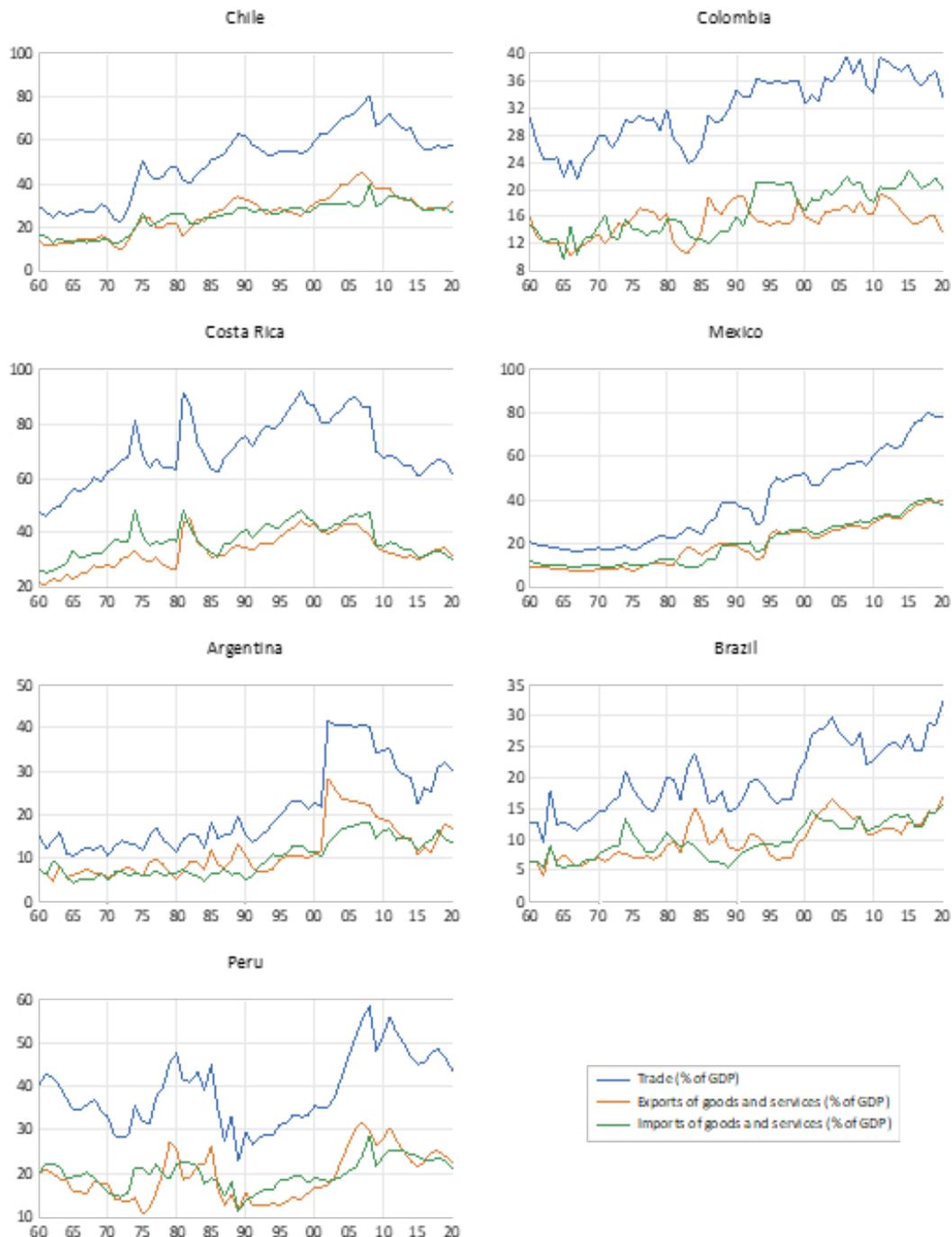
Source: World Development Indicators.

Another important point in the reform process was the change in the external sector structure, especially regarding export composition. Several points stand out. First, the share of manufacturing exports has increased. An

emblematic case is Mexico, which, besides some Central American countries, has become an exporter of manufactured goods of different levels of technological intensity, although with a growing weight of medium-high- and high-tech exports. The increase in the weight of manufacturing is also observed in Colombia, Costa Rica, Argentina, and Brazil.

Second, ores and metal exports have lost relative weight in Chile and Peru, although they continue to be highly relevant in both countries. For its part, the share of ores and metal exports has increased in the case of Brazil. Third, food exports continue to be of special importance in Argentina and Brazil, while in Colombia, Costa Rica, and Peru their weight has decreased. Finally, fuel exports have increased their share in Colombia while Mexico shows a constant drop.

Figure 2. Export Composition in Selected Latin American Countries
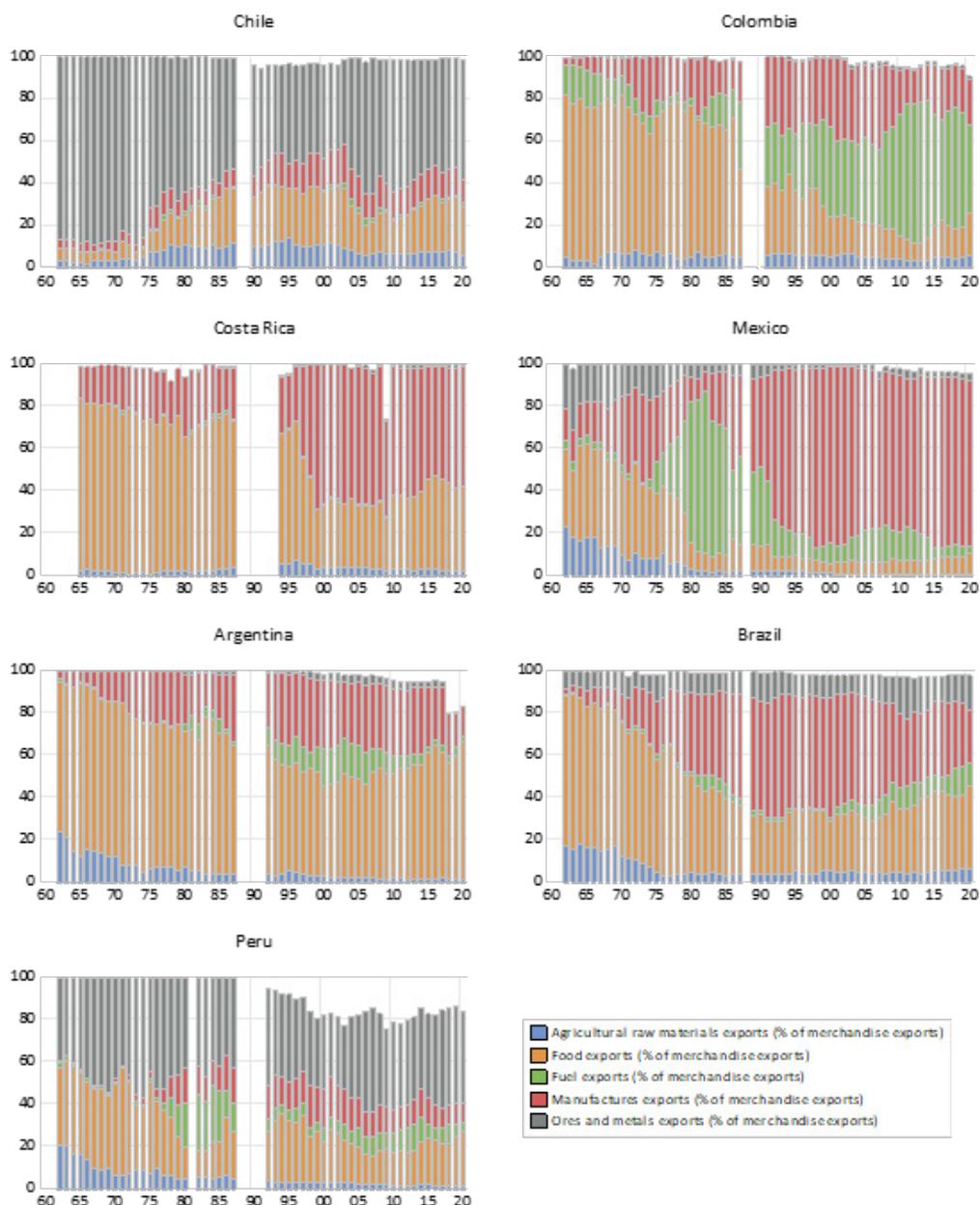
Source: World Development Indicators.

Latin American countries are key players in the global trade of commodities and raw materials. The combination of the dependence on raw material exports and trade liberalization since the economic reforms of the 1980s

and 1990s has increased the region's vulnerability to changes in international prices. In this sense, the period 2000-2013 was characterized by a significant and sustained increase in the price of commodities and raw materials. Thus, higher prices of commodities and raw materials increased the flow of foreign currency into the exporting countries, lessening the external restriction on economic growth.

Figure 3 shows the evolution in the last 30 years of the commodity price indices elaborated by the International Monetary Fund (IMF). As can be seen, between 2000 and 2013, commodities prices increased substantially, with an interruption in 2008, as a result of the global financial crisis. However, the recovery after the financial crisis was relatively fast, reaching maximum values between 2010 and 2013. This period is commonly known as the boom of commodities prices. However, in 2014 and 2015, commodities prices fell significantly and since then, except for metals, prices have remained at levels lower than those reached in 2013.

The boom in commodities prices partially explains the increase in the shares of food, fuel, and ores exports in Latin American countries. However, this is also a reminder of the exposure of Latin American countries to international prices of commodities and raw materials.

Figure 3. The Evolution of Commodities Prices
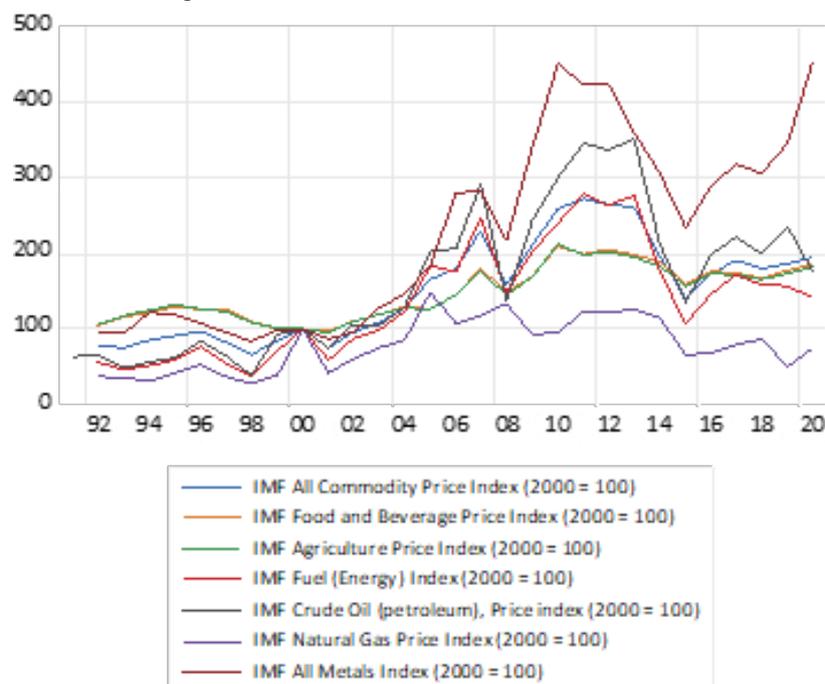
Source: International Monetary Fund.

In summary, Latin American countries have increased their share in world trade since the trade liberalization of the 1980s. However, the effects in terms of the change in the export structure are differentiated. On the one hand, some countries have substantially increased the production of medium, medium-high, and high-tech manufacturing goods. On the other hand, several countries in the region have maintained the trade of commodities and raw materials as the axis of their export basket, benefiting from the boom in commodities prices during the period 2000-2013 as a result of the accelerated growth of the world economy, in general, and in Asian countries, in particular (Kilian & Hicks, 2013; Kim & Ando, 2012). Finally, the third group of countries has managed to diversify their export basket by combining the production of manufactured goods with commodities and raw materials.

3. External Sector and Economic Growth in Latin America

After the debt crisis and the stabilization process, the growth rates of the Latin American economies have shown divergent trends. In this sense, considering that the trade liberalization was based on the establishment of an export-led growth strategy, it would be expected that the growth in exports would be reflected in higher rates of economic growth. However, the data do not show a clear positive relationship. Figure 4 shows the relationship between openness in terms of trade and exports, and GDP growth. At the top, the scatter plots do not show a clear relationship between GDP growth rates and exports/trade openness. For its part, the lower part shows a positive relationship, although not entirely clear, between the level of trade openness/exports and the GDP per capita. The causality analysis is out of the scope of this article.

Figure 4. Exports, Trade Openness and Economic Growth
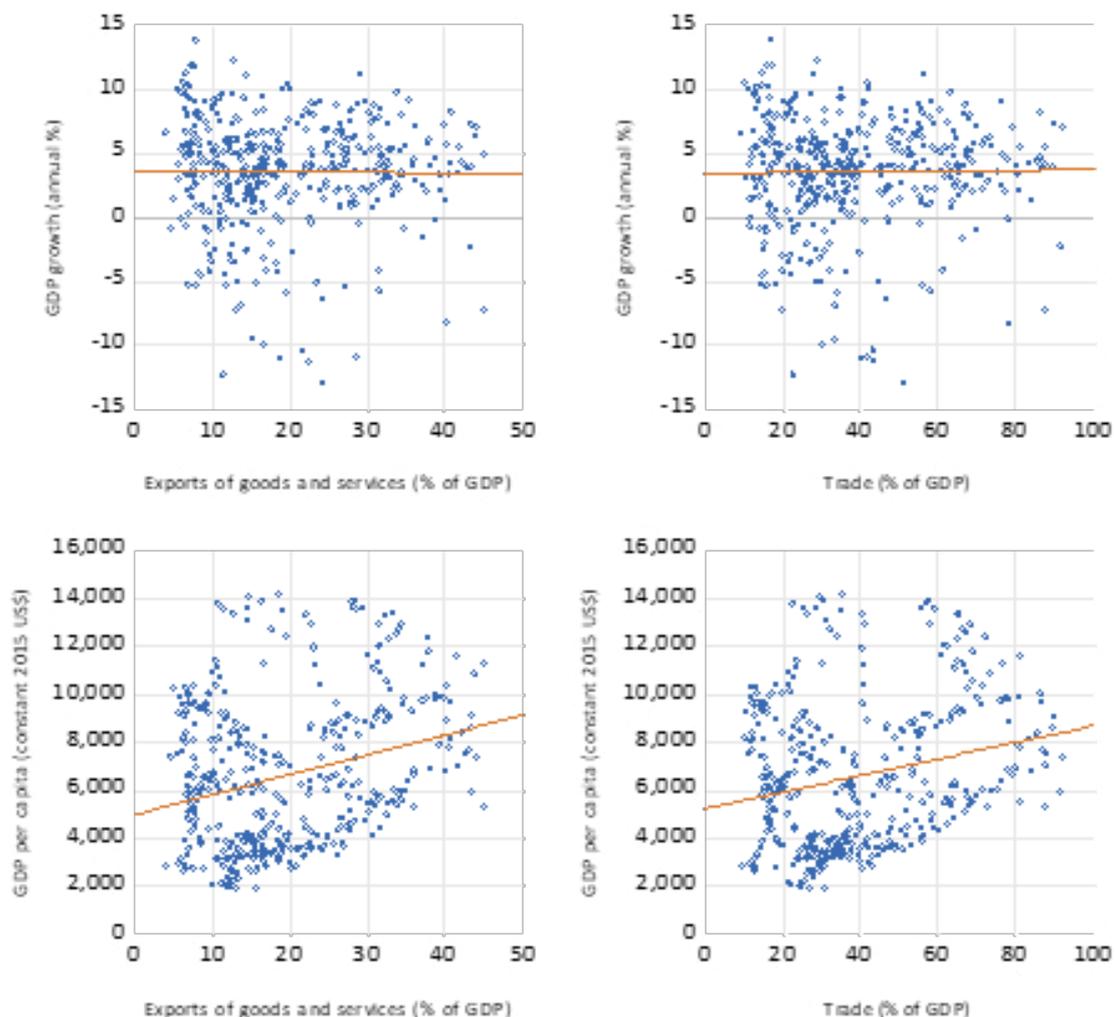
Source: World Development Indicators.

The economic literature has focused on identifying the characteristics of the external sector that positively influence economic performance. In terms of exports, there is evidence of positive effects on the economic growth of export diversification when countries move from producing commodities and raw materials towards the production of manufactured goods (Herzer et al., 2006; Vogiatzoglou, 2019), especially in the case of exports of technologically intensive goods. However, more developed countries could benefit from specializing in their export basket (Hesse, 2009; Munir & Javed, 2018). The benefits of manufacturing exports depend on the domestic value-added content of gross exports, that is, after discounting the imported content of exports (Carrasco & Tovar-García, 2021).

Regarding imports, the economic literature shows the relevance of importing capital goods in the case of developing countries (Carrasco & Tovar-García, 2021; Herrerias & Orts, 2013). For its part, the effects of input imports depend on the part of the production process in which the economies are found (Hagemejer, 2018). Thus, in countries with firms at the final stage of global value chains, the value-added within the country is limited and the effects on economic growth are weak.

In this context, the domestic value-added content of gross exports is key to the potential positive effects of exports on economic growth in countries with a high share of manufacturing exports. Figure 5 shows data on the domestic value-added content of gross exports. As can be seen, the countries that have a lower proportion of manufacturing exports have a higher domestic value-added content of gross exports. Although this is to be expected, in a context where the production of manufactured goods is distributed throughout the world within global value chains, a too low level of domestic value-added content of gross exports represents a drag on the rate of economic growth. In this regard, the case of Mexico is emblematic. Although Mexican exports have grown significantly since entering General Agreement on Tariffs and Trade (GATT) and signing North American Free Trade Agreement (NAFTA), the effects on economic growth have been quite limited. Mexico is one of the OECD countries with the highest share of import content of exports.

Figure 5. Domestic Value-Added Content of Gross Exports as a Share of Gross Exports
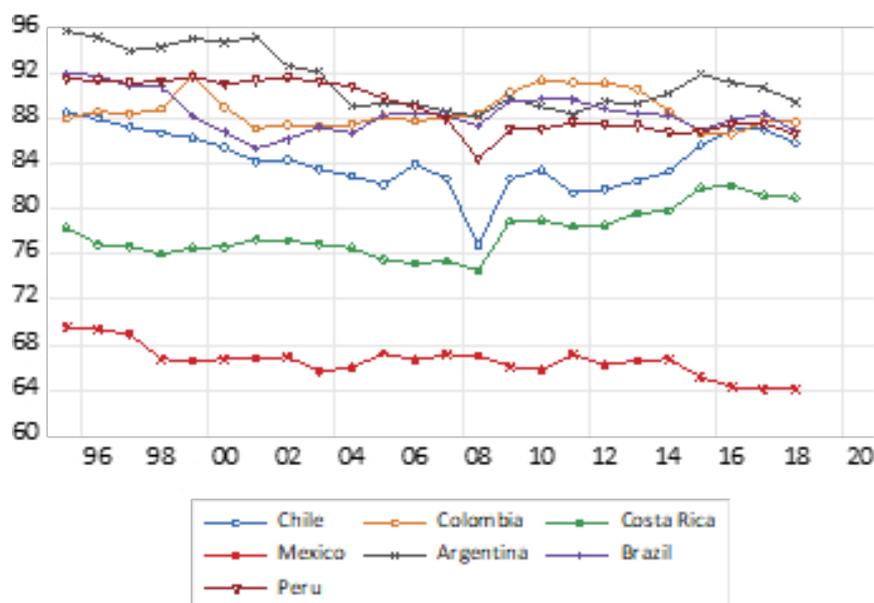
Source: OECD Statistics.

4. Final Remarks

In 2022, it will be 40 years since the sovereign default of the Mexican government and the beginning of the reforms in Latin American economies. Trade liberalization and the restructuring of the external sector were key in the reforming process of Latin America.

Since then, Latin American countries have, on average, a higher level of trade openness while increasing the share of manufactured goods in the export basket. However, in terms of economic growth, the results have been uneven and below what was originally expected.

The success of an export-led growth strategy depends on several factors including the domestic support to manufacturing industries through industrial policy. The combination of recent evidence on the characteristics of the

external sector structure that improves economic growth and an industrial policy that accelerates the transformation process of the export sector is essential for the future performance of Latin American economies.

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AXIS 2
ECONOMIC DEVELOPMENT

THE BRAZILIAN ECONOMY IN NEOLIBERALISM: PROFIT RATE AND INSTITUTIONAL CHANGE

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1. Introduction

In the last seventy years, Brazil has gone through two different phases in terms of economic growth. Firstly, during the developmentalism between 1950 and 1980, Brazil was one of the most dynamic economies worldwide. The Gross Domestic Product growth rate was above 7% per year. Between the end of the Second World War and 1980, growth was fuelled by the industrial sector in a framework of industrialization by import substitution. The erosion of that process started in 1973 with the end of the golden age of capitalism. There was a decline in the profit rate in the Brazilian economy.

Secondly, from 1980 to 2020, growth was slightly above 2%, a staggering decline of 5% per year. The phase can be further divided into four sub-periods. Firstly, from 1980 to 1989, when the economy was characterized by stagnation and rising inflation, there was a transition with the gradual abandonment of industrialization by import substitution. Secondly, between 1989 and 2002 when the economy adopted the neoliberal model. The most significant changes were the opening of the trade and financial accounts, the control of inflation in 1994 with the Real Plan, the privatization, the reduction of the state's role in economic activity, and the inflation targeting regime in 1999. Thirdly, between 2003 and 2014, Brazil carried out policies that combined developmental and neoliberal elements. The rising demand for commodities in global markets opened the possibility of gradually implementing an economic policy that promoted economic growth and rising wages. The Brazilian economy expanded by 3.4% annually. Fourthly, in the 2015-2020 timeframe, there was a total return to neoliberalism following the soft coup in 2016. With the new round of neoliberal reforms and the effects of Covid 19, the GDP in 2019 was 6.4% lower than in 2014.

The adoption of neoliberal reforms, according to its proponents, should have brought a new phase of sustained growth. Many of the institutional changes in the 1990s were based on the so-called Washington Consensus. These were associated with changing the state's role in the economy, flexibilization of markets, liberalization, privatization, and international integration. Allegedly, by adopting this set of reforms, the Brazilian economy should have been able to participate in the globalization process, receiving a flow of international resources capable of raising investments. This should have promoted technological modernization, allowing the country to capture the gains

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associated with the third industrial revolution. The Brazilian companies would have adapted to the new environment through competition, increasing their productive efficiency.

The structural crises of capitalism and the institutional and ideological changes of the world economy are crucial ingredients in analyzing the Brazilian economy in the last seven decades. Brazil occupies a subordinate role in the world capitalist economy as a late industrializing country. Technical and institutional changes are generated in developed capitalist countries, particularly in the United States. Brazil reproduces these changes with a time delay.

The proposal to embark on neoliberal reforms reflects the movements in England and the United States. The Golden Age crisis resulted from the falling profit rate. The latter provoked the reaction of capitalist sectors and changed the political framework, leading to the electoral victory of Margaret Thatcher in 1979 and Ronald Reagan in 1980. These political forces carried out conservative institutional changes that greatly favored finance capital. As these changes solidified, the social sectors that benefited from them became hegemonic, consolidating the essential elements of neoliberalism in advanced capitalist countries. The bargaining power of the working class declined markedly, making it possible to raise labor productivity in a labor market that was increasingly free from regulation and with low capital accumulation.

This article investigates the economic performance of the Brazilian economy in neoliberal capitalism, looking at the profit rate and its components: technical change, income distribution, and capacity utilization. However, it is necessary to understand the essential elements that configured the crisis of the Golden Age and the response to this crisis in Brazil. Crucial changes in institutions, in the pattern of technical change, in the income distribution took place then. Understanding these changes is pivotal in comprehending the great Brazilian stagnation that has occurred since the 1980s.

The article proceeds as follows. The following section addresses the calculation of the profit rate and its components in the classical-Marxian tradition. Section 3 briefly presents the growth of the Brazilian economy in the 1950-2020 period. Section 4 describes the evolution of the profit rate and its components. Section 5 explores the relationship between profit rate and capital accumulation. Finally, section 6 summarizes our findings.

2. The Profit Rate and its Components

The goal of production and investment in the capitalist society is to produce profits. Profitability is the driving force of capitalism. The decline in profit rate reduces the expectation of profits, which tends to diminish investment and capital accumulation. A lower investment rate reduces the levels of production and employment. Economic policy may raise investment and capital accumulation in the short term. However, in the context of a falling profit rate, both investment and capital accumulation will fall in the medium and long term.

As suggested by Weisskopf (1979), the path of the profit rate can be explained by three factors which, in the Marxian perspective, are related to different sources of capitalist crisis. The first is the decline in the profit share due to the higher bargaining power of workers. A profit squeeze occurs when wages rise faster than labor productivity for economic and political reasons. The second is the fall in potential productivity of capital due to the rising organic composition of capital. This phenomenon, usually associated with technical change, occurs when the price of capital goods rises faster than the price of other goods. The third is the decline in the level of capacity of utilization due to a lack of aggregate demand. However, independent of its source, the fall in the profit rate results in declining investment and capital accumulation and consequently, lower economic growth.

The profit rate is measured by the ratio between the total profits to total advanced capital during a given period. Weisskopf (1979) proposed a decomposition of the profit rate, r, to investigate whether its change in time

hinges on the profit share, capacity utilization, u, and the potential productivity capital, ρ. The profit rate is computed as follows:

$$r = \frac{Z}{K} = \frac{Z}{X} * \frac{X^P}{K} * \frac{X}{X^P} = \pi\,\rho\,u$$

Where Z denotes the net profit, K is the net capital stock, X is net output, and XP is the net potential output.

In the classical-Marxian tradition, the rising organic composition of capital is the primary determinant of the profit rate in the long run. Marx argued that individual capitalists would adopt technical changes that lowered production costs at current levels of real wages; the viable technical changes to obtain "super-profits" by selling their merchandise at prices determined by the higher costs of their less technically advanced competitors. Marx saw this process as a powerful engine of technical change in capitalist production.

The struggle between capitalists and workers over value added, creates a powerful incentive for technical change to follow a labor-saving and capital-using pattern, where the growing use of machinery and equipment replaces human labor. In this view, mechanization is the pattern of technical change in capitalism, with rising labor productivity and falling capital productivity. Foley and Michl (1999) call this type of technological change, Marx-biased technical change. For similar income distribution and capacity utilization, the rate of profit falls if technical progress is Marx-biased. Because of the falling profit rate, capital accumulation and economic growth also decline in the long run.

With the Marx-biased pattern of technical progress, the following trends are predicted: (i) rising labor productivity, falling capital productivity, and increasing capital intensity; (ii) declining rate of profit, with given income distribution and level of capacity utilization; (iii) rising real wages; (iv) falling capital accumulation.

3. The Brazilian Economic Growth and the Profit Rate: 1950-2020

Table 1 presents the Brazilian economic growth during developmentalism and neoliberalism. It is possible to observe the remarkable differences in economic growth between both periods. The sector with the most significant decline in growth is industry, it reached an astonishing 8% annually.

Table 1. The Growth Rate of GDP and Economic Sectors in Brazil. 1950-2020

	GDP	Agriculture	Industry	Services
1950-2020	4.4%	3.6%	4.3%	4.5%
1950-1980	7.4%	4.3%	8.9%	7.6%
1950-1973	7.5%	5.4%	12.1%	9.6%
1973-1980	7.0%	4.8%	7.2%	7.9%
1980-2020	2.3%	3.1%	0.9%	2.3%
1980-1989	2.7%	3.2%	1.2%	3.1%
1989-2002	2.4%	3.2%	0.8%	2.0%
2002-2014	3.5%	3.4%	2.6%	3.5%
2014-2020	-1.1%	2.5%	-2.4%	-0.9%

Brazil went through an intense mechanization process during import substitution industrialization in the Golden Age of capitalism. The industrial share reached 44% in 1980. The crisis in the early 1960s resulted in political

change, but the military dictatorship maintained the developmentalist model. From 1973 onwards, the structural crisis marked its presence in Brazil with a drop in industrial production growth. Import substitution industrialization began to reveal its limits.

The dictatorship responded to the crisis with an ambitious investment program. The Second National Development Plan, II PND, was conceived in the framework of import substitution industrialization and stimulated capital goods and energy production. The Plan was financed with external indebtedness, and Brazil maintained relatively high growth rates between 1973 and 1980. The cost was a rapidly increasing external debt. This increasing debt put Brazil in a position of increased financial fragility. The adoption of neoliberalism by advanced countries, with the increase in interest rates, was one of the factors of the crisis in the 1980s. The growth rate fell to 2.7% between 1980 and 1989, and the inflation rate reached 1034 % in 1989.

In the 1990s, the Brazilian economy adopted neoliberalism. Many reforms were implemented, such as commercial and financial liberation, the privatization of state companies, and a change in the state's role in the economy. The financial sector benefited from these changes. The renegotiation of the external debt in the context of the Brady Plan, allowed the country to accumulate the foreign reserves to launch the Real Plan in 1994. It successfully reduced the inflation rate, which declined to 8.3% in 1997.

After the reelection of Fernando Henrique Cardoso, Brazil devalued its currency in early 1999, following the path of financial crises in developing countries. In the same year, Brazil adopted an economic policy that combined an inflation targeting regime, primary fiscal surplus, and a floating exchange rate. The high interest rate played a vital role in this arrangement to keep inflation under control and attract international capital. The economic growth between 1990 and 2002 was just 2.4% per year.

The first victory of the Worker's Party occurred in 2002, when President Lula was elected. The neoliberal inefficacy to promote growth and employment played a key role in his election. In the "Letter to the Brazilians" published in July 2002, Lula pointed to the limits of his program to reassure financial sectors that the future government would maintain critical elements of neoliberalism. Once in power, the Workers Party's economic policy combined aspects of both developmental and neoliberal models, in which the circumstances dictated which one would be dominant.

The favorable international environment, the adoption of elements of the developmental state, and social inclusion measures resulted in rising economic growth and falling unemployment. After Lula's reelection in 2006, there was the launching of the Growth Acceleration Program, PAC. It consisted of a set of public and private investments under the coordination of the minister Dilma Rousseff. The Brazilian state returned to intervening in markets using a developmentalist policy. By the late 2000s, the impression was that Brazil had recovered its growth dynamic. GDP expanded at 4% annually during the 2002-2010 years.

The crisis of neoliberalism had a reduced effect in Brazil between 2008 and 2010. The government employed fiscal and monetary expansionary policies to spur the demand for manufacturing goods after the collapse of Lehman Brothers in the late 2008. State-owned enterprises increased their investments and the supply of credit. However, the structural crises of capitalism always had a substantial impact on the Brazilian economy and politics.

In 2010, Dilma Rousseff was elected the first woman president. The government assumed a more proactive role, stimulating private investment through tax exemptions and lower interest rates. It was thought that the fall in interest rates would reduce the gains of financial capital and benefit the productive capital, which would expand investments. Moreover, it was hoped that Petrobras would expand its pre-salt investments. Public investment would then have a secondary role in boosting economic growth. However, between 2010 and 2014, the GDP only grew at 2.3% per year.

Pres. Dilma Rousseff was reelected in 2014, despite mounting problems in the economy. In 2015, Pres. Dilma adopted a neoliberal economic policy with a series of austerity measures that drove a GDP decline of 3.8 per cent, followed by a 3.6 per cent fall in 2016. It was a dramatic change from the previous decade. The economic crisis, coupled with the unfolding repercussions of corruption allegations, led to the soft coup that deposed Pres. Dilma from the presidency in 2016.

Vice president Michel Temer assumed the government and implemented a series of neoliberal measures proposed in the document A Bridge to the Future (In Portuguese, Uma Ponte para o Futuro). The document suggested the reduction of labor costs, a change in the minimum-wage indexation rule, reform in the labor law, social security reforms, elimination of constitutional spending on education and health, privatization, and trading openness. The proposals were consistent with a radical neoliberal turn proposed by the bourgeoisie and were far beyond the political possibilities of the Worker's Party.

Bolsonaro was elected in 2018 with a far-right discourse and a neoliberal economic policy. The offensive in favor of capital intensified from 2019 onwards. Social security reforms and privatizations were applied. The Temer and Bolsonaro governments are a continuum from an economic point of view. The covid-19 reached the country in March 2020, merging the economic crisis with a health crisis with dire consequences for the Brazilian population.

4. The Profit Rate and its Determinants

Figure 1 displays the profit rate in Brazil between 1950 and 2020. A downward trend can be observed in the profit rate. This path conforms with the classical-Marxian analysis of the falling rate of profit. The adoption of capital-intensive technology during industrialization by import substitution reduced the productivity of capital, particularly in the II PND. The deindustrialization of the Brazilian economy in neoliberalism might be interpreted as a production shift toward the higher profitability displayed by the primary sector.

However, it is possible to identify four phases in the evolution of the profit rate. Firstly, between 1950 and 1973, there was a slight decline in profitability. Secondly, a sharp drop in the rate of profit from 1973 to 1989 was observed consistent with a structural break in the profit rate. Thirdly, the profit rate slightly expanded from the late 1980s until 2007. Fourthly, the profit rate declined from 2007 to 2015, when it slowly increased up to 2019.

After the structural crises of golden age in 1973 and of neoliberalism crises in 2007, the profit rate declined leading to political and institutional changes in Brazil. The adoption of neoliberalism, the soft coup and an intensified version of neoliberalism were all examples of these changes.

Figure 1: The profit rate in Brazil, 1950-2020.
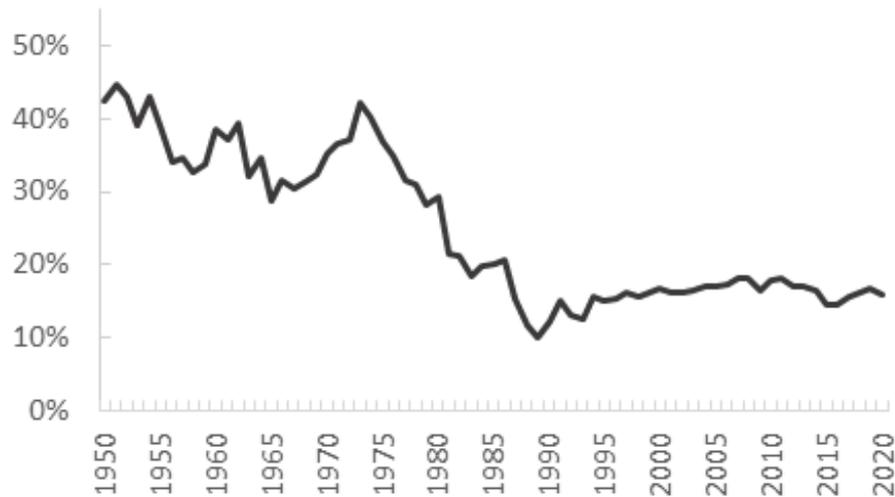
Source: Marquetti et al. (2022).

Table 2 reports the determinants of the profit rate: potential capital productivity, capital share, and level of capacity utilization. Overall, the numbers in Table 2 highlight that the profit rate reacted mainly to the changes in capital productivity. Both profit-share and capacity utilization were a secondary role in explaining the shifts in the profit rate.

Looking at the profit share, we can emphasize two aspects. Firstly, the profit share was relatively stable in the long term. The average profit share was 48.7 per cent from 1950 to 2020. Secondly, political and economic factors influenced the profit share in Brasil. With the adoption of neoliberalism, the profit share increased continuously from 38 percent in 1989 to 50.7 percent in 2004. Neoliberal reforms and macroeconomic policies have strengthened capitalists in the dispute over the value added. Between 2007 and 2014, the profit rate declined driving by a profit squeeze. Marquetti, Hoff, and Miebach (2020) point to the profit in the second period as an essential factor in the political crisis that began in 2014.

Table 2: Decomposition of the profit rate in Brazil: 1950-2020

	r	ρ	π	u
1950-2020	-1.40%	-1.11%	-0.05%	-0.235%
1950-1980	-1.20%	-1.72%	0.61%	-0.096%
1950-1973	-0.02%	-1.40%	1.32%	0.056%
1973-1980	-5.05%	-3.72%	-0.78%	-0.556%
1980-2020	-1.54%	-0.65%	-0.54%	-0.339%
1980-1989	-11.59%	-6.88%	-4.37%	-0.342%
1989-2002	3.70%	1.60%	2.06%	0.033%
2002-2007	2.39%	1.67%	-0.14%	0.870%
2007-2014	-2.08%	0.81%	-2.09%	-0.800%
2014-2020	-0.50%	0.84%	0.52%	-1.860%

Source: Marquetti ei al. (2022).

The second column of Table 2 shows the profit rate decomposition results concerning capital productivity. There was a fall in capital productivity until the late 1980s and a slight increase from then on. Three phases are observed; in the first, between 1950 and 1973, capital productivity decreased by 1.4 percent per year; in the second,

between 1973 and 1989, there was a sharp drop in potential capital productivity of 3.72 per cent per year. As mentioned earlier, the long-term behaviour of profit rate was ultimately determined by capital productivity.

Finally, the last column of Table 2 exhibits the numbers for capacity utilization. There are three crucial differences between the periods 1950-1980 and 1980-2020. Firstly, the average level of utilization of installed capacity was 4.9 percentage points higher in the period 1950-1980 than between 1980 and 2020, indicating that the drop in the profit rate also resulted from the lower capacity utilization. Secondly, the recessions between 1980 and 2020 were more intense than in the 1950-1980 period. Thirdly, there were a more significant number of contractions in the 1980-2020 period. In the Marxist approach, capacity utilization reflects the effective demand and has a short-term impact on profits and the profit rate. These results, linked to the centrality of technology in determining the profit rate, are consistent with the Marxian analysis of technical change.

5. The Profit Rate and Capital Accumulation

Capital accumulation measures the speed at which the country is enlarging its stock of physical capital, which comprises non-residential buildings, machinery, and equipment. Consequently, if labour is available, capital accumulation measures the speed at which the country's capacity for producing wealth is expanding. The profit and investment rates determine the net capital accumulation rate. If the profit rate declines, the trend of the accumulation rate ought to be downward, tracking the falling rate of profit.

Figure 2 pictures Brazil's accumulation and profit rates in the 1955-2020 period. Capital accumulation reached its maximum in 1975, showing a strong downward trend from that year onwards. The fall in the rate of accumulation between 1975 and 1980 is explained by the sharp decline in the profit rate that occurred after 1973. Form late 1980s until early 2010s, the accumulation displayed cyclical movements around 2% per year. After 2011, the net accumulation rate declined strongly, reaching negative values between 2016 and 2020.

Figure 2: Profit rate and net capital accumulation rate in Brazil: 1950-2020
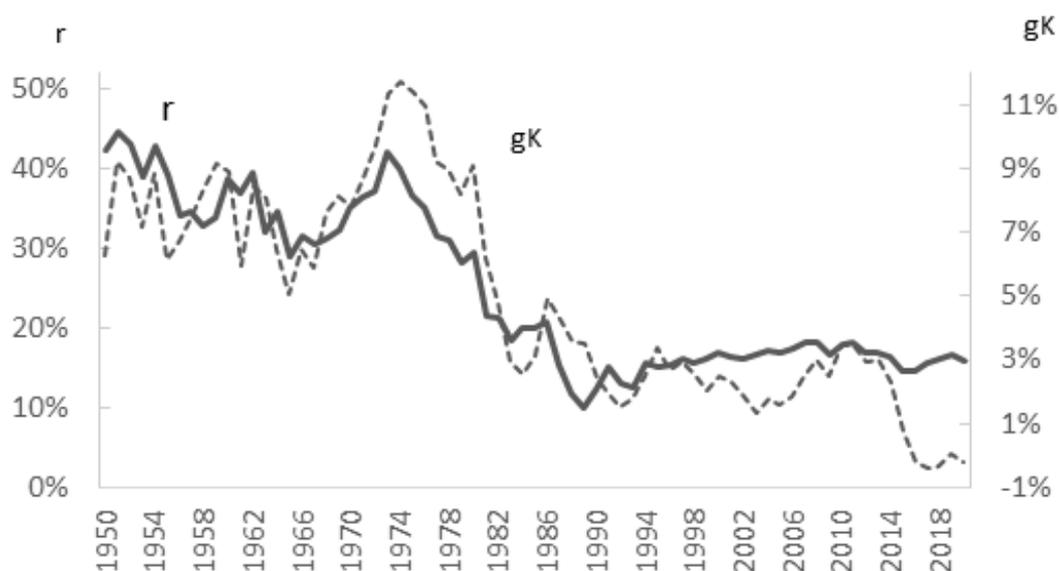
Source: Marquetti et al. (2022).

Specifically, three significant aspects of capital accumulation can be underscored. Firstly, five cycles can be distinguished in the study period: 1950-1974; 1974-1986; 1986-1995; 1995-2010; and, lastly, the present cycle, which began in 2010. Secondly, the net accumulation rate shows a downward trend like the movement of the profit

rate. The peaks, except that of 1974, and troughs of each successive cycle were lower than those of the previous one. Thirdly, two different periods can be observed for the capital accumulation rate. Between 1950 and the late 1970s, economic growth was led by the industrial sector in the framework of an import substitution industrialization model. The rate of profit fell sharply in the second half of the 1970s and 1980s, which marked the transition from the stage with a high capital accumulation rate and growth to the great stagnation. From the early 1980s to the start of the 1990s, the low rate of accumulation was due to poor profitability and the external debt crisis. A neoliberal model was applied in Brazil in the early 1990s; despite slightly higher profitability, the accumulation rate did not increased due to the fall in the investment rate.

Figure 3 pictures the path of the capital accumulation rate and the net investment rate. The net investment rate influences cyclical changes in the capital accumulation rate. The Goal's Plan (In Portuguese, Plano de Metas) provided a significant increase in investment from 1956 to 1960, led by the public sector and state enterprises and with strong participation by external capital, resulting in rapid investment growth. The early 1960s was a time of great political upheaval, culminating in the 1964 military coup. After a series of institutional changes, investment recovered in the late 1960s. The net accumulation rate thrived during the so-called Brazilian economic miracle between 1968 and 1973, exceeding 12% a year between 1974 and 1976. Noticed that the investment rate peaked during the second National Development Plan, a time of sharply falling profitability.

The high investment rate was due to state leadership in the process, which was financed by external borrowing. The strategy adopted with the second National Development Plan resulted in higher external debt, exacerbating the country's financial fragility. The effects of the second oil crisis and the rise in international interest rates were very damaging to the Brazilian economy. As measured by the labor productivity growth rate, generating wealth was necessary for the country to cope with future payments, but it barely increased relative to the rise in external debt and the likelihood of adverse external shocks. The servicing of this debt meant a massive transfer of resources abroad in the 1980s, causing the net investment rate to decline.

The reduction in accumulation in 1975 is accounted for by the sharp fall in the rate of profit after 1973. In the 1980s, the accumulation rate also suffered the adverse effects of the declining investment rate.

Figure 3. Capital Accumulation and Investment Rate in Brazil: 1950-2020
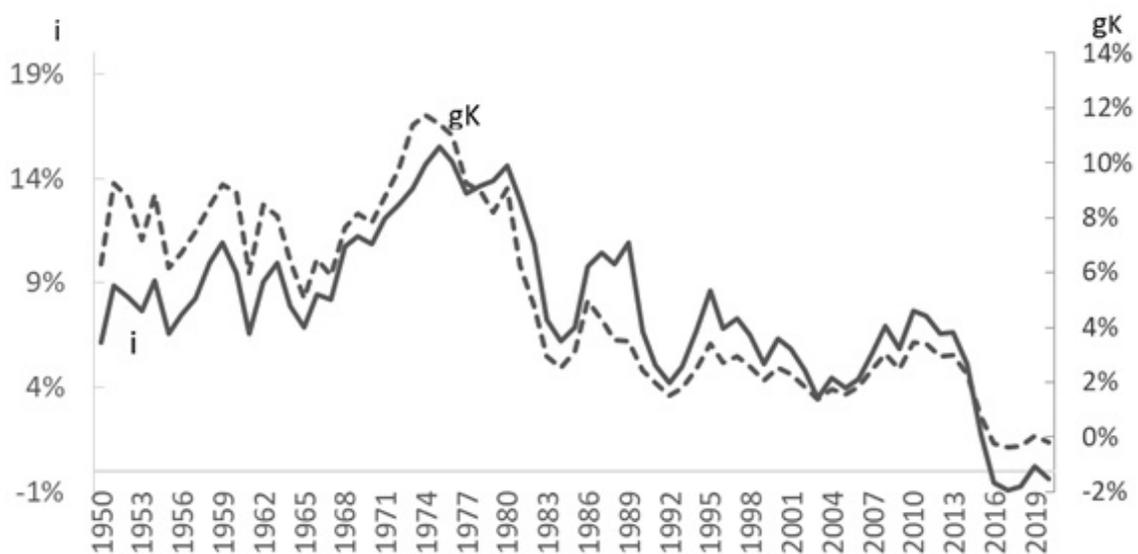
Source: Marquetti et al. (2022).

Moreover, the concurrent increases in the domestic debt, the domestic real interest rate, the indexation mechanism associated with high inflation resulted in a transfer of resources from the productive to the financial sector. Together with the falling profit rate, these factors account for the reduction in the accumulation rate in the Brazilian economy from the late 1970s onward. The origin of the Brazilian economic crisis lies in the falling profit rate in the mid-1970s due to the decline in capital productivity. The reduction in the net investment rate in the 1980s worsened the situation.

This study endorses the analysis of the causes of Brazilian inflation in the late 1970s and early 1980s conducted by Celso Furtado in 1984. According to that author: [...] the root cause of the inflation is the decrease in the productivity of the economic system [...] The average productivity of investments has traditionally been high in Brazil. To achieve a one per cent increase in domestic product it was only necessary to invest two per cent of this same product [...] What has been occurring recently is a notable fall in productivity. Today, we need to invest four to six per cent of domestic product to achieve a one per cent increase in the product [...] the main reason [for this] is the lack of coordination of public investments, and of private investments induced by it (Furtado, 1984, pp. 7-8).

Notice that the downward trend in the capital accumulation rate and the net investment rate continued throughout the 1990s, despite rising profitability. The so-called lost decade of the 1980s was a period of crisis and transition from the import substitution industrialization model to the neoliberal model. Neoliberalism represented adopting a "market-friendly" growth model whereby the state's role in the economy was changed, state firms were privatized, capital and labor markets were liberalized, and there was international integration. This model's supporters believed that, by introducing neoliberal reforms, Brazil would benefit from globalization and receive a fresh inflow of global investment that would increase capital accumulation and productivity in the economy (Franco, 1998). From 1990 onwards, the Brazilian economy underwent a series of neoliberal reforms. They included adopting a new form of international integration via trade and financial liberalization (Cysne, 1998) and the privatization program, involving sell-offs of firms in the petrochemical and metal ores sectors being sold off.

External debt renegotiation under the Brady Plan enabled Brazil to return to the international financial market and build up sufficient reserves to launch the Real Plan in 1994. The Plan comprised two parts: a macroeconomic policy to control inflation and a program of neoliberal reforms to stimulate growth. High interest rates and Brazil's return to the international capital market allowed the currency to appreciate and inflation to fall to single-digit levels. After 1994, the privatization of public services began, with the selloffs of telecommunication, electricity, and banking firms. One of the main problems with the Real Plan was that it increased the economy's external financial fragility, which, combined with the volatility of international capital flows, caused the real to depreciate in 1999.

The Brazilian crisis was preceded by a string of international upheavals that started with the 1994 Mexican crisis, followed by the 1997 Asian crisis and the 1998 crisis in the Russian Federation. The country's economic authorities responded to the crisis by adopting a policy that combined an inflation target, a primary fiscal surplus, and a floating exchange rate. Monetary policy played a fundamental role in controlling the exchange rate via an interest rate high enough to attract international capital and thus keep inflation down to near the desired level. With the Real Plan, Brazil fully adopted the neoliberal agenda. Although the policies successfully brought down inflation, they were unable to restore dynamism to the Brazilian economy. The net accumulation rate was meager, despite the shift in the pattern of technical change in the Brazilian economy, which meant only limited recovery in profits. After picking up again between 1993 and 1997, the net investment rate fell again, bottoming out in 2003.

The net investment rate and the accumulation rate recovered from 2004 to 2010. The combination of the developmentalists aspects of the Workers' Party government's strategy with the commodity boom of the period allowed the recovery of state investments. The private sector investments were also stimulated by the rising profitability and the growing demand.

After 2011, there was a substantial decline in the investment rate and accumulation rate. Private capital reduced its investments as profitability started to fall. Roussef's government tried to encourage private investments through fiscal exemptions in federal taxes and lowering interest rates. The strategy was not successful in sustaining the investment rate, nonetheless, employment remained high. High employment meant a tight labor market and further fall in profitability as wages increased at higher pace than labor productivity. Also, the government failed to preserve the state investment rate, especially after the political effects of the scandals around Petrobras.

These contradictory developments contributed to the profound economic and political crises that marked the 2011-2020 period. After the fall of the Rousseff Government, the neoliberal policies, as it was expected, failed to recover accumulation and investment rates. However, the measures were suceful in transferring income from labor to capital, the profit share expanded between 2015 and 2020. The Brazilian economic perspective is bleak, the Country has the daunting task of reigniting its economy.

6. Final Remarks

The article presented an interpretation of the economic performance of the Brazilian economy between 1950 and 2020. The evolution of the profit rate, its determining factors, and institutional changes are used to explain capital accumulation and GDP growth rates. Our results demonstrated the role of the profit rate in determining the accumulation rate and the economy's growth rate. Moreover, our work explored the interplay between the rate of profit, capital accumulation, investment and institutional change in Brazil.

The results can be summarized as follows:

1. The profit rate exhibited a downward trend from 1950 to the late 1980s; subsequently, its direction was slightly upward up to 2007 and downward from then on. A relationship between the phases of the profit rate and the crises of the Golden Age and neoliberalism was observed;

2. The decline in capital productivity was the primary determinant of the fall in the profit rate. This finding is consistent with Marx's theory of the profit rate. Profit share was relatively stable, averaging 48.7 percent. The level of capacity utilization was lower in neoliberalism than in developmentalism;

3. Neoliberalism was unable to significantly increase the rate of profit, reduce the cost of capital goods and provide a robust increase in capital and labor productivities;

4. There are limits on the ability to resume the process of capital accumulation and growth through the market. The state also has limits on applying Keynesian policies in periods of structural crisis associated with a fall in profitability. Countercyclical policies have a reduced capacity to spur profitability and accumulation, being unable to fight profit crises.

These results have relevant implications for the challenges faced by the Brazilian society in overcoming the reduced growth rate of the last 40 years and, in particular, the multiple drawbacks of the last decade. A declining profitability trend in a capitalist economy, especially in undeveloped country, implies in difficulties in the incorporation of technical change which requires high capital accumulation. Fot its turn, the high capital accumulation depends on profit rate and investment. The profit rate and the investment rate had declined in the Brazilian economy since the 1980s. The neoliberalism prioritizes short-term financial profits which reduces source for productive investment. It reduces the productive investment even in the context of higher profits. Public investment has an important but limited role in expanding capital accumulation. Keynesian policies were not able to avoid the structural crises associated with a fall in profitability in Brazil. Moroever, the state has its own contradictions, the economic policy in last decades played a fundamental role in the implementation of neoliberalism.

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INDUSTRY VULNERABILITY IN BRAZIL: BRIEF NOTES ON THE HEALTH COMPLEX AND THE CHALLENGES FACING THE GLOBAL HEALTH CRISIS

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There are two different approaches in economic theory that deal with the importance of industry for the development process of a country, one being a dominant view, linked to the free market, and another more critical, based on the defense of some form of intervention by the State.

The first, known as the neoclassical approach, does not distinguish the importance of a particular sector of activity for economic growth, which is explained by itself as the accumulation of production factors and technological progress. The sectors that will stand out are those in which the country has the greatest comparative advantages, regardless of the different impacts that each sector can generate on employment and activity in other sectors.

The second, formed by Keynesian-structuralist models, highlights the sectoral importance in determining economic growth, more specifically the centrality of the industrial sector, due to several special characteristics, among them: the ability to generate and propagate technological changes; main driver of productivity growth; positive externalities and synergies between sectors and production chains; greater dynamism in international trade and balance of payments sustainability and, in the case of developing countries, the fact that it is intensely related to the process of income convergence to levels similar to those of developed countries. In addition to the macroeconomic sectors, the various industrial sectors also receive attention, considering that the mentioned benefits tend to be greater as greater the participation of more sophisticated technological activities is.

Consequently, the sectoral approach brings with it the concern about the trend towards deindustrialization, a phenomenon associated with the decline in the industrial share of production and total employment in the economy. In more advanced countries this happens as a natural process of economic development, as a population with higher per capita income levels progressively consumes less industrial goods and more personal services, financial services, leisure and tourism services, private health, higher education etc. In developing economies, on the other hand, this phenomenon is considered premature, in the sense that it occurs at lower income levels, with important implications for long-term development.

In a recent survey for the Institute of Studies for Industrial Development (IEDI), Morceiro and Tessarin (2019) reveal that Brazilian industry was one of the ones that has fallen the most in the world in almost 50 years. Among 30 countries, Brazil has presented the third biggest retraction in the sector since 1970, behind only Australia and the United Kingdom. What sets us apart, however, is precisely that these countries had already achieved high incomes when they began their deindustrialization processes and continued to increase their income at a much higher rate than Brazil in the years that followed.

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Data from the United Nations Statistics Division (2022) show that the added value of the manufacturing industry, which represented almost 20% of the total value added of the economy in the early 1980s, in 2020 was around 11%. In addition, there is also a tendency towards regressive specialization, that is, the industry producing medium-high and high-technology goods continues to lose ground to the non-manufactured and low and medium--low technology industry, which represented, in 2019, approximately 75% of national industry transformation, as shown in Figure 1.

Figure 1. Value of Industrial Transformation by Technological Intensity: 1996-2019 (% of total)
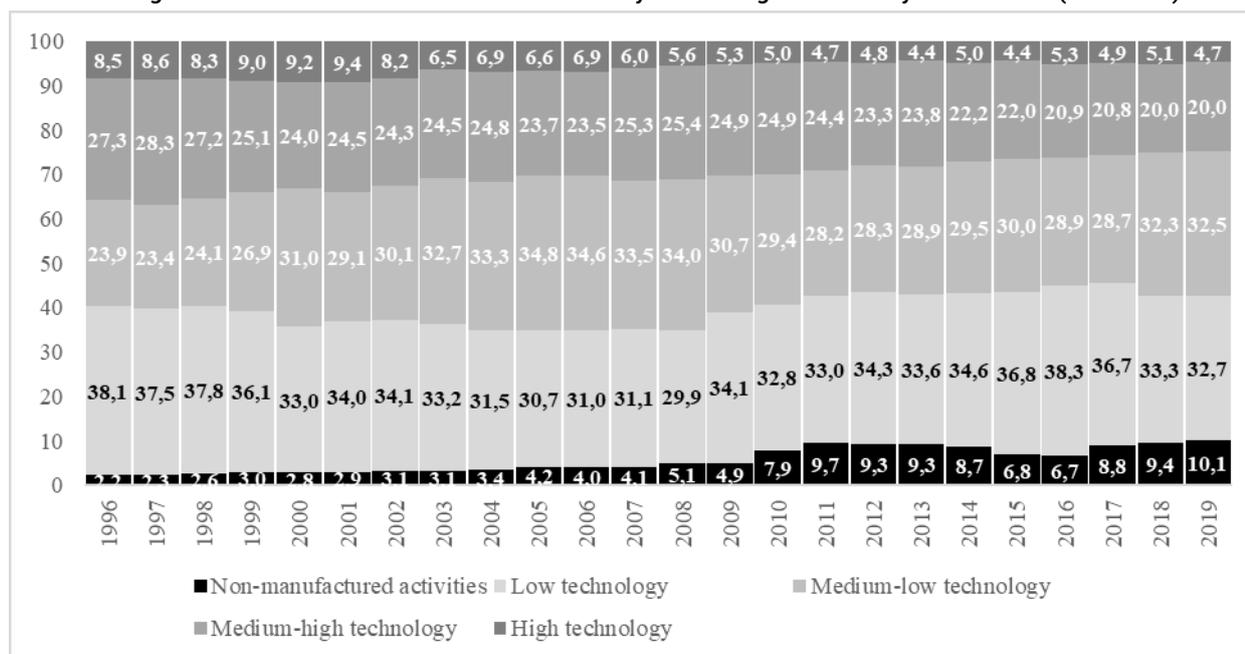
Source: Authors' elaboration based on data from the Brazilian Institute of Geography and Statistics, Annual Industrial Survey.

Note: Non-manufactured activities constitute extractive activities, not included in the OECD classification by technology intensity proposed by Hatzichronoglou (1997).

The specialization of the Brazilian industry in the production of low and medium-low technology goods is reflected in the country's exports and imports. Data from United Nations Comtrade (2022) reveal that, on the one hand, Brazilian exports follow the same direction as production, with non-manufactured and low and medium-low technology exports responsible, in 2020, for 84,9% of the entire value exported by Brazil. On the other hand, imports follow the opposite path, as 63,9% of the value imported by the country has been allocated to medium-high and high technology goods.

Since the beginning of the health crisis in Brazil and in the global economy, a relevant question has been to what extent the health-industrial complex was prepared for this crisis, or how the equipment and materials industry related to health were represented within the production, export and import of the Brazilian economy. To this end, we observed IBGE (Brazilian Institute of Geography and Statistics) data for industrial production and UN Comtrade with a higher level of disaggregation to capture exports and imports of two main groups of industries: 1) of apparatus and instruments for medical-hospital, precision, test, and control use and 2) of pharmochemical, pharmaceutical and chemical products.

Regarding the first group, Figure 2 shows in the red line the Brazilian production of equipment and instruments for medical-hospital, precision, test and control industries, which in 2020 represented only 0.83% of the country's total industrial production. In the same figure, the gray bars show the percentage share of exports (positive signs on the left axis) and imports (negative signs on the left axis) of these industries in the total exported and imported by country, respectively, while the black line informs the trade balance (difference between exports and

imports) of these industries. The data show that the contribution of these industries to the country's total exports is practically insignificant, less than 1% over the entire period and 0.28% in 2020, while imports have a participation of about 10 times greater, although they currently represent 3% of total imports. On the other hand, the trade deficit of these industries has been on an accelerated growth trajectory since 1989, despite the slight recovery between 2014-2016, returning to a decline and recording an important deficit of 4.4 billion dollars in 2020.

Figure 2. Productive-Commercial Participation of the Apparatus and Instruments Industries for Medical-Hospital Use, Precision, Test and Control: 1989-2020 (% of the Total)
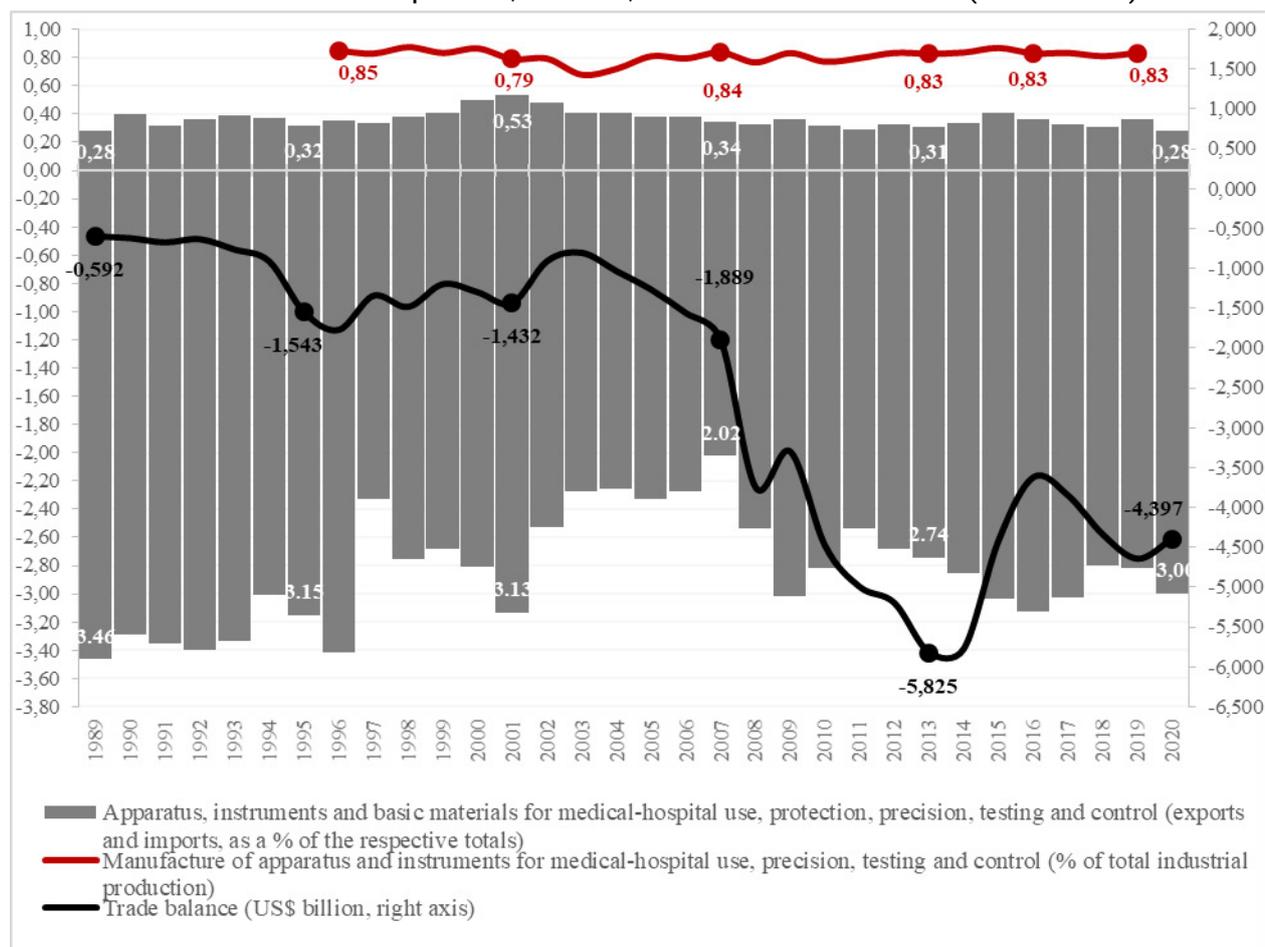
Source: Authors' elaboration based on data from the Brazilian Institute of Geography and Statistics, Annual Industrial Survey (2019), and the United Nations Comtrade Database (2022), at product level the Harmonized System (HS) 6 digits.

Note: The relative share of exports and imports is indicated by the positive and negative signs, respectively (left axis).

     Figure 3 shows the same information (production and trade) for the pharmochemical, pharmaceutical and chemical industries. The red line reveals a downward trajectory in the relative production of these industries, which represented 11.08% of total Brazilian production in 1996 and, in 2019, dropped to 7.92%. At the same time, there is a negligible but still decreasing share of exports from these sectors in the country's exports, while imports are increasing and currently account for around 22% of total imports, a very significant portion. Naturally, the trade deficit in these industries followed a sharp growth path, from little more than 1 billion dollars in 1989 to 29.5 billion at the end of 2020.

Figure 3. Productive-Commercial Participation of the Pharmochemical, Pharmaceutical and Chemical Industries: 1989-2020 (% of the Total)
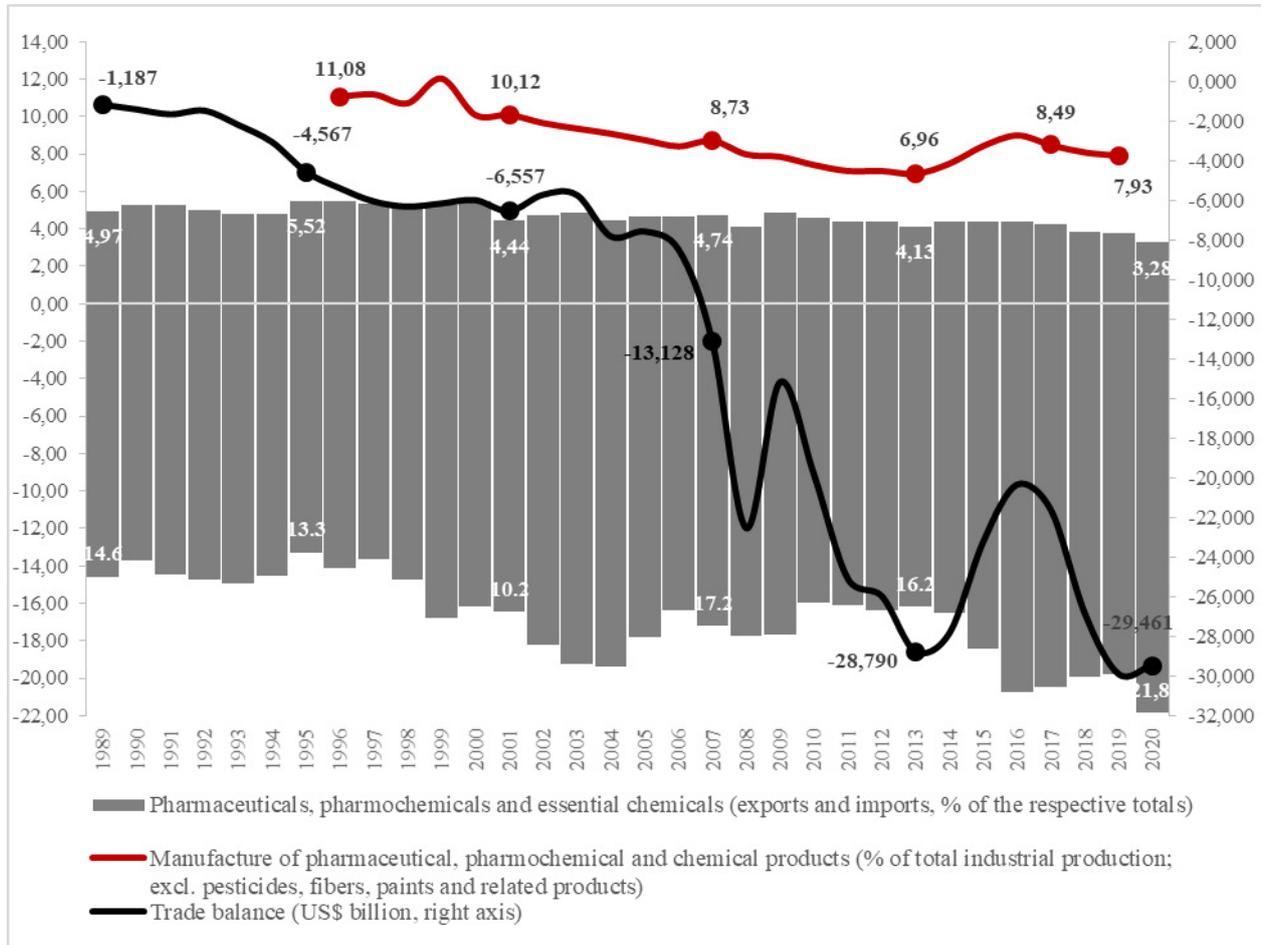

Source: Authors' elaboration based on data from the Brazilian Institute of Geography and Statistics, Annual Industrial Survey (2019), and the United Nations Comtrade Database (2022), at product level the Harmonized System (HS) 6 digits.

Note: The relative share of exports and imports is indicated by the positive and negative signs, respectively (left axis).

Therefore, the data discussed here reveal that the industry as a whole, and more specifically the health complex, is characterized by significant economic fragility, with high dependence on technology and basic industrial feedstock, so that the supply of these products has long been incompatible with national demand. Especially in the health complex, the coronavirus pandemic has clearly exposed these deficiencies, bringing important challenges to face the global health crisis, such as the difficulty of producing and even importing essential products in the fight against it. We witness, for example, the lack of alcohol gel in hospitals, gloves, masks and other personal protective equipment, mechanical respirators and other medical and hospital equipment, medicines and basic reagents for diagnostic tests and several other items manufactured from different Chemicals.

To meet the current need for these products, the country has resorted to imports, in a market where China holds more than 90% of all world production. However, with the high demand and international competition at this time of a pandemic, Brazil has found it difficult to acquire these products. Besides the subject health complex, a survey carried out by the Brazilian Association of Electrical and Electronics Industry (Abinee) at the beginning of March 2020, revealed that 70% of the associated companies already had problems with the supply of components, produced mainly in China and other Asian countries (CRISE..., 2020). It is important to remember that the electronics sector is present from the transformation of natural resources into energy to the bit that is transformed into information in the access device. And in this highly restricted scenario, technology stands as a fundamental tool to connect

people, companies, and sustain the active economy, in addition to providing entertainment, access to education, the supply needs of the food sector, etc.

Such problems in supply chains are not unique to Brazil, and they reignite the debate around the world about the need for companies and countries to reduce international dependence. Japan, for example, from its record-breaking package of nearly $1 trillion in economic stimulus against the coronavirus crisis, has earmarked about $2 billion in support in the form of grants and direct loans to companies willing to take their industrial plants today in China back to Japan (Reynolds & Urabe, 2020).

Finally, in addition to the shortcomings linked to production, trade and investments in the health complex, the lack of investment in research and development (R&D) and innovations in the health area should be highlighted. This has a direct impact on the lack of materials and reagents for mass testing, seen as a fundamental prerequisite in a successful strategy to combat the new coronavirus, as well as a potential discovery of a vaccine. It is worth remembering that this process is naturally time consuming, in addition to involving potential obstacles to the speed of supply at a global level. Even with all the public pressure, if a vaccine is discovered by a company in the United States, for example, in addition to the time required for large-scale production, access could still be delayed by issues such as commercialization rights, intellectual property, inadequate distribution infrastructure, etc. In this context, the importance of continuous R&D investment must be recognized as a sovereign strategy in the face of situations such as the one posed by the current pandemic.

However, investment plans in this area are not promising. In the BNDES (National Bank for Economic and Social Development) document Investment Perspectives 2019-2022, the investment plans of 19 sectors are presented, 11 of which in industry and 8 in infrastructure, for the period from 2019 to 2022. For this period, the reports are of postponement of investments of greater complexity due to uncertainties in the public procurement scenario and closure of Brazilian production units of multinational laboratories, given the strategies of concentration of production in specific countries. It is time to recognize, therefore, the important role of public investments in the health complex through its effects of complementarity with private investment, not only through increased demand and infrastructure, but also inducing autonomous demand in different sectors, whose degree of sophistication can imply greater industrial dynamism, a reduction in the production costs of private investment and an increase in general productivity.

In this sense, it is equally important to emphasize that R&D activities traditionally involve high investment, uncertainty and a long maturation period, elements that normally keep private venture capital away, so the participation of the public sector becomes fundamental. When well structured, for example with retention of "golden shares" of patents, intellectual property, public sector support for business innovation can constitute an important source of resources to be reinvested in the economy, education, infrastructure of the health system, etc.

In short, the current pandemic reveals another important virtue of the industry, which is to guarantee national sovereignty in the face of a public health crisis, and demonstrates that for Brazil to be able to recover from this deep dive and resume a path of economic and social development, it is urgent to have a sophisticated national industry capable of connecting to the fourth industrial revolution already underway and, thus, of integrating itself in a sustainable way into the global economy. In this context, the development of public policies to encourage industry and science and technology proves to be, more than ever, indispensable.

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PROFITABILITY OF LARGE PUBLICLY TRADED-COMPANIES: EVIDENCE OF FINANCIALIZATION OF BRAZILIAN NON-FINANCIAL COMPANIES

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1. Introduction

The Brazilian economy is stagnant. Since the 2015-2016 recession, GDP has not recovered to the level of 2014. Despite the pandemic in 2020, the GDP in 2021 recovered from 2019, but this remains lower than in 2014. The deterioration in labor market conditions mirrors the economic stagnation. Since 2016, according to the Official Statistical Office (Brazilian Institute of Geography and Statistics - IBGE), the country has registered double-digit unemployment rates. In 2021, the average rate of open unemployment was 13.2%, and of the total employed population, 40.7% were in the informal sector, that is, in low-quality jobs.

In parallel with the economic issue, the country experienced its biggest political crisis since the resumption of democracy in the mid-1980s. A political movement in the Parliament for the impeachment of President Dilma Rousseff, elected by the Workers' Party (PT), began after her re-election in 2014. Since then, neoliberal economic measures have been implemented to reduce state participation in the economy under the expectation that the economy would recover once investors' confidence is restored through austerity policies, which did not happen.

Marquetti et al. (2016) offer an interpretation of the political crisis of the PT government during the presidency of Dilma Rousseff based on the evolution of the rate of profit and its determinants. The authors show that since 2010 the rate of profit has been declining. They conclude that the leading cause is the increase in the wage share combined with the fall in capital productivity. In their interpretation, the negative evolution of the rate of profit implied a rupture of the class coalition that was established in the 2002 election and had sustained the PT governments since then.

To shed more light on the evolution of the profit rate of the Brazilian economy in the 2010s, this note aims to exploit information from the balance sheet of companies listed on the stock exchange. We will show that the profit rate of large non-financial companies increased in the second half of the 2010s when the economy dived into a recession. We conclude that the context of contraction of public investments due to the economic policy strategy initiated by the Government of President Temer in 2016 did not awaken the entrepreneurial 'animal spirits' as expected. In addition, it is possible to note that the advance in the financialization of large companies explains how profitability remained high despite the economic recession.

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Besides this introduction, this short note is divided into two sections plus a conclusion. Section two highlights the main features of the recent recession of the Brazilian economy and changes in income distribution. Section three estimates the rate of profit based on the balance sheet data of publicly traded companies listed on the stock exchange and analysis its evolution along with the 2010s. Finally, in the last section, we conclude the note.

2. The Recession of the Brazilian Economy and the Evolution of the Profits

We start our discussion by presenting the evolution of GDP since 2010. Figure 1 shows average growth rates for GDP and demand components for 2010-2015 - the slow growth phase compared to the 2000s - and 2016-2019 (before the pandemic) - the recessive phase. The average growth in the 2010-2015 period was 2.2% p.a., contrasting with the near-stagnation of the following period (0.2% p.a.).

The first year, 2010, marks the highest expansion rate since price stabilization in the mid-1990s, 7.5%. This result positively responded to the government's incentives to sustain aggregate demand by maintaining public investments and stimulating private consumption after the international financial crisis hit the Brazilian economy in the second half of 2008. As of 2011, the Brazilian economy slowed down, partly for domestic reasons – the not well-succeeded attempt to relax the macroeconomic tripod and exhaustion of measures to encourage domestic demand – and partly due to the slowdown in world trade and uncertainty about the duration of the global recession. In 2015, GDP growth was negative (-3.5%) in the face of a solid fiscal contraction and a drop in aggregate investment of 13.9%. In 2016, GDP contracted by 3.3%, leading to a change in the macroeconomic policy orientation and the implementation of liberal reforms. In 2016-2019, ending before the pandemic, the Brazilian economy entered a recession.

Figure 1. Average Annual GDP Growth Rates and Components of Aggregate Demand 2010-2015, and 2016-2019
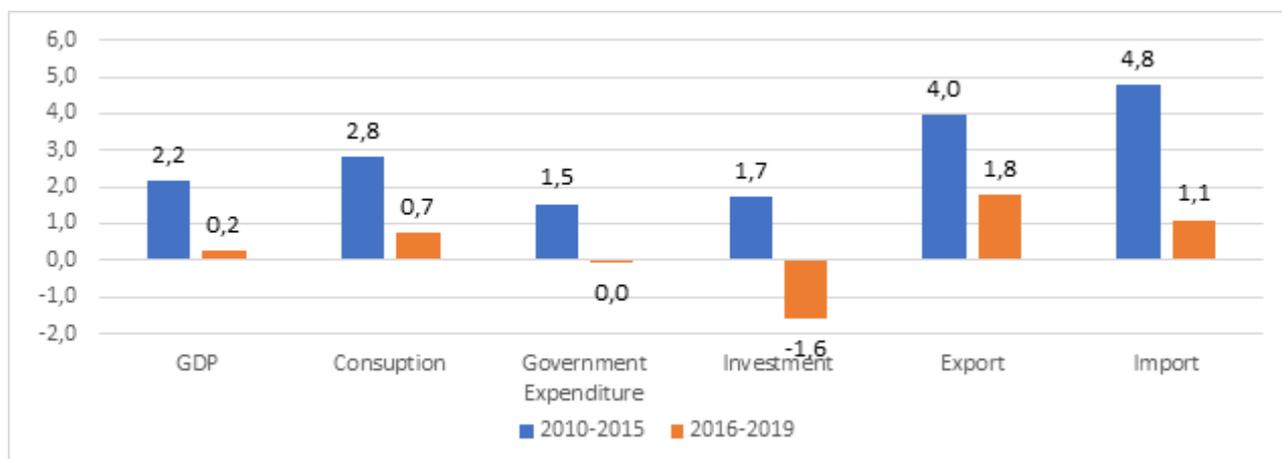
Source: IBGE, Quarterly National Accounts.

Significant shifts in income distribution are observed in the context of sharp changes in the short-term growth dynamics. Figure 2 shows the evolution of the share of gross operating surplus (a proxy for profit share) and wages in GDP. From 2010 to 2016, the percentage of wages increased, and this movement is primarily explained by the policy of valuing the real minimum wage implemented by PT governments since 2003. As of 2016 onwards, the wage share declines following the implementation of liberal labor reforms. In Marquetti et al.'s (2016) interpretation, the second half of the 2010s marks the end of the class coalition that had supported PT's economic policies, and political and economic uncertainty increased in the economy.

Figure 2. Share of the Gross Operating Surplus of Non-Financial Companies and Wages in GDP (%)
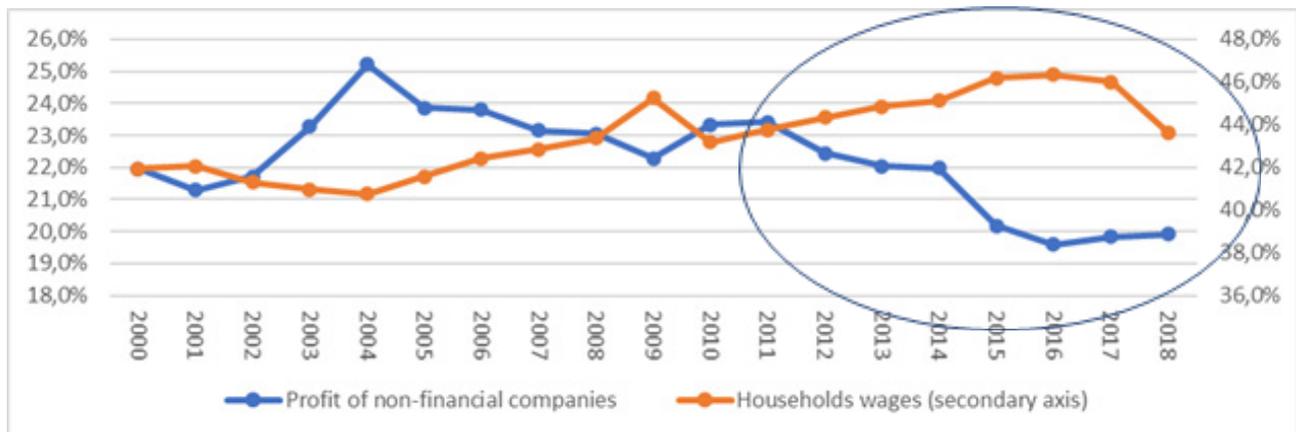
Source: IBGE, National Accounts.

One consequence of the increase in the degree of uncertainty in the economy due to domestic economic and political problems is that the recovery of the profit share in the second half of the 2010s is not followed by a recovery in the investment rate. The economy's investment rate falls, despite the decrease of the basic interest rate from 2016 onwards to historically low levels. In line with Keynes's (1982) investment theory, the company's decision to immobilize capital depends on evaluating expected returns. Therefore, for Keynes, investment in fixed assets depends on the state of confidence in positive expectations of future returns, that is to say, on the future behavior of aggregate demand.

To illustrate how the recession of the second half of the 2010s depressed business expectations in fixed assets, Figure 3 shows the evolution of the investment rate and the evolution of a proxy of aggregate financial investment rate. The comparison suggests that the decline in the investment rate from 2014 onwards might be explained by the change in the expectations regarding future returns on the investment in fixed assets due to, on the one hand, the cut in public investments (following the implementation of austerity policies) and, on the other, on increasing uncertainty about the sustainability of aggregate demand. The demand for financial assets, in turn, gains weight increasing its share on GDP in line with the deceleration of investment in fixed assets, clearly signaling a defensive posture of non-financial companies.

Figure 3. Investment and Financial Investment as a Share of GDP (%): 2010-2019
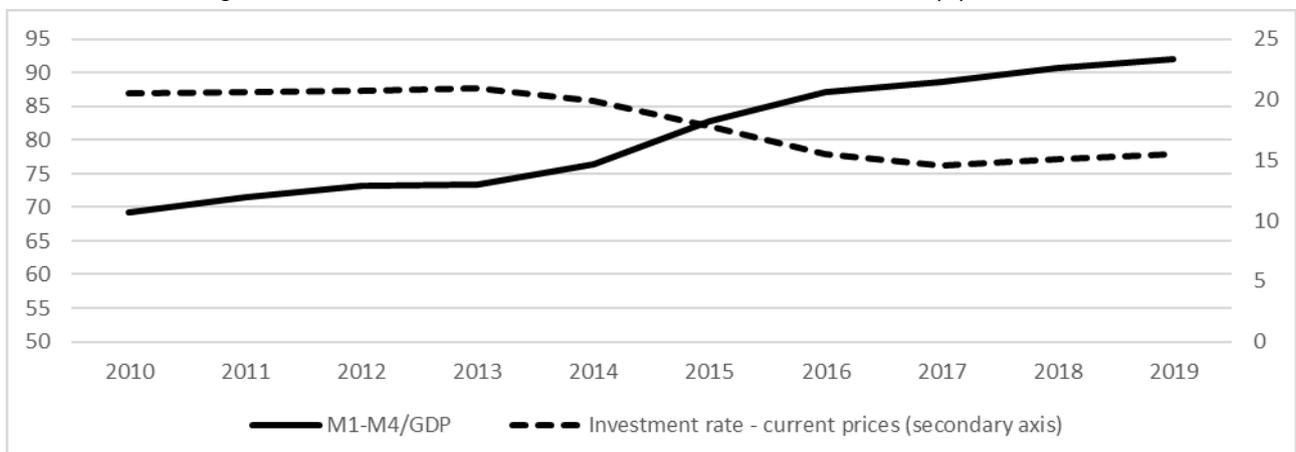
Source: Ipeadata, IBGE - Quarterly National Accounts.

From 2015 onwards, we see a replacement of fixed investments with financial allocations. In the next section, we present the behavior of the profit rate of publicly-traded companies during the 2010s to deepen the discussion on why the increase in the profit share did not leverage the investment rate in the second half of the 2010s.

3. The Profit Rate of Publicly Traded Companies Between 2010 and 2020

The profit rate of publicly traded companies listed on the Brazilian stock exchange signaled growth from 2016 until before the pandemic. Figure 4 compares the evolution of the GDP growth rate and the average rate of return on equity (Return on Equity - ROE), taken here as a proxy for the profit rate of listed companies. The behavior of the average ROE before and after 2015 is noteworthy. While in the early years of the 2010s, the profit rate of companies followed the fluctuations in GDP, from 2015 onwards, there was a detachment where the average profit rate of companies increased, and the economy maintained its low growth rate until 2020.

Figure 4. GDP Growth Rates and Return on Equity (ROE): 2010-2020%
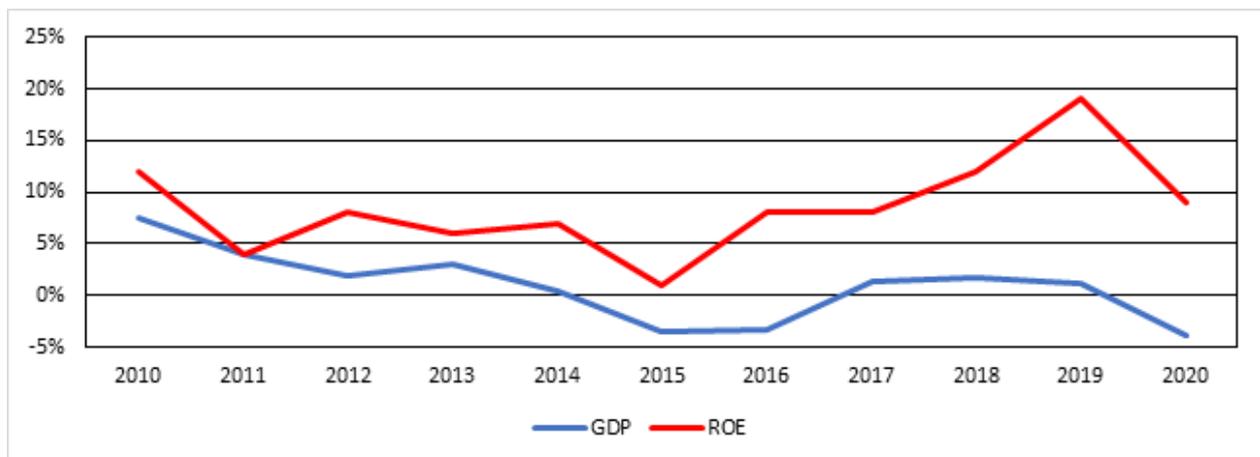
Source: IBGE: Quarterly National Accounts and Securities Commission (CVM).

To explain why the recovery in the rate of profit of large non-financial companies did not boost the resumption of private investment, we turn to Keynes once more. Considering the Keynesian view, investments are determined by long-term return expectations. The estimate of future returns, translated to present value, defines a discount rate - the marginal efficiency of capital. In this line, Keynes (1982, Chap. 17) establishes a relationship between the different interest rates defined in various types of investments according to the degree of liquidity of the assets. Investment in productive capital represents the immobilization of resources in assets of low liquidity and high expectation of return. Therefore, an essential comparison for decision-making in long-term capital immobilization is the level of the basic interest rate of the economy. Suppose the short-term interest rate set by the monetary authority is at a high level, and it influences the long-term interest rate through the yield curve, for example. In this case, the decision to invest in assets with low liquidity and long-term returns is penalized.

In the Brazilian case in the 2010s, the profit rate of the large non-financial companies and the period's interest rate set by the monetary authority are shown in Table 1. The comparison shows the choices the companies face to allocate their resources straightforwardly. We suggest that the higher the basic interest rate, which influences the return on all financial assets, including on government bonds, to the ROE (our proxy for the profit rate for large non-financial companies) the lower the incentive for companies to invest in long-term fixed assets. This is so because the incentive to invest in the capital financialization circuit will be greater since the risk premium for the

animal spirits is reduced. On the other hand, the higher the ROE to the basic interest rate, the greater the investment incentive in fixed assets.

Table 1. ROE for Total Revenue, ROE Without FInancial Income and ROE of Financial Income, and Selic Interest Rate: Monthly Average of Selected Periods

	2010-2014	2015-2020	2010-2020
ROE	7.4%	9.5%	8.5%
ROE without Financial Revenue	5.0%	2.9%	3.9%
ROE of Financial Revenue	2.4%	6.6%	4.7%
Selic Interest Rate	9.4%	8.3%	8.8%

Source: CVM. Authors´s own elaboration.

Table 1 points to a trend in the financialization process of the sample of companies analyzed. ROE was below the Selic rate in 2010-2014, while between 2015-2020, it was marginally above the average Selic rate for the period. Between 2010 and 2020, the ROE presented an average annual rate of 8.5%, while the average Selic rate was 8.8%.

Another indication of financialization can be seen by comparing the ROE rates without financial revenue and the ROE of financial revenue for 2010-2014 and 2015-2020. In the first period, the average ROE without financial revenue, a proxy for operating profit (5.0%) is higher than the ROE of financial revenue (2.4%). The opposite was observed in 2015-2020 (2.9% and 6.6%, respectively). Considering the last column (2010-2020), we see that the average ROE rate of 8.5%, when broken down into ROE without financial revenue (3.9%), was below of return on financial investments (4.7%). For the whole period, only financial revenue can deliver a higher return (4.7% between 2010-2020) than the 'productive' ROE itself (3.9% between 2010-2020).

Therefore, we can conclude that it is not enough to recover the economy's rate of profit, which has been happening in large companies since 2016. We should remind that the recovery in the profit rate follows the increase in the profit share (Graph 2) after implementing the liberal reforms in the labor market in 2016. However, to resume the investment rate is also necessary to awaken the animal spirits of the business sector by giving confidence through consistent economic policies to induce the immobilization of resources for an extended period. It is necessary to return to the growth of the aggregate demand in a sustainable way.

4. Final Remarks

The data explored for the large non-financial companies show that the ROE without financial revenue, our proxy for operational profit, reduced between 2010-2014 and 2015-2020, indicating that the recession after 2015 brought negative results for the return of the analyzed companies. The decline in the profit rate is in line with Marquetti et al.'s (2016) analysis.

In our analysis, we point out the financialization process of non-financial companies. In this sense, in the 2010-2020 period, we observe an expansion of the financial return of non-financial companies, as the ROE of financial revenue surpasses the ROE without financial revenue. We show that this result is explained by the relatively high level of the basic interest rate (even declining since 2016), taken here as representative of the rate of return of investments in the financial market.

For the negative cycle of productive investment to be broken, the economy needs to grow again. Public investments in infrastructure, for example, can act as a lever to recover companies' operating profits (and not financial profits). At this point, public investment acts as an essential inducer of this growth.

In light of what has been discussed, we suggest, by way of conclusion, some policy recommendations to resume growth and reduce the financialization of companies:

- Revisit and discuss the Spending Ceiling fiscal rule and public investment financing for the resumption of growth;

- Develop policies to regulate food and energy prices since cost inflation is not fought, given the recent international food and energy price shocks, with the rampant increase in interest rates;

- Reduce the financialization of companies by reviewing instruments to combat inflation. In this sense, monetary policy should be aligned with expected returns in the productive sector to promote and not inhibit it.

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DOES MISALLOCATION OR INEFFICIENT ALLOCATION OF RESOURCES EXPLAIN UNEVEN DEVELOPMENT? SOME CONSIDERATIONS FROM THE LITERATURE OF ECONOMIC GROWTH AND DEVELOPMENT

José Luis Oreiro[1]

One of the major challenges for the theory of economic growth and development is to explain the huge and growing per capita income differential among countries. As pointed out by ROS (2013, p.28-29) from the analysis of the literature on the subject, the dispersion between per capita income levels has continuously increased since the emergence of the Industrial Revolution. It is the phenomenon known as the "Great Divergence"; a term defined by historian KENNETH POMERANZ (2000). This process has continued for the past 150 years, so that, on the one hand, the world's high-income economies in the early 2000s had a GDP per capita of between 6 and 9 times higher than high-income countries in 1870, and the composition of the group of high-income countries is basically the same (including the economies of Japan and South Korea more in the group of high-income countries throughout the 20th century) in the early 21st century than it was in the last quarter of the 19th century. In this sense, PRITCHETT (1997) points out that the relative per capita GDP of high-income and low-income countries went from 8.7 in 1870 to 51.6 in 1985.

This increase in dispersion between per capita income levels is not, however, a homogeneous process among countries. This is because (i) some middle-income countries have a per capita GDP growth rate higher than the growth rate of high-income countries, thus forming a "convergence club"; (ii) among most middle-income or below-average income countries, there is a clear process of divergence: those countries with a higher per capita income have a higher per capita income growth compared to lower per capita income countries.

The neoclassical theory of growth has a notorious difficulty in explaining this phenomenon of great divergence or unequal development (See OREIRO, 2016, chapter 2). The standard neoclassical model, that is, the Growth Model of Solow (1956), by assuming constant returns of scale and perfect competition in all markets, treats technology as a "public good", that is, as something freely available (at zero price) for all firms, in all countries. This is because, under the conditions mentioned, the so-called Euller-Wickesteed product exhaustion theorem is valid, according to which all income generated in the economy is "spent" or "exhausted" in the remuneration of production

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factors (capital and labor) based on their marginal productivity. Thus, there is nothing left of the income to remunerate the research activity and development of new technologies. Thus, the neoclassical model of economic growth is simply unable to explain technological progress, taking it as something exogenous to the system.

If technology is a good free as the standard neoclassical model can explain the per-capita income differentials between countries? The first alternative is to explain the per-capita income differentials because of the international differences between the determinants of steady-state per-capita income. In the Solow model, steady-state per capita income (measured in efficient units of labor) depends positively on the savings/investment rate and negatively on the population growth rate, the depreciation rate of the capital stock and the growth rate of the (sic) "total productivity of production factors", which is calculated residually from the growth accounting exercises (OREIRO, 2016, p.p.23-26) and treated as an exogenous variable in determining the level of steady-state income (curious how an endogenous and exogenous variable can be at the same time!). Thus, the international divergences between per capita income levels would result from international differences between savings/investment rates and population/workforce growth rates, assuming that (a) the depreciation rate of the capital stock should be approximately the same between countries and (b) there are no theoretical reasons to justify long-term differences between the total productivity growth rates, given the nature of the (very free) technology in the standard neoclassical model.

From these considerations ROS (2013) performs a calibration exercise of the Solow model from a sample of 87 countries with data taken from Penn World Tables (PWT or Henson Data Set) and World Development Indicators (WDI), which are measured in PPC (purchasing power parity) to constant dollars of 2005. The results are presented in the Table 1 below:

Table 1. Effective and Steady-State Values of the Per Capita Income Gap for the
Year 2008 in the Solow Model (PPP, Constant Dollars of 2005)

	Group 1	Group 2	Group 3	Group 4	Group 5
GDP per capita	75.179	38.104	17.003	6.433	2.042
Investment Rate (% GDP)	23,5	24,5	22,6	22,5	18
Labour Force Growth Rate	1,2	2,2	2,9	8,6	2,7
Income as % of Group 1 countries	100	50,7	22,6	8,6	2,3
Steady-State income as % of income of Group 1 countries	100	94,7	86,9	87,2	78,5

Source: Penn World Tables (PWT or Henson Data Set) and World Development Indicators (WDI).
Note: Sample from 87 countries.

Where:

1. Group 1 High Income Countries: Norway, Singapore, United States, Belgium, Netherlands, Australia, Austria, Ireland, Hong Kong, Sweden, United Kingdom, France, Italy, Finland, Canada, Denmark, Switzerland;

2. Group 2 Middle-High Income Countries: Japan, Greece, Isræl, Spain, New Zealand, South Korea, Portugal, Turkey, Mexico, Iran, Chile, Malaysia, Argentina, Costa Rica, Uruguay, Dominican Republic, Botswana;

3. Group 3 Middle Income Countries: Panama, Venezuela, Mauritania, South Africa, Jamaica, Colombia, Brazil, Tunisia, El Salvador, Peru, Egypt, Ecuador, Jordan, Namibia, Thailand, Syria;

4. Group 4 Middle-Low Income Countries: China, Honduras, Morocco, Paraguay, Bolivia, India, Indonesia, Philippines, Pakistan, Nigeria, Nicaragua, Zambia, Cameroon, Congo, Mauritania, Senegal, Mali, Ivory Coast;

5. Group 5 Low Income Countries: Gambia, Lesotho, Bangladesh, Ghana, Benin, Kenya, Nepal, Tanzania, Sierra Leone, Rwanda, Burkina Faso, Guinea, Madagascar, Mozambique, Malay, Ethiopia, Burundi, Zimbabwe.

Table 1 inspection shows that the per-capita income differential of high-income countries in **terms of low--income countries was 43.4 times in 2008**, i.e, **high-income countries had a GDP per capita about 44 times higher than low-income countries**. However, the calibration of the Solow model for this sample of countries results in a per capita income differential of only 1.27 times, that is, **if the Solow model were "correct" high-income countries should have a per capita income only 1.27 times higher than the per capita income of low-income countries**. As they say in the United States "it is not even wrong" ("it's so ridiculous that it's not even wrong", in a translation for the Portuguese).

An attempt to improve the "performance" of the standard neoclassical model was made by MANKIW, ROMER AND WEILL in 1992 [hereinafter MRW (1992)]. The main contribution of this article was to include human capital as a factor of production, alongside physical capital, and labor. In this context, production per worker will depend on the stock of physical capital per worker and the stock of human capital per worker. A first point to be emphasized is that while the measurement of physical capital and labor are not the subject of empirical controversy (although at the theoretical level we cannot forget the problems of measuring the capital stock raised by the Capital Controversy in the 1950s), with human capital it is not the same. MRW (1992) use the percentage (%) of the working-age population that is in secondary school as a proxy for investment in human capital. ROS (2013) considers the number of years of schooling of the population over 25 years as close to this variable.

Table 2 shows the calibration results of the MRW model (1992) for the same database used in the previous table. As we can see, the per-capita income differentials predicted by the MRW model (1992) for the countries of groups 1 and 5 are much higher than predicted by the Solow model, such differentials are much smaller than those observed in the real world. In fact, while the MRW model (1992) predicts a differential of 5.84 times, a differential of 43.4 times is observed for the countries in the sample, i.e., **the MRW model (1992) explains only 13.45% of the per capita income gap of the countries under consideration**.

Table 2. Steady-State Per-Capita Income Gap Predicted by the MRV Model

	Group 1	Group 2	Group 3	Group 4	Group 5
MRW close to	7,5	8,3	9,3	5,8	3,9
Steady-State value of	8.2	6.4	5.4	1,9	0,6

	Group 1	Group 2	Group 3	Group 4	Group 5
Steady-state value of as % of group 1	100	77,9	66,6	23,2	7,1
Education (years)	9,1	6,8	5,0	4,0	2,6
Education (years) as % of group 1	100	74,8	55,5	43,6	28,8
Income as % of group 1 (2008)	100	50,7	22,6	8,6	2,7
Expected income in steady-state as % of group 1	100	81,8	68,1	37,8	17,1
Effective gdp growth per capita rate (1970-2008)	3,1	3,9	3,6	3,5	3,0
Per capita product growth rate predicted by the model	3,1	4,8	6,0	6,5	6,7
Number of countries	17	17	17	18	18

Source: Ros (2013, p. 87).

More recently, neoclassical theory has presented an alternative hypothesis to explain the differentials of per capita income between countries, which is the theory of poor allocation of production factors. The fundamental idea is that the differences in productivity (and per-capita income) observed between countries are not due to the existence of a technological gap, with some firms and countries operating on the technological frontier and a slow and unequal diffusion of technology to other firms and countries; but rather due to a supposedly greater propensity of poor countries to use their production factors less efficiently due to factors such as corruption, regulation and state intervention in the economy (RESTUCCIA AND ROGERSON, 2017, p. 153).

A first observation that must be made is that the emergence of this new strand of neoclassical growth theory is important evidence of the failure of the so-called "new growth theory" to account for the problem of unequal development. The new theory of growth was developed from two strands, the first initiated by Romer (1986), consisted of abandoning the supposed constant returns of scale and replacing it with the hypothesis of constant or increasing marginal incomes on physical capital at the level of the economy as a whole. In this context, while at the firm level, scale returns would remain constant, making it possible to maintain the supposed traditional of perfect competition in the production factor markets; at the level of the sector or the economy as a whole, the returns of scale would be increasing due to the presence of overflow effects or externalities of a pecuniary or technological nature.

The obvious problem with the hypothesis of increasing returns of scale at the level of the economy as a whole is that the model predicts increasing rates of productivity and per capita income growth over time, so that productivity would tend to infinity in a finite time interval. In addition, it is very difficult to evaluate models based on

large-scale technological externalities in an open economy framework. If externalities cannot cross borders between countries, then the hypothesis of increasing scale returns generates a lot of per capita income divergence, which is not consistent with the existence of "convergence clubs" between high-income and upper-middle-income countries.

The second strand developed from ROMER (1990) consisted of abandoning the perfect competition hypothesis to allow the introduction of "quasi-incomes" that could be used in the remuneration of research and development efforts. In this second strand, the models of **economies of specialization and industrial differentiation** stand out (Romer 1987, 1990) in which the engine of growth is the introduction of innovations that allow the increase of the variety of intermediate goods used as input in the production of final goods and **models of creative destruction** (AGHION AND HOWITT, 2009) in which the engine of growth is the introduction of innovations that allow increasing the quality of intermediate goods (in terms of higher productivity), making the previous crop of intermediate goods technologically obsolete. In this context, economic growth takes place through Schumpeterian "creative destruction" in which the emergence of an innovation leads destroys the market of previous innovation.

The first class of models of this second strand presents predictions that are clearly inconsistent with the observed facts. First, on the balanced growth path the rate of labor productivity growth depends on the size of the workforce. Therefore, small countries should have a trend of growth systematically lower than countries with a large population, which is not supported by the data. Although we consider the workforce employed in the R&D sector, rather than the entire workforce; JONES (1995) shows that the number of scientists working with R&D has increased 9-fold since 1953 while the rate of productivity growth has remained constant. Finally, if we consider more general specifications of the technical progress function than the linear specification presented by ROMER (1990), the productivity growth rate will depend, on the balanced growth path, on the population growth rate; in such a way that with the stabilization of the population and with the workforce allocated in the R&D sector reaching its maximum percentage, the rate of innovation will inevitably fall due to the "end of school" effect, producing a result of "secular stagnation".

The second class of models of this second strand, the models based on Schumpeter's "creative destruction," establish the existence of a direct relationship between the degree of market concentration and the rate of productivity growth in the balanced growth path. This is because a more competitive market structure would generate a smaller flow of "temporary rents" from the successful introduction of innovation, which would discourage R&D investments and therefore productivity growth. The problem is that the empirical evidence available seems to point to a nonlinear relationship between market concentration and R&D investment in the form of an inverted U, thus pointing to the idea that there is a degree of market concentration that maximizes long-term growth.

Let us now return to the discussion of the theory of misallocation of resources. To understand what this theory is about, we must first define what an efficient resource allocation would be. A **factor allocation is said to be efficient if the marginal productivity of production factors is the same among all firms and sectors of economic activity**. Thus, there are no productivity gains to be achieved by transferring production factors from one firm to another, or from one sector of activity to another.

This definition of resource allocation encounters several problems that we encounter in the real world. In order for the equalization of marginal productivity of production factors between firms and sectors to be possible, there should be no barriers to the entry or exit of firms from the various sectors of activity; labor force mobility must be unlimited between firms, sectors and countries; there should be no asymmetric information and nominal price rigidity and all companies should have access to the same financing conditions in such a way that none of them will be required to use a lower amount of capital than is economically efficient. In other words, the definition of optimal resource allocation does not seem to be particularly relevant to the analysis of the world in which we actually live.

But in addition to normative criticism the theory of misallocation of resources, we must evaluate whether it is able to solve the problem it proposes to deal with, that is, to explain the differences observed in the levels of productivity and per capita income between countries from the hypothesis of misallocation of resources. To do so, it will be necessary to evaluate the methodology for measuring the level of poor allocation of resources, as well as establishing a quantitative connection between the possible sources of misallocation and the available misallocation measures. As we shall see below, the great deficiency of the theory of misallocation lies precisely in its inability to establish an empirical link between the possible causes of poor allocation of resources and the extent of this misallocation.

Regarding the measurement methodology, the literature on misallocation of resources establishes two methodologies, namely: direct and indirect. The direct methodology focuses on specific sources of misallocation to assess its consequences. These sources may be (i) statutory measures, which includes tax codes and regulation; (ii) discretionary decisions made by the government or other entities such as banks, which includes corruption, subsidies, targeted credit, subsidized interest rates, etc.; (iii) Market imperfections which includes the monopoly power of companies in market structures with imperfect or oligopoly competition, market frictions, property rights and etc. This requires quantitative measures on each of the basic sources of misallocation. The problem is that getting these measures is a particularly difficult task. In the words of RESTUCCIA AND ROGERSON (2017):

> "Implementing it requires quantitative measures of the underlying source of misallocation. If statutory provisions are the key source of misallocation, then this is perhaps not a problem. However, if the most important sources of misallocation reflect discretionary provisions, then measurement may be very difficult. Even if regulation is an important source of misallocation in aggregate, the highly specialized and complex nature of regulation within specific industries may still make it very difficult to develop and analyse an appropriate structural model" (p.155).

The second methodology is indirect. Here the focus is to identify the extent of misallocation without identifying the causes of it. In this context, the measurement of misallocation requires the definition of what would be an efficient allocation of resources, which, as we saw earlier, implies the equalization of marginal productivity among all producers. In the words of RESTUCCIA AND ROGERSON (2017):

> "This approach also requires some structure, but unlike the direct approach it does not require specifying a full model. In our simple example, given cross-section data on output, labor, and capital, it is sufficient to specify the production function in order to directly compute the implied amount of misallocation. To see why, note that with data on y, k, and h for each producer and a production function f we can infer the Ai Given a production function /and the A_i, we can directly solve for the allocation of inputs among producers that would maximize output. Comparing this to actual output provides an assessment of the extent of misallocation" (RESTUCCIA AND ROGERSON, 2017, p.155).

This methodology presents several limitations. The indirect approach assumes a production structure and uses micro-economic data to estimate wedges in first-order conditions that characterize an efficient allocation. In HSIEH & KLELOW (2009) it is assumed that all producers in the same sector use the same Cobb-Douglas production function. Therefore, in balance, the K/L ratio should be the same for all producers. However, **if the technologies are different then the differences in K/L ratios reflect specificities of the technology employed by companies rather than misallocation**. Another problem occurs due to the existence of adjustment costs of the labor force and/or ca-

pital stock. In this case, the differences in marginal yields of the factors may represent the existence of adjustment costs, instead of showing the existence of poor allocation of resources. In this context, **the possible way out would be to focus on the misallocation of factors between countries, rather than at the per se levels**. Even so, the greater dispersion of marginal labor and capital products among developing economies – such as China and India – **may reflect greater measurement errors in these countries compared to developed countries** – such as the United States.

This possibility was examined by BILS, KLENOW AND RUANE (2017). In this article, the authors used the panel component of the HSIEH & KLELOW (2009) datasets for the United States and India and thus infer the measurement error in each country and the extent of misallocation. The results obtained were quite unfavorable for the hypothesis of poor allocation of resources. First, the a**uthors showed that measurement errors account for a significant amount of dispersion between the marginal productivity of production factors. Second, the contribution of measurement error has become surprisingly more important in the United States over time, but relatively stable in India**.

In a way, the analysis of the literature on misallocation of resources shows us that it is a theory without empirical evidence to support it; or empirical evidence without a robust theory to explain it. Unequal development remains a huge challenge for the neoclassical theory of economic growth and development. An adequate response to this phenomenon should be sought in the various heterodox theories of economic development. I suggest to the interested reader to consult Ros (2013, caps. 6-13) to learn about the Classical Theory of Economic Development and growth models led by the aggregate demand for post-Keynesian inspiration. Another alternative is the structuralist macroeconomics of development and the new developmentalism. The interested reader can seek BRESSER-PEREIRA, OREIRO AND MARCONI (2015) for a more general overview of new developmentalism and OREIRO, MARTINS DA SILVA AND DÁVILA-FERNANDES (2020) for a more formal presentation of the structuralist macroeconomics of development.

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