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Carrera 30 No. 45-03, Edificio 310, primer piso
Correo electrónico: revcuaeco_bog@unal.edu.co
Página web: www.ceconomia.unal.edu.co
Teléfono: (571)3165000 ext. 12308, AA. 055051, Bogotá D. C., Colombia

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CONTENTS

CONTENIDO

CONTEÚDO

EDITORIAL

STRUCTURAL CHANGE AND COUNTER-REFORMS IN LATIN AMERICA: NECESSITY OR POSSIBILITY?

Pablo Ignacio Chena and Esteban Pérez Caldentey[1]
Guest Editors

1. A SPECIAL CONTEXT FOR A SPECIAL NUMBER

The issue that we present today was conceived in a very different economic, political and social context from the one that currently prevails due to the emergence of a unique historical event: The Coronavirus pandemic. A phenomenon that will have effects on economic growth and unemployment similar to those of the Great Depression of the 1930s and an impact on human lives similar to those of a war. An economic crisis and a humanitarian crisis come together in this event.

One of the central questions posed by this phenomenon is whether it will accentuate the prevailing trends in the form of organization and articulation of production on a world scale and global finance, or whether, by contrast, it will be a disruptive factor and one of creative destruction. Whatever the result, the pandemic will affect the productive structure of Latin America and the possibilities of the region to move towards a progressive structural change.

[1] Pablo Ignacio Chena is a CONICET Researcher and Esteban Pérez Caldentey is Coordinator of the Financing for Development Unit within the Economic Development Division (ECLAC). The ideas expressed herein are the sole responsibility of the authors and may not coincide with those of the institutions with which they are affiliated.

Papers in this special issue address different aspects and dimensions of structural change for Latin America, both from a regional perspective (Emilia Ormaechea and Víctor Ramiro Fernández; and Matías Torchinsky Landau), from one focusing on the specific experiences of Mexico (Juan Carlos Moreno-Brid, Joaquín Sánchez Gómez and Luis Ángel Monroy Gómez Franco), Colombia (Gonzalo Cómbita Mora), Ecuador (Katiuska King and Pablo Samaniego), Argentina (Pablo Chena; Demian Panigo and Germán Zorba), and jointly for Chile, Argentina and Mexico (Samuele Bibi).

Despite these papers having been thought about and written before COVID-19, the analysis and conclusions of the articles remain valid in the current circumstances. On the one hand, they allow us to understand how structural obstacles in the region aggravate the effects of COVID-19 and may limit our capacity to face them. On the other hand, they can serve as a basis to identify the key challenges that the region will face in terms of moving towards a progressive structural change in a post-COVID world.

2. GLOBAL TRENDS IN THE WORLD ECONOMY PRIOR TO COVID-19

In the last three decades, the global economy has been characterized by two major trends. On the one hand, the non-financial corporate sector has witnessed a simultaneous process of expansion, concentration and globalization without historical precedent. This process has been guided by large traditional transnational companies to mobilize a wide variety of industries, production and employment around the globe. This responds to the search for greater benefits through lower production costs, the expansion of global markets, and insertion into global value chains. Changes of production location are not related to only one specific industry or product line; they occur across a wide range of industries and products.

Global business concentration has increased in many productive sectors, and the bulk of multinational companies belong to the western world. Evidence available for 2017 shows that, out of a sample of 22 sectors (including groceries, electronics, pharmaceuticals, chemicals, energy, and transportation, among others), the top ten companies held, on average, 88%, and the top five 80% of the global market in these sectors. For the same year, the leading company captured on average 43% of the global market. Seventy-seven percent of these leading companies belonged to the United States or Europe, and only 1% were of Chinese origin (Nalin, 2017).

Along with this expansion of the real sector, the financial sector also underwent important transformations across the globe. On the one hand, the financial sector experienced unprecedented expansion in the first decade of the 21st century, driven by a strong interrelation between leverage and interconnectivity that allowed global banking to effect strong profits. At the same time, as well as greater interrelation fostered between the real and financial sectors, there was also predominance of the finance sector over the production sector.

This can be referred to as a financialization process, one that has permeated many economic activities, including the distribution and production of goods and services. It has also been reflected in the significant increase in inequality both globally and at country level. The increasing role of raw materials as financial assets illustrates this process. The Global Financial Crisis changed the way in which the transformations of the financial sector and its interaction with the real sphere are established; a serious blow to the global banking. However, other financial institutions and, in particular, the non-bank financial sector experienced strong dynamism, while the non-financial corporate sector adopted a role as financial intermediary, taking advantage of the boom in the international bond market that replaced the loss of dynamism of international cross-border loans.

3. LATIN AMERICA AND THE ABSENCE OF PROGRESSIVE STRUCTURAL CHANGE

The close relationship between the financial sector and the real sector, and the consequent financialization process, were not exclusive to developed countries. They also affected developing economies. An illustrative case is the emergence of financial conglomerates in some countries in the region (Abeles, Pérez Caldentey & Valdecantos, 2018; Bortz & Kaltenbrunner, 2020). However, this financial development was not accompanied by productive development or progressive structural change. The lack of structural change is reflected in the fact that the growth rate of labor productivity in Latin America has, in the last thirty years, lagged behind that of all developing regions (0.4% for the 1991-2018 period, compared to 6.5%, 4.2%, 1.1% 1.0% for the East Asia and the Pacific, South Asia, the Middle East and North Africa, and Sub-Saharan Africa) (Paus, 2019).

The absence of structural change is also reflected in Latin America's export structure that, over time, has remained anchored in natural resources. The evidence available for the 1980-2018 period shows that the proportion of raw materials and manufactures based on natural resources represented 77%, 63%, 44%, 60% and 50% of the total on average in the early 1980s, 1990s, 2000s, 2010 and for 2018 (ECLAC, 2019). Regarding recent dynamics, there are two great paths that can promote structural change in the region. On the one hand, a drop in the terms of trade with great possibilities of becoming secularized over time, an aspect highlighted by Prebisch (1967) as an impulse to industrialization in the periphery. On the other, an accelerated outflow of financial capital from the periphery to the center, a phenomenon that limits the financialization of capital (Bortz & Kaltenbrunner, 2020).

However, an aspect that gives rise to a certain pessimism is the location of the innovation processes. Global value chains play a determining role in this issue, locating low-value-added production segments (non-core activities) in Latin America, where competition revolves around reducing wages. While central countries concentrate innovation, competition for the monitoring and control of property rights, finance, and marketing (core activities) (Medeiros & Trebat, 2016). In this aspect, no changing elements have been observed so far.

4. THE PANDEMIC: WILL IT INCREASE THE VULNERABILITY OF THE PRODUCTIVE APPARATUS OR WILL IT BE A PROCESS OF CREATIVE DESTRUCTION?

In this context, the Covid-19 pandemic erupts as a true event in the sense of Badiou (1999); a break in the field of knowledge about the established situation that allows the emergence of a possibility not considered until now.

The change began with a sudden stop in the movement of people and goods for sanitary reasons that soon moved to the sphere of production. With similar effects to those of an involuntary general strike, COVID 19 has produced a scenario of total uncertainty that deteriorate the state of confidence in the established conventions of the marginal effectiveness of capital in the short, medium, and long term, as a result of the many questions that exist about the depth of the crisis and its timing.

The Pandemic is a factor of disruption and destruction of the productive structure at global and regional levels. In Latin America, productive sectors, including services, are highly dependent on external demand and the proper functioning of global production chains. In its own dynamics, the crisis threatens, on the one hand, to extinguish huge numbers of companies and entire branches of goods and services production on global, regional and national scales. Certainly, this reveals the fragility of the productive structure in Latin America.

At the same time, the Pandemic can be transformed into a way of rethinking adequate policies for a productive structure that is more closely related to economic and social development objectives. Can it represent the opportunity for "creative destruction" capable of generating structural change? Outside the margins of determinism, a number of elements emerge that can lead us to think about this possibility.

5. BEYOND THE HEALTH STATUS STATE: A DEVELOPMENTAL STATE?

Historically, the central element of development has been an interventionist state that has guided the process using different strategies and instruments, as is required by circumstances and economic policy objectives. The great powers developed and became strong under the tutelage of the State.

COVID-19 will definitely change the State-market relationship, allowing us to open up to the possibility of a Developmental State, given the fragility shown by the economic and social institutions, as a consequence of the Washington Consensus policies and the market mechanisms established to tackle the effects of the Pandemic.

Another question that arises in the papers in this special issue is the evolution of the National States, an institution that, as highlighted by the work of Emilia Ormaechea and Víctor Ramiro Fernández, is a central to promoting structural change. However, in the last decades, this institution served as an instrument for the reproduction of financial capital or it was structurally conditioned by it. An aspect that is analyzed in detail and under different perspectives in this issue for the cases of Mexico (Juan Carlos Moreno-Brid, Joaquín Sánchez Gómez and Luis Ángel Monroy Gómez Franco); Colombia (Gonzalo Cómbita Mora); Ecuador (Katiuska King and Pablo Samaniego); Argentina (Pablo Chena; Demian Panigo and Germán Zorba) and jointly for Chile, Argentina and Mexico (in the text by Samuele Bibi).

The COVID 19 crisis has caused the governments of the National States to adopt a dynamic that, with different speeds and retentions, seem to lead to a "Sanitary State Reason" with four main characteristics: a) a drastic change in public spending to boost the health component, and social and economic subsidies; b) the formation of a certain consensus to temporarily finance this increase in spending with the issuance of domestic currency; c) greater control of the population and the territory; and d) the revival of economic, political, and social borders.

The transitory nature of the "Sanitary State" and its instruments open certain dilemmas, about the future of the region in issues such as public spending: will it be financed predominantly by taxes on wealth or taxes on financial capital circulation? Or will the subsequent fiscal adjustment prevail after the pandemic?

State intervention in markets: will it prioritize the needs of transnational capital subsidizing them until the end of the crisis or will strategic companies be nationalized for the development of new productive branches? Regarding foreign trade: will state control of imports and exports be consolidated with regional South-South trade agreements? Or alternatively, will the trend to go back to free trade prevail, according to the mandates of global value chains?

Regarding international financial capital flows: will conditionalities and limitations apply to their entry and exit, or will financial liberalization be imposed once again? Finally, regarding technological change: will greater competition between countries prevail or will the concentration of innovations be consolidated in the centers of the world system?

The answer to these questions and the coordination between the economic policies of the different countries will somehow define the potential of progressive structural change in Latin America (on the importance of fiscal coordination, see Matías Torchinsky Landau's article in this issue). The possibility of moving from a Sanitary State to one that resumes the region's developmentalism tradition arises, after COVID-19, as a possible alternative.

Finally, this special issue includes everything it needs to make it special. Beyond the current global situation of the pandemic, this issue, number 80 of *Cuadernos*

de Economía, coincided with the celebration of the 40th anniversary of the journal. This seems a reasonable coincidence, if we are referring to a biannual publication but looking back, it was a matter of chance. First, it should be clarified that despite its first issue being published in 1979, the journal is celebrating 40 years of academic service since there were no publications in 1982.

Cuadernos de Economía began with one annual publication until 1993 when it turned biannual. Since 2012, in addition to the regular issues, a special issue has been published once a year, whose main objective is to addresses a topic of current interest. As we can see, the journal has come a long way, including ups and downs that have given rise to a number of exceptions to its regularity, but it has always fulfilled its goal of promoting the production and diffusion of knowledge in the different branches of economic sciences in Colombia and Latin America.

Without further prelude, let us begin with the introduction to this issue written by professor Marc Lavoie, to whom we are especially grateful for his participation and for his profound intellectual contributions to the heterodox economics tradition that is clearly a central topic in this issue.

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INTRODUCTION

THOUGHTS ON POST-KEYNESIAN ECONOMICS AND EMERGING ECONOMIES

Marc Lavoie

The few times that I have been to conferences in Mexico or in South America, I have been asked what advice I could offer on economic policy from a post-Keynesian point of view. My answer has always been the same: I bring the economic theories; you assess whether the theories and their assumptions apply to your country since you are the experts on its economic environment and constraints. I know fairly well the institutions and economic conditions of my own country —Canada—but, since I have little expertise in economic development, I only have a very vague idea of whether the problems, let alone the solutions, are similar in emerging countries. My intention is not to act like the technocrats from the International Monetary Fund who believe that whatever the problem or the country, the same standard recipe—their structural adjustments—can always be imposed.[1]

This being said, there are policies that post-Keynesians are likely to recommend in most circumstances. I have long argued that one of the key presuppositions of heterodox economics is the belief that unfettered markets—markets left on

M. Lavoie
Emeritus Professor, University of Ottawa and University of Paris 13.
E-mail: Marc.Lavoie@uottawa.ca

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[1] The only time I took a really strong stand is when I visited Iceland in early May 2012 and had the chance to talk to both the Minister of Finance and the Governor of the central bank for several hours. At the time Iceland, after its disastrous banking crisis, was thinking of joining the Eurozone. I was adamant that this would be a very bad decision. I doubt my opinion had any impact, but we know for a fact that Iceland did not join the Eurozone!

their own—are unlikely to be associated with economic stability. While (most) post-Keynesians are ready to take the position that capitalism is likely to provide the dynamism Schumpeter highlighted, they are also keenly aware that capitalism must be tamed and that the State must play a key role, both at the macroeconomic level through its budgetary expenditure and by imposing proper regulations at the microeconomic dimension, but also through leadership at the mesoeconomic level. At the sectoral level, the key role of the State for technological development has recently been well documented by heterodox authors close to post-Keynesian economists such as Mazzucato (2013).

Post-Keynesians have also always been reluctant to join the fashionable excitement around capital flow liberalization. The IMF finally came to its senses by recognizing that free capital flows might be appropriate for developed economies but were most likely to be damaging for emerging economies with less sophisticated financial markets (Grabel, 2018). Besides the high dangers of financial crises and economic recessions generated by these uncontrolled capital flows, there has also been a realization by the IMF that the liberalization of foreign capital flows has led to a rise in income inequality (Ostry, Berg & Tsangarides, 2014), as it increases the negotiating power of firms to the detriment of labour. Indeed, when Jonathan Ostry, in 2016, made the above claims during a lecture he was invited to at the University of Ottawa, I pointed out that free trade was likely to have the same effect as free capital movements because it would also enhance the bargaining power of firms and weaken that of trade unions since firms could now import goods from anywhere in the world and threaten to move production abroad. Ostry reluctantly agreed that this was indeed a logical step to take. There are, thus, two reasons to be suspicious of free trade: authors such as Chang (2008) have long argued that free trade might be good for powerful countries whereas emerging countries may never get their opportunity to develop their own industries; moreover, we also now know that free trade is likely to increase income inequality. Thus, even mainstream authors, at least those at the IMF, now push aside the claim that we have to arbitrage between equality and efficiency, as was famously claimed by Okun (1975) in a little book that all of us were asked to read when I was finishing my undergraduate studies. Income inequality is now perceived as being likely to be harmful to growth.

This brings me to a topic which has generated a lot of interest among heterodox economists in general and post-Keynesians in particular and even among researchers in comparative political economy: wage-led versus profit-led growth. The topic has been brought beyond the realm of academia by the International Labour Office, which discussed it extensively in its 2012 annual report. I played a small role in all of this as I was asked to make a plenary presentation on wage-led growth at the 2009 ILO conference in front of the tripartite delegates. This was followed by a workshop on wage-led and profit-led growth that was held at the 2012 conference, which give rise to the book that I edited with Stockhammer (Lavoie & Stockhammer, 2013). One thing that we found hard to convey was the

distinction between a wage-led regime and wage-led policies. A regime is how the economy reacts to an autonomous change in the wage or the profit share. It depends on propensities to consume, investment functions, the structure of international trade, and the way firms react to changes in unit labour costs. An economy has a wage-led demand regime if an increase in the wage share leads to an increase in economic activity; it is a profit-led demand regime if this leads to a decrease in economic activity. By contrast, policies are wage led (profit led) if they intend to raise or favour the wage share (profit share).

Heterodox econometricians have been particularly active around the question of whether or not various countries were empirically in a wage-led or profit-led regime. As one would expect, authors belonging to different research traditions have yielded opposite results, and not always because they were using different econometric methods. Anyway, my understanding of all this has been that most developed countries are wage led while countries exporting primary goods, even developed countries such as Canada or Australia, tend to be profit led. Surprisingly, at least for some observers, countries with a large export sector are not necessarily profit led. Almost all of the ten studies undertaken for South Korea have shown this to be a wage-led country (Lee, 2019). Also, a study has found that China used to have a profit-led demand before the 2008 financial crisis but has entered a wage-led demand regime since then as a result of changes in consumption and investment parameter values and because the proportion of trade has diminished (Jetin & Reyes, 2019).

However, I have become aware by attending various sessions at conferences that there is substantial scepticism regarding the feasibility of wage-led policies in emerging countries. These doubts arise both from a practical point of view, in the sense that governments are unlikely to endorse them, and from an economic point of view, in the sense that several heterodox economists are convinced that emerging economies have profit-led demand regimes. One of the arguments being advanced in support of profit-led demand regimes is that emerging economies would be supply-constrained. As I mentioned in my book (Lavoie, 2014, pp. 278), Kalecki himself believed that situations of excess capacity first and foremost concerned capitalist economies. Here is what he thought back in 1966, as summarized by Feiwel (1972) from an article written in Polish by Kalecki:

> Whereas the crucial problem of a developed capitalist economy is the adequacy of effective demand, as such, an economy possesses a stock of productive capital which more or less matches the existing labor force and is therefore capable of generating a rather high per capita income, provided that its resources are fully employed. The cardinal problem of the underdeveloped (or less developed) economies is the deficiency of productive capacity rather than the question of its variable utilization (underutilization) (pp. 18-19).

One may wonder whether Kalecki's opinion was overly influenced by his observation of socialist economies, in his case Poland. Kornaï (1971), observing Hungary,

thought that capitalist economies had sales competition, with excess supply and sellers competing with each other to capture customers. Conversely, socialist economies were under purchase competition, with demand always being constrained by a lack of supply and with buyers (both firms and consumers) competing to capture commodities. Can past underdeveloped or current emerging economies be characterized along the lines of deficient productive capacity and deficient supply, as, for instance, is argued by Razmi (2016)? Perhaps they can. As I said earlier, I am no emerging economies expert, but what I find intriguing is that two of the first four authors in the Kaleckian tradition to build wage-led models came from India (Amitava Dutt) and Brazil (Edward Amadeo): both emerging economies. Taylor (1983, pp. 13-14), in a book on 'applicable models for the third world', describes his wage-led model based on excess or spare capacity by referring to 'countries at middle and low levels of gross domestic product per head'.[2] In addition, Ro Nastepad and Servaas Storm, who have carried out very interesting theoretical and empirical work on demand and productivity regimes, became attracted to the Kaleckian model of growth as a consequence of their earlier studies on the Indian economy. In a recent interview, Dutt (2020) reasserts that wage increases in the informal sector are likely to have little negative effects on investment in the formal sector or on exports, and that small open economies, in contrast to mainstream assumptions, cannot export all that they can produce, as emphasized by balance-of-payment growth models *à la Thirlwall*.

Kaleckian models and empirical studies have perhaps put too much emphasis on wage and profit shares. Through the studies by Thomas Piketty and his numerous collaborators, inequality based on personal income has been in the limelight, and there has been a recognition that rising divergences within the wage share could be the cause of as large, if not bigger, income inequality compared to functional distribution between wages and profits. In fact, this is why I have always paid attention to the distinction made by Rowthorn (1981) between managerial salaries and the wages of direct workers, or what some call supervisory and non-supervisory workers, as have others more recently (Palley, 2017). Indeed, this distinction is not innocuous: there is evidence that the presence of managers, who are less directly related to production, may bias empirical studies towards findings of profit-led demand regimes (Cauvel, 2019; Lavoie, 2017). In addition, income inequality is also related to social benefits—social security, unemployment insurance, and pensions for the elderly—as well as to the income that can be obtained from the informal economy. The positive effects on aggregate consumption of a more equal income share also arise from improvements in these social benefits. If data for the Canadian economy can be generalized for other countries (Costantini & Seccareccia, 2020), the evidence is quite clear that individuals or households in the poorer quintiles have a propensity to consume which is very much higher than that of agents found in the richer quintiles, so improvements in the

[2] The fourth author is Robert Rowthorn.

degree of equality in personal income distribution will for sure increase consumption demand.

Over the last few years, it has been recognized that the demand effects of an increase in the wage share are likely to be modest. From the very beginning, it was pointed out that to neutralize the potential negative effects on net exports, the positive effects of such wage increases would best be achieved if they could be pursued in a concerted way by countries belonging to the same economic zone: not an easy task (Capaldo & Izurieta, 2013). Coordination was also key in the response to the Global Financial Crisis in 2009. Such wage increases would also best be associated with a concomitant expansionary fiscal policy (Obst, Onaran & Nikolaidi, 2017). Perhaps the newly-found celebrity of the advocates of Modern Monetary Theory (MMT)—a branch of post-Keynesian economics that minimizes the financial dangers of public debt—will induce more governments to go ahead with such policies, although, once again, one may fear that MMT scriptures may not fully apply to emerging economies (Bonizzi, Kaltenbrunner & Michell, 2019).

Finally, one cannot be silent on the practical difficulties in moving towards less neo-liberal and more progressive economic policies, as well as having them accepted by the ruling class. I realized this when I went to a conference in Argentina in November 2013. In the car driving us from the airport to Buenos Aires, I was discussing the conjecture of the economy with an interpreter of the central bank of Argentina. To my surprise she told me how annoyed she was with the progressive social policies pursued by the Argentine government. She complained that social benefits had been improved so much that now her housemaid refused to spend four hours a day on public transport to come and work in her house at the current wage. She would need to pay her more. This led me to think that if middle-class citizens do not endorse these 'income-led' policies, the government was likely to be beaten in the forthcoming elections, which is exactly what happened. I am told that similar motives can explain the results of the presidential election in Brazil in 2018. Other South American countries—Bolivia for instance—also seem to be currently subjected to this sort of revenge of the ruling or upper-middle class.

Besides these political difficulties, even when wage-led or income-led policies are actually being implemented, as has been the case in Brazil or South Korea, they become easy targets for mainstream economists whenever the economy slows down. As it is very difficult to quickly disentangle the causes of such a slowdown between wage-led policies, monetary policies, banking behaviour, the exchange rate, a capital strike, degrowth by foreign customers or domestic fiscal restraints, it is easy to blame progressive economic policies, as recounted by Serrano and Summa (2015) for Brazil or by Lee (2019) for Korea.

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PAPER

MEXICO'S LATEST –AND PROBABLY LAST– PACKAGE OF MARKET REFORMS (2012-18): THE REMAINS OF THE DAY*

Juan Carlos Moreno-Brid
Joaquín Sánchez Gómez
Luis Ángel Monroy Gómez Franco

Moreno-Brid, J. C., Sánchez Gómez, J., & Monroy Gómez Franco, L. Á. (2020). Mexico's latest –and probably last– package of market reforms (2012-18): The remains of the day. ***Cuadernos de Economía, 39*****(80), 425-443.**

The Pact for Mexico signed in 2012 identified 108 policy actions to be implemented during the government of Enrique Peña Nieto. The signing of this agreement was the prelude to a new wave of market reforms. This article summarizes

J. C. Moreno-Brid
National Autonomous University of Mexico (UNAM). Mexico City, Mexico.
Email: mbrid@economia.unam.mx

J. Sánchez Gómez
National Autonomous University of Mexico (UNAM). Mexico City, Mexico.
Email: sgomezjoaquin@hotmail.com

L. Á. Monroy Gómez Franco
City University of New York (CUNY), USA. New York, United States.
Email: monroygomezfranco@gmail.com

* This paper is an unpdated and much revised and succint version of an extense and in-depth study carried out by the authors for the Mexican Senate (See Moreno-Brid, Sanchez, & Salat, 2018).

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a previous document in which we analysed each reform implemented in several areas: labour, education, fiscal, financial, economic competition, telecommunications, and energy. This paper affirms and insists on the need to launch a new development agenda that promotes sustained growth, with the main focus being to reduce inequality and promote social mobility.

Keywords: Economic development; development; planning and policy; institutions and growth; Latin America; planning; coordination and reform.
JEL: O1; O2; O43; O54; P41.

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El Pacto por México firmado en 2012 identificó 108 acciones de política a implementarse durante el gobierno de Enrique Peña Nieto. La firma de este acuerdo fue la antesala de una nueva oleada de reformas estructurales. Este artículo resume un estudio previo, donde analizamos con detalle cada una de las reformas implementadas en las materias: laboral, educativa, fiscal, financiera, competencia económica, telecomunicaciones y energía. En este texto se afirma e insiste en la necesidad de poner en marcha una nueva agenda de desarrollo que promueva el crecimiento sostenido, teniendo como eje toral abatir la desigualdad y promover la movilidad social.

Palabras clave: desarrollo económico; desarrollo; planificación y política; instituciones y crecimiento; América Latina; planificación; coordinación y reforma.
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Palavras-chave: desenvolvimento econômico; desenvolvimento; planificação e política; instituições e crescimento; América Latina; planificação; coordenação e reforma.
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INTRODUCTION

In 2012, Enrique Peña Nieto was elected President, which meant the return of the *Partido Revolucionario Institucional* (PRI) to power after more than a decade in opposition. Ever since his campaign, he had pointed out the economy's slow long-term growth and the acute poverty as the major challenges –perhaps the greatest– of Mexico's development agenda. On his first day in office, along with the leaders of the three main political parties at that time, the PRI, the Partido de Acción Nacional (PAN), and the Partido de la Revolución Democrática (PRD), he launched the Pacto por México (Pacto). This was officially described as "...a new political agreement to boost economic growth and generate quality jobs demanded by Mexicans" (López-Noriega & Velázquez, 2018, p. 46).

The Pacto, Mexico's most relevant political agreement in a long time, identified 108 policy actions to be implemented between 2012-18. It also inaugurated a new wave of market reforms, along the same lines of the first reforms during the mid 1980s that opened domestic markets, reduced the role of the State in the economy, and made exports the engines of economic expansion. Comprising eleven reforms, the Pacto endeavoured to change key areas of the country's economic and social life: education, finance, energy (including oil and electricity), telecommunications, market competition, fiscal reform, transparency, and even the criminal justice and electoral systems. In addition, a liberal labour reform was put into operation in the last months of President Calderón's tenure (2006-12). All eleven reforms were implemented within the next 24 months.

The purpose of this paper is to make an overall assessment of this reform package with regards to its impact on removing –or not– key binding constraints on Mexico's log-term development. It is organized as follows: After the introduction, the next section reflects on the methodological difficulties inherent in assessing the impact of major packages of diverse structural reforms, given their multiple objectives and varied time horizons. Once the analytical underpinnings have been reviewed, a comprehensive assessment is made of the structural reform package as a whole (not of each reform individually) based on what we see as its progress and setbacks in promoting the country's economic growth and development. Subsequently, the paper comments on what we see as the new and the old challenges that the Mexican economy faced at the end of the Peña Nieto administration. This helps to explain the collapse of the PRI in the 2018 Presidential election and its defeat by López Obrador and MORENA, with their campaign focused on the need to fight corruption and to put an end to neoliberalism. We close with a brief analysis of the macroeconomic policies put in place by Andres Manuel during his first year in office.

ON THE IMPACT OF STRUCTURAL REFORMS IN MEXICO: AN OVERVIEW AND METHODOLOGICAL CHALLENGES

Peña Nieto's market reforms –in compliance with the regulations set by the State's economic planning responsibilities– were designed and launched within the overall

framework set by *The National Development Plan 2013-2018.* The NDP identified five main axes in its development agenda: i) Institutional strength for peace, ii) Social development for inclusion, iii) Human capital for quality education, iv) Equal opportunities, and v) An international role with global responsibility. It included a Programme for Democratic Productivity (PDP) as an across-the-board initiative, arguing that "…in order for Mexico to fulfil its maximum potential it is indispensable to raise productivity (Gobierno de la República, 2013, p. 19). Moreover, it stated that:

> The dynamism of productivity has been a recurrent feature of international success stories. Countries that have established the conditions for sustained productivity growth have been able to generate greater wealth and wellbeing for their people…Productivity in an economy is one of the fundamental determinants of economic growth. Growth is the means that will allow us to achieve a better standard of living for the population, a more equitable society and permanently reduce poverty.

In the negotiation process with Congress, Peña Nieto promised that the Pacto's reforms guaranteed a 5% annual average rate of long-term GDP growth. He warned that, without it, the average annual GDP growth rate would be 3% at most. The reforms defined the economic agenda of his administration. Macroeconomic policy, which has been the same since the mid-1980s, focused on the objective of consolidating stabilization, understood as low inflation (around a 3% annual increase rate in consumer prices) and a minimal fiscal deficit. However, this has to deal with major external shocks in the oil international market as well as, and importantly, with the adverse effects of Trump's rise to power. Social policy continued to focus on conditional cash transfers to the poorest members of society.

On the economic and social fronts, Peña Nieto's reforms do not look to have been successful. The average growth of real GDP between 2012-18 was slightly above 2%. Total Factor Productivity actually declined, the incidence of poverty was higher at the end of his mandate than at the beginning, and inequality was not reduced. Formal employment, measured by the number of workers affiliated to Mexico's Social Security (IMSS) rose, but labour market conditions dramatically deteriorated: the unemployed plus underemployment and those who no longer seek work because they do not believe they can find it reached 20% of the working age population. The proportion of workers who receive less than three minimum wages rapid and persistently rose, while the share of those earning more than five minimum wages collapsed (Samaniego, 2018).

To a large extent, the Pacto followed the prescriptions of the pioneering market reforms launched in the mid-1980s by De la Madrid and Salinas de Gortari. However, it now took for granted that, after years of orthodox policies, the country's macroeconomic fundamentals were strongly consolidated. This is because a Pacto that boosted economic growth required a change in the supply conditions to favour the free action of market forces to jumpstart productivity. In its demand

management, macroeconomic policy or even State-led industrial policies would and could not strengthen Mexico's long-term growth potential. Through supplying side interventions, this meant that distortions needed to be corrected for key markets to function. This was particularly true for the labour market, which was rigid, had poor training of human resources, was highly informal and, therefore, had a low productivity (Delajara, De la Torre, Díaz-Infante & Velez, 2018). An additional diagnosis was that privatization and deregulation has to be speeded up, mainly in the oil and electricity industries, financial services, and telecommunications industries. Removing the above-mentioned distortions would –the story went– boost productivity and growth. In terms of his individual reforms, in his last months in office Calderon (2006-12) implemented a constitutional change aimed at making the firing and hiring procedures more flexible.[1] The following Table 1 summarises the reform package implemented during Peña Nieto's administration.

Interestingly, even though Peña Nieto's discourse was in full favour of reducing the role of the State, the reforms of the educational, fiscal, and financial systems incorporated certain initiatives aimed at strengthening the public's certain regulatory capacities. The fiscal reform was set to raise public revenues by taxing higher socio-economic strata and removing important tax deductions. The financial reform –in theory though much less in practice– aimed to boost the intermediation of funds from the banking sector to be used in entrepreneurial purposes. The purpose of one relating to education was to recover the key role of the State in the administration of all matters related to public education (Granados Roldán, 2018).

A Note on the Methodology to Assess Systemic Reforms

The evaluation of any package of numerous, in-depth, and simultaneously applied structural reforms is a complicated task. This is especially true in this case where very little time has elapsed since their launch, and many of them were drastically interrupted by the new administration. A priori, there is a great diversity of criteria to evaluate them: almost as many as the different economic and social development objectives. The selection of any evaluation metrics is far from trivial. It may be that from the perspective of a particular goal, for example the sustainability of public finances, one reform may be seen as most favourable, but under another perspective (boosting public investment in infrastructure) it may appear to be a complete failure. Moreover, the design and implementation of the 2012-2018 structural reforms did not take methodological issues into consideration future impact evaluation.

A further complication is that progress of the different structural reforms towards their goals is not necessarily linear; its success or failure may perhaps only be accurately seen in the medium- or long-term. At the same time, a commensuration of the significance of its various effects is additionally complicated by the fact

[1] In August 2019, a new Labour Reform was approved, which strengthens the labour justice system and promotes union freedom and association.

Table 1.
Description of Mexico's Sstructural Reforms: 2013-2018

Reform	Approval of secondary law	Key objectives
Labour	08/2019	Promote the creation of formal jobs through new and more flexible forms of employment with access to social security.
Educational	09/2013	Transform the national education system, focusing on teacher evaluation. Regain control by the State of public schools' payroll as well as their hiring capacities. The General Education Act and the Professional Teaching Service Act were enacted.
Fiscal	10/2013	Increase tax revenues by two and a half GDP points through changes in income tax rates, raise the maximum marginal rate to 35%, reduce investment tax incentives, and approve a 10% tax on capital gains and dividends.
Financial	01/2014	Strengthen property rights of creditors and empower the regulatory authority to expedite conflict resolution and competition between financial intermediaries. Expand capacity of development banks to provide credit to small and medium-sized enterprises (SMEs).
Competition	05/2014	Strengthen the capacities and powers of the Federal Economic Competition Commission (COFECE) and give it constitutional autonomy with the power to eliminate barriers to competition and to regulate access to essential inputs.
Telecommunications	06/2014	Expand competition and create a regulatory body: Federal Telecom Institute (IFETEL) to sanction "dominant operators".
Energy	08/2014	Open the sector to the participation of the domestic and foreign private sector in terms of exploration, production, and transportation of oil and gas; as well as its refining and marketing, promoting competition, increasing technological efficiency, and the supplying of services. Modify the corporate governance structure of PEMEX and CFE.

Source: Moreno-Brid, Sánchez and Salat (2018, p. 64).

that many reforms were simultaneously applied with ambitious scopes that were not necessarily convergent. They may have impacted different areas of economic activity, heterogeneous populations, regions, or even social, economic, and political groups. The impact of external shocks also needs to be considered.

It should also be kept in mind that progress in achieving some objectives may lead to setbacks in others. These *trade-offs* can be considerable and policy-makers are not always aware of all of them or of the magnitude of their various effects on different groups. Likewise, any structural reform creates winners and losers. Last but not least, the implementation of structural reforms took place in a weak institutional economic planning framework. This made it more difficult to ensure its coordinated implementation, systematic monitoring, and regular evaluation.[2]

As López Noriega & Velázquez (2018) pointed out:

> The parties in opposition, who shared the authorship of the Pact for Mexico and its reforms, neglected its monitoring and scrutiny. Once the reforms were approved, they forgot about their implementation and assessment... While the preparation of this agreement shone for its political effectiveness, the task of carefully following its execution stood out for its irrelevance. Actually many commitments that made up the Pact were simply ignored in practice (p.32).

An alternative option is through a counterfactual exercise in which the observed evolution of the economy from the implementation of the public policy in question is contrasted with what, it can be assumed, would have been its inertial trajectory in the absence of such policy. This methodology, however, is impossible to apply in the case of a such large-scale package of structural reforms like the Pacto.

Thus, any evaluation of the reforms and the Pacto por Mexico is subject to many caveats/assumptions. We chose to evaluate the joint package of structural reforms from two complementing points of view. The first is to focus on the extent to which the reforms achieved the objectives stated by the Peña Nieto government when they were launched as part of the Plan Nacional de Desarrollo 2013-18 and the Pacto. Were the goals achieved? The second evaluation is rooted in recent contributions we made with a dear colleague (Jaime Ros) involving the identification of binding constraints on Mexico's long-term growth. In this regard, we assess the degree to which the package of structural reforms weakened, removed, or sharpened key constraints on Mexico's long-term economic expansion.

[2] Article 26 of the Constitution establishes that there must be democratic and deliberative planning with mechanisms of participation established by law to reflect the aspirations ... of the society. The Law will determine the organs responsible for the planning process and the bases for the Executive to coordinate ... with the governments of the federative entities ... and agree with individuals the actions ... for its elaboration and execution. (Moreno-Brid & Dutrenit (coord), 2018).

THE MARKET REFORM PACKAGE 2013-18: AN IN-DEPTH ANALYSIS AND IMPACT EVALUATION

As part of his campaign, Peña Nieto recognised the urgent need to remove the Mexican economy from the trap of slow growth and acute poverty, despite having consolidated a dynamic export sector, a low inflation, and a very moderate fiscal deficit. He announced that his government would implement a set of major market-reforms to boost GDP, productivity, and employment. Some of these reforms, such as the one on telecommunications, had remarkable success, others did not.

Moving fast-forward to our main conclusion: from 2013-18, years during which Pacto's market reform package was intensely applied, the Mexican economy did not manage to get out of the trap of slow expansion. Undeniably, there were improvements in some indicators of well-being, for example, in life expectancy, school coverage, and child health. Likewise, low inflation, a limited fiscal deficit, and a booming manufacturing export sector marked the economy's performance. Moreover, the national elections were held peacefully and opened the door for the arrival of the National Regeneration Movement (MORENA) party –and Andrés Manuel– to the Presidency. However, no significant progress was made in removing key obstacles to the country's development. The average annual rate of growth of real GDP was barely over 2%. Poverty, inequality, and lack of social mobility worsened. The labour market deteriorated with a recomposition of employment towards lower wage scales, and there was a reduction of labour earnings in real terms as well as a share of GDP. Labour productivity was far from dynamic and kept lagging behind that of the USA. Total factor productivity declined, contrary to NDP 2013-18 projections. To add to this poor economic performance, the rise in the perception of corruption, and growing concerns about insecurity and violence, the "remains-of-the-day" after the reforms did not turn out well.

To what extent are the disappointing results of the structural reforms due to errors in their diagnosis of problems with the Mexican economy? To what extent are they rooted in errors of instrumentation? Or are they rooted in, say, the bad-luck of adverse external shocks experienced in this period? To begin to answer this, let us return to the economic history of Mexico. As Moreno-Brid and Ros (2010) point out, the long periods of high and sustained expansion of the Mexican economy (1954-1970 and 1975-1982) were characterized by a strong and legitimate government that had a: i) Correct diagnosis of the *binding constraints* on the long-term growth of GDP, ii) Public policy tools able to remove or significantly alleviate such constraints and, most relevantly, iii) Capacity to build a consensus among the relevant political and economic actors on the two previous points and a shared and firm commitment to a viable strategy to remove them in order to boost economic growth and development. These conditions were simply not satisfied during Peña Nieto's tenure; thus, his reforms were ultimately doomed. This warrants a closer examination.

The reforms were based on the assumption that the country's macroeconomic fundamentals were solid and, therefore, only needed some adjustments at the micro

level to remove market distortions. Based on this view, rising productivity would be a consequence of reduced labour informality and increased competition in local markets. It should be noted that boosting fixed capital formation and implementing an active industrial development policy were not involved in this diagnosis.[3] The external sector was still seen as the engine of growth, and the internal market's potential to act as a complementary engine of expansion was assumed away or ignored. Wages were seen more as a cost than as a source of domestic demand. Not surprisingly, neither inequality nor lack of social mobility were social policy concerns.

Official speeches argued in favour of going beyond stabilization and trade liberalization and applying active industrial and financial policies to boost innovation and value-added generation (not low wages) as the basis of Mexico's international competitiveness. However, this discourse was not translated into effective programmes on a national level. Without such policies and in a context in which investment lacked dynamism, the Mexican economy could neither reduce its lags in productivity and sectoral heterogeneities nor trigger an upturn in economic activity.

The emphasis on micro or institutional aspects was, in our view, incorrect. It failed to tackle any of the binding constraints on the Mexican economy's long-term growth: i) insufficient fixed capital formation, especially in the public sector, ii) a productive domestic structure with weak upward or backward linkages. Thus, in spite of or because of the set of market reforms, our international competitiveness came more and more to be based on low wages and on imported intermediate inputs and capital goods, making the balance of payments an even more binding constraint on the long-term expansion, (iii) a financial system that does not provide adequate and sufficient resources for business activity, (iv) acute inequality and low social mobility (in addition to poverty) that undermines the potential of the internal market to act as an engine of growth, and (v) acute fiscal fragility, with insufficient resources, little impact on redistribution, countercyclical policies, and insufficient, and in many cases, inefficient public expenditure. Given that the Pacto failed to address them, these restrictions became more entrenched. To begin to remove them requires a different development agenda: one that is very different from the Pacto's structural reforms

In terms of economic performance, during Peña Nieto's tenure, the average GDP growth rate actually declined, and did not even reach 3%. Mexico was stagnant in terms of expansion. Mexico's gap with the United States in terms of GDP per capita and average labour productivity in these years continued to deteriorate relatively. Today, this GDP per capita gap is as broad as it was in the 1950s (Moreno-Brid & Dutrenit, 2018).

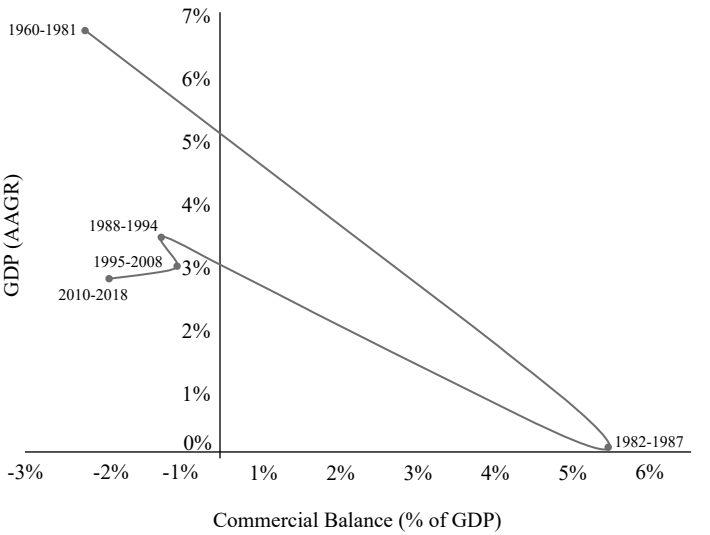
[3] As Moreno-Brid & Dutrenit (coord) (2018) point out, the official discourse of Peña Nieto's administration, especially at the beginning, admitted the need to apply a policy of productive development, but in fact the actions in that direction were few and with scarce resources. Put another way, industrial policy was the "missing link" in the quest for robust export-led growth.

The persistently slow expansion of real GDP, for decades, is cause for alarm. An annual increase of real GDP below 4% per year is insufficient to create jobs for the growing workforce. A virtually stagnant economy, which is the current situation (in 2019 its GDP declined), cannot offer serious jobs and wages.

Figure 1 illustrates the weight of external constraint on Mexico's long-term economic growth. Note the deteriorating relationship between the trade deficit (as a percentage of GDP) and GDP growth rates since the debt crisis and the implementation of the first market reforms launched in the 1980s. During 1960-1981, real GDP grew at an average annual rate of 6.6% with a trade deficit equivalent to 1.7% of GDP. The end of the oil boom in 1981-82 and the subsequent crisis caused the economy to stagnate over the next five years and to register a trade surplus (on average 5% of GDP).

With trade liberalization underway from 1988-1994, and in 1995-2008 with NAFTA in operation until the international financial crisis detonated, real GDP growth averaged between 3% and 4% per year with a trade deficit close to 1% of GDP. Leaving aside the contraction in 2009, between 2010-2018 economic growth slowed down even more but the trade deficit increased as a percentage of GDP. In other words, without a change in the productive structure to significantly increase the internal backward and forward linkages, the Mexican economy cannot grow at high and sustained rates for a long period because the trade deficit would rise to unsustainable levels as a proportion of GDP, triggering a balance-of-payments crisis.

Figure 1.
Mexico's Average Annual GDP Growth and Trade Balance of Goods and Services (% GDP) (1960-2018)

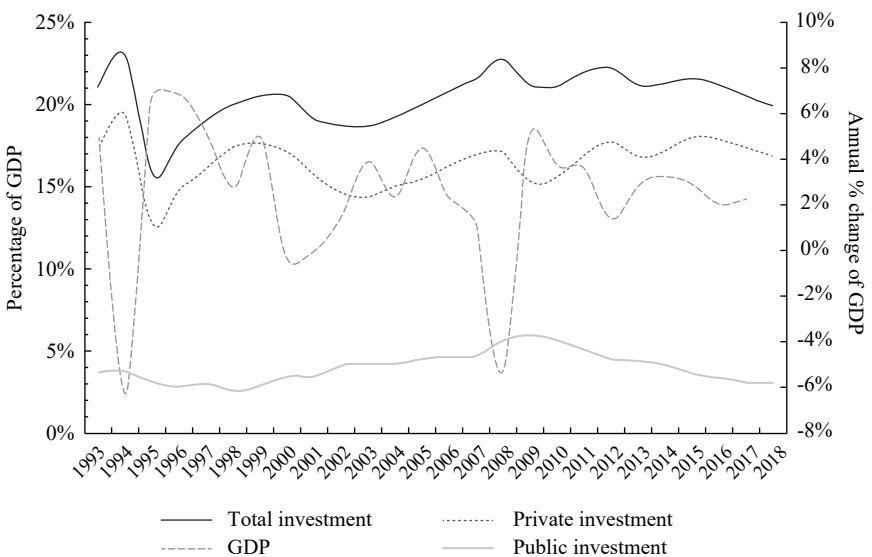


Note: TMCA = average annual growth rate, in percentages
Source: Own elaboration, based on World Bank, World Development Indicators database.

The failure of the *export-led growth* strategy that was inaugurated in the mid-1980s and continued until 2018 can be explained in several ways. The first is the lack of dynamism of gross fixed capital formation. The second is the acute increase in the income-elasticity of imports due in part to the absence of an industrial policy and in part to the long-term trend of real exchange rate appreciation. As the figure shows, despite structural reforms, in 2012-18 the fixed investment ratio as a share of GDP tended to decline. It remained below 25%, a proportion that the consensus marks as the minimum threshold to achieve GDP annual expansion rates of 5% or more. In addition to the concern about the limited momentum of investment, there is also evidence that its efficiency has fallen, as measured by the evolution of the incremental capital-output radio (ICOR) or by its multiplier impact on GDP (Moreno-Brid, Perez-Benitez, & Villarreal-Paez, 2017).

The trajectory of the investment ratio is explained by the fact that the upturn in its private component has been offset by the retrenchment of public investment. In 2012-18 –as in other presidential periods– any attempts for fiscal adjustment were concentrated on cutting spending on the public sector's fixed capital formation. This was politically much more feasible than cutting employment or wages in the public sector.

Figure 2.
GDP Growth and Gross Fixed Investment Ratios, 1993-2018, Based on 2013 Constant Peso Data



Source: Own elaboration, based on INEGI, System of National Accounts database (2019a).

This strategy undermined private investment given the prevalence of *crowding-in* effects (not *crowding-out* as previously argued). Private investment has been held back by credit rationing by the private banking system and the lack of public development banks. Financial intermediation to the private entrepreneurial sector has been insufficient; it has a ratio as a proportion of GDP that is among the lowest for a large Latin American economy.

Indeed, in spite of the 2014 financial reform, the objectives of which were to foster competition in the commercial banking sector and strengthen development banks, the performance indicators of the system as a source of funds scantly changed. Domestic credit to the non-financial private sector remained below 18% of GDP. Development bank financing barely rose; thus, it remained very low compared to other international examples.

The lack of long-term venture capital was a strong barrier. Together with the financial reform, the intermediation margin with respect to interest rates (TIIE and CETES at 91 days and 182 days) fell by just two points. This was a likely reflection of the high concentration of the banking sector: 80% of total credit is currently concentrated in seven institutions. As we previously stated, when analysing of the macroeconomic implications of Peña Nieto's financial reform: "...except for very specific issues such as the rise in commercial banks' profits, [the financial reform] can be unambiguously described as a failure" (Moreno-Brid et al., 2018).

Strengthening the functionality of the education system is indispensable, in every aspect, from planning at all levels, administration, training, teaching and learning techniques/skills, materials, and infrastructure. The educational reform sought to take over the State management. Its design, with emphasis on teacher evaluation for personnel selection and, above all, permanence in employment was the cause of conflicts that remain unresolved. The reform was applied in a disorganized manner in what should have been a more time-consuming process, especially because of the magnitude of the challenge to evaluate and incorporate almost one and a half million teachers into a new model. Other problems were programming aspects of infrastructure, administrative organization, and paying attention to problems of equity and quality that had a complex regional diversity without adequate organization and conviction of the actors in the educational process.

López Obrador's government has once again addressed the above-mentioned matters. However, it remains to be seen whether he has been able to rescue what works from Peña Nieto's reform and cancel or change what does not work. The debate is heated and still open, and it is yet to be seen whether his government will move towards better and greater learning capacities, technical knowledge, and skills.

A fiscal reform was implemented during the previous president's tenure; the first significant one in many years. It did help to boost non-oil budget revenues through the elimination of certain exemptions and income-tax deductions, to increase the maximum rate of income tax for individuals to 35%, and to introduce a capital gains tax. These are quite noteworthy achievements that managed to cushion the

impact of the collapse in oil revenues. However, public debt soared and, inexplicably, public investment massively declined during these six years. Fiscal space was curtailed. In fact, given the inertial commitments of current expenditure, pensions, and debt service, the "policy space" for discretionary fiscal purposes does not exceed three GDP points. This is an insufficient amount to address the deterioration of infrastructure and begin to meet major social lags in health, education, and social protection.

Prior –and in a certain way parallel– to the fiscal reform of 2013, Peña Nieto implemented an energy sector reform, to liberalize and give much more room to private investment in the oil and energy industries that had, for years, been fully dominated by the two major state owned enterprises (SOE): Petróleos Mexicanos (PEMEX) and the Compañía Federal de Electricidad (CFE). Given Mexico´s public finances' crucial dependence on the oil sector, which traditionally provided close to 35% of public revenues, this reform had a key role in the Pacto's agenda. The idea was, on the one hand, that by eliminating virtually all restrictions to private domestic or foreign investment, Mexico's energy sectors would have the necessary financial and technical resources to modernize and strengthen their capacit. Given the tight government budget constraint, it was argued that the private sector's intervention was the only option to carry out a transformation of this kind. On the other hand, the energy reform was accompanied by a change in PEMEX's tax regime to strengthen its finances, human and capital resources. Regarding the electrical sector, the reform set important targets to move forward towards a transition to clean energy. By eliminating regulatory barriers to entry, it created a full private market for energy generation and transmission.

Soon the energy industry was transformed: numerous private companies began to compete with SOEs in all energy and oil related activities from exploration, exploitation, transport, storage, commercialization, etc. Active participation of the private sector was encouraged through auctioning the rights to explore/develop a number of oil fields.

The results of the reforms are somewhat mixed. The fiscal budget drastically reduced its dependence on oil revenues. This was, in part, due to the decline of crude oil prices in the international markets as well as due to the results of the fiscal reform in increasing non-oil tax revenues by more than two percentage points of GDP. However, oil production collapsed as PEMEX's revenues and investment acutely fell in real terms (by 15% and 39%, respectively during these years) and investment by private firms did not gain sufficient momentum. The amount of funds fell well short of the government's expectations. On the other hand, the electrical industry did strengthen its capacity and performance thanks to the reform introducing creative forms of allowing private sector participation. Not surprisingly, Mexico's trade balance in crude oil and oil related products rapidly deteriorated and began to register ever increasing deficit.

One of the Pacto's unquestionable achievements was putting in place a regulatory, legal framework oriented to promote transition to cleaner energy.

Unfortunately, López Obrador was even in his campaign, firmly opposed to the energy reform. After taking office he cancelled (whether permanently or temporarily is unclear) key aspects of the energy reform that allowed more private sector activity in the oil and energy industry. By December 1, 2019, his first year in office, progress in favour of a transition –albeit moderate– to clean energy has been reversed. The new government has fiercely pushed for: i) the construction of a new oil refinery (in Dos Bocas), ii) the use of coal for electric generation, and iii) a move against the green initiative for a more liberal use of clean air certificates.

Inspite of Lopez Obrador's opposition, there is consensus that an in-depth fiscal reform will have to be soon implemented. It should encompass income, expenditures, financing, and other key aspects in its institutional framework. Clearly, there is scope for raising taxes; the 17.2% as a share of GDP in 2017 represents half of the OECD average revenue coefficient and is more than 10 points below that of Argentina and Brazil (Márquez-Ayala, 2018). There are also many other areas where revenues can be raised: collecting property and inheritance taxes, modifying the VAT rate (perhaps generalizing it and removing exceptions), changing tax rates so they have a progressive impact on income distribution.

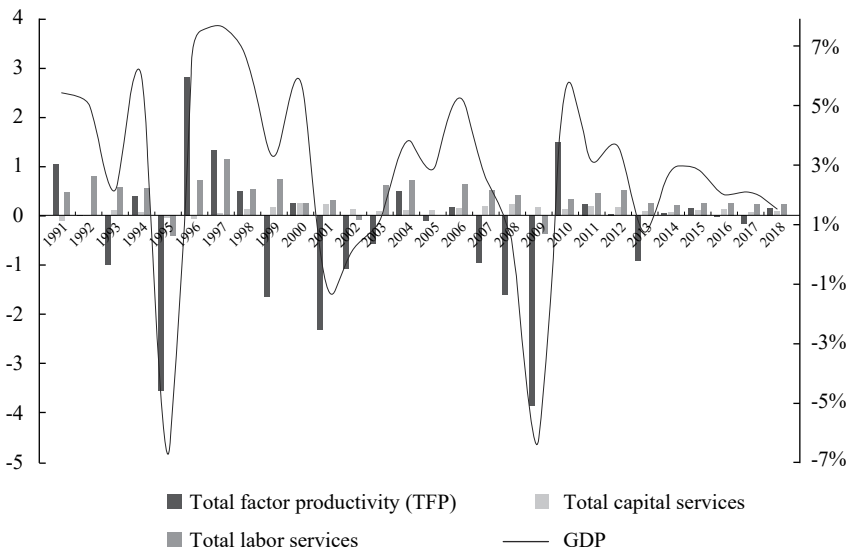
The Fiscal Budget and Responsibility Law in place more than a decade ago, with its inherent procyclical character, should be replaced by a rule based on structural balance throughout the business cycle. Also, there is a systematic and acute gap between the amounts approved for different items in the government budget annually approved by Congress and the amounts that actually exercised each year. Most worrying, is that Congress only is informed of this difference a year and a half later, too late to do anything about it. Such institutional context question the essence of budget planning and control (Nuñez-González, 2017). A most welcome change in this area would be to create a Fiscal Council in Mexico, in line with the U.S. *Congressional Budget Office*, as a technical arm of the legislature for the validation of the Finance Ministry's projections of GDP, which relate to a public debt path and other key variables that have a major role for budget matters.

The contraction of gross fixed capital formation by the public sector in real terms at an average rate of 5% per year throughout Peña Nieto's presidency (2012-2018) is a scandal that conspicuously undercut the growth potential of the economy. In addition, his administration paid no attention to the major flaws that –as all experts recognise– mark the institutional and regulatory framework of public works in Mexico: their design, approval, execution, and monitoring of public projects. As has been argued (Gala-Pacio, 2018; Moreno-Brid et.al, 2018) the National System of Public Investment (SNIP, the regulatory framework, has major deficiencies that severely distort its capacity to act as a policy tool to select projects that are relevant from a common, good perspective for development. As it stands, it fails to guarantee that project selection is consistent with a national development agenda. It seems to be more of a bureaucratic agency used to stamp projects based more on political than socioeconomic criteria. There is ample room to improve its capacity to monitor and ensure that public infrastructure projects are executed in time, are high quality, and have an accountable efficient and transparent use of financial resources.

Market reforms failed to induce significant investment to augment and modernize the capital endowment per worker. Without them, any pretence to strengthen labour productivity was illusory (Ros & Ibarra, 2019). The lack of momentum for gross fixed investment (and its virtual stagnation in many industries) made it impossible for capital endowment to significantly increase during this period. The persistent lag in labour productivity should not come as a surprise, despite the fact that the NDP placed productivity as the cornerstone of its agenda. As mentioned above, in these years Total Factor Productivity (PTF) actually declined (Moreno-Brid, Dutrenit (coord) 2018).

The evidence points to the fact that, notwithstanding their merit in reorienting output to the external market and in consolidating macroeconomic stabilization, the market reforms (both in their recent version 2012-18 and in previous ones), failed in their quest for high, sustained and inclusive economic growth. They did not succeed in 1994-2008 when world trade and Mexican exports were growing rapidly. Nor have they been able to do so since 2008-09 when, due to the international financial crisis, the world economy entered into the so-called New Normality, marked by the loss of momentum in international trade. The protectionist tendencies of Trump's government have shrunk even further the odds in favour of Mexico's *export-led growth*.

Figure 3.
Mexico. GDP Growth Accounting: 1991-2018 (Percentages and Production Value Growth Rate Referenced on the Right Axis)



Source: Elaborated based on data from INEGI (2019b), Total Factor Productivity (2013=100)

CONCLUSIONS: GENERAL BALANCE OF THE MARKET REFORMS AND PROPOSAL FOR EQUALITY AND SUSTAINED GROWTH

In December 2018, a new government took office in Mexico, with López Obrador as President. It is too soon to assess whether his agenda will be successful or not. In any case, without cancelling the outward orientation, the export capacity of the Mexican economy, it must place the internal market as an important and complementary engine to boost economic activity and employment.

It is not a question of abandoning the effort to export more and with greater added value, or to reverse the opening up of the country's domestic markets to foreign competition. In order to strengthen the domestic market, the policy agenda must place the reduction of inequality as a priority. This concern was never on the policy radar of the Peña Nieto administration or any of the other presidents over the last three or four decades. As ECLAC stated, the Mexican economy must "grow to equalize, and equalize to grow" (CEPAL, 2010, p.13). The World Bank and the IMF agree that inequality has become a crucial obstacle to economic growth; the institutions provide empirical evidence of international experiences that have succeeded in reducing inequality and promoting growth without jeopardizing macro stability (World Bank, 2016). The OECD and ECLAC have pointed to inequality as major obstacle for Mexico to achieve a higher long-term rate of economic expansion (OECD, 2017; CEPAL, 2010).

The close link between equality and growth was ignored by the structural reforms between 2012-18. This omission, together with the subsequent neglect of the internal market in the Pact's approach, marked the labour reform. In fact, the 2012 labour reform sought greater flexibility in the labour market, without taking into account elements relating to security, quality of employment, and the unbalanced weight between labour and capital in the struggle for the factorial distribution of income. With work being the main source of income, deteriorating conditions undermined the possibilities of reducing inequality and increasing social mobility (El Colegio de México, 2018). This helps explain that during the six-year period unemployment and informality rates fell, but quality work became scarcer, and wages deteriorated, even more among formal than informal workers. Thus, the structural reforms did not reverse the downward trend in the purchasing power of labour income, which had been the case since 2009, in the three occupational categories. From 2010 to 2017, on average and in real terms, the income of employers diminished by 26%, subordinates by 18%, and self-employed by 7%.

Given the evidence, we insist that a new development agenda that changes the dynamics of aggregate demand and, in turn, recomposes supply is required. Policies must be implemented to reduce income concentration and promote social mobility, with full respect for macroeconomic stability and social peace. Fiscal, financial, and monetary policy priorities will have to be reordered to pay more

attention to their impacts on inequalities and socio-economic mobility. At the same time, we will have to review social programmes, removing redundancies and inefficiencies in order, hopefully, to move towards a universal social protection system. So far the López Obrador agenda has not centred on these concerns. It has put in place a drastically austere fiscal policy that is extremely procyclical, and the priority is to have a balanced budget and not to incur in additional debt. The president's macroeconomic policies are essentially the same as those of Peña Nieto's in his last years: austerity as a guideline on fiscal matters, and inflation targeting in the context of a floating exchange rate as the core of monetary policy. Trade policy has, at its centre, the ratification of the USMCA agreement that substitutes NAFTA as a regional agreement on managed trade. Industrial policy is, for practical purposes, non-existent, as it takes the back seat to commercial policy. And social policy is now centred on unconditional cash transfers.

Labour policy is the one area in which the López Obrador administration has made major changes. It has approved and put in place a reform along the lines of the reform path announced in 2017 (within the context of Mexico's interest to join the Trans Pacific Partnership (TPP)) to modernize key regulations and strengthen trade unions. In particular, it put the minimum wage on a path of sustainable and meaningful recovery towards the levels of dignity that were established as a citizen's right in the 1917 Constitution.

There is an urgent call today for a national agreement to promote fixed investment (public and private) together with an active industrial development policy. Its objectives should be to expand and modernize infrastructure, machinery, and equipment, and to densify the national productive fabric, in order to base competitiveness on innovation and the generation of value added instead of low wages. Such a policy must not neglect the qualitative improvement and diversification of the exportable supply, as well as its capacity to move the rest of the national economy forward. To achieve this, the indispensable instruments required are the strengthening of development banking and the avoidance of a real exchange rate appreciation in the long-term.

As we have previously stated, "in a context of low fiscal revenues, a public policy dilemma arises maintain a small state in terms of public spending, with very limited social rights, or seek sources of income that allow the expansion of those rights. Both options imply fiscal discipline". (Moreno-Brid, Pérez-Benitez, & Villarreal-Paez, 2017, p. 69). The first option is ethically and politically unviable given the long-standing conditions of poverty, inequality, poor economic growth, and low social mobility. Therefore, the second option is the route to follow.

The viability of the development agenda we propose (which differs from the diagnosis and implementation of the 2012-18 structural reforms, and is also not the same as what López Obrador has so far implemented) depends critically on the country's political will to put in place an in-depth fiscal reform. Sooner rather than later, long-term budget planning –far beyond the six-year presidential terms–

will have to be based on an intergenerational social and economic needs perspective. From there, it should proceed to identify the resources needed to fund such initiatives –either through tax or debt– in such a way as to guarantee a pattern of sustainable public sector indebtedness. All of this should include a pressing need for efficiency, transparency, and relevance for the well-being of the population.

In terms of emergencies and their possible consequences on taxation, a major issue is people's security and safety and how to repair the enormous damage that has been caused by internal violence over the last twelve years. Pacifying the country is a prerequisite for long-term productive investment and, more importantly for persistent social peace. However, such pacification has an unavoidable financial cost that will have to be covered by a fiscal reform associated with a fundamental long-term need to create a welfare state that has been perennially absent in this country. One way to do this, as López Obrador has stated, is to reallocate available resources, end corruption, cut duplicate or inefficient programmes, and seek greater efficiency and cost improvements. All these are welcome, but this is not enough to provide fiscal revenues for an amount of, at least, six additional GDP percentage points that are required to adequately address the needs and lags in both social and infrastructure for economic development. Thus, a fiscal reform is unavoidable.

We close with the following assertion: There is no way for the López Obrador government… to avoid fiscal reform. (CIEP, 2017). Will the political capital of Lopez Obrador's government be sufficient to underpin such a fiscal reform and to make a New Social Pact with the private sector to, on the one hand, energize fixed capital formation and, on the other hand, make significant and timely progress in reducing inequality? These are key questions the answers to which will mark the path of development and perhaps the political and social stability of Mexico in the future.

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PAPER

DISCONTINUOUS CONTINUITY: STRUCTURAL CHANGE AND ITS (DIVERGENT) MEANINGS IN LATIN AMERICAN STRUCTURALISM AND NEO-STRUCTURALISM

Emilia Ormaechea
Víctor Ramiro Fernández

Ormaechea, E., & Fernández, V. R. (2020). Discontinuous continuity: Structural change and its (divergent) meanings in Latin American structuralism and neo-structuralism. *Cuadernos de Economía, 39*(80), 445-469.

This paper analyses the continuities and discontinuities regarding the concept of structural change in Latin American structuralism and neo-structuralism and considers the global context in which these ideas and their variations are produced. In this sense, the transformations of capitalism from 1950 onwards are taken into account as are the diagnoses and strategies promoted by the ECLAC to ultimately achieve structural change through structuralism and neo-structuralism. How the role of the state is conceived in each of these contexts and the consequences derived from state intervention to promote the structural change are also analysed.

E. Ormaechea and V. R. Fernández
Instituto de Humanidades y Ciencias Sociales del Litoral (IHUCSO – UNL/CONICET), Santa Fe, Argentina. eormaechea@fcjs.unl.edu.ar, rfernand@fcjs.unl.edu.ar

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El artículo analiza las continuidades y discontinuidades respecto al concepto de cambio estructural en el estructuralismo y neoestructuralismo latinoamericano, considerando el contexto global en el que se produjeron dichas ideas y sus variaciones. Para ello, se tienen en cuenta las transformaciones del capitalismo desde 1950 en adelante, y los análisis y estrategias elaborados por la CEPAL para lograr el cambio estructural con el estructuralismo y neoestructuralismo. También se analiza cómo se entiende la intervención del Estado en cada uno de esos contextos y las consecuencias que se derivan de dicho abordaje para la promoción del cambio estructural.

Palabras clave: estructuralismo latinoamericano; neoestructuralismo; Estado; periferia; desarrollo latinoamericano.
JEL: O14, O25, O33, O38, P16.

Ormaechea, E., & Fernández, V. R. (2020). Continuidade descontinuada: o conceito de mudança estrutural e seus (divergentes) significados sob o estruturalismo e neoestruturalismo latino-americano. *Cuadernos de Economía, 39*(80), 445-469.

O artigo analisa as continuidades e descontinuidades referentes ao conceito de mudança estrutural no estruturalismo e neoestruturalismo latino-americano, considerando o contexto global onde se produziram estas ideias e suas variações. Para isso, consideram-se as transformações do capitalismo desde 1950 em adiante, e as análises e estratégias elaborados pela CEPAL para alcançar uma mudança estrutural com o estruturalismo e neoestruturalismo. Também faz-se uma análise sobre como se entende a intervenção do Estado em cada um desses contextos e as consequências derivadas desta abordagem para a promoção da mudança estrutural.

Palavras-chave: estruturalismo latino-americano; neoestruturalismo; Estado; periferia; desenvolvimento latino-americano.
JEL: O14; O25; O33; O38; P16.

INTRODUCTION

Two of the main contributions of Latin American structuralism, created within the Economic Commission for Latin American and the Caribbean (ECLAC), were the original analysis of these economies' problems to promote economic development and the proposal to carry out a state-led structural change. The theoretical framework argued that Latin American countries, as peripheral economies, should transform their productive structure by industrializing. This would allow them to obtain a share of the benefits of technical progress and progressively raise the standard of living of the masses (Prebisch, 1949).

However, there were many obstacles early on in Latin America. On the one hand, the characteristics of industrialization did not allow Latin America to develop (Hirschman, 1968). Despite this strategy's initial good results, restrictions associated with the impossibility of advancing in the "difficult substitution" and overcoming the technological and financial dependence on central economies soon became evident. On the other hand, structuralism showed increasing difficulties in the face of the Neoliberal counter-attack (Kay, 1993; Sztulwark, 2005). This, boosted by the centre after the end of the Fordist-Keynesian mode of development, gained political and academic relevance in Latin America and repositioned a new understading of the development process (Toye, 1987). As a result, and facing an imminent capitalist reconfiguration (Fernández, 2017), the ECLAC revised its initial proposals to overcome its theoretical limitations and adapt them to the new context (Bielschowsky, 1998).

Conceptually, the new proposal of the ECLAC was called "neo-structuralism" (Sunkel & Zuleta, 1990). The prefix "neo" was intended to represent, at least discursively, an updated version of the original structuralism with the new challenges imposed by globalization. However, notwithstanding this pretension of continuity, the renewed discourse of the "structural change", or the intention of "Changing Productive Patterns with Social Equity" (CEPAL, 1990), certainly implied an important rupture regarding the main concepts of the structuralist tradition. The very notion of the "structural change" was one of the pillars on which that redefinition took place.

This theoretical redefinition implied a remarkable displacement of concepts that, although being central in structuralism, appeared anachronistic under the new context. The following stand out: the role of power in the formation of differentiated productive structures, the conflicting dynamics of peripheral capitalism, the role of the state as the development-subject, and, particularly, the importance of formulating local ideas to problematize Latin American development. That is to say, to reflect from a "peripheral perspective", as Prebisch noted in his initial writings in the ECLAC (Prebisch, 1951) and he then later highlighted the point during his last theoretical production years (Prebisch, 1984).

To clarify this process, the paper analyses the continuities and discontinuities regarding the concept of structural change in ECLAC's structuralist and neo-structuralist theoretical production. We consider the global context in which these ideas and their

variations are produced. In this sense, the functioning and transformations of capitalism from 1950 onwards are taken into account as well as the diagnoses and the subsequent strategies promoted by the ECLAC to ultimately achieve the structural change under those different historical contexts. Finally, we analyse how state intervention is conceived in each of these contexts, paying attention to the impacts and consequences derived from the conception of state intervention that promotes structural change.

LATIN AMERICAN STRUCTURALISM AND THE PROPOSAL OF STRUCTURAL CHANGE: STATE-LED INDUSTRIALIZATION

Latin American structuralism emerged in a complex geopolitical and geo-economic context, at the end of the Second World War, the beginning of the Cold War, and during the consolidation of the Unites States' global hegemony (Arrighi, 1994). At this juncture, the issue of development acquired a particular meaning, especially because of the many efforts made by the USA to reaffirm and legitimize the capitalist system in the areas under its influence (Bracarense, 2012).

Regarding the central countries, this implied the promotion of several strategies to consolidate the intensive-monopolistic mode of development (Boyer, 2016). Here, state-intervention assumed a key-role in the formation of welfare states and the predominance of Keynesian policies. During this geo-political context of post-war re-construction led by the USA, the control of social conflict was guaranteed by the creation of a "virtuous circle" among welfare states, corporate capital, and organized labour (Harvey, 1998). In this sense, the period that began in 1945 was characterized by outstanding economic growth accompanied by a pattern of income-redistribution that increased a large part of the population's standard of living (Harvey, 1998).

The USA's geopolitical positioning was accompanied by the consolidation, at a global level, of political structures that supported its dominance. This meant the reaffirmation of the already existing International Organizations, such as the ones that were part of the Bretton Woods agreement (and, among them, the World Bank and the International Monetary Fund), as well as through the creation of new international political institutions, for example, the Organization of the American States and the United Nations (of which the ECLAC was part). At the same time, while the USA –and central countries– centralized the main power institutions and instruments under their control, they also showed a especial interest in stimulating debates about the economic development of the low-income countries.

In this context, in Latin America, the external changes experienced after the decline of the British hegemony, the 1930 global crisis, the two world wars, and the consolidation of the USA's hegemony promoted relative autarkies in many countries in the region. The state-led industrialization –initially as a pragmatic reac-

tion to those processes and then as a political project in Latin American countries (Fajnzylber, 1983)– was deployed in the context of relative self-determination and autonomy within those national spaces. This allowed them to develop endogenous-accumulation strategies prompted by the states, but under the structural conditionings, including financial and technological dependence, imposed hierarchically and unequally by the central countries (Fernández & Ormaechea, 2019).

Within this context of profound changes, the creation of the ECLAC as part of the United Nations and, especially, the emergence of Latin American structuralism, represented a critical and original contribution to problematize the challenges for Latin American development.[1] There was a critical analysis of the capitalist system's dynamics (Prebisch, 1949) and a theoretical framework for the state-led industrialization deployed in the region during those years (Bielschowsky, 1998).

The structuralists' argument began with a critique of the dominant economic theory during the time in the field of international commerce. This was the Ricardian theory of comparative advantages, which highlighted the virtues of international trade based on productive specialization (Cardoso, 1977). Contrary to the supposed benefits this theory supported, the structuralists pointed out that capitalism was, in fact, formed by central and peripheral economies. This differentiation relied on the capabilities of each of these economies to generate and take advantage of technical progress (CEPAL, 1951; Prebisch, 1949). Because of this historical dynamic, the central countries had a homogenous and diversified productive structure. The modern technique had expanded uniformly among the different sectors and shaped a productive structure with similar levels of sectorial productivity. However, the peripheral countries had heterogeneous and specialized productive structures. In these economies, the modern technique had only developed those activities related to the export of commodities the central countries demanded. At the same time, the other sectors of the economy operated with very low productivity levels, similar to the pre-capitalist or subsistence methods of production (CEPAL, 1951).

According to the structuralists, there were several problems with this primary and heterogeneous productive structure. First, the deterioration in the terms of trade of commodities acted progressively limiting the periphery's capability to import (Prebisch, 1949). Second, the commodities exported to the centre were not enough to support the economic demands for Latin American development. In this sense, the centre's low-income-elasticity of demand for commodities generated an imbalance between the effective demand of the central countries and what the peripheral countries should export to cover the growing imports required for their development (CEPAL, 1951, 1954; Prebisch, 1983). Third, this scheme of productive specialization relegated the periphery to a vulnerable position in terms of the centre's

[1] Notwithstanding structuralism's "extracontinental roots", because of the influence of Classical Theory, Marxism, and Keynesianism in its theoretical framework, its originality lies in the proposal to use some of those contributions to problematize Latin American development and to convert this interpretation into a set of policies to promote industrialization (Cardoso, 1977).

demand and economic cycles. This is because peripheral countries did not have an endogenous driving force to grow. They, instead, depended on central countries' demand. Thus, they were subject to the centre's economic oscillations (Gurrieri, 2001).

Therefore, to overcome the periphery's dependent positioning regarding the dynamics imposed and controlled by the centre, the structuralists argued the importance of carrying out a development strategy based on the deployment of an import-substituting industrialization (ISI). The essence of this strategy rested on the recognition that, given the structural characteristics of the Latin American economies, their development not only implied economic growth but also, necessarily, a structural change in terms of productive, demographic, occupational, and distributive transformations (Rosales, 1988).

The ISI aimed to diversify the production and to employ more workers in activities with higher levels of productivity. Ultimately, this was going to be the strategy to overcome the structural heterogeneity inherited from the primary export mode of development (Rodríguez, 2006). It was also required to strengthen the articulation among the economic sectors and to reduce the technological lag. It was then expected that the improvement in productivity would increase the total product, and this, together with the changes in redistribution patterns, would raise the living standards for a large part of the population (Prebisch, 1949). In addition, income redistribution was expected to foster and sustain the domestic demand that the new industries required.

Given the ambitious goals of the ISI, the structuralists considered the need to plan the development strategy. In this propositive framework, one of the most distinctive elements of this theory –and, at the same time, one of the most criticized– was positioning the state as the key-actor of the development strategy (Cardoso, 1977). The justification of this call to the state to direct the structural change strategy could be explained through the identification of an unequal scheme of capitalist reproduction that, commanded and controlled by the centre, generated a centripetal, exclusive, and subordinating dynamic over Latin American countries. To reverse this, states should design and plan the deployment of an ISI, which would order the investments, stimulate the economic sectors, and make the behaviour of private actors compatible with the requirements of the development programme (CEPAL, 1955; Prebisch, 1952).

It is clear that this approach marks a clear distance from the neoclassical theory and its conception of state intervention. In this sense, it recognises that the free market did not allow the development of the periphery, and that it is through the active role of the state that Latin American productive structure could be transformed into a more inclusive industrial pattern of accumulation (Fernández & Ormaechea, 2020). At the same time, even when there are some similarities with Keynesianism, which was the predominant macroeconomic theory in the central countries during the post-war period, there is, however, an important difference regarding the role of the state in both theories. In the periphery, the importance of

the state is not only associated with the stimulus of the effective demand (Bustelo, 1999), but it also has to face structural change: the transformation of the growth pattern and the heterogeneous productive structures. Hence, for the structuralists, the peripheral states have a much deeper and more complex role than the central countries in the promotion of development (Gurrieri, 1987).

THE LIMITS OF INDUSTRIALIZATION AND THE RECENT CAPITALIST TRANSFORMATIONS: THE TRANSITION FROM STRUCTURALISM TO NEO-STRUCTURALISM

The limits of industrialization

Notwithstanding the contributions of industrialization to economic growth, the characteristics of ISI did not allow the structural change the structuralists proclaimed (Fajnzylber, 1983). The consideration of economic, social, and political factors played a key-role in this disenchantment with industrialization (Hirschman, 1968). Thus, the analysis of the ISI's obstacles that limited the structural change represented the progressive complexity of the ECLAC's theoretical framework during the following decades.

The analysis of the industrialization was based on the recognition that Latin American economies achieved an important transformation of their productive structure during the "easy substitution", at least in those countries with greater relative development (Mexico, Brazil and Argentina). Industry became the dynamic core of these economies. It turned into a modern, non-export sector that operated with productivity levels above the system-average, similar to those of the traditional export complex (Pinto, 1976a). However, despite the higher complexity of the local productive apparatus, the export basket consisted of commodities (Guillén Romo, 2008). Although this imbalance was not a problem during the first years of the ISI, the incompatibility of the productive and the demand structures started to aggravate during the "difficult substitution" (Pinto, 1980) when import rates of capital goods increased and the crisis in the balance of payments became regular (Kerner, 2003).

The call to the foreign productive capital was understood as a solution to the persistent external imbalances. The main investments came from the American transnational companies (Kerner, 2003). However, although these large companies managed to position themselves in the local markets and control the more dynamic industrial activities, they were not characterized for either stimulating the local development of technologies or for searching for competitiveness via innovations oriented to the world markets. Instead, they tended to import obsolete technology from the industrial centre (usually, from their parent companies) to the periphery.

Even though this technology was obsolete in the central countries, it was relatively advanced for the technological patterns of the periphery.

In a widely protected market, these companies consolidated monopolistic positions without improving their competitiveness. They opened new activities, absorbed many of the more profitable local companies, and generated "backward" and "forward" linkages of their economic activities. These were the bases of true economic systems that had the subsidiary of the transnational companies at their core as well as local companies that depended on them for the sales, capitalization, and technology in their periphery (O'Donnell, 1975). Ultimately, this way of solving the external restriction, based on foreign direct investments and not on the diversification and expansion of exports, finally led to Latin American economies' dependence on foreign capital (Pinto, 1976a; Sunkel, 1970).

The ECLAC's analyses of the 60s and 70s focused more on the economic, social, and political processes that influenced these results. These contributions were framed in a particular institutional context that we have called "late structuralism"[2] (Ormaechea & Fernández, 2018). The analysis and proposals of this context were influenced not only by the limitations of the ISI, but also by the political and ideological climate that was strongly affected by the Cuban Revolution and the subsequent strategies prompted by the USA to consolidate its dominance in the Latin American region (i.e. by the "Alliance for Progress") (OEA, 1961). Within this context, the Social Division and the Latin American and Caribbean Institute for Economic and Social Planning (ILPES) were also created within the ECLAC. This all has a strong influence on the revaluation of new analytical dimensions to comprehend the obstacles for Latin American development beyond the purely economic variables (Cardoso & Faletto, 1969).

Hence, ECLAC's analyses paid more attention to the relationships of power and the conflicting external and internal interests that operated in Latin America and conditioned its development (Cardoso & Faletto, 1977; Prebisch, 1976, 1980; Quijano, 1968; Sunkel, 1967, 1971). These analyses revalued the historical study of the consolidation of local dominant actors, the different political alliances, and the emergence of new political actors under de ISI (Cardoso & Faletto, 1969; Quijano, 1968). They also considered the Latin American states and their intervention modalities under a framework of class struggles and conflicting interests. In this sense, the states were understood as important structural elements to be able to comprehend both the conditions of underdevelopment and dependency as well

[2] We use the expression "late structuralism" to refer to the authors' contributions that were articulated to the ECLAC during the 60s and 70s, which complemented the initial structuralist analytical framework that was strongly economicist by incorporating contributions from Sociology and Political Science. This expression differs from other contextual debates associated with Dependency Theory, the influences of which were not the initial structuralists' contributions, but the old discussions inspired by Marxist theories. In any case, what we call "late structuralism" is usually recognised as one of the variants of the Dependency Theory (Palma, 1978; Vernengo, 2006), especially the "less radical" wing of the theory.

as the development possibilities for those countries (Cardoso & Faletto, 1977; Graciarena, 1976; Prebisch, 1976, 1980; Wolfe, 1976).

Within this framework, the arrival of transnational companies to the periphery, under different modalities, represented a resignification of the traditional binary conception of centre-periphery economies. In other words, it represented a new dependence modality of the peripheral economies to the logics imposed and controlled by the centre (Cardoso & Faletto, 1977). This dependence was not only expressed through the international trade identified by the structuralists (Prebisch, 1949), but also through new modalities of the centre's production *in* the periphery (Sunkel, 1970). It was clearly recognised that foreign capital has a major presence in the productive pattern of the periphery (through the presence of the transnational companies) and that it controlled the most dynamic activities of the local productive apparatus. Hence, the reflections about the possibilities of Latin American development demanded that the important role assumed by the foreign actors in the region was considered (Cardoso & Faletto, 1977).

These issues were specifically addressed in the "styles of development" debates of the 70s (Bielschowsky, 1998). From a strictly economic angle, the term "style of development" refers to the way in which human and material resources are organised and assigned within a particular system in order to solve questions such as what goods and services need to be produced, how, and for whom (Pinto, 1976b). As part of this framework, Latin America's structural heterogeneity accounted for the persistence of sectorial, social, and spatial inequalities (Pinto,1976a) in which the demands of the upper strata determined and controlled the most dynamic elements of the productive apparatus. Ultimately, this triple concentration of technical progress acted by limiting the dynamisms of the economic system.

The ECLAC's authors recognised that this dominant "style of development" was just one alternative of several historically possible alternatives. It was determined by the interest of hegemonic coalitions that had the resources to impose it on other options (Graciarena, 1976; Wolfe, 1976). Thus, it implied the explicit recognition of power, dominance, and the conflicting character of capitalism. These dimensions were the result of groups and social classes relations derived from the dominant forms of capital accumulation, productive structures, and the trends of income distribution; and they were framed in a specific historical and dependent conjuncture (Graciarena, 1976).

When identifying these processes, the ECLAC's proposals insisted on the need to carry out a structural change. The lack of dynamism of the ISI was recognised as well as the need to advance in several social reforms. This resulted in the reaffirmation of the early Prebischian argument: carrying out an agrarian reform that allowed a social structural transformation and an income redistribution (Prebisch, 1963). In this sense, the non-alteration of the productive structure implied a waste of the resources available to boost Latin American development. In addition, the agrarian question and the way in which the lack of dynamism, the dependency, and the structural heterogeneity would be solved required deep transformations in

many sectors, including the patrimonial, tributary, educational, technological, and political (Bielschowsky, 1998).

Recent capitalist transformations

Nevertheless, by the time that the Latin American ISI showed its own limitations when consolidating itself as a development strategy, global capitalism was going through a reconfiguration in its accumulation and regulation dynamics. This implied deep transformations in productive, regulatory, and spatial terms regarding the characteristics that were assumed during the post-war period under an intensive-monopolistic mode of development (Jessop, 2008). It also involved the development theories and images that accompanied that context (Toye, 1987).

These transformations, enabled by a recent technological revolution (Castells, 1990), were promoted by the dominant fractions of capital in the centre to overcome the obstacles that, from their perspective, represented the organised labour and the welfare states. Taking advantages of the lower cost of labour, the different stages of productive processes were de-localized and re-integrated into several geographical spaces (Harvey, 1998). New economic sectors specialized in commercial, technological and organisational innovation emerged. At the same time, there was increasing fragmentation and disarticulation of the organised workforce.

As part of the framework of all these processes, the neoclassical theory became dominant by re-imposing an image of development that was associated with market liberalization and self-regulation (Harvey, 2007). This started with a critique of the state intervention's modalities that were deployed in both the centre and periphery during previous decades. Among the contextual elements that promoted and facilitated the implementation of this political, economic, and theoretical strategy, the following should be named: First, the triumph of Thatcher (United Kingdom) and Reagan (USA) as leaders of the neoliberal discourse after the end of the intensive-monopolistic mode of development in central countries. Second, the collapse of socialism that gave rise to new theories that argued for the "end of history" (Fukuyama, 1992). They proclaimed the end of development theories and the emergence of a new neoliberal global order (Kay, 1993). In Latin America, the restrictions of the ISI that resulted in the debt crises and in the "lost decade" also played a significant role (Bielschowsky, 1998). The failure of the Latin American industrialization, compared with the success of the East Asian experience (World Bank, 1993), led the Latin American countries accepting the structural reforms boosted by the North under the undisputed influence of international financial organizations, such as the International Monetary Fund and the World Bank (Kay, 1993).

The neoliberal offensive criticized the modalities of state intervention deployed under the ISI. It argued that the limits of the ISI were the result of policies that promoted the excessive economic protectionism and the inefficient allocation of

resources. These criticisms also reached the theoretical production of ECLAC, which was stigmatized as the promoter of interventions and inefficient ideas. Consequently, especially during the 80s, the ECLAC moved away from its original and central axis of thought associated with the development of the periphery, and retreated to the discussion of short-term issues, which was in-line with the requirements of the new world ideological context (Sztulwark, 2005).

The concept of structural reform acquired remarkable relevance in the Latin American scenario but for a meaning that was different from the structuralists. Although neoliberals denied the problems of Latin American economies were structural in character, in the sense granted by the structuralists during the 50s and 60s (Furtado, 1952, 1965; Prebisch, 1949), they also promoted a package of "structural reforms". These referred to the need to reduce the state, privatize state-companies, eliminate subsidies, disarticulate economic protectionism, liberalize the markets, and prompt a development strategy that was no longer centred on local markets but oriented towards international trade (Kay, 1993).

THE EMERGENCE OF NEO-STRUCTURALISM: THE NOTION OF STRUCTURAL CHANGE AND THE RENEWED ROLE OF THE STATE

While all of these processes implied the ECLAC's loss of relevance in terms of proposing interpretations and recommendations for Latin American development, the institution carried out a revision of its original postulates during that time. Thus, the Cepalian authors intended to review the limitations of the former industrialization strategy, adapt them to a new global phase of capitalism, and offer a challenging alternative to the neoliberal hegemony (Bielschowsky, 1998). The result of this proposal was called neo-structuralism (Sunkel, 1991; Sunkel & Zuleta, 1990). However, when we analysed the reinterpretation of structuralism, there was a clear distance from its original contributions. This was particularly evident in the displacement of concepts that, although being central in structuralism, appeared anachronistic under the new context.

The shift from structuralism to neo-structuralism implied an epistemic change in the study of capitalism. Capitalism was no longer considered in terms of a system, that in its historical expansion configured (and configures) differentiated spaces of accumulation and regulation. Therefore, in this new approach, the very centre-periphery concept loses relevance. In this transition, a distinctive element was also the disappearance of the analytical dimension regarding the notion of power in the configuration and reproduction of capitalism as well as the modalities that it assumes, particularly in the periphery. The meaning of the concepts relating to structural change and the role of the state changed remarkably. Finally, neo-structuralism also displaced the structuralist premise regarding the importance of producing ideas locally (that is, from a "peripheral perspective") to comprehend

the Latin American challenges for development. Prebisch pointed this out in his initial writings at the ECLAC (Prebisch, 1951) and tried to highlight the point during his last stage of theoretical production (Prebisch, 1984).

Regarding the concept of structural change, after the limits of the ISI and the 1970 capitalist transformations, neo-structuralism recognised the shortcomings of Latin American economies, which were technologically delayed, and demanded a catching-up process to improve its international trade patterns. Influenced by the works of Fernando Fajnzylber (1981, 1983, 1990), the ECLAC defined two main axes for the new development strategy: the need to increase productivity and the need to genuinely improve international competitiveness (CEPAL, 1990).

As part of this new context, and in consonance with the requirements imposed by globalization, structural change is oriented towards a productive transformation that centrally incorporates knowledge-intensive activities and technological innovation throughout the productive structure (CEPAL, 2012). Such a strategy recognises the need to selectively integrate into the world economy and create competitive advantages through a well-designed industrial policy. Specifically, it proposes diversification towards sectors where domestic and external demand expands rapidly so that demand can be satisfied with domestic supply and imports and exports can grow in a balanced manner without putting unsustainable pressure on the balance of payments (CEPAL, 2012).

As such, the productive structure should achieve two types of dynamic efficiencies that allow the rapid growth of productivity, production, and employment over time. The first is the "Schumpeterian efficiency", which is oriented towards developing the most intensive sectors in innovation and knowledge, and with more capabilities for diffusion throughout the economy. The second is the "Keynesian efficiency", which is related to dynamism for the demand of goods produced in the countries and oriented to internal and external markets (CEPAL, 2012).

Although Latin American structuralism also highlighted the central role of technical progress (and its propagation) in shaping central and peripheral productive structures (CEPAL, 1951), neo-structuralism no longer adopts a perspective of analysis in dual terms. That is to say, a perspective of analysis that conceives a dichotomy between (i) a modern industry, with high level of productivity that generates technical progress and where innovation is not translated into the fall of prices; (ii) and an agricultural economy, with a lower productivity level that incorporates technical progress and where innovation translates into the fall of prices (Barletta & Yoguel, 2017). Conversely, the notion of structural change is addressed in terms of systemic competitiveness. This supposes that competitiveness not only of one sector but of the entire productive apparatus is improved (Rosenthal, 1994), and it is oriented to exports as well as domestic demand (CEPAL, 2010). In effect, technological development should reach the whole economy through backward and forward linkages, leading to the emergence of new sectors of medium and high productivity in order to create a denser production matrix (CEPAL, 2012).

This would allow the development of local knowledge-intensive activities, reduce structural heterogeneity, and decrease the technological and productive gap with developed countries (CEPAL, 2010).

At the same time, the neo-structuralists recognise the significant legacy of structuralism in the interpretation of the role played by technical progress in the differentiation of productive structures (CEPAL, 2012; IDRC-CEPAL, 2007). However, they intend to update those contributions and offer a better understanding about the study of the dynamics of technical progress in terms of its generation, expansion, and adaptation. In other words, they pay more attention to the technological diffusion barriers and to the policies that would eventually promote a convergence pattern between *developing* and *developed countries*.

Consequently, they draw on contributions from Post-Keynesianism, the Schumpeterian growth theory, and the Evolutionists theories of technical change (Cimoli & Dosi, 1995; Cimoli, Dosi, & Stiglitz, 2009; IDRC-CEPAL, 2007; Katz, 2001). The analysis is not centred anymore on the technological differences between different historically shaped productive structures, but, instead, it is focused on companies and their capabilities to generate and/or adapt themselves to the new technological innovations (CEPAL, 2012). Thus, companies assume a key-role in the development strategy because they become the main actors for knowledge dissemination and technology appropriation. Within this framework, concepts such as technology transfer, dissemination, adaptation, and learning (in its different modalities: learning by interacting, by using, by exporting, by observing, etc.) become relevant. In addition, even though the responsibility of catching-up relays on the companies, the convenience of accompanying those initiatives with the presence of public and private institutions that stimulate and facilitate those technological practices is highlighted.

Therefore, unlike the original structuralism, this way of understating Latin American development (as *developing countries* and no longer *peripheral countries*) is not conceived in dissonance with an unequal global capitalist structure constituted by centre and peripheral economies. Conversely, a *win-win* development strategy predominates, which highlights the importance of taking advantages of the opportunities that are offered by the new global competence scenario. This supposes the deployment of collaborative and cooperative practices for technology transfer among public and private actors (such as public entities, research institutes, universities, and different size companies), and the possibility to achieve a successful international insertion by finding niches in the market for technology-intensive products (CEPAL, 2012).

Therefore, the constitutive elements of capitalism that are associated with its contradictory and conflicting character, previously highlighted by structuralists, are ignored. The dynamics of power that are constituted from these processes within the periphery, and in the –always– reconstituted form of the centre-periphery relationship are also ignored. In effect, structuralism's original contributions, when

adopting the centre-periphery analytical scheme, highlighted the existence of a hierarchical, unequal, and centripetal system, which because of its expansion, constituted differentiated productive and spatial structures that were linked by dominance and dependency relationships (that is to say, relations of power). Such expansion and the modalities of unequal trade were understood not only as the means that allow central capitalism to solve its contradictions and retain a huge part of the economic surplus, but also as mechanisms that established structural limitations to the periphery to overcome the way it was positioned. At the same time, this strategy (industrialization) implied that the particularities of the Latin American productive structure and its problems were recognised. This was mainly analysed through concepts that showed the consequences of the deterioration in terms of trade, low productivity, mechanisms for surplus appropriation (such as the patterns of sumptuous consumption and low wages) and the balance of payments restrictions.

In summary, neo-structuralism, when omitting the recognition of the peripheral specificity, calls for a development proposal that does not centrally conceive the contradictory logics of capitalism associated with the development of the centre and its (new) modalities of expansion to –and then taking control of– the periphery or the conflicts derived from these processes (Di Filippo, 1998; Fernández, 2017). Instead, it supposes a universal pattern of development based on catching-up processes, which would eventually place Latin America on the global technological frontier.

Naturally, this change in the interpretation of capitalism's functioning also implied some changes in how the role of the state was understood for Latin American development. When analysing those changes, two different contexts of ECLAC's neo-structuralist theoretical production can be identified. First, there is a context of critical approach of the state that is in consonance with the new discourses of development that were dominant during the 90s. This is based on the neoclassical theory and the requirements imposed by the structural reforms prompted by the Washington Consensus. Second, there is a more optimistic and permissive context regarding the state intervention that emerged during the predominance of neo-developmental states in the region (Bresser-Pereira, 2006; Gaitán, 2014).

Regarding the first context, situated during the emergence of neo-structuralism and the predominance of neoliberalism during the 90s, the understanding of the state appears to be closely related to ECLAC's efforts to offer a revised analysis of the ISI's limitations and an update of those contributions in the era of globalization. How the state intervened during industrialization was criticised by many intellectual circles both within and outside ECLAC.

The new understanding of the state under neo-structuralism represented a significant difference regarding the structuralist's original contributions. The Prebischian emphasis on the need to generate local theories to address Latin American development lost its relevance by the time theories from the North gained strength in

the Latin American scenario in general, and in the Cepalian argument in particular (Fernández, 2010; Pinto, 1987). As we shall see, this was shown in the new discourses: (i) that argued the need to reduce the bureaucratization and guarantee the efficiency of the state; (ii) that promoted systemic and cooperative approaches of the state; and (iii) that revalued decentralization policies, which can be understood as participative and democratizing practices in civil society.

Regarding the first of these discourses, neo-structuralism criticized several excesses of the ISI, such as disproportioned bureaucratization, inefficiency, inadequate allocation of resources (CEPAL, 1990), and the overestimation of state protectionism, which in practice acquired a "frivolous" (Fajnzylber, 1983) character and distorted the functioning of economies. The economic policy instruments' lack of analytical consideration to achieve what they wanted to was also criticized (Bitar, 1988; Fishlow, 1987; Rosales, 1988). As a result of these limitations, it was argued that there was a need to build efficient states (Rosales, 1988) based on a predominantly subsidiary conception of their intervention (CEPAL, 1990; Faletto, 1996). All these political and theoretical redefinitions were closely related to the requirements imposed by the Washington Consensus and its defence of the structural reforms.

Regarding the second discourse, the understanding of the state also changed. The state was assigned the two crucial tasks of overcoming the accumulated gaps in the areas of equity and promoting international competitiveness. For those purposes, a new pattern of state intervention was promoted in terms of a "strategic consensus-building", where the different representative forces of society should interact (CEPAL, 1990). However, notwithstanding these ambitious tasks assigned to the state, the predominant discourse was one that conceived that it should not deploy a wide or extensive intervention (Bitar, 1988). Instead, it should be specifically self-limited and simplified and it should also develop synergetic and collaborative dynamics with private actors (CEPAL, 1990). Another task that is required of the state is the deployment of sectorial and selective policies, oriented to achieve a sophisticated external insertion based on innovation and knowledge-oriented industrialization (CEPAL, 1990). In general, the understanding of state-intervention is closely related to the need to promote systemic competitiveness policies, which became the new technological and productive paradigm during neo-structuralism (CEPAL, 1990; Esser, Hillebrand, Messner, & Meyer-Stamer, 1996; Rosales, 1996).

Neo-structuralism also revalued the dynamics of nets to promote development. This analytical framework replaced the former structuralists' binomial "state and markets" with a new theoretical matrix that highlighted the virtuous mechanisms of interaction, which should be deployed among the "market, state and society" triad. In other words, it is about finding the right balance between state-intervention and market. Therefore, the state appears integrated in a perspective of systemic competitiveness (CEPAL, 1990; Esser et. al., 1996) that, even though it critically observes the possibility of solving the processes through the markets,

relativizes and redefines the role of the hierarchies that dominated under "frivolous" post-war protectionism (Fajnzylber, 1990). The nets appear as the structuring elements of this new competitiveness, mainly through collective learnings and innovations promoted by systemic interactions. The state is then incorporated as the stimulator and promoter of the several mechanisms of public-private cooperation on which these nets should be built and the learnings deployed (Fajnzylber, 1990; Sunkel & Zuleta, 1990).

Finally, the third discourse shows another important change associated with the global processes of capitalism in general and the Cepalian discourse in particular. It is related to the renewed role and relevance of the subnational scales that are conceived as central spaces for the promotion of development (Fernández, 2010). In this sense, and in accordance with international organizations such as the World Bank (Burki, Perry, & Dillinger, 1999), the discourse of decentralization gained strength among the neo-structuralist arguments that promote the transfer of responsibilities from the national state to the regional and local authorities. This argument was based on the assumption that regionalization would allow a better use of regional resources, potentialities, and markets while favouring the initiative of private actors (Bitar, 1988, Bossier, 1994). However, although this debate conceived states' new role for development, it was not theoretically linked with the discussion of structural change.

As has been previously stated, this self-limited, subsidiary, and efficient understanding of the state went through some changes during the first decade of the 21st century. Several factors played a role in these changes. On the one hand, the explicit recognition of the profoundly negative economic and social consequences of the policies promoted by the Washington Consensus, from which the neo-structuralist paradigm could hardly be completely separated (Guillén Romo, 2007). There was also the acknowledgement that the link between "market, state and society" that had been promoted during previous decades was unable to solve the Latin American structural problems, and some changes in the understanding of the role of the state were introduced (CEPAL, 2010). On the other hand, the renewed political climate of Latin America also influenced ECLAC's theoretical production. Thus, during the first decade and a half of the 21st century, the states were repositioned –at least discursively– in the centre of the political scenery by the neo-developmental governments in order to promote development and reduce inequities (CEPAL, 2010).

These changes show a more optimistic and permissive view regarding state intervention. The state will no longer be based on a conception of simplified and self-limited intervention; instead, the convenience of its intervention will be recognised in several areas of the economy (CEPAL, 2010, 2012, 2014). This is a perspective that proposed an active participation to guarantee the adequate macroeconomic environment for private actors to replace the former subsidiary conception of the state. Thus, the state assumes a central role to promote: a) the productivity convergence through policies oriented towards industrial development, technological

innovation, the financing of less productive sectors, and the promotion of the small and medium enterprises; b) the improvement of employment conditions, through minimum wages and labour agreements, the protection of informal workers and the implementation of social protection guarantees; and c) the reduction of social gaps, through a sustained increase in social spending and income-transfer systems that have a redistributive effect, as well as guaranteeing access to education and health (which are understood as universal rights) (CEPAL, 2010, 2012). From this new perspective the state has a fundamental role for income redistribution and the assurance of an acceptable standard of living for the Latin American population.

However, the new references to the state simultaneously coexist with the predominance of a state's approach that keeps on conceiving it as one of the actors inside the "market, society and state" triad. In other words, beyond the aforementioned changes, the state's action is still understood within a "strategic consensus-building" and "pacts" between public and private actors framework (CEPAL, 2010, 2012, 2014). Thus, this is an approach that understands state intervention in terms of consensually integrating several actors to promote synergic behaviours (CEPAL, 2012).

Finally, in a scarcely articulated contribution from a spatial scales perspective, instances such as the ILPES, which are closely related to the neo-structuralist's discourse associated with systemic competitiveness (Silva Lira, 2005), have been promoting a dialogue between neo-structuralism and the subnational scales approaches to promote local development. This proposal highlights the role of the territories as fields for innovative creation and for taking advantages of their own resources. In this way, neo-structuralism has pointed out that the promotion of virtuous and synergetic circles that would allow the territorial development and the reduction of the structural heterogeneity is not only a matter of relationships between public and private actors, but also of the necessary coordination between different levels of government.

FINAL CONSIDERATIONS: THE CHALLENGES FOR THE STRUCTURAL CHANGE AND THE ROLE OF THE STATE FOR LATIN AMERICAN DEVELOPMENT IN THE 21ST CENTURY

During 7 decades, the ECLAC discussed the need for Latin America to carry out a structural change. However, notwithstanding the continuity of this topic, the meaning of this concept has changed depending on the different historical and theoretical contexts that were analysed. Ultimately, these epistemic changes represent a clear divergence between structuralism and neo-structuralism in terms of the theoretical comprehension of how capitalism works and, therefore, in ECLAC's proposals for development.

The structuralists' analysis, and their proposal for structural change, started with the identification of several problems associated with the peripheral productive structures. These economies were inserted in a capitalist system that operates under contradictory, unequal, and exclusive dynamics. Hence, having a primary and heterogeneous productive structure implied a dependent and subordinated positioning in the face of the logics imposed and controlled by the centre. This process was explained through the aforementioned concepts such as the deterioration in the terms of trade, income elasticity of demand, structural heterogeneity (in productive and labour terms), and the centre-periphery relationship itself.

Consequently, when proposing the ISI and appealing to the state, the structuralists recognised that capitalism operated through a pattern of accumulation and reproduction that was widely unequal. In addition, to revert that dynamic, the political decision to transform the Latin American productive structure was necessary to create a more sophisticated and productive scheme that allows a more homogenous, diversified, and egalitarian industrial pattern of accumulation.

During the decades after the emergence of Latin American structuralism, the understanding of the way in which capitalism operated on a global level, and particularly in the periphery, was nourished by new explanatory variables. These variables revalued the relations of power that operated on the centre-periphery level, but also within the periphery, and that explained, in part, the obstacles that were present when the ISI was implemented. This, coupled with the recognition of the new modalities assumed by foreign capital in the region, especially during the 70s, gave rise to reflections on the meaning of structural change in that context. This was discussed through "Styles" debates and the projections and possibilities of the periphery's development within an imminent global transformation scenario. Similarly, when considering the predominant role that foreign capital acquired in the region and the intensified conflicts between social classes, the understanding of the state and its possibilities for intervention also became more complex.

Finally, the emergence of neo-structuralism is situated in a context characterized by the primacy of globalization and neoliberalism, which can be understood as a conservative reaction to the limitations experienced by Fordism at the centre and the ISI at the periphery. Without ignoring the loss of relevance of the ECLAC during that transitional context or the conditionings in Latin America, especially through the Washington Consensus, neo-structuralism defined itself as a renewal and an alternative to the neoclassic device. However, the neo-structuralist proposal implied not only a remarkable rupture regarding the traditional epistemic approach of structuralism to the study and comprehension of the functioning of capitalism as a system, but also regarding the meaning and the challenges for the structural change in the new context.

The divergence concerning the analytical theory of ECLAC could be observed, first, in the displacement of concepts that had been central in the original theoretical approach: principally the recognition of the specificity of the peripheral

condition of Latin American economies and the relations of power that sustained and reproduced the positioning. As a result, there was a change regarding the original structuralist diagnosis and propositive strategies. When creating a distance between the recognition of the power relationships that constitute the link between the centre-periphery and its conflicts of interest, neo-structuralism understood the problems of Latin American development as a result of internal factors that appeared decoupled from the dynamics and opportunities offered by globalization. Unlike the original Cepalian tradition, the way to understand the challenges of structural change does not conceive contradictions or conflict of interest: neither in terms of the traditional binomial centre-periphery (considering an eventual repositioning of the latter) nor among the stratum that operated within the periphery (supposedly oriented to develop collaborative and cooperative practices for technology transfer and learning). In other words, without conflict, the win-win cooperation within the periphery is a requirement for a win-win integration in the external scenery.

The omission of the conflicts results in a development strategy that does not centrally conceive the contradictory logic associated with the development of the centre and its (new) modalities of expansion to –and to take control of– the periphery or the conflicts derived from it. It supposes, instead, a universal pattern of development based on the deployment of a catching-up processes that would eventually allow Latin America to achieve the global technological frontier. Thus, the constitutive elements of capitalism highlighted by structuralist theory, associated with power, conflicts, and contradictions, as well as how those processes historically shaped differentiated productive structures with their own specificities, are no longer relevant. In this way, neo-structuralism leaves aside the recognition that any attempt to develop peripheral economies should situate the problem of power and conflict in the centre of the analysis.

Similarly, the understanding of the state also showed a clear distancing from the structuralists' foundations that justified an ISI intervention and from the following contributions that situated it in an environment of increasing tensions because of the conflicts of interests between local and external actors in the periphery. So, while the hierarchical, unequal, and conflicting dimension of peripheral capitalism is no longer considered, the state no longer assumes a fundamental and irreplaceable role. Quite the opposite, the way of understanding state-intervention under neo-structuralism started from a constructive logic that was based on the consensus and collaboration nets among public and private actors. Once again, this interpretation does not consider the local and external actors who are present in the periphery and condition the possibilities of state intervention to direct a development strategy.

Nevertheless, far from suggesting an irreconcilable dialogue between structuralism and neo-structuralism, we instead promote an updated recovery of the structuralist tradition through a dialogue with the current contributions of neo-structuralism. As a central point, it demands the re-location of the dimension of power as a

condition to problematize the proposals of structural change and state intervention in the 21st century.

To do so, it is necessary to recompose the historical analysis of the formation of Latin American productive structures where the power relationships are created as a result of the interactions among internal-external actors that operate in the periphery. It also demands the identification of the conflicting dynamics that are taking place between the several actors present in such historical structures. As part of this framework, the problem of states' intervention and their capabilities, conditionings, and possibilities to carry out the tasks assigned to them by theory should be considered. Such a reflection should not ignore the recognition of a conflicting process that operates in the periphery and that, for many years, has shown its potential to condition the policies oriented towards transforming the Latin American productive structure. For that purpose, the reflection about state structures and interventions should be central in Latin American development theories, which retrieve the state's centrality –although in a de-problematized way– to carry out the structural change.

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PAPER

TOWARDS FISCAL COORDINATION IN SOUTH AMERICA: A PROPOSAL BASED ON INTER-COUNTRY FISCAL MULTIPLIERS

Matías Torchinsky Landau

Torchinsky Landau, M. (2020). Towards fiscal coordination in South America: A proposal based on inter-country fiscal multipliers. *Cuadernos de Economía, 39*(80), 471-497.

Based on the methodology developed by Cingolani, Garbellini, and Wirkierman (2013) and the inter-country input-output (ICIO) tables published by the OECD, we estimate a matrix of multi-country income multipliers for five South American countries for the 2005-2015 period. We then devise a linear program to calculate the requirements of a coordinated fiscal expansion (where each country participates, although not in the same proportion) in order to achieve a target rate of growth for all countries in the region. This policy outperforms the implementation of isolated actions by each government, considering both their fiscal and external costs.

M. Torchinsky Landau
Kingston University London and Université Paris 13, Buenos Aires, Argentina.
Email: matiastorchinsky@gmail.com

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Keywords: Fiscal multipliers; South America; regional integration; input output.
JEL: C61; C67; F14; F15; O41.

Torchinsky Landau, M. (2020). Hacia la coordinación fiscal en Sudamérica: una propuesta basada en multiplicadores fiscales multipaís. *Cuadernos de Economía, 39*(80), 471-497.

De acuerdo con la metodología desarrollada por Cingolani, Garbellini y Wirkierman (2013) y las matrices insumo-producto multipaís elaboradas por la OCDE, se estima una matriz de multiplicadores fiscales multipaís para cinco naciones sudamericanas en el período 2005-2015. Luego, utilizando programación lineal, se calculan los requisitos de una política fiscal coordinada (donde cada país participa, aunque no en la misma proporción) que permita alcanzar una tasa de crecimiento especificada para todos los países de la región. Las estimaciones muestran que esta política da lugar a mejores resultados que la implementación de acciones independientes por parte de cada gobierno, tanto en el plano fiscal como en el externo.

Palabras clave: multiplicadores fiscales; sudamérica; integración regional; insumo producto.
JEL: C61; C67; F14; F15; O41.

Torchinsky Landau, M. (2020). Rumo à coordenação fiscal na América do Sul: uma proposta baseada em multiplicadores fiscais multipaís. *Cuadernos de Economía, 39*(80), 471-497.

De acordo à metodologia desenvolvida por Cingolani, Garbellini e Wirkierman (2013) e as matrizes insumo-produto multipaís elaboradas pela OCDE, estima-se uma matriz de multiplicadores fiscais multipaís para cinco nações sul-americanas no período 2005-2015. Depois, utilizando programação linear, se calculam os requisitos de uma política fiscal coordenada (onde cada país participa, ainda que não na mesma proporção) que permita alcançar um índice de crescimento especificado para todos os países da região. As estimativas mostram que esta política conduz a melhores resultados que a implementação de ações independentes por parte de cada governo, tanto no plano fiscal como no externo.

Palavras-chave: multiplicadores fiscais; América do Sul; integração regional; insumo produto.
JEL: C61; C67; F14; F15; O41.

INTRODUCTION

The first decades of the 21st century have been full of contrasts for South America. After a process of sustained economic growth until 2012, fostered by the global rise in commodity prices, most of the economies in the region entered a phase of low or even negative growth, in a global context of low aggregate demand, the end of the "commodities supercycle", and a general worsening of global financial conditions, particularly for emerging countries.

In this context, the recommended economic policy from a Keynesian point of view would have been an increase in fiscal expenditures, accompanied by lower interest rates, in order to expand aggregate demand via the *multiplier*, which would lead to a boost in economic activity (Kalecki, 1954; Keynes, 1937).

However, South American countries' productive structure is characterized by combining a few highly competitive sectors, most of them based on natural resources, with a much less developed manufacturing industry —according to Diamand (1972), an "unbalanced" productive structure— which leads to a structurally high import elasticity. This hampers the implementation of expansionary policies in two ways: on the one hand, a stronger domestic market, with higher wages, would reduce competitivity and therefore curtail exports and increase imports, reducing income (Blecker, 2011; Hein & Vogel, 2008) and, on the other hand, the balance of trade deterioration would lead to an external constraint to growth, given the need of foreign currency in order to finance imports required for the productive process (Prebisch, 1950; Thirlwall, 1979). This characteristic of Latin American economies strengthened during the last decades after the abandonment of industrialization strategies that were prevalent until the 70s and the "reprimarization" of these economies during the recent commodity prices boom. Consequently, during recent years, many South American countries engaged in a "race to the bottom" by implementing austerity policies to reduce fiscal deficits, a fact that is illustrated by the recent return of IMF programs to the region in Argentina and Ecuador.

Conversely, it has been argued that the opposite approach (that is, a simultaneous and coordinated increase of fiscal expenditures) could be an alternative, more efficient strategy. This suggestion is based on the fact that, while one country's expansion would increase its imports, the simultaneous increase of its trade partners' economic activity would boost its exports, since they will require, at the same time, imported inputs. In this way, the total impact on the balance of trade would be lower.

Devising such a policy requires moving further away from the mainstream understanding of the relation between growth and trade, based on the calculation of trade elasticities (Houthakker & Magee, 1969), which focuses on exchange rates as the main adjustment mechanism, and, in more recent times, on DSGE models, which consider multiple countries that only differ in size (Corsetti, Meier, & Müller, 2010). Conversely, a Post-Keynesian approach, where the focus is put on production by considering income elasticities rather than on the exchange rate, allows a model to be developed that coherently integrates multiple heterogeneous countries.

The first step towards the development of such a framework was taken by Goodwin (1983) through the estimation of a "world matrix multiplier", which allowed the devising of, in Keynes' words (1936, p. 349), a "national investment program directed to an optimal level of domestic employment which is twice blessed in the sense that it helps ourselves and our neighbours at the same time". A particularly interesting feature of this methodology is that, while it takes a Keynesian standpoint by attributing a key role to aggregate demand, at the same time, it considers specific features for each country through their different import propensities, in line with a Harrodian (but also a structuralist) approach (Harrod, 1933; Prebisch, 1950).

Not much attention has been paid to this seminal paper, particularly due to the lack of consistent multinational data regarding growth and particularly trade. However, during recent years, multi-country databases (particularly inter-country input-output matrices) provided the required data for the implementation of these type of methodologies. This led to the Cingolani et al. (2013) work, which extended Goodwin's methodology by considering gross instead of net output and applied it to the countries in the Western Balkans, demonstrating that a coordinated expansionary fiscal policy is feasible for this region and displays better results for all dimensions (growth, trade, and fiscal costs) than an independent expansionary policy in each country. Portella-Carbó and Dejuán (2018) apply a similar methodology to the Eurozone to test if a Keynesian policy can promote not only growth but also income convergence, finding a trade-off between these two dimensions.

The South American region could also benefit from this approach in order to return to a growth path. This depends on a number of variables including: the multiplier effect of fiscal policies, the degree of productive integration among countries, and the dependence on extra-regional imported goods and services. A coordinated regional policy is viable not only because the involved countries display similar productive structures and face common challenges, but also because intra-regional trade displays, as opposed to extra-regional exchange (based on primary goods exports), a much more developed basket of goods and services, including a considerable percentage of manufactured goods and an important role for high and medium technology industries (CEPAL, 2018; Duran Lima & Lo Turco, 2010).

There is, however, a major challenge posed by the fact that South America shows much lower levels of productive integration than other regions such as the EU, North America, and Asia: it is divided between two major trade blocs (the MERCOSUR, composed by Argentina, Brazil, Paraguay, and Uruguay, and the Pacific Alliance, formed by Chile, Colombia, and Peru, plus Mexico from outside the region), and its main trade flows are not intra-regional but with external trade partners such as China, the EU, and the US. This implies that an expansionary fiscal policy, even if it is coordinated, might still have a considerable negative impact on the balance of trade.

The goal of this article is to implement the methodology developed by Cingolani et al. (2013) for South America, estimating inter-country matrix multipliers and then developing a linear program, which allows the necessary fiscal injection in

each country to be calculated to allow for a positive rate of growth in all of them. This is done while maximizing "net gains", defined as the difference between GDP expansion and the increase in fiscal and external deficits.

The article is organised into five sections. After this introduction, the second section describes the current growth dynamics in the region and depicts regional trade. The third section of the paper presents the methodology to be implemented, and the fourth displays the main results. Finally, section five concludes.

AN OVERVIEW OF RECENT DECADES IN SOUTH AMERICA

Growth Dynamics and Fiscal Policy

The first decade of the 21st century was a period of extraordinary economic success for all countries in South America;[1] they reached the highest rates of growth since the 70s. Between 2000 and 2011, the average GDP growth rate for the region was 3.9%, even taking into account the impact of the global financial crisis in 2009 (if this year is excluded, the average reaches 4.3%).

The expansion of economic activity was also accompanied by improvements in the labour market—generally not only limited to low unemployment rates but also leading to a reduction of informality rates (Bertranou, Casanova, & Sarabia, 2013; Saboia & Neto, 2018)—a more egalitarian income distribution and a strong aggregate demand, both domestic and external.

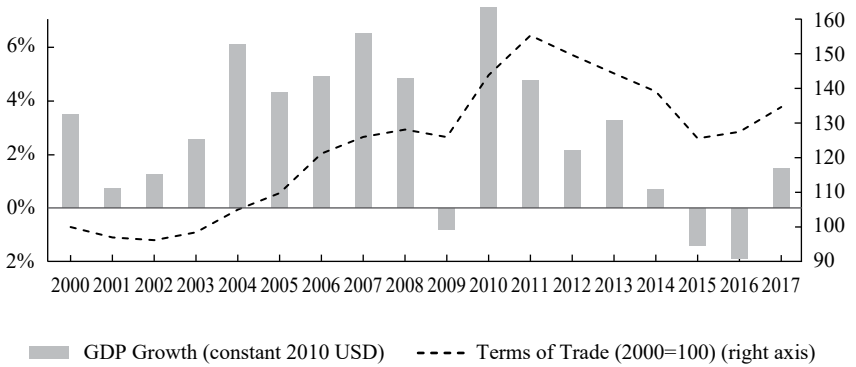
This period of solid growth was driven, schematically, by two main factors. On the one hand, the simultaneous election of progressist leaderships in most countries (known as the "pink tide") led to the implementation of policies that improved income distribution, such as increases in the minimum wage and social programs, and abandoned fiscal austerity, increasing domestic demand and (through the "accelerator") fixed investment (Kalecki, 1954; Samuelson, 1939).

On the other hand, the rapid increase in commodity prices, driven by a low but stable growth in developed countries, the emergence of new developing players such as China and, according to some authors, the use of commodities as financial assets (Belke, Bordon, & Volz, 2013; Carrera, 2018; Cheng & Xiong, 2014) had a twofold effect, increasing aggregate demand through higher exports but also relaxing the external constraint to growth by providing foreign currency in order to finance the increase in imports associated with a higher growth rate (Prebisch, 1950; Thirlwall, 1979). The external constraint to growth became even less binding

[1] Given that the source we use only displays information for Chile, Argentina, Brazil, Colombia, and Peru, this analysis will be focused on these countries, and the expression "South America" will refer to them. It should be considered that, together, they make up 89% of South American total GDP (IMF, 2019).

during this period due to the low global interest rates and the consequent capital inflows into developing countries.[2]

Figure 1.
South America, GDP Growth and Terms of Trade (2000-2017)



Conversely, changes in the external conditions after the financial crisis, often accompanied by the development of internal tensions, interrupted this virtuous growth dynamic: even though the region recovered quickly from the direct impact of the crisis in 2009, with a solid economic expansion in 2010 and 2011, growth rates have been low since 2012 and even negative for 2015 and 2016. A number of factors played a role in this drastic change in the regional dynamics.

First, the end of the commodity prices boom in 2014 led to an increase in the region's vulnerability (Abeles & Valdecantos, 2016): it implied not only a fall in aggregate demand but also a deterioration of trade balances, reducing the availability of foreign currency in order to finance the imported goods and services required to maintain high levels of economic activity. This has been particularly critical for the region since many countries "reprimarized" their productive structure (and, to even a higher degree, their exports basket) during the commodity boom (CEPAL, 2012). In some cases, the tighter economic conditions and the "defensive" reactions of firms and workers to currency depreciations in order to maintain their real income, led to an upsurge in distributional struggle, triggering inflationary processes.[3]

Second, the sudden reduction in availability of foreign currency could not be compensated for easily with higher indebtedness since capital flows were not as

[2] An exception was Argentina, where the negotiations regarding the default of the public debt in 2001 implied that the financial markets remained relatively closed for the country.

[3] Conflict inflation models explain this phenomenon: a currency depreciation leads to price increases, which are resisted by the workers, who demand higher nominal wages to recover their purchase power. This, its turn, increases costs for companies and therefore prices, potentially leading to inertial inflation (Olivera, 1967; Rowthorn, 1977).

available as in the previous period due to a "fly to quality" process after the financial crisis of 2007/08. Therefore, the external constraint to growth expressed itself as a twofold effect, both real and financial. The accumulation of foreign reserves during the previous period and a widespread regulation of foreign financial flows provided some cushioning, which was more relevant in some countries than others (Ocampo, 2009).

Finally, a generalized political shift, particularly from 2015 onwards, implied the replacement of progressist governments by more conservative ones, which brought back the paradigm of "sound finance" for public accounts. Although fiscal deficits generally increased due to the fall in tax income, there were no strong fiscal expansions in order to countervail the lower activity in the private sector, both domestic and foreign; on the contrary, fiscal expenditure (especially investment) often reacted procyclically due to the application of austerity programs in order to recover fiscal balance.

The policy discussed in this paper, based on an expansionary fiscal policy, strongly contrasts with the ones implemented in the region in recent years. However, the success of such a strategy relies on the potential spillovers among countries. Therefore, an analysis of the structure of regional trade becomes necessary in order to discuss the potentialities and challenges of such a strategy. That is the goal of the next subsection.

Regional Trade

The simultaneous deterioration of trade balances after the end of the commodity prices boom was possible due to the fact that most of the trade for these countries is extra-regional: the main partners are the U.S., the EU, and China. Table 1 shows the trade flows of goods and services between the five considered countries, their main trade partners, and the rest of the world.

Indeed, the reliance on extra-regional trade partners is a feature of both exports and imports for the five considered countries. As shown in the last column of the table, the region is the destination for around 10% of total exports, the exception being Argentina, for which the region represents 21% of its external markets.

The analysis of imports depicts a similar situation although with higher divergences: countries such as Argentina, Chile, and Peru are more reliant on imports from the region (presented in the last row of the table), while Brazil and Colombia acquire foreign goods mainly outside the area. This feature is particularly manifest for final goods and services, while intermediate products are more frequently sourced in the region (particularly in the case of Argentina and Chile).

Regarding intra-regional trade, there are substantial asymmetries. Brazil is, by far, the most relevant regional player: it is the origin of 44% of the regional imports and the destination of 32% of the regional exports of the other four countries. Argentina is the second biggest player in the area, providing 27% of the regional exports

Table 1.
Regional and Extra-regional Trade (2015) Billions of dollars

		Importer									% X Reg
		CHI	ARG	BRA	COL	PER	USA	CHN	EU	RoW	
Exporter	CHI	-	1.4	4.0	0.8	1.5	9.0	19.2	8.4	26.0	11.0%
	ARG	2.7	-	10.1	0.6	1.0	5.6	6.6	10.0	31.6	21.1%
	BRA	5.7	13.3	-	2.4	2.1	35.7	44.8	37.0	86.3	10.3%
	COL	0.9	0.3	1.4	-	1.6	15.8	4.6	6.4	11.8	9.8%
	PER	1.2	0.2	1.3	1.1	-	7.3	9.8	5.3	12.8	9.7%
	USA	12.9	12.8	54.2	19.9	9.7	-	237.7	453.6	1223.0	5.4%
	CHN	16.2	12.6	38.5	12.3	9.0	489.2	-	352.2	1268.4	4.0%
	EU	12.1	14.7	70.2	10.6	6.7	573.4	297.2	-	1776.0	4.1%
	RoW	19.3	19.2	72.2	18.6	13.0	1395.0	1272.8	1411.8	-	3.4%
%M Reg		14.8%	20.3%	6.7%	7.3%	13.8%	2.9%	4.5%	2.9%	3.8%	-

Source: Own calculation based on ICIO-OECD.

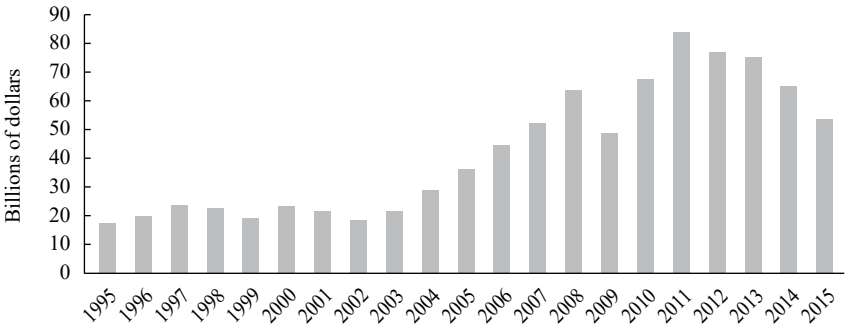
and importing 28% of the regionally traded goods. Chile, Peru, and Colombia (in that order) explain the remaining trade flows.

In this regard, two main trade areas of the region can be identified, both structured around Brazil: one with Argentina and Chile and another with Colombia and Peru, which is considerably smaller than the previous one. In addition to these trade flows, Peru is also an important export destination for Chile.

These two features—dependence on extra-regional trade and internal asymmetries—have historically characterized the South American region. The (limited) regional trade has been fostered by the creation of two trade blocs: the MERCOSUR in 1991, which includes Argentina, Brazil, Paraguay, and Uruguay (Venezuela was a member, but it was suspended in 2016) and the Pacific Alliance (AP) in 2012, composed by Chile, Colombia, Mexico, and Peru. A boom in regional trade took place between 2004 and 2011, when trade flows grew at a yearly average rate of 20%, as shown in Figure 2. This strengthened regional integration, but without reverting the structural dependence on extra-regional markets: by 2011, when regional trade reached its historical record (84 billion dollars), trade with the rest of the world was 11 times higher.

Moreover, this trade pattern has strengthened during recent years: the slowdown in economic activity since 2011 came with a severe reduction of regional trade flows, which, after peaking at 83 billion dollars, fell to 53 billion in 2015, a 36% reduction in only four years. Although trade with the rest of the world also declined, the decrease was only by 17%, which reduced the importance of regional trade for the five considered countries.

Figure 2.
Regional Trade of Goods and Services (1995-2015)



Source: Own calculation based on ICIO-OECD.

This trade structure poses a constraint on the possibilities of devising a coordinated fiscal policy, given the fact that such a strategy will necessarily worsen trade balances since most international trade is extra-regional for the five selected countries. A generalized expansion in South America, without simultaneous growth in the rest of the world, will necessarily lead to a deterioration of the balance of trade of the region as a whole.

Therefore, a coordinated fiscal policy that also aims to be sustainable in the long run has to be accompanied by a strategic industrial policy able to develop supply capacity in the sectors with high extra-regional import propensity, such as electronics, transport equipment, mining, and basic metals in order to replace these purchases by regionally produced goods, which would strengthen cross-country income-multipliers. It should be noted that, as was previously mentioned, regional trade displays a much higher participation of manufactured goods and high-tech industries than exports to extra-regional markets, implying that a coordinated fiscal policy would have a stronger effect for these sectors. Thus, there is a synergy between the short-term macroeconomic policy suggested here and an industrial policy oriented towards promoting regional structural change, which could be reinforced by directing the increase on public expenditure required to dynamize economic activity to specific industries.

After this depiction of the region's recent economic performance and its trade, the next section describes the methodology implemented to estimate a coordinated fiscal policy that, considering the aforementioned challenges, allows for generalized economic growth in South America, minimizing fiscal and external costs.

METHODOLOGY: ESTIMATING INCOME AND TRADE MULTIPLIERS FOR A COORDINATED POLICY

Matrix Notation and Remarks

In this section, matrix algebra will be used to present the calculation of net income multipliers, their balance of trade (BoT) effects and, finally, to develop a linear program in order to estimate an optimal coordinated fiscal policy. To facilitate the presentation of the methodology, it is necessary to first define some conventions regarding notation.

Vectors are represented by lower-case characters (e.g. z) and are always column vectors of dimension n x 1 (n is the number of countries) unless it is explicitly specified that they are transposed (e.g. z^T). Matrices are indicated by upper-case characters (e.g. H), except diagonalized vectors (matrices with a vector on its main diagonal and zeros on the other cells), represented as lower case-characters with a hat (e.g. $\hat{z}$). Vector e, of dimension n x 1, displays 1 as value on all its cells, and is used to be pre- or post-multiplied by other vectors and matrices in order to add them by column or row, respectively.

The methodology presented here is based on Cingolani et al. (2013). The only difference is that the rest of the world is considered as any other country, unlike in the original paper, where it is treated exogenously. The original methodology can be consulted in the aforementioned article.

Income Multipliers

The first step in order to estimate a series of cross-country income multipliers is to define a framework for production and trade that makes the interdependence between countries explicit, where both gross output z and trade balances b are represented. Such a framework can be formulated as:

$$z = He + d \tag{1}$$

$$b = \left(H - \hat{m}_h\right)e, \text{ being } \hat{m}_h = H^T e \tag{2}$$

In expression (1), H is a matrix of dimension n x n (n is the number of countries considered), depicting intermediate and final production of goods and services, for domestic use in main the diagonal (h_{ii}), and traded with other countries in the off-diagonal cells ($h_{ij}, j \neq i$). The only produced goods and services excluded from matrix H are the expenditures considered as exogenous, in this case, domestically produced public expenditures, included in vector d, of dimension n x 1. It should be noted that since input-output matrices depict primary income distribution, vector d only considers government purchases of goods and services (these include the provision of public administration services but not income transfers and subsidies).

Equation (2) presents the trade balance for each country, based on matrix H. Trade balances are calculated by adding the rows of the matrix (exports) minus the columns (imports), excluding the values from the main diagonal, which are production for domestic use. Vector d plays no role here since it only includes domestic demand components.

We can describe the system in "intensive" terms, that is, considering values per unit of gross output. In order to do this, we divide each column of matrices H and $\hat{m}_h$ by the corresponding value of the vector z:

$$\Lambda = H\hat{z}^{-1},\ \hat{\alpha}_h = \hat{m}_h\hat{z}^{-1} \tag{3}$$

In this way, we can rewrite equation (1) in intensive terms, by replacing (3):

$$z = \Lambda \mathrm{z} + d \tag{4}$$

And solve for z:

$$z = \left(\mathrm{I} - \Lambda\right)^{-1} d = Bd \tag{5}$$

Matrix $\left(\mathrm{I} - \Lambda\right)^{-1}$, or B, is the equivalent of the "Leontief inverse" for our multi-country setting. As such, the cross-country interdependence is made explicit since the gross output of each country will be determined by the values of the exogenous final demand d in all others. With the first-difference estimator (5), we obtain:

$$\Delta z = \left(\mathrm{I} - \Lambda\right)^{-1} \Delta d \tag{6}$$

Matrix $\left(\mathrm{I} - \Lambda\right)^{-1}$ also represents the inter-country gross output multipliers: each cell $\left(\mathrm{I} - \Lambda\right)^{-1}_{ij}$ describes the increase in country's i gross output when there is an increase of 1 monetary unit in exogenous demand from country j.

From the income side, we can also represent gross output as the sum of intermediate inputs x and value added y:

$$\mathrm{z} = \mathrm{x} + \mathrm{y} \tag{7}$$

Again, we can describe the system in intensive terms, by defining $\mathrm{a}_x = \hat{x}\hat{z}^{-1}$, that is, the proportion of intermediate inputs in gross output per country:

$$\mathrm{z} = \hat{\mathrm{a}}_x \mathrm{z} + \mathrm{y} \tag{8}$$

And, finally, solve z:

$$\mathrm{z} = \left(\mathrm{I} - \hat{\mathrm{a}}_x\right)^{-1} \mathrm{y} \tag{9}$$

Equation (9) shows that gross output is defined as the total requirements generated by value added y. Combining expressions (5) and (9), and by taking the first differences, we obtain:

$$\Delta y = \left(\mathrm{I} - \hat{\mathrm{a}}_x\right) B \Delta d = \Pi d \tag{10}$$

Therefore Π is the net income multipliers matrix, which describes the rise in total net income (value added) caused by an increase in exogenous demand d. Each cell in the main diagonal (Π_{ii}) represents each country's income multiplier, while the off-diagonal values ($\Pi_{ij}, i \neq j$) describe the increase in a country's i net income for an increase of one monetary unit in country's j exogenous demand.

As such, the total net income of a country is determined by the level of autonomous expenditures in all countries (including itself), making the fact explicit that output determination is not a national but a simultaneous, worldwide process. Moreover, we can divide expression (10) for each country into two components: the income generated by domestic autonomous expenditures and the one created due to other countries' exogenous expenditures:

$$\Delta y = \Pi_{ii} d_i + \sum_{i \neq j} \Pi_{ij} d_j \quad \forall i = 1,2,\ldots,n \tag{11}$$

However, since our objective is to estimate a coordinated fiscal policy for a certain group of countries (in this case, the ones from the South American region, which we will call "group 1"), it is necessary to distinguish between intra-regional and extra-regional income multipliers. This means separately considering the effects of an increase in autonomous injections in group 1 countries or in group 2 ones. In order to do this, we can rewrite the output, income, and trade systems—that is, equations (1), (2), and (7)—as partitioned matrices:

$$\begin{bmatrix} z_1 \\ z_2 \end{bmatrix} = \begin{bmatrix} H_{11} & H_{12} \\ H_{21} & H_{22} \end{bmatrix} \begin{bmatrix} e_1 \\ e_2 \end{bmatrix} + \begin{bmatrix} d_1 \\ d_2 \end{bmatrix} \tag{12}$$

$$\begin{bmatrix} b_1 \\ b_2 \end{bmatrix} = \begin{bmatrix} H_{11} - \hat{m}_{h_{11}} - \hat{m}_{h_{12}} & H_{12} \\ H_{21} & H_{22} - \hat{m}_{h_{12}} - \hat{m}_{h_{22}} \end{bmatrix} \begin{bmatrix} e_1 \\ e_2 \end{bmatrix} \tag{13}$$

$$\begin{bmatrix} z_1 \\ z_2 \end{bmatrix} = \begin{bmatrix} x_1 \\ x_2 \end{bmatrix} + \begin{bmatrix} y_1 \\ y_2 \end{bmatrix} \tag{14}$$

Analogous to expression (3), we can define partitioned matrices in intensive terms:

$$\begin{aligned} \Lambda_{11} &= H_{11}\hat{z}_1^{-1} & \hat{\alpha}_{h_{11}} &= \hat{m}_{h_{11}}\hat{z}_1^{-1} & \hat{a}_{x_1} &= \hat{x}_1\hat{z}_1^{-1} \\ \Lambda_{21} &= H_{21}\hat{z}_1^{-1} & \hat{\alpha}_{h_{21}} &= \hat{m}_{h_{21}}\hat{z}_1^{-1} & & \\ \Lambda_{12} &= H_{12}\hat{z}_2^{-1} & \hat{\alpha}_{h_{12}} &= \hat{m}_{h_{12}}\hat{z}_2^{-1} & \hat{a}_{x_2} &= \hat{x}_2\hat{z}_2^{-1} \\ \Lambda_{22} &= H_{22}\hat{z}_2^{-1} & \hat{\alpha}_{h_{22}} &= \hat{m}_{h_{22}}\hat{z}_2^{-1} & & \end{aligned} \tag{15}$$

And, as in equation (5), matrix $B = \left(\mathrm{I} - \Lambda\right)^{-1}$ is also partitioned:

$$\mathrm{B} = \left(\mathrm{I} - \Lambda\right)^{-1} = \begin{bmatrix} B_{11} & B_{12} \\ B_{21} & B_{22} \end{bmatrix} \tag{16}$$

Then expression (5), which determines gross output, can be rewritten as:

$$\begin{bmatrix} z_1 \\ z_2 \end{bmatrix} = \begin{bmatrix} B_{11} & B_{12} \\ B_{21} & B_{22} \end{bmatrix} \begin{bmatrix} d_1 \\ d_2 \end{bmatrix} \tag{17}$$

We can also rewrite the income multipliers from equation (10), distinguishing between intra-regional and extra-regional autonomous demand and their effects:

$$\begin{bmatrix} \Delta y_1 \\ \Delta y_2 \end{bmatrix} = \begin{bmatrix} I_{11} - \hat{a}_{x_1} & 0 \\ 0 & I_{22} - \hat{a}_{x_2} \end{bmatrix} \begin{bmatrix} B_{11} & B_{12} \\ B_{21} & B_{22} \end{bmatrix} \begin{bmatrix} \Delta d_1 \\ \Delta d_2 \end{bmatrix} = \begin{bmatrix} \Pi_{11} & \Pi_{12} \\ \Pi_{21} & \Pi_{22} \end{bmatrix} \begin{bmatrix} \Delta d_1 \\ \Delta d_2 \end{bmatrix} \tag{18}$$

Finally, since we are focusing on group 1 countries, we can assume $\Delta d_2 = 0$. Then, the effect on group 1 countries of an increase in autonomous demand in these same countries is:

$$\Delta y_1 = \left(\mathrm{I}_{11} - \hat{\mathrm{a}}_{x_{11}}\right) B_{11} \Delta d_1 = \Pi_{11} \Delta d_1 \tag{19}$$

This expression will later be fundamental as part of the linear program to estimate the optimal fiscal policy since it provides the net income multipliers for the region.

Trade Balances

In order to estimate a fiscal policy that considers BoT effects, it is necessary to also understand the effects that changes on autonomous demand have on trade balances for each country. Starting from equation (2) and introducing (3), we obtain:

$$b = \left(\Lambda - \hat{\alpha}_h\right) z \tag{20}$$

This shows how trade balances are understood as fully determined by output levels z. Naturally, the sum of trade balances $\sum_{i=1}^{n} b$ equals zero since trade is a zero-sum game where one country's exports are another's imports. Replacing (5) in (20) and taking first differences, we obtain the effects of each country's balance of trade for a change in autonomous demand Δd:

$$\Delta b = \left(\Lambda - \hat{\alpha}_h\right)\left(I - \Lambda\right)^{-1} \Delta d \tag{21}$$

However, and as was the case for income multipliers, we are interested in distinguishing between BoT effects due to changes in autonomous expenditures in each group of countries. Therefore, by replacing the expressions from (15) in equation (20), we can describe trade for each group of countries. Intra-regional trade in each group of countries is:

$$\begin{bmatrix} b_{1,1} \\ b_{2,2} \end{bmatrix} = \begin{bmatrix} \Lambda_{11} - \hat{\alpha}_{h_{11}} & 0 \\ 0 & \Lambda_{22} - \hat{\alpha}_{h_{22}} \end{bmatrix} \begin{bmatrix} z_1 \\ z_2 \end{bmatrix} \tag{22}$$

While extra-regional trade can be defined as:

$$\begin{bmatrix} b_{1,2} \\ b_{2,1} \end{bmatrix} = \begin{bmatrix} -\hat{\alpha}_{h_{21}} & \Lambda_{12} \\ \Lambda_{21} & -\hat{\alpha}_{h_{12}} \end{bmatrix} \begin{bmatrix} z_1 \\ z_2 \end{bmatrix} \tag{23}$$

The total BoT for each region is simply the addition of its intra-regional and extra-regional balances:

$$\begin{bmatrix} b_1 \\ b_2 \end{bmatrix} = \begin{bmatrix} b_{1,1} \\ b_{2,2} \end{bmatrix} + \begin{bmatrix} b_{1,2} \\ b_{2,1} \end{bmatrix} \tag{24}$$

Given that trade is a zero-sum game, both intra-regional trade balances are zero, and the sum of group 1 extra-region BoT is the inverse of group 2 extra-region BoT:

$$e_1^T b_{1,1} = e_2^T b_{2,2} = 0 \tag{25}$$

$$e_1^T b_{1,2} + e_2^T b_{2,1} = 0 \tag{26}$$

By replacing expression (17) in (22), we obtain intra-regional trade balances as a function of autonomous demand:

$$\begin{bmatrix} b_{1,1} \\ b_{2,2} \end{bmatrix} = \begin{bmatrix} \left(\Lambda_{11} - \hat{\alpha}_{h_{11}}\right)\left(B_{11}d_1 + B_{12}d_2\right) \\ \left(\Lambda_{22} - \hat{\alpha}_{h_{22}}\right)\left(B_{21}d_1 + B_{22}d_2\right) \end{bmatrix} \tag{27}$$

It can be seen that intra-regional trade balances do not only depend on autonomous demand from countries in the same group; they also depend on the other group of countries' demand. This responds to the fact that part of that extra-regional demand requires imports from the region (directly or indirectly), which, in turn, implies the supplying country must import other inputs, part of which originate in the region.

Similarly, we can write extra-regional trade balances by replacing (17) in (23):

$$\begin{bmatrix} b_{1,2} \\ b_{2,1} \end{bmatrix} = \begin{bmatrix} \left(\Lambda_{12}B_{21} - \hat{\alpha}_{h_{21}}B_{11}\right)d_1 + \left(\Lambda_{12}B_{22} - \hat{\alpha}_{h_{21}}B_{12}\right)d_2 \\ \left(\Lambda_{21}B_{11} - \hat{\alpha}_{h_{12}}B_{21}\right)d_1 + \left(\Lambda_{21}B_{12} - \hat{\alpha}_{h_{12}}B_{22}\right)d_2 \end{bmatrix} \tag{28}$$

Once again, the extra-regional BoTs depend on both regional and non-regional autonomous demand. Because we focus on group 1 countries and we disregard

intra-regional balances of trade, we have to focus on expression $b_{1,2}$ while assuming $d_2 = 0$ in order to know the effect an increase in domestic demand has on extra-regional balances of trade:

$$\Delta b_{1,2} = \left(\Lambda_{12} B_{21} - \hat{\alpha}_{h_{21}} B_{11}\right) \Delta d_1 \tag{29}$$

This expression will be a key input in the estimation of the optimal fiscal policy, since it represents the effects of such a policy on the extra-regional BoT for each country, which is one of the constraints for the feasibility of such a strategy.

A Linear Program for a Coordinated Fiscal Policy

Once the income multipliers and the BoT effects of an increase in autonomous demand (here, public expenditure) are known, it is possible to develop a fiscal policy that allows for an increase in net output with a limited impact on the fiscal stance and the balance of trade. In order to do this, we develop a linear program, which implies the optimization (maximization or minimization) of a linear function, subject to a number of constraints.

In our framework, the variable to optimize (in this case, minimize) will be the total fiscal expansion required by group 1 countries (the region). There are three constraints: first, that the percentual increase in GDP has to be higher than a defined value $\overline{g}_y$ (in our case, 1%) for all countries in the region; second, that the change of fiscal expenditures has to be positive for all group 1 countries; and third, that the fiscal injection must lead to "net gains" π, understood as the increase in GDP minus its "costs": its impact on the government's budget and on the balance of trade. This final constraint can be written as:

$$\pi = \Delta y_1 - \Delta d_1 + \Delta b_{1,2} > 0 \tag{30}$$

Replacing equations (19) and (29) in (30), and after some algebraic manipulation, we can rewrite equation (30) as:

$$\pi = \left(\left(\mathrm{I}_{11} - \hat{\mathrm{a}}_{x_{11}} - \hat{\alpha}_{h_{21}}\right) B_{11} + \Lambda_{12} B_{21} - I\right) \Delta d_1 > 0 \tag{31}$$

The way this optimization is specified is not irrelevant, given that it defines the goals of our policy. Indeed, these equations hide some important theoretical and practical implications that should not be overlooked. One of these issues is that our definition of net gains, following that of the original paper, includes the policy's impact on the government's budget. However, from a Keynesian point of view, the relevance of fiscal deficits can be discussed. An alternative target could be the attainment of full employment in all countries instead of a specific growth rate. This could be done by estimating the required increase in gross output to provide jobs for the currently unemployed population based on a linear employment function. Another option could be to maximize regional growth assuming that each country has a specific limit for increasing its BoT deficit (for example,

assuming limited credit on international markets, a loan from international institutions or, in a Bretton Woods fashion, the chance for funding a limited balance of payments deficit).[4]

Another implication of the way we define our system of equations is that, by assuming an equivalent rate of growth for all countries as the policy goal, there is no treatment of the current income gaps, which would not necessarily be reduced. Indeed, Portella-Carbó and Dejuán (2018) find a trade-off between growth and convergence in a similar study for the Eurozone. Thus, a policy that aims to reduce the income differences among South American countries should explicitly include this goal in the optimization. Due to space constraints, this will not be addressed in this paper, but further research into this issue would complement the approach presented here.

Considering the three aforementioned constraints, based on equations (19) and (31), the linear program to minimize the fiscal expenditure can be written as:

$$\min e_1^T \Delta d_1 s.t. \begin{cases} \hat{y}_1 \left(I - \hat{a}_{x_{11}} \right) B_{11} \Delta d_1 > \overline{g}_y \\ \Delta d_1 > 0 \\ \left(\left(I_{11} - \hat{a}_{x_{11}} - \hat{\alpha}_{h_{21}} \right) B_{11} + \Lambda_{12} B_{21} - I \right) \Delta d_1 \end{cases} \tag{32}$$

As a result, we obtain a vector Δd_1^* which displays the minimum fiscal injection required for each country to at least achieve the required growth rates that are subject to the described constraints. We can use vector Δd_1^* to compute the effects of such a policy. First, we can calculate the resulting rates of growth, from equation (19):

$$g_y^* = y_1^{-1} \left(I - \hat{\mathrm{a}}_{x_{11}} \right) B_{11} \Delta d_1^* \tag{33}$$

And the intra and extra-regional effects on the BoT, based on equations (27) and (29):

$$\Delta b_{1,1}^* = \left(\Lambda_{11} - \hat{\alpha}_{h_{11}} \right) B_{11} \Delta d_1^* \tag{34}$$

$$\Delta b_{1,2}^* = \left(\Lambda_{12} B_{21} - \hat{\alpha}_{h_{21}} B_{11} \right) \Delta d_1^* \tag{35}$$

By replacing the values obtained in equation (30), we obtain the net gains of such a policy:

[4] If the target is full employment, no linear programming is required since there is only one equality restriction and the solution is simply $\Delta d_1 = B_{11}^{-1} \, \hat{a}_1^{l-1} \, \overline{g}_l$ where $a_1^l = \hat{l}_1 z_1^{-1}$ is the employment per unit of gross output for each country and $\overline{g}_l$ is the number of jobs that have to be created in each country to reach full employment. The second target can be reached with the following linear program: $\min - e_1^T \left(I - \hat{\mathrm{a}}_{x_{11}} \right) B_{11} \Delta d_1 s.t. \left[\left(\Lambda_{11} - \hat{\alpha}_{h_{11}} - \hat{\alpha}_{h_{21}} \right) B_{11} + \Lambda_{12} B_{21} \right] \Delta d_1 < f_1$ where f_1 is a vector displaying the maximum increase in the BoT deficit allowed for each country.

$$\pi^{*} = g_{y}^{*} y_{1} - \Delta d_{1}^{*} + \Delta b_{1,2}^{*} > 0 \tag{36}$$

Finally, and as a key policy decision, we can compare the coordinated fiscal policy and its effects with an independent policy by each country. The latter is understood as the individual fiscal expenditure required by each country to attain the same rate of growth if its partners do not increase their current fiscal expenditure. If we define a matrix β with the main diagonal of matrix B_{11}, the required independent fiscal expansion $\Delta\tilde{d}_{1}$ can be calculated as:

$$\Delta\tilde{d}_{1} = \beta_{1}^{-1}\left(I - \hat{\mathrm{a}}_{x_{11}}\right)^{-1} g_{y}^{*} y_{1} \tag{37}$$

And the corresponding effects on the balance of trade, like in equations (34) and (35), are:

$$\Delta\tilde{b}_{1,1} = \left(\Lambda_{11} - \hat{\alpha}_{h_{11}}\right) B_{11} \Delta\tilde{d}_{1} \tag{38}$$

$$\Delta\tilde{b}_{1,2} = \left(\Lambda_{12} B_{21} - \hat{\alpha}_{h_{21}} B_{11}\right) \Delta\tilde{d}_{1} \tag{39}$$

Therefore, the corresponding net gains of an independent fiscal policy would be:

$$\tilde{\pi} = g_{y}^{*} y_{1} - \Delta\tilde{d}_{1} + \Delta\tilde{b}_{1,1} + \Delta\tilde{b}_{1,2} > 0 \tag{40}$$

It should be noted that while the net gains of a coordinated fiscal policy do not include the intra-regional trade effects $\Delta b_{1,1}^{*}$, the independent fiscal policy does consider them ($\Delta\tilde{b}_{1,1}$). This is because the sum of such effects is necessarily zero, which makes them irrelevant when the unit of analysis is the region as a whole (which does not deny that intra-regional compensation mechanisms might be necessary). Conversely, when each country is concerned exclusively with its own BoT, they have to be kept into account.

A fundamental policy decision will be the comparison between the net gains of a coordinated fiscal policy (π^{*}) and the ones corresponding to an independent expansion ($\tilde{\pi}$). The next section will present the estimated income and trade multipliers of South America and the impacts and net gains of both a coordinated and an independent fiscal policy in order to provide a basis for comparison.

A COORDINATED FISCAL POLICY FOR SOUTH AMERICA

To perform the analysis of income and trade multipliers and to estimate an optimal fiscal policy, the database we used was the inter-country input-output (ICIO) matrix developed by the OECD, covering the 2005-2015 period. It includes 64

countries plus a "rest of the world" (RoW) region.[5] The five countries included in the South American region are Argentina, Chile, Brazil, Colombia, and Peru. This presents some limitations to the estimations since other relevant countries from the region are excluded due to lack of data. However, in 2018 these five nations represented 89% of the South American GDP measured in PPP according to the IMF (2019).

While the input-output matrix contains data for 36 sectors in each country (presented in the previous sections) these have been aggregated in order to calculate income and trade multipliers, obtaining a matrix H of dimension 65x65 for each year, with data on goods and services production and trade. Domestic government expenditure was considered as the exogenous source of demand, while all other final demands were considered endogenous and, therefore, part of the H matrix.[6]

By aggregating the matrix to a country level, we miss the chance of analysing the sectoral impacts of our policy, and, consequently, to direct government expenditures to specific sectors since they are considered at an aggregate level in this paper. Further studies including a sectoral dimension could refine the policy we suggest by computing a vector of fiscal expenditures that fosters demand for specific sectors, with the more ambitiuos goal of promoting not only growth but also structural change.

For the sake of brevity, most results are only displayed for the last year of the series (2015). Table 2 presents the income multipliers for the region in 2015, calculated following equation (19). Each cell describes the effect of an increase of one monetary unit in government expenditure of the originating country (column) on the receiving country (row). The diagonal values (in bold) show the national income multipliers. The highest national multiplier is displayed by Argentina, followed by Colombia, Brazil, and Peru, while Chile displays a much lower value than the rest of the region.

The column "Response" adds the total effect on each country if its four regional partners increase their public expenditure by one monetary unit. Conversely, the "Impulse" row represents the total cross-country effect of an increase in government expenditure by the same amount. It can be seen that the country that most benefits from a generalized fiscal expansion would be Brazil and, in a second place, Argentina, given their roles as providers of inputs and final goods for the region. Conversely, a fiscal expansion in Chile and Peru would trigger the greatest income effect for their partners. This poses a challenge for the development

[5] Originally 69 countries (including RoW) since Mexico and China also have a division between export processing/global manufacturing and the domestic economy, but they were added up order to simplify the computation and results.

[6] The only component of final demand considered as exogenous was the general government final consumption (GGFC), produced domestically. The other components of final demand depicted in the ICIO-OECD (household and non-profit institutions consumption, gross fixed capital formation, inventories and purchases by non-residents, both domestic and imported, as well as imported final government consumption) are considered as endogenous and included in matrix H.

Table 2.
Intra-regional Income Multipliers π (2015)

		Originating Country					
		Chile	**Argentina**	**Brazil**	**Colombia**	**Peru**	**Response**
Receiving Country	Chile	**2.29**	0.02	0.02	0.03	0.06	0.14
	Argentina	0.10	**3.23**	0.06	0.03	0.07	0.26
	Brazil	0.20	0.23	**2.89**	0.11	0.14	0.68
	Colombia	0.03	0.01	0.01	**2.93**	0.08	0.14
	Peru	0.04	0.01	0.01	0.04	**2.89**	0.10
	Impulse	0.38	0.27	0.11	0.21	0.35	-

Source: Own calculation based on ICIO-OECD.

of a coordinated fiscal policy since countries whose expansion implies higher spillovers onto the others are those who benefit the least.

If we consider the addition of both coefficients as a measure of regional importance, in the sense that a higher value represents a more relevant role for the determination of regional output, we can say that Brazil (0.79) is the most relevant country, followed by Argentina (0.53), and then Chile (0.52). Conversely, Colombia (0.45) and particularly Peru (0.35) play a less relevant role.

In order to estimate an optimal fiscal policy, it is necessary to also know the effects in the balance of trade of a fiscal expansion in each country, presented in Table 3, which uses equations (27) and (28). Each cell shows the effect that a fiscal expansion of one monetary unit by the country in the column has on the impact on the balance of trade of the country in the row. The diagonal describes the effect of a fiscal expansion by each country on its own BoT. Naturally, all these values are negative since a fiscal expansion and its multiplying effect increase imports barely affecting exports.[7] Less integrated productive structures, such as Colombia, Chile, and Peru show higher import requirements and, therefore, a strong negative trade effect of an expansionary fiscal policy, while Argentina and Brazil have lower impacts on their BoT. It should be noted that these values are not per dollar of GDP but per monetary unit of fiscal expansion (the corresponding effects on GDP were presented in the previous table).

[7] The only effect of a fiscal expansion in the same country's exports would be given by the fact that other countries would also increase their income (due to higher exports) and, therefore, require imported inputs, part of which originated in the country that pursued the initial fiscal expansion. However, this amount tends to be relatively small. The existence of such kind of operations is considered as an indicator of productive integration (Daudin, Rifflart, & Schweisguth, 2011).

Table 3.
Balance of Trade Multipliers Δb_i (2015)

		Originating Country					
		Chile	**Argentina**	**Brazil**	**Colombia**	**Peru**	**Response**
Receiving Country	Chile	**-0.70**	0.00	0.00	0.00	0.01	0.02
	Argentina	0.02	**-0.41**	0.01	0.01	0.01	0.05
	Brazil	0.04	0.05	**-0.43**	0.02	0.03	0.14
	Colombia	0.00	0.00	0.00	**-0.70**	0.01	0.01
	Peru	0.00	0.00	0.00	0.00	**-0.71**	0.01
	Impulse	0.07	0.05	0.02	0.04	0.06	-

Source: Own calculation based on ICIO-OECD.

The "Response" column describes the total effect on each country as a result of an expansion of the other four. Again, Brazil is the country that benefits the most, improving its BoT by 0.14 monetary units if the other four considered countries increase their fiscal expenditures by one monetary unit each. It is followed by Argentina and Chile.

The "Impulse" column presents the total effect on the trade partners' BoT of an increase of one monetary unit in the fiscal expenditure of the column country. In this case, the most relevant countries are Chile, Argentina, and Peru. Therefore, the same regional asymmetry exists: while Brazil's balance of trade benefits greatly from an expansionary policy, given its key productive role in the region, it does not cause much exports from the region, given the fact that it mainly imports from extra-regional countries.

Considering both results, we can devise an optimal fiscal policy according to a linear program (32) that implies an expansion of GDP of at least 1% in the five considered countries and leads to net gains, as defined by equation (31). The effects on growth and the BoT, as well as the increase in government expenditure, are calculated following expressions (33), (34), and (35). Table 4 presents the details of this policy. The first column shows the effect that the fiscal expansion has on each country's GDP. In 2015, it was possible to carry out a fiscal policy leading to the minimum required GDP growth, which is 1% for all countries.

The second column shows the required expansion in fiscal expenditure in order to achieve the specified rate of growth. The countries having to deal with a higher fiscal effort (in terms of their current expenditure) are Chile and Peru. In all cases, the required expansion shows reasonable values that are lower than 3% of 2015 government expenditures. However, when the distribution of the total fiscal expansion is considered (column 3), it can be seen that Brazil and Argentina, given the size of their economies, undertake most of the fiscal effort. It is positive that

Table 4.
Coordinated Fiscal Policy (2015)

	GDP Growth	**% Increase in Government Expenditure**	**Dist. of Fiscal Effort**	**Regional BoT Effect (%GDP)**	**Extra-Regional BoT Effect (%GDP)**	**Total BoT Effect (%GDP)**
	g_y^*	$\Delta d_1^* / d_1 - 1$	$\Delta d_1^* / e_1^T \Delta d_1$	$\Delta b_{1,1}^*$	$\Delta b_{1,2}^*$	
Chile	1.0%	2.9%	9.6%	-0.01%	-0.3%	-0.3%
Argentina	1.0%	1.5%	17.3%	0.00%	-0.1%	-0.1%
Brazil	1.0%	1.6%	57.6%	0.00%	-0.1%	-0.1%
Colombia	1.0%	1.7%	9.4%	0.00%	-0.2%	-0.2%
Peru	1.0%	2.4%	6.1%	-0.01%	-0.2%	-0.2%

Source: Own calculation based on ICIO-OECD.

Brazil, which, as previously shown, would be the main beneficiary of this policy, is also the most committed country from a fiscal point of view, which aligns incentives among countries.

Finally, the last three columns describe the effects in the balance of trade. The regional effect in trade (that is, the effect on each country's BoT only with the other region members) is negligible, and, naturally, it adds up to zero since one country's exports are another's imports. The extra-regional effects, however, are higher and negative, particularly for Chile, Colombia, and Peru, which worsen their trade balance by a margin between 0.20% and 0.25% of GDP per percentual increase in income. However, except for Colombia, these countries are currently the ones with better trade balances, facilitating the implementation of this strategy.

The key policy variable is, however, the net gains of a coordinated fiscal policy (defined as the difference between the increase in GDP and the "cost" of the policy in fiscal and external balances) and its comparison with the gains of an independent fiscal policy that would lead to an equivalent rate of growth. On the one hand, the result of linear program —equation (32)—, and equations (33), (34), (35) and (36) show, for a coordinated fiscal policy, the resulting GDP growth, the required increase in government expenditure, the impact on the regional and extra-regional balance of trade, and the net gains. On the other hand, equations (37), (38), (39) and (40) present the same variables for an independent fiscal policy that leads to an equivalent rate of GDP growth. Table 5 compares the effects of both policies for 2015.

Table 5.
Comparing Coordinated and Independent Fiscal Policies (2015) Millions of dollars

	Coordinated Policy					Independent Policy				
	ΔGDP (1)	ΔGov Exp (2)	ΔReg BoT (3)	ΔNon Reg BoT (4)	Net Gains (1-2+4)	ΔGDP (5)	ΔGov Exp. (6)	ΔReg BoT (7)	ΔNon Reg BoT (8)	Net Gains (5-6+ 7+8)
	$g^*_y y_1$	Δd^*_1	$\Delta b^*_{1,1}$	$\Delta b^*_{1,2}$	π^*	$\tilde{g}_y y_1$	$\Delta \tilde{d}_1$	$\Delta \tilde{b}_{1,1}$	$\Delta \tilde{b}_{1,1}$	$\tilde{\pi}$
CHI	2313	913	-28	-579	821	2313	1011	-34	-639	629
ARG	5808	1636	-8	-572	3601	5808	1795	-13	-626	3374
BRA	16523	5446	66	-2265	8812	16523	5708	79	-2377	8517
COL	2762	889	-6	-598	1275	2762	944	-6	-636	1176
PER	1812	577	-23	-370	866	1812	627	-26	-402	757
TOT	29218	9461	0	-4383	15375	29218	10086	0	-4680	14453

Source: Own calculation based on ICIO-OECD.

It can be seen that the required fiscal expansion in order to achieve an equivalent GDP growth is lower for all countries when a coordinated strategy is implemented, and the effect on the balance of trade is less detrimental. The difference is particularly important for Chile, Peru, and Argentina, and smaller for Colombia and Brazil. The latter contrasts with our previous results: even though Brazil is the country that has received the most benefits at an intensive level (per unit produced) the size of its economy implies that regional trade is a relatively small part of its total exchange, and, therefore, its gains are also of limited importance for the country.

Despite these differences, net gains are higher for the five considered countries when a coordinated strategy is implemented than when an independent fiscal policy is applied; this calls for regional coordination. Moreover, and as shown in Table 6 (which presents the percentage difference of the net gains of a coordinated and an independent policy for each year), this has been the case for the five countries during the whole period under analysis (2005-2015).

This differential, that can be understood as an incentive for cooperation among countries, generally shows an upward tendency until 2011 (excluding 2009), and, since then, it starts reducing considerably. This is consistent with the slowdown in regional trade after 2011 (weakening the cross-country multipliers) and the fall in commodity prices, which tightened the external constraint to growth. However, net gains always remained higher for a coordinated policy than for an independent one, indicating that the former would yield better results than the latter.

Table 6.
Net Gains Differential of Coordinated and Independent Fiscal Policies (2005-2015)

	2005	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Chile	65%	58%	69%	142%	43%	53%	72%	58%	44%	43%	31%
Argentina	19%	19%	20%	20%	13%	16%	17%	12%	12%	10%	7%
Brazil	3%	3%	3%	4%	3%	3%	3%	3%	3%	3%	3%
Colombia	7%	9%	8%	9%	7%	8%	10%	9%	8%	8%	8%
Peru	17%	22%	25%	31%	16%	20%	25%	21%	19%	17%	14%

Source: Own calculation based on ICIO-OECD.

CONCLUSIONS

Since 2012, growth rates in South America have been low, with some countries even facing sharp recessions. In a context of stagnant global demand, fall of commodity prices and risk-averse global financial markets, fiscal austerity has only made the situation worse by curtailing aggregate demand.

However, austerity is not completely irrational from a national point of view: in a context of falling exports and, therefore, shortage of foreign currency, a fiscal expansion would probably increase economic activity, but this would lead to higher imports and, therefore, to a disequilibria in balance of payments.

This article presented a policy proposal that would allow this limitation to be overcome, at least partially, based on the methodology developed by Cingolani et al. (2013). By estimating inter-country fiscal multipliers and making use of linear programming, we have shown that a coordinated fiscal expansion between five countries—Argentina, Brazil, Chile, Colombia, and Peru—can lead to an increase in GDP for all of them, with lower impacts on the governments' budget and the balance of trade than an independent policy. This result is explained by the fact that, while one country's expansion would indeed increase its imports, part of these purchases would come from the region, implying a positive effect on its partners' growth and balance of trade.

However, it has been shown that the regional productive structure and international relations in South America pose several challenges for such a policy: limited regional trade (with high dependency from extra-regional partners, particularly China, the U.S., and Europe), weak coordinating institutions and high asymmetries between countries imply that carrying out a coordinated expansionary policy would not be exempt from tensions. Indeed, the political feasibility of such a policy is not granted, considering the very different approaches to regional integration of the two main trade blocks in the region (on the one hand, a more inward-looking MERCOSUR, and, on the other hand, a Pacific Alliance which aims to increase extra-regional exports). There have also been recent attempts by the regional

political leadership to promote trade agreements with extra-regional partners, particularly the MERCOSUR-EU deal and the potential Brazil-US agreement.

Notwithstanding the above, our results showed that a coordinated strategy is better than independent actions both on the fiscal and the external front for all countries, with reasonable values: in order to achieve a 1% GDP growth in all countries, the required fiscal expansion for each one of them would range between 1.5% and 3%. Moreover, the two countries required to make a larger effort relative to their current spending, Chile and Peru, are the ones that currently display lower fiscal and trade deficits, which reduces potential regional tensions. However, putting compensation mechanisms in place or facing certain public investment projects through regional banks could increase incentives for these countries.

Despite these positive results, our analysis comes with a warning: given the dependence of all countries on extra-regional imports, an expansionary policy (even coordinated) implies a worsening of the trade balance for the region as a whole, and particularly for Chile, Colombia, and Peru. This is not an exclusive South American feature, but the constraints are higher for the region given its trade patterns and disintegrated productive structure, which poses a limit to the achievable rates of growth for such a policy. In order to overcome these limits, an industrial policy seeking to reduce technological dependency (in which the increase of fiscal expenditures should take part, targeting specific sectors) becomes necessary in order to allow for structural change and long-term growth, an issue which should be tackled by further research.

It should also be noted that the growth target defined (1% of GDP for the five countries), as well as our definition of "net gains" (GDP growth minus the increase in fiscal and trade deficits) are somewhat arbitrary. From a Keynesian point of view, an alternative goal could be to achieve full employment, without particular concerns for fiscal deficits. Finally, the issue of convergence among countries is not discussed here but cannot be ignored. The flexibility of the presented framework would allow for the implementation of all these additions and improvements; the foundations for its computation have been laid in the previous sections, and future research should go along this path.

To summarise, a coordinated fiscal policy is not only feasible, but it would also lead to considerably better results than independent initiatives by each country. Industrial policies to enhance integration could increase the potential of this strategy. Unfortunately, most South American countries are taking the opposite path by cutting their fiscal expenditures and undermining regional agreements. The outcome is visible and discouraging: South America has been the region with the lowest growth rates in the world for the last five consecutive years. The results presented in this article show that austerity is not the only option, and that it is time to discuss expansionary fiscal policies in order to return to a growth path.

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PAPER

THE ANTI-BLANCHARD MODEL AND STRUCTURAL CHANGE IN LATIN AMERICA: AN ANALYSIS OF CHILE, ARGENTINA AND MEXICO

Samuele Bibi

Bibi, S. (2020). The Anti-Blanchard model and structural change in Latin America: An analysis of Chile, Argentina and Mexico. *Cuadernos de Economía, 39*(80), 499-522.

This paper was born with the purpose of encouraging academic debate within the economic discipline that has been dominated by a purely orthodox or mainstream approach. One of the most innovative books in the expository-pedagogical part and its content is represented by the *Anti-Blanchard macroeconomics* by Emiliano Brancaccio. Beyond the analysis of the two contrasting models, the Anti-Blanchard model is used to study the situation in several Latin American countries. In particular, the structural change happened in those countries since the stronger wave of increasing neoliberal policies seem to fit particularly well in the explanation of the Anti-Blanchard model.

Keywords: Mainstream economics; heterodox economics; distribution; productivity; real wage.
JEL: B5; E11; E12; E24; J5.

S. Bibi
University of Trento, Trento, Italy. E-mail: samuele.bibi@gmail.com

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Bibi, S. (2020). El modelo Anti-Blanchard y el cambio estructural en América Latina: un análisis de Chile, Argentina y México. *Cuadernos de Economía, 39*(80), 499-522.

Este artículo nace con el propósito de alentar el debate académico dentro de la disciplina económica que ha sido dominada por un enfoque puramente ortodoxo o convencional. Uno de los libros más innovadores en la parte expositiva-pedagógica y su contenido está representado por la *Macroeconomía Anti-Blanchard* de Emiliano Brancaccio. Más allá del análisis de los dos modelos contrastantes, el modelo Anti-Blanchard se utiliza para estudiar la situación en varios países latinoamericanos. En particular, el cambio estructural ocurrió en esos países, ya que la ola más fuerte de políticas neoliberales en aumento parece encajar particularmente bien en la explicación del modelo Anti-Blanchard.

Palabras clave: economía ortodoxa; economía heterodoxa; distribución; productividad; salario real.
JEL: B5; E11; E12; E24; J5.

Bibi, S. (2020). O modelo Anti-Blanchard e a mudança estrutural na América Latina: uma análise do Chile, Argentina e México. *Cuadernos de Economía, 39*(80), 499-522.

Este documento nasce com o propósito de incentivar o debate acadêmico dentro da disciplina econômica que foi dominada por uma perspectiva puramente ortodoxa ou convencional. Um dos livros mais inovadores na parte expositiva-pedagógica e seu conteúdo está representado pela *Macroeconomia Anti-Blanchard* de Emiliano Brancaccio. Além da análise dos dois modelos contrastantes, o modelo Anti-Blanchard se utiliza para estudar a situação em vários países latino-americanos. Particularmente, a mudança estrutural ocorreu nesses países, já que a onda mais forte de políticas neoliberais em aumento parece encaixar particularmente bem na explicação do modelo Anti-Blanchard.

Palavras-chave: economia ortodoxa; economia heterodoxa; distribuição; produtividade; salário real.
JEL: B5; E11; E12; E24; J5.

Those who make peaceful revolution impossible will make violent revolution inevitable.

Kennedy (1962)

INTRODUCTION

Throughout history, few economics manuals have been as successful and have become widespread in university circles as *Macroeconomics* by Olivier Blanchard. Blanchard is one of the most well-known and influential academic economists in the world. He is also the founder and, until recently, director of the IMF's research centre. The first version of his *Macroeconomics* manual is from 1996. The manual written by Blanchard has been one of the masterpieces that was used to train many economists at university level in the U.S., Europe, and throughout Latin America; it also influenced the policies they designed and supported once they were in public institutions.

Blanchard's textbook, both analytically and theoretically, represents one of the most advanced expressions of mainstream thinking: the currently dominant macroeconomic theory. This represents the synthesis between traditional theory, namely the neo-classical synthesis, and neo-Keynesian economics, also called "new consensus". In recent decades, this school of thought has assumed a hegemonic position in academia. It is also the headlight and point of reference for the political institutions of Western countries that, since the 1990s, and more particularly in recent years of crisis, have followed the related economic policies prescriptions. It must be recognised that several mainstream economists, including some of the most prominent such as Blanchard himself, have recently been more open to considering alternative visions of critical economics, because they are based on real socio-economic facts and they have a greater capacity to explain the crisis.

Brancaccio's alternative model is inspired by the economic literature called "critical theory" that takes inspiration from figures such as Karl Marx, Michal Kalecki, John Maynard Keynes, Piero Sraffa and others. Without any doubt, Keynes's contribution is present in both traditions. However, for orthodox economists, Keynesian theory is nothing more than a special short-term case of the neoclassical tradition; critical economists, on the other hand, attribute it with a general and long-term structural value. To open the academic economic arena and make it more suitable for a real debate, the Anti-Blanchard manual is currently being translated into Spanish[1] and will be available in the months following the publication of this paper.

[1] The Anti-Blanchard book will be available in Spanish by Brancaccio and Bibi in the months after the publication of the current paper.

This paper is structured as follows. The next section[2] retraces Blanchard's model by analysing the structural macroeconomic functioning of an economy and its explanation of the labour market. This is followed by a reconsideration of the core of the critical Anti-Blanchard model. The paper goes on to conduct an explorative exercise by attempting to use those models to question which one has a better explanatory function for some OECD countries with respect to widespread and current policies such as the push for increasing labour productivity that is accompanied by the simultaneous flexibilization and liberalization in the labour market. Next, the focus goes on three Latin American countries for which data are available: Chile, Argentina and Mexico, and it investigates if these cases fit into the mainstream story or into the Anti-Blanchard one. Finally, conclusions are drawn at the end of the paper.

BLANCHARD'S MODEL

Blanchard's mainstream model is defined as a general macroeconomic equilibrium model with market imperfections. In fact, it does not describe a purely competitive abstract economic system. On the contrary, this economic system admits the role of trade unions as an indicator of the workers' conflict and the degree of market competitiveness, opening the possibility to even analyse the presence of markets that are not perfectly competitive.

The Blanchard model is also called the AD-AS model. The AD represents the aggregate demand, which is generated from the IS-LM model; the AS relation indicates the aggregate supply determined by the labour market model and the main factors that affect the productive choice of companies (cost of energy and other raw materials).

The IS-LM model allows the production values and interest rate that balance the goods market (IS) and the money market (LM) to be derived. Thus, it is possible to track the aggregate demand curve (AD), which has an inverse relationship between the price level and the demand for goods and, therefore, production. The aggregate demand equation is represented as follows:

$$\text{AD:} \quad Y = f(G, T, M / P) \tag{1}$$

The inverse relationship between prices P and the demand for goods, and, therefore, production —Y— is explained by the fact that an increase in prices leads to a reduction in the real value of foreign exchange stocks (M/P) held by the population. People react to this contraction of monetary stocks by selling financial assets at their disposal to obtain greater liquidity. This operation causes asset prices to

[2] Sections *Introduction* and *Blanchard's model* were based on the divulgation work produced by Enrico Turco inside the Rethinking Economics movement. https://www.rethinkecon.it/blanchard-e-lanti-blanchard-parte-i/ Rethinking Economics movement was born in England with the mission of fostering academic debate in the economic field that has relied almost exclusively on the "dominant model" or mainstream of which Blanchard is one of the most prominent authors.

fall, and, thus, raises the interest rate. The consequence is a decrease in investments, which have now become more expensive to finance, a fall in demand and, therefore, in production and employment. The decrease in AD is a fundamental hypothesis for the operation of the mainstream model: a hypothesis that will be at the centre of criticisms of Brancaccio's analysis.

The labour market model allows the aggregate supply (AS) to be determined. In the labour market there are two curves that represent (i) the real wages required by workers and (ii) the real wages offered by employers. The first equation, $W/P = F(u, z)$, states that real wages required by workers have a function that is negatively correlated with the unemployment rate (u) and positively correlated with a residual variable that mainly captures the level of conflict, or workers' protection (z). In other words, the higher the unemployment rate, the greater employers' bargaining power and the lower the wages required by workers. This takes into account workers' degree of conflict and greater protection for them, for example due to better legislation to protect workers and the norms against unjustified dismissals. These require greater wage demands.

The real wages are defined based on the price at which the employers decide to apply to the goods sold. The price function is: $P = (1 + \mu)\ W/A$. Thus, the price at which the goods are sold is determined by the cost of labour per unit of goods, W/A (W = wage, A = productivity), plus a profit margin for each piece of merchandise sold: μ. This is influenced by the degree of market competitiveness: if there is a lot of competition in the market, companies will be forced to apply a lower profit margin to be more competitive; On the contrary, if markets are more concentrated, companies have greater market power and will set prices, and, therefore, higher margins. The most important thing is that, according to Blanchard's model, the profit margin, z, as well as productivity, A, is an exogenous parameter that companies will maintain, at least in the short term, always unchanged. This means that, if nominal wages increase, companies will decide to increase their prices proportionally, keeping the fixed profit margin. As we will see later, this also represents another postulate that Brancaccio will question in his alternative model. With some minor modifications, we obtain the equation for real wages offered by entrepreneurs: $W/P = A/(1 + \mu)$, where both A and μ are constant.

The intersection of the two real wage curves determines the only wage level at which the wage supply of the companies meet the workers' wage demand. For this reason, the unemployment rate associated with this situation is defined as the natural unemployment rate, that is, the natural state of the economy to which market forces should tend: the only one capable of guaranteeing price stability and of wages. In fact, in all other cases inflationary or deflationary pressures occur, respectively, if the unemployment rate is lower or higher than its natural level.

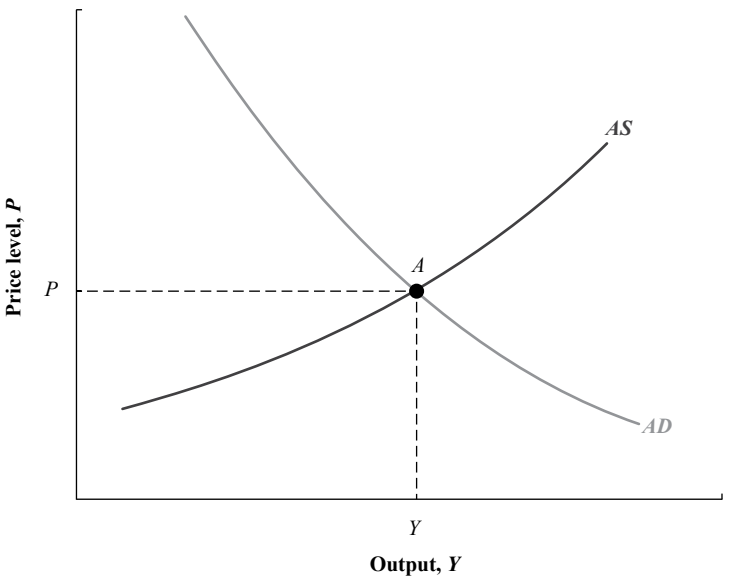
The previous analysis allows us to identify the aggregate supply curve and then arrive at the full AD-AS model. The aggregate supply, obtained from the equality of the two wage curves and some additional substitutions, is defined as follows:

$$\text{AS:} \quad P = [(1 + \mu) / A]P^e\ F(1 - Y / AL; z) \tag{2}$$

Equation (2) presents a direct relationship between production Y and price P: if production Y increases, the unemployment rate decreases (u = 1-Y/AL). In this way, workers —who gained greater contractual force— require wage increases that companies, given the constant profit margin, finally charge through higher prices P. Once the equations of aggregate demand and aggregate supply are generated, the AD-AS model is ready. It is represented by the intersection of the two curves: the decreasing AD and the increasing AS. Their intersection determines a level of prices (ordinate axis) that is compatible with the level of natural production (x axis) and, therefore, with the natural unemployment rate (labour market model) that represents the state of equilibrium to which market forces tend to bring the economy during periods of tranquillity.

Before examining the alternative model, it is advisable to see the AD-AS model in operation. Suppose we are in a recession situation due to entrepreneurs' lack of confidence in the future that is characterized by a fall in investments and, thus, from the aggregate demand from AD to AD' (Figure 2). In a situation like this, the level of production is lower than that of equilibrium, just as the unemployment rate is higher than its natural level. High unemployment weakens workers, who will be forced to moderate their wage demands; nominal wages are also reduced. At this point, companies will proportionally reduce prices to be more competitive, assuming they do not "take advantage" of the wage contraction and keep their profit margin unchanged, μ. The reduction in prices leads to a decrease in expected prices, which, in turn, leads to a new reduction in wages, etc. The economy goes into a deflationary spiral, and, thus, the AS moves down (from A' to A'').

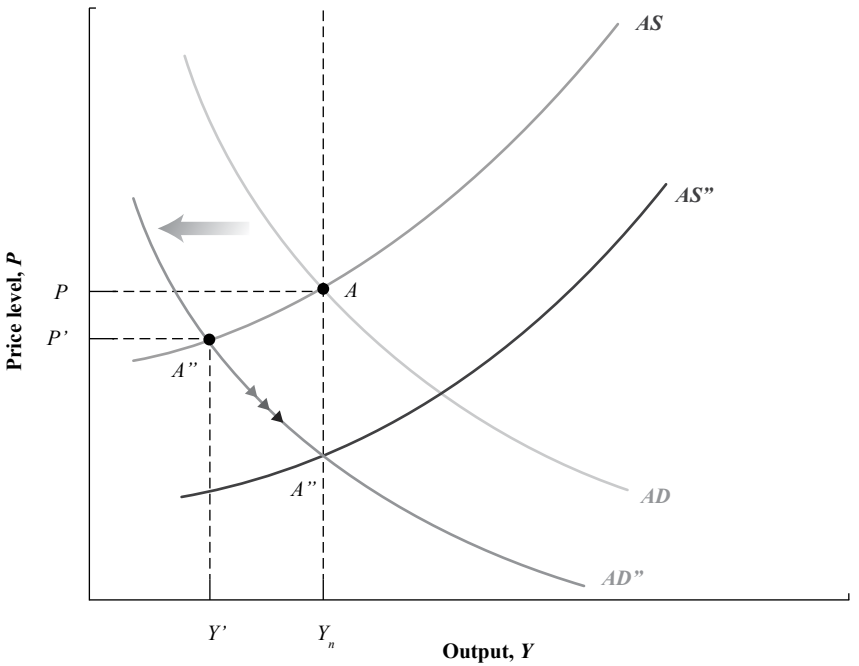
Graph 1.



Source: Blanchard (2010).

What will be the impact of the price reduction on demand? It is important to remember what was defined at the beginning of Blanchard's model regarding the decrease in AD. The price reduction will lead to an increase in the real value of monetary stocks (M/P) held by the population. Excess monetary stocks will be invested in financial assets, which will lead to an increase in their prices and, in that way, a reduction in the interest rate. The reduction in interest rates will result in the levelling of all rates in the financial market, including that required by banks to grant loans. In this way, it will be more favourable for entrepreneurs to borrow and make new investments, which will increase demand, production and employment. These movements (which move the AD curve along the AS curve) will take place until the level of production returns to the equilibrium level prior to the crisis (when the unemployment rate will nearly have returned to its natural level).

Graph 2.
The Effects of a Fall in Investments Due to a Crisis of Confidence on the Part of Entrepreneurs



[a] It should be stressed that the original chart on p.166 shows the reduction of the budget deficit by the Government. However, the effects of a fall in investments would result in the same mechanism of falling DA and adjustment through an expansion of the AS.
Source: Blanchard (2010).

To conclude, the AD-AS model shows us that market forces, if left alone, are able to return the economy to its equilibrium level, without the need to resort to expansive policies by central authorities.

In addition, other conclusions that can be drawn are the neutrality of money and the virtue of wage moderation, which is a legal framework that weakens, rather than protects, workers and pushes them to moderate wage demands. This should translate into a greater demand for labour by companies and, therefore, a permanent reduction in the unemployment rate. It is evident, as Brancaccio writes, that "the AD-AS model allows us to confirm some typical laissez-faire positions." However, the two fundamental postulates on which Blanchard's model rests are (i) the decreasing inclination of the AD, and (ii) the exogenous nature of the profit margin and the conflict of workers. Brancaccio's criticism will be concentrated around these two hypotheses and then translated into an alternative macroeconomic model that can be compared to the mainstream model.

BRANCACCIO'S ANTI-BLANCHARD MODEL: A CRITICAL ANALYSIS[3]

Let us now analyse these last two points on which the Anti-Blanchard critical analysis is based.

First of all, to analyse an economy, it is useful to ask ourselves what happens when the AD is not decreasing as well as the reason for this possibility. Brancaccio perfectly explains that this situation occurs, according to the defenders of the critical economy, due to the possible manifestation of three motivations, all destined to break the causal link between the price reduction (and the consequent increase in monetary stocks held by the operators) and the increase in investments and aggregate demand.

1. The first motivation is due to the known case of the "liquidity trap" that was pointed out by Keynes himself: when monetary stocks increase in real terms (M/P), traders generally try to get rid of them by investing in securities. However, if the operators' expectations regarding the securities in which they should invest are those relating to future price reductions, then these purchases will not be made in view of a possible loss of capital. If this occurs, a reduction in prices (and an increase in monetary stocks) will not result in a reduction in the interest rate and, as a consequence, there will neither be an increase in investments.
2. Even if the liquidity trap does not take action, nothing determines that a reduction in the interest rate stimulates investments: in fact, investors

[3] Sections *Brancaccio's Anti-Blanchard model: A critical analysis* and *The study of several OECD countries subject to increased productivity and liberalization of the labour maket* have been translated and adapted from the research carried out by Samuele Bibi http://www.rethinkecon.it/blanchard-e-lanti-blanchard-parte-ii/

may be (and generally they are) more attentive to the future profitability of their investments and earnings than to the interest rate. Even if the interest rate collapses, investors may not invest in new machinery and productive capacities if there is no clear vision on the horizon, both for possible economic crises and for other political and institutional reasons.

3. The third channel that could undermine the inverse relationship between prices and aggregate demand refers to the complexity of production. Assuming a single homogeneous good in production can greatly simplify the didactic explanation, but at the same time this assumption is a misleading tool with respect to the relationships between the varieties of goods produced and the means of production. This topic has been and continues to be very complex and debated and we will limit ourselves to a brief reference. Since the interest rate can be considered as a cost of production for companies, when this decreases, there is no absolute univocal relationship to the extent that it affects the sales prices of products since these can increase, but also decrease.

Considering the three previous channels of a decreasing AD rupture, Brancaccio tries to consider a "vertical AD" linking it, at this point, with the equations that determine the labour market. A vertical AD implies that possible reductions in wages (and prices) may not have an expansive impact on aggregate income. If the AD is vertical, although the AS increases (due to the reduction in labour costs), it would only result in a reduction in prices, leaving the level of income and production unchanged (that is, without returning the system at any "natural" level).

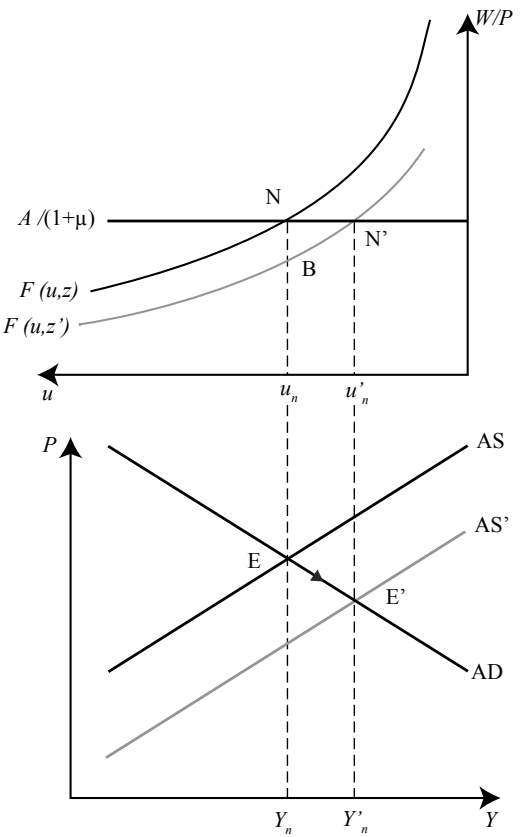
With regard to the labour market, the second criticism can be considered: Blanchard's model assumes that the profit margin and the "workers' conflict" (which constitutes nothing more than its degree of protection and claims) are exogenous data, not influenced by the balance of power between workers and companies. Using Marx's analysis again, one can question this hypothesis, arguing that both the production and the distribution of the product in the economy are deeply influenced by the balance of power between the social classes. In this way, the macroeconomic and distributive analysis between workers and capitalists is reversed despite using Blanchard's same tools.

Brancaccio analyses various case studies in detail and explains all possible outcomes considering the exogenous or endogenous nature of one or both of these parameters. It is essential to keep in mind that, being both endogenous, we can no longer speak of a "natural" unemployment rate.

For exposure limits, we will focus on the analysis of an interesting and quite current case: the case of a policy that favours the increase of labour productivity (A) and the simultaneous flexibility (z) –mainly downward– of wages. According to the general approach, the last effect should increase employment and the level of aggregate demand. In fact, this economic policy channel has been followed and encouraged in the last decade, in Italy, as well as in most of the countries of the European Union, in the United States and in several Latin American countries.

According to Blanchard's analysis, it is easy to see how, by acting on these two parameters, the function of real wages offered by entrepreneurs can be increased (corresponding to equation "ii" above, $W/P = A/(1+\mu)$), at the same time decreasing the real wage required by the workers (corresponding to the equation "i" indicated above, $W/P = F(u, z)$): everything is taken into account, assuming that companies do not take advantage of the weakness of workers trying to increase their profit margin.

Graph 3.
Wage Moderation ($z' < z$) Leaves Real Wages Unchanged and Reduces Unemployment ($z' < z$)



It is important to highlight that in the case we are proposing, in addition to a downward movement of the function of real wages requested by workers, from F (u, z) to F (u, z'), we also have an upward shift of the function of real wages offered by companies, due to increased productivity.
Graph 3 is the graphical representation of the first effect only.
Source: *Anti-Blanchard*, Brancaccio (2019), p. 34.

Based on the hypotheses, these two policies would lead to a certain decrease in employment and, especially in a crisis situation, they would work through an unquestionable greater growth of the economy, acting on the increase of the aggregate supply that could stimulate aggregate demand.

What would these two policies imply through a critical analysis of Brancaccio with a vertical AD and considering the possibility of conflicting power relations between the working classes and the firms (assuming that z and the profit margin are adjusted according to the latter)?

Since the margin does not move, the increase in worker productivity (A) automatically translates into an increase in real wages, but this assumption is exceptionally strong. In fact, it can be assumed that the increase in workers' productivity does not fully translate into an increase in real wages, but that it is completely absorbed by an increase in the profit margin of companies seeking to benefit from their lead position. In this case, the function of salaries offered by companies would not increase at all.

The policy of increasing wage flexibility, on the other hand, as in the case analysed by Blanchard (2010), would have the consequence of reducing the function of the wages they requested. At this point, given the reduction in workers' bargaining power, it would not be completely absurd to imagine that companies continue to press to increase their profit margin that is now endogenous and variable in relation to power relations exploiting their position of relative advantage. Therefore, it would be possible that the function of the real wages offered will fall even more to the point of equilibrium with the function of the required wages and reach exactly the same level of unemployment as there was before the increase in productivity and wage flexibility.

Policies have favoured a more unequal redistribution of resources. Companies have absorbed the workers' increase in productivity without seeing a real wage increase (which should have increased precisely due to their increase in productivity) or the level of employment.

There is one last question: at the aggregate level, what happened to the aggregate level of production determined by the intersection between the AD and the AS? In the most optimistic case, nothing. The AD, in fact, staying upright would not allow an expansion of the AS to have a positive impact at the aggregate level. Meanwhile, the AS has expanded, lowering the price level through a dangerous deflationary spiral without increasing GDP.

In the worst case scenario, given the perpetuation of the reduction in the price level, both families and businesses could expect a new price reduction. If deflationary expectations at the aggregate level are sufficiently consolidated and generalized, agents would probably postpone consumption and investments. In this case, the economy would endogenously deteriorate, negatively reducing the level of aggregate demand and the price level even more, making economic recovery more-and-more difficult.

THE STUDY OF SEVERAL OECD COUNTRIES SUBJECT TO INCREASED PRODUCTIVITY AND LIBERALIZATION OF THE LABOUR MAKET

Is the scenario in section *Brancaccio's Anti-Blanchard model: A critical analysis* been too pessimistic? Perhaps. We hope it is. We hope that the increase in labour flexibility has not meant that companies have taken advantage of their new position of relative advantage, or at least not completely. We also hope that a possible constant increase in productivity has been fully or at least partially reflected in an increase in the real wage of the workers who produced this result.

The scenario is probably never as clear as described in textbooks and, certainly in reality, many other variables come into play. For example, the following cases refer to countries with open economies, and, in this situation, international flows and exchange rate variations can definitely have a strong effect on the dynamics within such economies. However, if the theoretical foundations, more or less implicit in the policies implemented for more than a decade in the European, American and several Latin American labour markets (labour flexi-bility and productivity increase) were correct, we should expect a constant and conspicuous reduction in unemployment and an increase in real wages along with the increase in productivity.

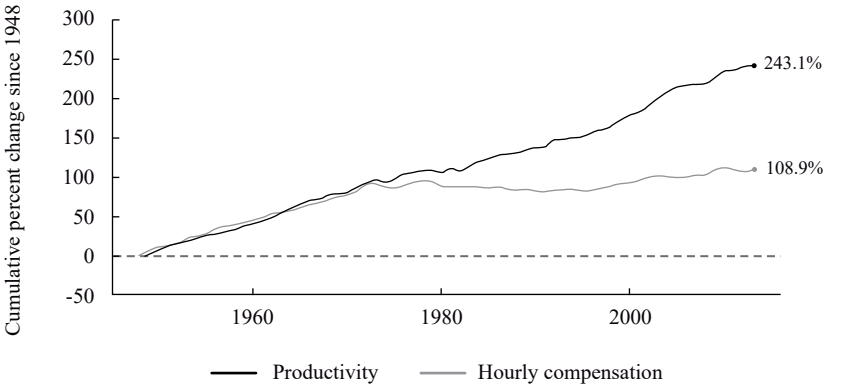
The data on the decrease in unemployment are covered on an almost daily basis on news programmes: the message does not seem to be too encouraging. Much less is said of the analysis that refers to the increase in workers' productivity and the real wage they receive.

The following figure is a graph shown by the Nobel Prize in Economics winner Joseph Stiglitz at the Trento Economics Festival during an INET - Institute for New Economic Thinking – conference in 2015.

As reported in Gould (2014), "from 1948 to 1979, productivity increased by 108.1 percent and hourly wages increased by 93.4 percent. From 1979 to 2013, productivity increased by 64.9 percent and hourly wages increased by 8 percent." There are doubts about the existence of a direct relationship between the increase in workers' productivity and the real wage that they finally receive.

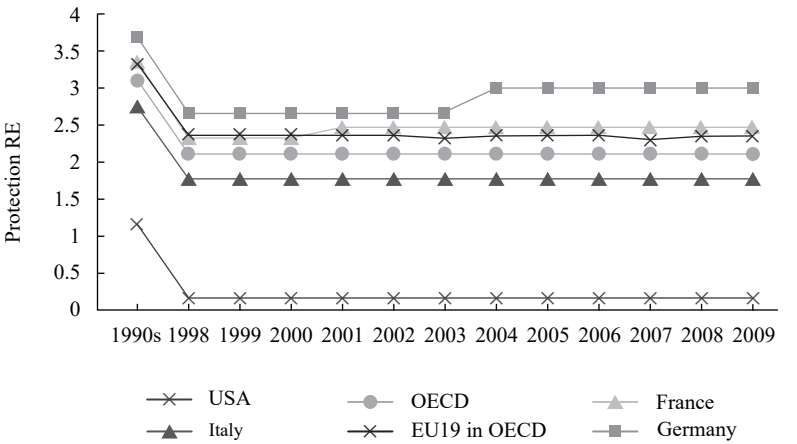
As for Europe, the situation does not differ much: in a 2014 article written by Tridico (2014) highlights how, in Italy, the "EPL", the Employment Protection Law, has weakened for both regular employees and for temporary workers, as can be seen in the following figures. The majority of the other European states have followed Italy's general trajectory, although in different measures.

Figure 1.
Disconnect Between Productivity and Typical Worker's Compensation in US, 1948-2013



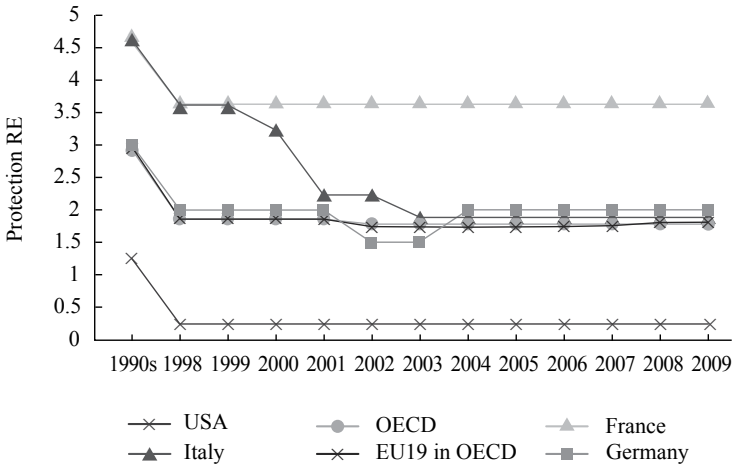
Source: Gould (2014).

Figure 2.
Protection of Regular Work – EPL Component



Source: Tridico (2014).

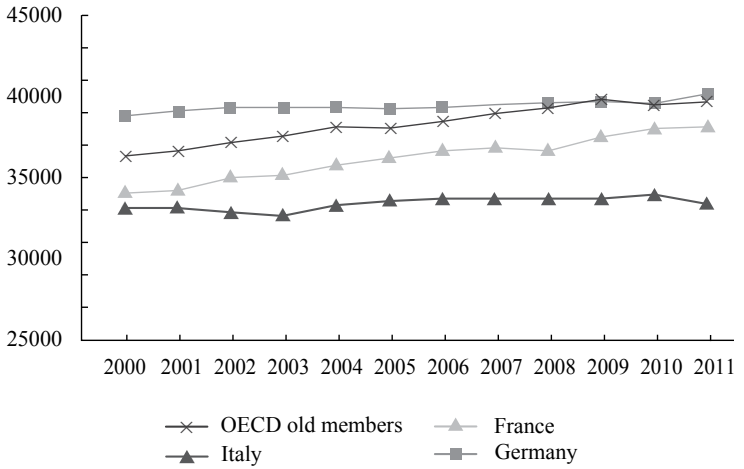
Figure 3.
Protection of Temporary Work – EPL Component



Source: Tridico (2014).

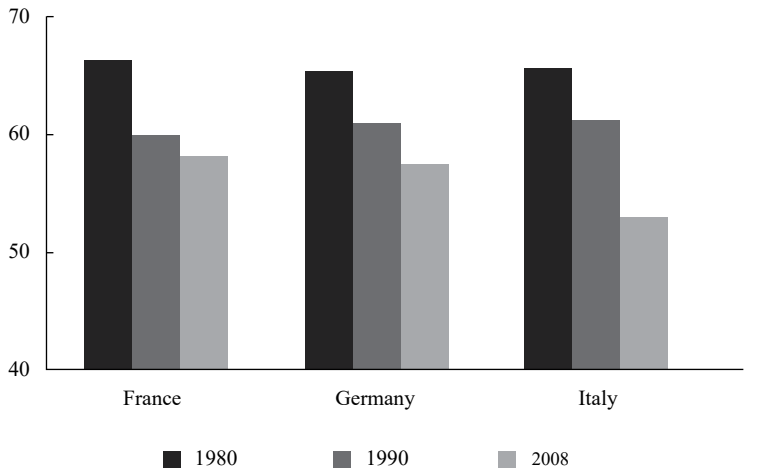
Even in Italy, real wages have not increased dramatically. As Tridico (2014) details, in 2011 the country was at the same levels as in the late 1990s (Figure 4). The wage participation rate has also been drastically reduced both in Italy, in France and Germany (Figure 5).

Figure 4.
Annual Salaries, in US $ 2011 PPP Cost Prices



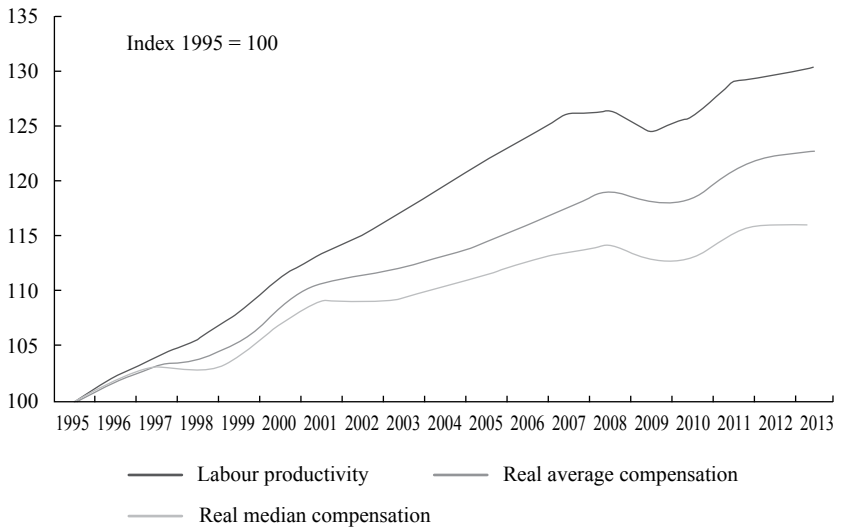
Source: Tridico (2014).

Figure 5.
Salary Participation Rate in % of total income



Source: OECD (2008) and ILO (2013).

Figure 6.
Real Median Wages Have Decoupled From Labour Productivity



Source: OECD (2018).

Figure 7.
Trends in Growth in Average Wages and Labour Productivity in Selected Advanced G20 Economies, 2000-2014

Source: (ILO O. I., 2015)

The policies that pushed to increase productivity together with labour liberalization in the US and in Italy, as well as in the majority of the OECD and G20 countries (Figure 6 and 7) did not translate into a simultaneous increase in real wages.

THE ANTI-BLANCHARD MODEL APPLIED TO CHILE, ARGENTINA AND MEXICO

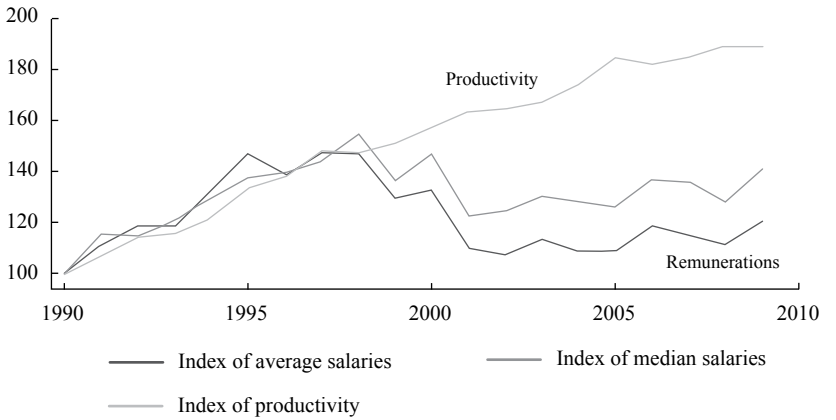
What was the experience of Latin America regarding the points being analysed?

At the moment there are not enough data to carefully analyse all the Latin American countries, and we could also not analyse them all for explanatory reasons. Thus, we decided to focus all attention on the countries that acted on these policies (increased productivity and, above all, on wage flexibility) more strongly than others: Chile, Argentina and México.

Although labour flexibilization policies have been introduced in Chile almost without interruptions, from 1975 onwards it was the new millennium that marked a crucial stage in labour flexibility. In fact, in 2001 a labour reform was promoted. This meant a growth for temporary jobs and an increase in the precariousness of work conditions (Segovia, 2014).

Figure 8 shows the gap between productivity and wages that has been widening in Chile since the new millennium when the policy of greater labour flexibility was promoted. While productivity in Chile increased from 150 to more than 190 at the end of the decade, the average wage index fell during the same period from 150 to below 120.

Figure 8.
Gap Between Productivity and Typical Compensation of a Worker in Chile, 1990-2009



Source: Durán Sanhueza (2015).

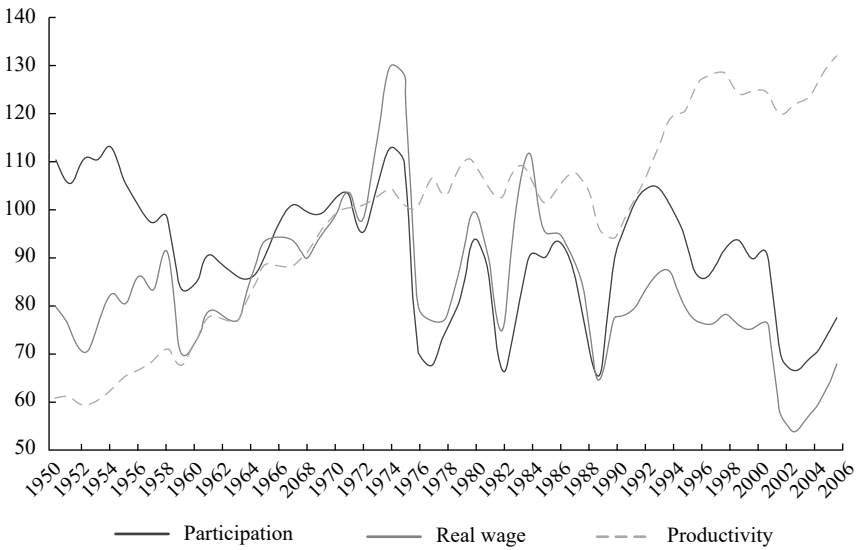
This phenomenon has undoubtedly contributed to worsening Chile's social redistribution that is already characterized as one of the most unequal countries in the world. In 2013, in Chile, the richest 1% of the country in terms of income held more than 30% of the country's total income (Durán Sanhueza, 2015). Recently, the Chilean government once again emphasized the need for greater wage flexibility (González & Marchetti, 2019).

Argentina also adopted a strong labour flexibility policy. Rial (2015) highlights how the policy in Argentina has only produced greater job insecurity; it has not increased employability, which was supposed to be the objective of this policy: "Our country was no neutral to the "flexibilization" wave that was installed in Europe and Latin America, deepening further in the 90s. The National Employment Law (Law 24.013) was the first regulatory body that dealt with the flexibility in the individual contract of work…" (Rial, 2015).[4]

Also in Argentina, especially during the years of neoliberal policies that have included greater labour flexibility, Figure 9 shows how the gap between productivity and real wages has been growing. In particular, this gap widened during 1976-1982 as well as during the strong neoliberal package in the '90s.

[4] The original Rial (2015) work is in Spanish: "Nuestro país no fue ajeno a la corriente flexibilizadora que se instaló en Europa y en América Latina, profundizándose en la década del 90. La Ley Nacional de Empleo (Ley 24.013) fue el primer cuerpo normativo que se ocupó de la flexibilización en el contrato individual de trabajo..."

Figure 9.
Salary Participation in GDP, Productivity and Real Wages. Total of the Economy. Argentina. 1950-2006 Evolution. Average. 1970-1972 = 100



Source: Kennedy and Graña (2010).

Finally, we analyse the case of Mexico. Here probably the most updated data seem to be the ones reported in Munguía Corella (2019) that use real data updated to 2019 with respect to productivity, real wage, unionization rate and profits.

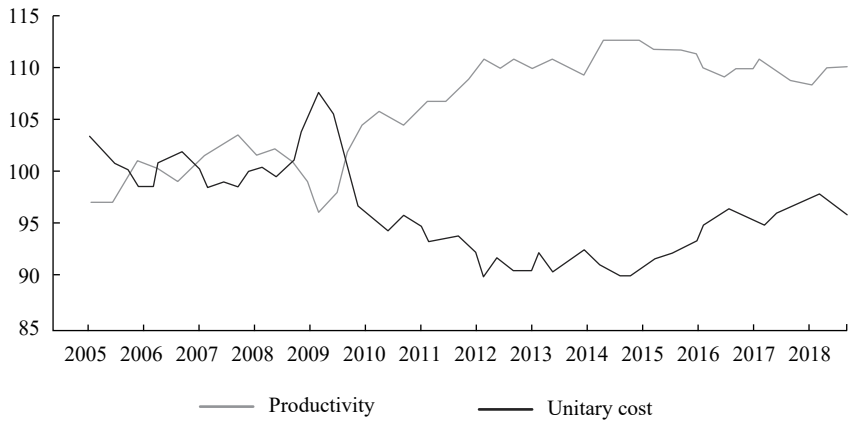
Corella (2019) explains that often during the last decades the story of low productivity has been usually used to justify the not growing real wages. However, the data presented exactly show the opposite. The productivity has been increasing, especially during the last two decades. At the same time, it is argued that the real wage has been actively maintained low thanks to the monopsony power in bargaining the labour contracts with workers (Figure 8).

The process of liberalization through labour flexibility and the effort to decrease the union power (the z in our model) succeeded in maintain the workers power low. The policies to weaken the union power resulted in a collapse of the union participation rate from 18% at the end of the 90s to about 2% in 2018 (Figure 9).

Corella (2019) argues that not only the labour productivity increased while real wage didn't follow that trend. Indeed, it argues that the two variables seem to move in a specular way. Figure 10 that analyses the productivity and real wage relationships at subsector level shows this effect.

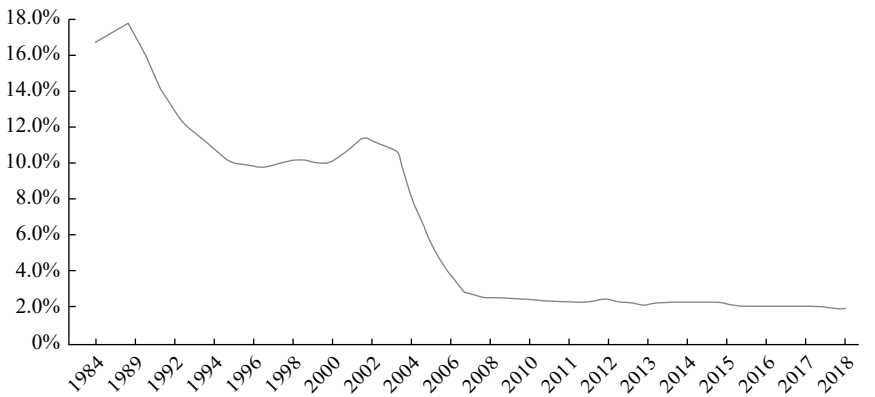
Finally, Corella (2019) shows a further interesting figure and give itself an explanation related to the interpretation that could be given with the Anti-Blanchard

Figure 10.
Labour Productivity and Unitary Labour Cost in Manufacture Industry. Index 2008 = 100



Source: Munguía Corella, 2019.

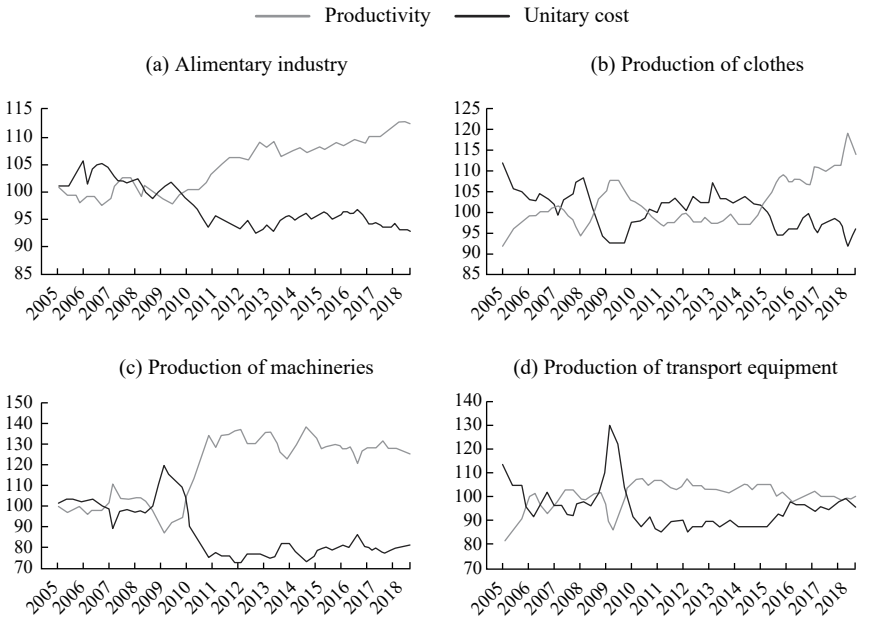
Figure 11.
Sindacalization Rate in Mexico



Source: Munguía Corella, 2019.

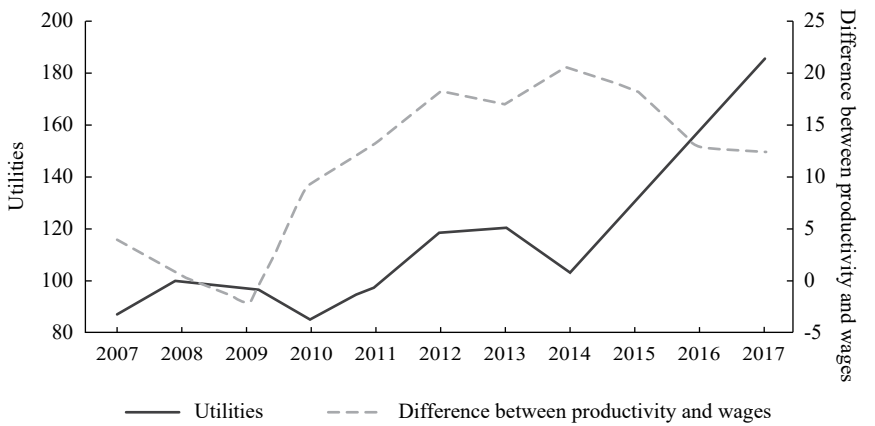
model. In fact, Figure 11 shows that while the gap between increasing productivity and real wage is produced, profits seems to grow very quickly underlining a very strong correlation between those two variables. Not only there is a phenomena of increasing gap between labour productivity and real wages linked to the debilitating policies. Furthermore, firms seem to take advantage of the weakness of the workers to increase their own compensations and profits for managers and owners of the firms.

Figure 12.
Labour Productivity and Unitary Labour Cost in Subsector of the manufacture Industry. Index 2008 = 100



Source: Munguía Corella, 2019.

Figure 13.
Relation between the productivity-wage gap with the utilities in manufacturer industry Utility Index 2008 = 100



Source: Munguía Corella, 2019.

CONCLUSIONS

In this paper we focused both on analysing the theoretical debate between one of the most influential mainstream model —represented by the description contained in Macroeconomics by Blanchard (2010)— and the critical analysis contained in the Anti-Blanchard model by Brancaccio (2019). It is shown how, despite using the same Blanchard tools, Brancaccio is able to arrive to very different conclusion using different hypothesis more related to real life scenario.

Also an empirical exercise is carried out, both for OECD countries and for the Latin American countries. The cases of US and Italy are investigated. The situations of Chile, Argentina and Mexico are analysed and the structural change happened in those countries with increasing neoliberal policies is considered. Despite it is recognized that those countries are opened economies and therefore international interactions can absorb or influence the different economic variables beyond the Blanchard and Anti-Blanchard analysis, the overall theoretical framework and comparison exercise can still be useful.

In particular, it is questioned that the mainstream model - such as the one contained in Macroeconomics by Blanchard - is able to explain the dynamics happened in those countries in the last decades. Quite the contrary, the dynamics and the story of US and Italy as well as the ones in Chile, Argentina and Mexico fit the Anti-Blanchard explanation particularly well. It is found that the liberalization and flexibilization of the labour market, for example through the increasing weakening of the workers' union and the weakening of the Employment Protection Law, led to a stagnant or decreasing workers' real wages despite their productivity increased over time.

In the US from 1979 to 2013, despite the flexibilization of labour market together with an increase in productivity by 64.9% did not translate into a parallel increase in the hourly wages that increased by only 8 percent. Similarly, the liberalization and flexibilization of the labour market in Italy didn't bring to an increase of the annual wages that remained fairly constant with a wage share that actually decrease by 10% between the 1980s and the 2008. A similar figure is found for the whole OECD and G20 countries that exhibited an increasing decoupling dynamic of real wage from labour productivity.

Latin American countries are not characterized by a different situation. Quite the contrary, the current strikes and protests in Chile and Argentina are the manifestation of the dissatisfaction of a stagnant or decreasing workers' compensation that did not follow the ever increasing labour productivity. Again, even in those cases, the liberalization and flexibilization policies of the labour market together with the push toward an increasing productivity promoted by the neo-liberal governments did not fit into the story of better workers' conditions of the mainstream point of view that would have led to an increase of the workers' real wage and standard of living.

Even if its situation did not explode yet into protests and visible workers' dissatisfactions such as that in Chile and in Argentina, Mexico is represented by a very similar situation. A liberalization of the labour market and weakening of the workers' union together with an ever increasing labour productivity did not translate into a parallel increase of workers' compensation in any sectors. A strong correlation is found between the gap in the real wage-workers' productivity and the management compensations and capitalists' profits. Again here, the Anti-Blanchard ana-lysis seems to fit the description of the Mexican situation very well, much better than the mainstream one.

While it may be imprudent to blame only labour flexibility for the sole cause of the situation of workers' real wages in Chile and Argentina and for the ineffectiveness in increasing the level of employability, it should be noted that:

> The experience developed in more than one hundred countries, gathered by the International Labor Organization, as well as numerous articles on the subject, has shown that labor flexibility in all its different forms has not been an effective tool to improve employability. In developed countries it has precarious formal employment and in developing countries it has alarmingly promoted labor precariousness. (Rial, 2015)

In the light of the data, Blanchard's model, even though didactically well-constructed and exposed, does not seems to perfectly represent reality. On the contrary, Brancaccio's model and critical economics, although they offer a more "painful" interpretation of economic mechanisms, seem to describe the last decades in the US, in Europe such as in several Latin American countries in a more realistic way. The positive side of this vision is that we are not yet in an irreversible phase and that the path, if we wish, can still be changed.

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PAPER

BEYOND GOODWIN: FINANCIALIZATION AS A STRUCTURAL CHANGE TO EXPLAIN THE NEW ARGENTINIAN CRISIS

Pablo Ignacio Chena
Demian Tupac Panigo
Germán Zorba

Chena, P. I., Panigo, D. T., & Zorba, G. (2020). Beyond Goodwin: Financialization as a structural change to explain the new Argentinian crisis. *Cuadernos de Economía, 39*(80), 523-540.

This paper aims to explain the causes of the 2018/2019 Argentinian crisis by means of a growth cycle model a la Goodwin, where the aggregate demand is wage-led, the wage-share is predatory of the external sector, and the financial norm stands as

P. Chena
Universidad Nacional de La Plata. Consejo Nacional de Investigaciones Científicas y Técnicas. Universidad Nacional de Quilmes. La Plata, Provincia de Buenos Aires, Argentina. E-mail: pablochena@gmail.com

D. Panigo
Universidad Nacional de La Plata. Universidad Nacional de Avellaneda. Consejo Nacional de Investigaciones Científicas y Técnicas. Universidad Nacional de Quilmes. Manuel B. Gonnet, Provincia de Buenos Aires, Argentina. E-mail: panigo@gmail.com

G. Zorba
Universidad Nacional de La Plata. La Plata, Provincia de Buenos Aires, Argentina.
E-mail: germanzorba@gmail.com

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an exogenous apex-predator of both real wages and the current account. Its main results allow us to understand the stylized facts of the Argentinian economy: a higher financial norm increases inequality and required current account surpluses, reduces stability, and increases volatility and recessions length.

Keywords: Argentina; crisis; business cycle; balance of payments constraints; financialization.
JEL: C61; E32; E37; F41.

Chena, P. I., Panigo, D. T., & Zorba, G. (2020). Más allá de Goodwin: la financiarización como un cambio estructural para explicar la nueva crisis argentina. *Cuadernos de Economía, 39*(80), 523-540.

Este artículo busca explicar los motivos de la crisis argentina de 2018/2019 mediante un modelo de crecimiento-ciclo a la Goodwin, en donde la demanda agregada es tirada por los salarios, la participación de los trabajadores en el producto es predadora del sector externo y la norma financiera se erige como superpredador exógeno tanto del salario real como de la cuenta corriente. Sus principales resultados nos permiten comprender los hechos estilizados de la economía argentina: una norma financiera más elevada aumenta la desigualdad y el superávit de cuenta corriente, reduce la estabilidad e incrementa la volatilidad y la duración de las recesiones.

Palabras clave: Argentina; crisis; ciclo económico; restricción externa; financierización.
JEL: C61; E32; E37; F41.

Chena, P. I., Panigo, D. T., & Zorba, G. (2020). Além de Goodwin: a financeirização como uma mudança estrutural para explicar a nova crise argentina. *Cuadernos de Economía, 39*(80), 523-540.

Este artigo visa explicar os motivos da crise argentina de 2018/2019 mediante um modelo de crescimento-ciclo à Goodwin, onde a demanda agregada é impulsionada pelos salários, a participação dos trabalhadores no produto é predadora do setor externo e a norma financeira se erige como superpredador exógeno tanto do salário real como da conta corrente. Seus principais resultados nos permitem compreender os fatos estilizados da economia argentina: uma norma financeira mais elevada aumenta a desigualdade e o superávit de conta corrente, reduz a estabilidade e incrementa a volatilidade e a duração das recessões.

Palavras-chave: Argentina; crise; ciclo econômico; restrição externa; financeirização.
JEL: C61; E32; E37; F41.

INTRODUCTION

Several months after taking office, the last neoliberal government of Argentina (2015-2019) proposed the following main economic goals: reducing the inflation rate (supposedly associated with fiscal deficit monetization), addressing foreign-currency shortage (allegedly attributed to reversing the problem of international competitiveness caused by a workers' excessive negotiating power, which determines a secular real exchange rate appreciation), and resolving private investment stagnation (purportedly linked to a low and decreasing rate of return of capital).

To address these macroeconomic problems, we chose a compulsory financialization strategy (Chena & Biscay, 2019)[1], which includes the following:

1. Capital account liberalization;
2. Exchange rate deregulation, with a strong initial currency devaluation;
3. Payment to vulture funds, as a starting point to address massive external indebtedness;
4. Financial norm[2] increase (hidden inside an "inflation targeting" scheme);[3]
5. Utilities financialization (through fee-dollarization and subsidies reduction);
6. Trade liberalization (with non-tariff barriers elimination);
7. Reduction of taxes and regulations on commodity exports.

The main government objective was to generate greater discipline for workers and non-financial firms in order to: a) moderate the exchange rate tension by improving the current account (based on a balance of payments absorption approach, but also expecting an exports boom with a higher real exchange rate); b) attract global value chains investments—a process they called "*lluvia de inversiones extranjeras*" ["a shower of foreign investments"]—, stimulated by a profit rate recovery); c) accelerate economic growth (given the assumption of a profit-led or export-led growth regime); and d) quickly reduce the inflation rate (as long as the worker discipline could contribute to a fiscal deficit reduction and the transition from monetization to external indebtedness).

[1] These authors associate financialization with the financial supremacy reflected in a capital market norm imposed on the rest of the economy through two major channels. On the one hand, the requirement of a high short-term return to non-financial firms that reduces long-term productive investment. On the other, the imposition of strong pressures to decrease labor costs through lower real wages, dismissals, or higher labor productivity. For the purpose of this paper, a financialization policy set is one that jointly promotes both channels.

[2] Based on Boyer (2000), a financial norm is a shareholder value requirement imposed from finance to production in globalized economies, through financial, monetary, trade, and fiscal policies.

[3] In a small open economy, the financial norm is (mostly) exogenous. Notwithstanding, monetary policies such as an inflation targeting regime (where a higher than the UIR parity interest rate is imposed to reduce inflation rates) could finally determine a higher local financial norm.

After four years of the implementation, financialization policies have clearly failed: the country doubled its rates of inflation, unemployment, and extreme poverty. There are two million people unemployed, ten million people with job problems (lack of job or in informal employment), 40% of the population lives below the poverty line, and one in ten Argentinians go hungry every day. In just four years, the country has regressed 15 years in terms of social welfare (see Panigo, Bona, & Wahren, 2019 and Fraschina & Panigo, 2020).

But the most important warning is that, for the first time in decades, a big crisis will not be coupled with a typical current account surplus. Indeed, the external indebtedness has been so great that, even in a recessive environment with a sharp drop in consumption (domestic absorption and imports), the current account deficit reached a record USD 31,000 million in 2017. Despite an intense additional contraction in consumption throughout 2019, the current account deficit will reach approximately USD 10,000 million.

For the next few years, the problem will become even more complex due to debt payments. Adding-up capital and interests (the latter are recorded in the current account), Argentina will annually be facing debt payments of USD 30,000 million between 2020 and 2023 (on average). In other words, without good rollover conditions, half of all foreign currency obtained through exports will be used for debt payments.

Within this context, the objective of the article is to develop a new theoretical scheme to explain the last Argentinian crisis (2018-2019) using a modified prey-predator model, inspired by seminal research undertaken by Lotka (1926), Goodwin (1967), and Volterra (1936). The contribution of this paper is to explain why adopting a destabilizing financial norm cannot be offset by forcing a higher labour discipline in order to recover macroeconomic stability.

To achieve this goal, the article is structured as follows. After the introduction, the theoretical framework is presented, which describes existing contributions on the relationship between income distribution, productive structure, financialization, and business-cycle dynamics. Next, the formal section of the document is introduced, which includes a prey-predator model where the current account is the prey and wage-share is the predator: this has a wage-led demand regime, stop-and-go cycles, and an exogenous apex-predator (the financial norm). We then analyse the effects caused by an increase in the financial norm on income distribution, current account, macroeconomic volatility, and system stability. The paper concludes with a policy discussion, where the results obtained are used to interpret the Argentinean crisis.

THEORETICAL FRAMEWORK

Heterodox business-cycle models are often classified into two generations (Pasinetti, 1960): linear models (Frisch, 1933; Kalecki, 1935); and non-linear ones

(Gabisch & Lorenz, 2013; Goodwin, 1951; Goodwin, 1990; Kaldor, 1940; Marrama, 1946).

On a theoretical level, heterodox pioneering approaches to the business-cycle that are focused on four major fluctuation mechanisms are associated with different schools of thought:

1. Keynesian-Kaleckian models (investment multiplier-accelerator, see Harrod, 1936; Hicks, 1950; and Samuelson, 1939;)
2. Marxist models (highlighting class struggles, see Goodwin, 1967)
3. Structuralist models (Stop-and-Go dynamics, see Braun & Joy 1968; Díaz Alejandro, 1963; and Panigo, Chena, & Gárriz, 2010); and
4. Post-Keynesian models (financial cycles, see Minsky, 1982, 1986)

The growing importance of financial flows in production logics has led to the need for a deeper analysis about the relationship between financialization and macroeconomic dynamics. This has generated a new branch of macro-models that incorporate financial norm effects (Boyer, 2000).

The financialization process is characterized by the increase in financial creditors and shareholders' power. This is reflected in a financial norm imposed on the rest of the economy through two major channels (Boyer, 2000). On the one hand, we have the requirement of a short-term return to non-financial companies that decreases their productive investment opportunities. On the other, we have the exertion of strong pressure to decrease labour costs, through decreasing real wages, lower turnover costs, and/or a higher labour productivity. Using a short-term closed economy model (inspired by the United States economy in the 1990s), Boyer (2000) points out that the probability of secular stagnation and macroeconomic instability grows under global finance supremacy. Moreover, there is an empirical relationship between falling real wages and financialization that increases social inequality (Diwan, 2001). As a consequence, most wage-led economies show stagnation paths (or brief and volatile growth periods, see Stockhammer & Kohler, 2019).

Taking these theoretical elements into consideration, we develop a growth-cycle model *a la* Goodwin (1967) but with remarkable differences to explain the Argentinian 2018-2019 crisis. It is an open economy model with stop-and-go cycles and wage-led aggregate demand, where the wage-share is predator of the current account (see Díaz Alejandro, 1963). In addition, the financial norm is introduced as an exogenous apex-predator of both real wages (see Boyer, 2000) and the current account (see Moreno-Brid, 1998),[4] with significant effects on equilibrium values and system stability.

[4] The apex-predator metaphor is used to indicate that a financial norm increase (that mimics an interest rate increase) will reduce real wages (as long as the shareholder value requirement imposes higher financial opportunity costs having to be compensated with lower labor costs) and the current account being deteriorated (because of higher external debt interest payments).

THE MODEL

The predator-prey model (with exogenous apex-predator) proposed to explain the recent Argentinian macroeconomic crisis includes the following simplifying assumptions:

1. Exogenous (disembodied) steady technical progress
2. Exogenous labour force growth rate
3. Exogenous exports growth rate
4. Two homogeneous production factors (labour and capital)
5. Variables expressed in real terms
6. Constant capital-output ratio
7. Wage-led GDP growth
8. Counter-cyclical current account
9. Flexible exchange rate regime with an open capital account
10. Negative relationship between real wages and real exchange rate
11. Exogenous (international) financial norm (equal to the interest rate) with negative impact on both real wages and current account.

Table 1 briefly describes the main model relationships.

Table 1.
Model Equations

Capital – Output ratio:	$\bar{\sigma} = \frac{k}{q}$	(1)
Employment:	$l = \frac{q}{a}$	(2)
Wage-share:	$u = \frac{w}{a}$	(3)
Employment rate:	$v = \frac{l}{n}$	(4)
Current account index:	$icc = \frac{x}{me}$	(5)
Labour productivity:	$a = a_0.e^{\alpha t}$	(6)

(*Continued*)

Table 1.
Model Equations

Population:	$n = h_0.e^{\beta t}$	(7)
Exports:	$x = x_0.e^{\pi t}$	(8)
Real wage growth:	$\frac{\dot{w}}{w} = \eta - \tau.\frac{\dot{tcr}}{tcr} - t.r$	(9)
Investment rate:	$\frac{\dot{k}}{k} = \frac{\dot{q}}{q} = \psi.u$	(10)
Extended imports growth:	$\frac{\dot{me}}{me} = \theta + \kappa.\frac{\dot{q}}{q} + m.r$	(11)
Real Exchange rate growth:	$\frac{\dot{tcr}}{tcr} = -\delta.icc + j.r$	(12)

Source: Own elaboration.

Where k is the capital stock, q is the GDP, w is the real wage, me is an extended imports index including external debt interest payments, a_0 is a labour productivity scale parameter and α is its growth rate, h_0 is a population scale parameter and β is its growth rate, x_0 is the exports scale parameter and π is its growth rate, η is the real wage autonomous growth rate, τ is the response of the real wage growth rate to the real exchange rate growth rate, t is the direct effect of the financial norm on the real wage growth rate (either through prices or fees), ψ is the wage-share impact on the GDP (and capital stock) growth rate, θ is the extended imports autonomous growth rate, κ is the imports growth rate sensitivity to domestic absorption (GDP growth rate), m is the financial norm influence on the extended imports growth rate (through debt interest payments), δ identifies the response of the real exchange growth rate to the current account, and j is the financial norm effect on real exchange rate dynamics (mediated by the capital account regulation policy), while r is the financial norm, which is supposed to be mainly exogenous in this model version.

This variation of the Goodwin's predator-prey model (Goodwin, 1967) includes key aspects of the Argentinian economic structure, particularly in equations (8) to (11):

- Exports are mostly determined by exogenous factors (i.e. they are inelastic to the real exchange rate);
- Real wages grow autonomously (unlike Goodwin, 1967) but decrease with the real exchange rate and the financial norm;

- The aggregate demand is wage-led; and
- The current account equation includes debt interest payments (unlike many structuralist models that identify the current account with a trade balance).

As shown below, the interaction between these characteristics and financial norm variations are fundamental to be able to explain the transition from stable systems to explosive dynamics.

Laws of Motion Equations

In this system, the semi-reduced forms identifying the predator-prey analytical scheme are given by the following expressions:

$$\dot{icc} = \left\{\left[\left(\pi - \theta\right) - m.r\right] - \psi.\kappa.u\right\} icc \tag{13}$$

$$\dot{u} = \left\{-\left[\left(\alpha - \eta\right) + \left(\tau.j + t\right)r\right] + \tau.\delta.icc\right\} u \tag{14}$$

Or, more synthetically:

$$\dot{icc} = \left[A - B.u\right] icc \tag{15}$$

$$\dot{u} = \left[-D + C.icc\right] u \tag{16}$$

Where: $A = \left[\left(\pi - \theta\right) - m.r\right]$; $B = \psi.\kappa$; $C = \tau.\delta$; $D = \left[\left(\alpha - \eta\right) + \left(\tau.j + t\right)r\right]$.

Steady State Equilibrium

By solving the non-trivial equilibrium, reduced forms, or equilibrium values of our main endogenous variables, the following are obtained:

$$u^* = \frac{\left(\pi - \theta\right) - m.r}{\psi.\kappa} \tag{17}$$

$$icc^* = \frac{\left(\alpha - \eta\right) + \left(\tau.j + t\right)r}{\tau.\delta} \tag{18}$$

Or:

$$u^* = \frac{A}{B} \tag{19}$$

$$icc^* = \frac{D}{C} \tag{20}$$

For the steady state to make economic sense, it is necessary to use the following additional assumptions:

a) Since C is positive by construction, then D also needs to be positive (as icc^* must be positive), that is $r > (\eta - \alpha)/(\tau.j + t)$

b) Since B is positive by construction, A needs to be positive and less than B (because u^* must be positive and less than 1), that is $\left[(\pi - \theta) - \psi.\kappa\right]/m < r < (\pi - \theta)/m$

Thus, the combined existence of equilibrium that makes economic sense for both variables requires that:

$$Max\left[\frac{(\eta - \alpha)}{(\tau.j + t)}, \frac{(\pi - \theta) - \psi.\kappa}{m}\right] < r < \frac{(\pi - \theta)}{m} \tag{22}$$

If condition (22) is not fulfilled, then either there are no closed orbits[5] or they do not make economic sense (impossibility zone). When there are no closed orbits, the only possible behaviour is divergence (or tendency towards the impossibility zone –i.e. trivial equilibrium).

Local Stability (Close to Steady State Equilibrium)

In the neighbourhood of the equilibrium, the system behaves similarly to its linear component. Therefore, the Jacobian is given by:

$$J = \begin{bmatrix} A - B.u & -B.icc \\ C.u & C.icc - D \end{bmatrix} \tag{23}$$

Replacing u and icc by their non-trivial equilibrium values, expression (23) becomes:

$$J = \begin{bmatrix} 0 & -\dfrac{B.D}{C} \\ \dfrac{A.C}{B} & 0 \end{bmatrix} \tag{24}$$

with eigenvalues:

$$\lambda_{1,2} = \pm i.\sqrt{D.A} \tag{25}$$

which is equivalent to:

$$\lambda_{1,2} = \pm i.\sqrt{\left[(\alpha - \eta) + (\tau.j + t)r\right].\left[(\pi - \theta) - m.r\right]} \tag{26}$$

[5] According to Brouwer's theorem, if the system has a closed orbit, the flow in the region inside that orbit would have a fixed point (see for example, Hirsch, 2012), and that fixed point is in contradiction with the absence of equilibrium.

As A.D is positive, the eigenvalues are conjugate complex numbers, which guarantees the linear stability of the system around the equilibrium.[6]

The following section analyses system stability far-away from the equilibrium, where nonlinear components dominate

Global Stability

In order to prove the existence of global stability we will use a first integral, that is, a function $H(u,icc)$ such that $\dot{H}=0$ along each system trajectories (so H is a constant of motion). Therefore, system orbits can be understood as level curves of $H(icc,u)$.

More specifically, we propose the function:

$$H = C.icc + B.u - D.ln(icc) - A.ln(u) - H^*_{icc} - H^*_u \tag{27}$$

where H^*_{icc} and H^*_u are constants such that $H\left(icc^*,u^*\right)=0$

$$H^*_{icc} = C.icc^* - D.ln\left(icc^*\right) \tag{28}$$

$$H^*_u = B.u^* - A.ln\left(u^*\right) \tag{29}$$

Differentiating H with respect to time, we get:

$$\dot{H} = C.\dot{icc} + B.\dot{u} - D.\frac{\dot{icc}}{icc} - A.\frac{\dot{u}}{u} \tag{30}$$

Replacing $\dot{icc}$ *y* $\dot{u}$ by expressions (15) and (16) respectively, we get:

$$\dot{H} = C\left(A.icc - B.u.icc\right) + B\left(C.icc.u - D.u\right) - D\left(A + B.u\right) - A\left(C.icc + D\right) = 0 \tag{31}$$

Therefore, as required, the value of H remains constant along system orbits (so system orbits are level curves of H).

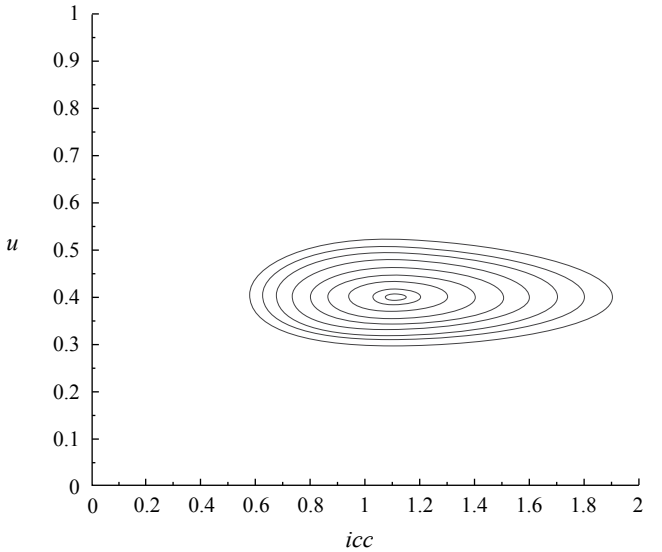
Figure 1 shows that these orbits are closed curves, which guarantees the global stability of the system.

To formally prove that this behaviour (i.e. having closed orbits) will remain the same throughout the first quadrant (the economic sense region), we observe that the Hessian matrix of H is positive, so the graph of H is convex.

$$\mathcal{H}(H) = \begin{bmatrix} \frac{D}{icc^2} & 0 \\ 0 & \frac{A}{u^2} \end{bmatrix} \tag{32}$$

[6] If A.D were negative (mathematically possible, but without economic sense in our model), Jacobian eigenvalues would be opposite real numbers, implying the existence of a saddle point in the linearization around the equilibrium.

Figure 1.
System Orbits / Level Curves of Function H



Source: Own elaboration.

Then, the behaviour of the system is also globally stable and has closed orbits around a non-trivial steady state equilibrium that makes economic sense (because A, B, C, and D are positive).

The main difference with the linear stability analysis is that closed orbits are no longer defined as regular ellipses. In this case, they are more spaced in for values above the equilibrium and more compressed below it.

Volatility

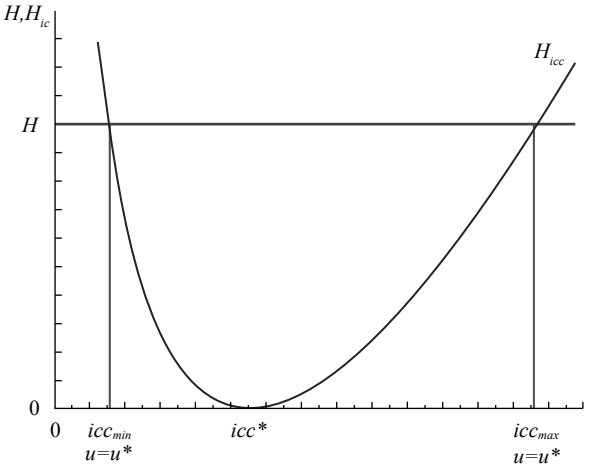
The orbit size depends on H values: the larger the value, the larger the orbit perimeter

Therefore, given H, we can calculate the extreme values of u and icc to obtain the variation range (a proxy for the business-cycle volatility). In order to achieve this, we separate into its two components:

$$H = H_{icc} + H_u = \left(C.icc - D.ln(icc) - H^*_{icc}\right) + \left(B.u - A.ln(u) - H^*_u\right) \qquad (33)$$

Equation (33) shows that, for a given orbit, H_{icc} reaches its maximum when $H_u = 0$ (this happens when icc is either a maximum or a minimum: $H_{icc} = H$, $H_u = 0$ and $u = u^*$, see Figure 2). A similar situation applies to u: maximum and minimum u values are those that satisfy $H_u = H$, $H_{icc} = 0$ and $icc = icc^*$.

Figure 2.
Relation Between H, H_{icc}, *u*, and *icc*



Source: Own elaboration.

We can observe that the greater the value of *H*, the greater the difference between maximum and minimum values for each variable. Consequently, the business-cycle not only depends on its structural parameters but also on the initial conditions.

EFFECTS OF FINANCIAL NORM VARIATIONS

Changes in the financial norm modify the steady state equilibrium, system stability, and business-cycle volatility. In the following sub-sections, these issues are formally examined.

Effects of the Financial Norm on Steady State Equilibrium

Taking partial derivatives of equations (17) and (18) with respect to r, it is possible to obtain the formal effect of the financial norm on the wage-share and the current account equilibria, respectively:

$$\frac{\partial u^*}{\partial r} = \frac{-m}{\psi.\kappa} = \frac{-m}{B} < 0 \tag{34}$$

$$\frac{\partial icc^*}{\partial r} = \frac{(\tau.j + t)}{\tau\delta} = \frac{(\tau.j + t)}{C} > 0 \tag{35}$$

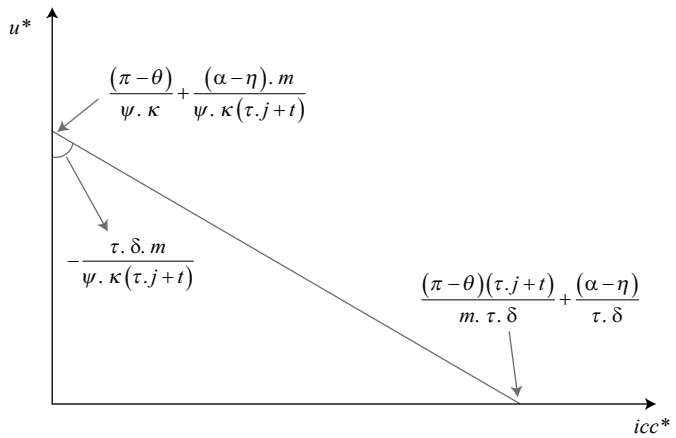
Additionally, since the financial norm is the same in both equations (17 and 18), it is possible to find a functional relationship between equilibrium values for different levels of *r*:

$$u^* = \frac{(\pi - \theta)}{\psi.\kappa} + \frac{(\alpha - \eta).m}{\psi.\kappa(\tau.j + t)} - \frac{\tau.\delta.m}{\psi.\kappa(\tau.j + t)}.icc^* \tag{36}$$

This equation defines a line over which the non-trivial steady state equilibrium ($[u^*, icc^*]$) will move when there are financial norm changes (Figure 3).

Based on the main result from equations (34) and (35) (and Figure 5), we can see that any exogenous increase in the financial norm results in opposite dynamics for u^* (decrease) and icc^* (increase). The first effect can be explained by the need for induced imports (due to economic growth) to be reduced in order to compensate for the increase in debt services (keeping the current account in a steady state: $\dot{icc} = 0$). On the other hand, the required increase in icc^* can be explained by the need to compensate for the direct reduction in real wages generated by the financial norm increase. A higher icc^* leads to a lower equilibrium real exchange rate and, therefore, to a higher real wage (ceteris paribus). These counterbalanced effects guarantee the stationarity of the wage-share ($\dot{u} = 0$).

Figure 3.
The Required Functional Relationship Between the Wage-Share and the Current Account to Guarantee Steady-State Equilibria



Source: Own elaboration.

Financial Norm Effects on Business-cycle Stability

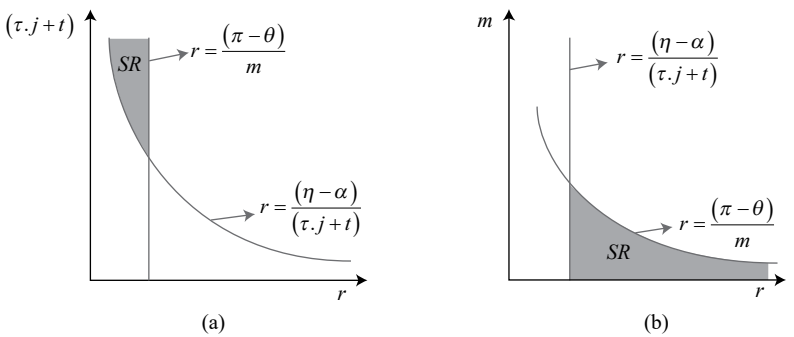
In equation (22), a necessary condition for the existence of equilibrium is that $\pi > \theta$ (meaning that without endogenous factors, the trade balance would tend to improve). If we additionally assume (to simplify the analysis in Figure 4) that $\eta > \alpha$ (meaning that without endogenous factors, the wage-share would tend to rise), an evaluation quadrant with a strictly positive financial norm can be obtained.

Additionally, we will work with the hypothesis that u <1 for relevant financial norm values. Based on the aforementioned circumstances, the stability regions for r in relation to key parameters of the class-struggle (t and τ), the financial regulation (j), and the weight of debt-interest payments in the current account (m) are described in Figure 4.

Panel (a) examines how the relationship between financial regulation, income-distribution and the financial norm affects the probability of a phase diagram with stable orbits around feasible steady-state equilibria (i.e. the stability region size - SR). Panel (b) shows how the relationship between the weight of debt-interest payments on the current account and the financial norm affects the above-mentioned probability.

When the system stability is lost because the financial norm is beyond the SR (and, therefore, the steady-state equilibrium is no longer in the first quadrant), stable dynamics can only be recovered through a higher net-exports, an autonomous surplus, or a reduction in the weight of debt-interest payments in the current account.

Figure 4.
Stability Regions for Different Values of $(\tau.j+t)$, m, and r



Source: Own elaboration.

As long as foreign trade structural parameters (π-θ) are hard to modify, the only remaining short-term policy appears to be the renegotiation of external financial conditions. Economic policies focusing on financial norms' effects on real wages, which are right-wing governments' first-line response to financial norm changes (i.e. financial liberalization -increase in j- and/or labour unions bargaining power reduction -increase of t or τ-), have no effect on system stability.

Financial Norm Effects on Business-cycle Volatility

As seen above, r values affect both steady-state equilibria and stability conditions. Additionally, the financial norm also has an impact on the business-cycle volatility.

If new equilibrium values (resulting from a higher financial norm) approach the current state of the system, it will reduce the value of the above-mentioned function H (a proxy for business-cycle volatility). However, if new equilibrium values move away from the current state of the system, it will increase H. This allows us to identify four alternative stages for the relationship between financial norms and business-cycle volatility (see Figure 5):

i. Stage 1 (recovery): $icc > icc^*$, $u < u^*$. Both variables are growing. In this stage, an increase in r leads to a higher icc^* and a lower u^*, reducing the business-cycle volatility (H).

ii. Stage 2 (expansion): $icc > icc^*$, $u < u^*$. u is still growing and icc begins to decline. The effect of r on volatility is non-monotonic (initially negative and finally positive).

iii. Stage 3 (adjustment): $icc > icc^*$, $u < u^*$. Both variables are decreasing. A higher r increases the business-cycle volatility.

iv. Stage 4 (recession): $icc > icc^*$, $u < u^*$. u is still decreasing and icc begins to grow. Once again, the effect of r on volatility is non-monotonic (initially positive and finally negative).

In order to achieve greater precision, the relationship between the financial norm and the business-cycle volatility can be formalized as:

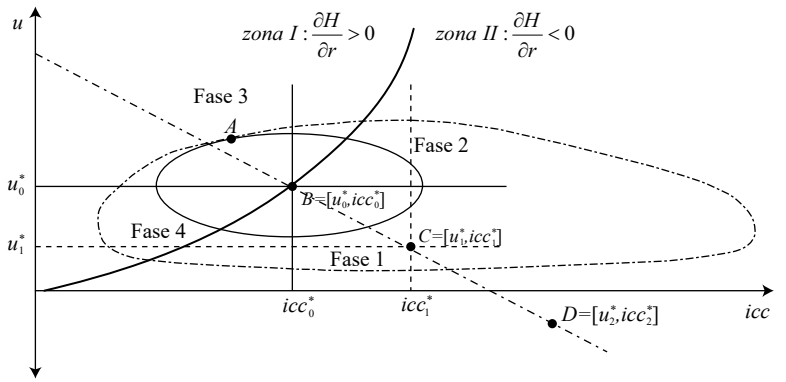
$$\frac{\partial H}{\partial r} = m.ln\left(\frac{u}{u^*}\right) - (\tau.j + t).ln\left(\frac{icc}{icc^*}\right) \tag{37}$$

Making equation (37) equal to 0 allows us to obtain a critical segmentation curve (see Figure 5):

$$u = u^*.\left(\frac{icc}{icc^*}\right)^{\frac{\tau.j+t}{m}} \tag{38}$$

As shown above, the relationship between the business-cycle volatility and the financial norm is stage-dependent. However, as long as the financial norm has an endogenous component (given by current account dynamics, which affect risk perception), the probability of an upward adjustment in r is greater during stage 3 (for example, when the economy is at a point like A in Figure 5 that has a declining and below-equilibrium level icc, combined with a downward evolution of u). In this stage, any rise in the financial norm increases the macroeconomic volatility and extends recessions since a higher financial norm moves the steady state equilibrium from B to C or D (depending on the intensity of the increase in r, see Figure 5). Equilibrium D is economically unfeasible, and the new feasible equilibrium C generates wider orbits (the dotted orbit in Figure 5) with deep and prolonged recessions (because GDP is wage-led), which can be socially untenable.

Figure 5.
The Relationship Between Business-Cycle Volatility and Financial Norm



Source: Own elaboration.

CONCLUSIONS

Financialization policies recently implemented in Argentina (as labour discipline mechanisms, supposedly required inflation and current account deficits to be reduced) led the economy to a recessive, regressive, and unstable configuration.

This article seeks to explain the underlying reasons for this behaviour by means of a growth-cycle model *à la* Goodwin (1967). where aggregate demand is wage-led, the labour share is predatory of the external sector, and the financial norm is an exogenous apex-predator of both the real wages and the current account.

Solving the model, we can see that a higher financial norm:

1. increases required inequality and current account surpluses (in steady state equilibrium);
2. reduces system stability regions, with an increase in the probability of hyper-recessive scenarios; and
3. increases business-cycle volatility (as long as the higher financial norm is often adopted in the adjustment stage)

It also follows from the model that stabilization (after a destabilizing increase in the financial norm) cannot be guaranteed through greater labour discipline (induced by direct and indirect effects of the financial norm on real wages), but with higher autonomous net-exports or with lower debt interest payments (through longer maturities, lower coupons, or debt cuts).

Finally, if the financial norm also has an endogenous component (linked to the current account dynamics, which affects risk perception), the financial norm upward adjustment is likely to be implemented in the adjustment stage of the business-cycle, increasing volatility and prolonging recessions.

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PAPER

ECUADOR: INTO THE ABYSS THANKS TO THE STRUCTURAL ADJUSTMENT POLICIES OF THE EXTENDED FUND AGREEMENT WITH THE IMF

Katiuska King
Pablo Samaniego

King, K., & Samaniego, P. (2020). Ecuador: Into the abyss thanks to the structural adjustment policies of the Extended Fund Agreement with the IMF. *Cuadernos de Economía, 39*(80), 541-566.

This paper analyses the scope, origins, justification, and commitments of the extended fund arrangement (EFA) signed by the Ecuadorian government and the IMF in March 2019. This agreement, which represents a little more than a third of Argentina' Stand-By Agreement, promotes Central Bank independence, austerity, as well as structural adjustment policies, but its basic' diagnosis omits external sector problems. This paper presents the implications and contradictions of the agreement to promote structural changes in the real sector and how these foster policies that protect the interests of bondholders and bankers.

K. King
Faculty of Social and Human Sciences, Central University of Ecuador (UCE), Quito, Ecuador.
E-mail: kking@uce.edu.ec

P. Samaniego
Faculty of Economics, Catholic University of Ecuador (PUCE), Quito, Ecuador.
E-mail: psamaniego038@puce.edu.ec

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Keywords: Ecuador, fully dollarized economy, extended fund agreement, structural adjustment policies, capital roundtripping.
JEL: E58; E42; F34; F55; H63.

King, K., & Samaniego, P. (2020). Ecuador: al abismo gracias a las políticas de ajuste estructural del Acuerdo de Servicio Ampliado con el FMI. *Cuadernos de Economía, 39*(80), 541-566.

Este artículo analiza el alcance, los orígenes, la justificación y los compromisos del Acuerdo de Servicio Ampliado firmado por el gobierno ecuatoriano y el FMI en marzo de 2019. Este acuerdo que representa un poco más de la tercera parte del Acuerdo Stand-By argentino, promueve la independencia del Banco Central, la austeridad fiscal así como políticas de ajuste estructural con un diagnóstico de partida que omite problemas en el sector externo. Se muestran las implicaciones y contradicciones del acuerdo para promover cambios estructurales en el sector real así como las políticas que protegen intereses de los tenedores de bonos y los banqueros.

Palabras clave: Ecuador, economía completamente dolarizada, Acuerdo de Servicio Ampliado, políticas de ajuste estructural, capital de ida y vuelta.
JEL: E58; E42; F34; F55; H63.

King, K., & Samaniego, P. (2020). Equador: ao abismo graças às políticas de ajuste estrutural do Acordo de Serviço Ampliado com o FMI. *Cuadernos de Economía, 39*(80), 541-566.

Este artigo analisa o alcance, as origens, a justificação e os compromissos do Acordo de Serviço Ampliado firmado pelo Governo equatoriano e o FMI em março de 2019. Este acordo que representa um pouco mais do que a terça parte do Acordo Stand-By argentino, promove a independência do Banco Central, a austeridade fiscal assim como políticas de ajuste estrutural com um diagnóstico de partida que omite problemas no setor externo. Mostram-se as implicações e contradições do acordo para promover mudanças estruturais no setor real assim como as políticas que protegem interesses dos detentores de bônus e dos banqueiros.

Palavras-chave: Equador; economia completamente dolarizada; Acordo de Serviço Ampliado; políticas de ajuste estrutural; capital de ida e volta.
JEL: E58; E42; F34; F55; H63.

INTRODUCTION

In the last two years Ecuador's economic policy has been characterized by erratic management, resulting in an economic slowdown and even a change in the population's initial positive economic expectations of the Moreno government (King & Samaniego, 2019). In fact, the government, accompanied by a good part of the mass media using politically aligned economic analysts as cheerleaders, has created an environment similar to that described by Klein (2008), in which the population is convinced that there is no alternative other than to accept the contraction of public spending as a solution to a 'crisis' and to ask multilateral organizations for help with economic management.

This is precisely what the Ecuadorian government did at the beginning of 2019 when it delegated the solution of the Ecuadorian economy's problems to the International Monetary Fund (IMF). However, the government's principal objective – attacking the fiscal deficit– was based on a dubious diagnosis that did not account for the economy's structural problems, especially the external sector deficit.

By focusing exclusively on the fiscal aspect, not only was a comprehensive macroeconomic overview neglected, but a message was sent to the public that fiscal policy was responsible for all the economy's ills, including the need to promote austerity, concessions, monetization or privatization of public assets, and a possible reduction in the provision of public services (Vasquéz & Silva, 2019).

There have been several contradictions in economic management: for instance, the approval of a Law of Productive Promotion (LPP) in 2018 that both increased tax incentives for companies and provided a tax amnesty, at the very time the government was emphasising the need for increased budget revenues.

This article analyses the nineteenth agreement signed between Ecuador and the IMF. The objective is to provide an understanding of the implications the proposed economic reforms will have for a fully and officially dollarized economy such as the Ecuadorian one. The hypothesis is that if the agreement is implemented, the economy will be hit by a major recession that is coupled with a major setback for any plans to transform the productive structure.

The article is arranged into six sections. In the first, we introduce the issue; in the second, we present the state of art of the structural programmes and describe the methodology; in the third, we analyse the scope of the agreement and discuss the origins of the agreement and its justifications; in the fourth we reveal and explain, by sector, the commitments assumed in the arrangement; in the fifth, we examine the implications for the planning and financing of structural change; and in the sixth, we offer our conclusions.

STATE OF ART AND METHODOLOGY

Structural adjustment policies imply austerity, privatization, and financial and trade liberalization, and they had been examined in many scopes. One of the main effects had been to "shrink policy space", which reduces public policies' possibility for development (Chang, 2006; Griffiths & Todoulos, 2014; Kentikelenis,

Stubbs, & King, 2016; Stiglitz, 2017), the recovery of growth (Weisbrot, Ray, Johnston, & Cordero, 2009), and consumption and poverty (Ugarteche, 2016).

Another point is that there is no policy flexibility, and governments use the IMF conditionality to disguise proposals, which can coincide with pressure groups' interests because they would otherwise not have been put into practice by the opposition (Kentikelenis et al., 2016).

It is often assumed that agreements with the IMF are well designed and the Greek structural adjustment programme is the worst example of design as well as political and economic mismanagement both in Greece and at the European level (Moschella, 2016). These agreements include conditionalities to ensure states' servicing debt, "as well as setting the economic climate for growth ... [but] adjustment comes at a high social cost" (Thomson, Kentikelenis, & Stubbs, 2017, p. 2) because it limits resources for education, health, and social protection (Ortiz, Chai, & Cummins, 2011).

On the other hand, one of the arguments in favour of signing agreements with the IMF is that they act as a catalyst for other aid because they convey good signals. Stubbs, Kentikelenis, and King (2016) found that IMF aid varies in relation to the kind of aid and is stronger in "debt-related relief and general budget support…and non-existent for health and education" (2016, p. 513).

In terms of its effects on social variables, Thomson et al. (2017) have compiled the empirical literature since 2000 regarding the aggregate effect of structural adjustment programmes administered by the IMF and other multilateral institutions on maternal and child health outcome variables. They found "unanimous… detrimental association between structural adjustment and child and maternal health outcomes" (2017, p. 9).

The government's alignment in foreign policy, which has led to the signing of an agreement with the IMF, usually means less strict conditionality. This is reflected in non-improving financing conditions (Chapman, Fang, Li, & Stone, 2017). Similarly, Dreher, Sturm, and Vreeland (2013) consider that politically important countries are more softly treated by the IMF. In fact, Chapman et al. (2017, p. 348) said that "when the informal influence is at its peak, (...) the announcement of a new IMF program leads to capital flight". We must remember that the United States has a veto right (Kruger, Lavigne, & McKay, 2016) and the U.S. together with the European countries' (that use the Euro) voting powers "exceeds the corresponding voting shares" (Brandner, Grech, & Paterson, 2009, p. 24).

The methodology we use in this paper is explanatory. As observed in the state of the art, there are no structural adjustment policy studies for a fully dollarized economy. Therefore, this article is based on the context in which the agreement was made. It is explanatory in terms of the content of the agreement in how it reveals these policies influence on structural changes.

In addition, this article uses a mixed approach through the collection and analysis of the agreement's qualitative information as well as interviews and editorials to examine its origins in foreign policy and justification discourses. In the quantitative section, it uses macroeconomic information mainly from the Central Bank

of Ecuador, as well as the tables presented in the agreement, to infer the effects of structural adjustment policies in the monetary, financial, external, fiscal, labour, and real sectors.

SCOPE OF THE AGREEMENT, DISCUSSION OF THE ORIGINS, AND PRINCIPAL JUSTIFICATIONS

Beginning in 2015, a number of analysts and media outlets began to promote the idea of the urgent and indispensable need for an agreement with the IMF;[1] the government of the time also opened the door when it allowed the IMF to evaluate the economy (IMF, 2015). At the time, it was stated categorically that this was the way public sector indebtedness could be improved, and that accepting the Fund's conditions was essential due to economic policy mistakes made during the past ten years.

After four years of negotiating and a change of government, we returned to the style of economic policy dominant during the so-called lost decade, 1990-2000, when the country faced the most important crisis of the twentieth century (Martinez, 2006). The government talked about and promoted the benefits of returning to an orthodox economic policy, one based on the benefits provided by the backing of the multilateral organizations, until quite recently.

Scope of the Agreement

Given the discourse, it might have been imagined that the country would receive an amount of resources at least proportional to those initially requested by Argentina.

Table 1 displays a comparison of the two agreements, the Argentinian Stand By and the Ecuadorian Extended Fund Facility Arrangement or Extended Fund Arrangement (EFA).

Table 1.
Scope of the Argentinian and Ecuadorian Agreements (in billions of U.S. dollars, as a Percentage of GDP and a Percentage of the IMF Quota)

	Argentina	**Ecuador**
Scope of agreement with IMF	57	4.2
GDP for year of Agreement	518.1	106.3
Percentage of GDP	**11**	**4**
Percentage of the quota with the IMF	1,277	435

Elaboration: Authors.
Source: Dujovne and Sandleris (2018), IMF (2019b), Martínez and Artola (2019).

[1] On Monday, January 4, 2016, the main editorial of the national daily *El Comercio* read the following: "These agreements, qualified as submissive, have been a way of 'doing our economics homework well'…" (authors' translation).

In fact, Ecuador received a little more than a third of the Argentinian loan. If it had obtained a similar percentage of its IMF quota, the EFA would have provided USD 11 billion. However, to justify the smaller amount, the EFA was disseminated together with the loan quotas from other multilaterals (Table 2).

Table 2.
Financial Scope of the Agreement (in millions of U.S. dollars)

Multilateral Organization	Amount	Increase in amount
International Monetary Fund	4,209	3,845
World Bank	1,744	1,190
Interamerican Development Bank — IDB	1,717	601
CAF – Latin American Development Bank	1,800	450
European Investment Bank	379	-
Latin American Reserve Fund	280	-
French Development Agency	150	-
Total	**10,279**	**6,086**

Elaboration: Authors.
Source: Finanzas and Gobierno, 2019 (p. 12).

It is worth noting that the real increase in the quota of the other multilaterals is USD 2,241 million, as the remaining amount is simply the renewal of existing credits, except the USD 364 million IMF emergency loan made after the 2016 earthquake (Grigoli & IMF, 2016).

It is also important to take into account that the funds provided by the EFA (USD 4,209 million) will be received over three years, and are equivalent to 1.35% of the country's estimated GDP for 2019.

One of the present regime's major criticisms of its predecessor was related to the methodology, consolidated or aggregated, used to calculate the debt. During the last few years of its mandate, the previous Government used the consolidated methodology in order to avoid falling foul of legal provisions requiring public debt to not exceed 40% of the GDP. The current government, however, has repeatedly claimed that Ecuador maintained a level of indebtedness close to 60% of GDP although this was based on an aggregated analysis.

In April 2019, the Ministry of Economy and Finance (MEF) presented their new debt calculation methodology, which was similar to the aggregated one; however, the IMF Agreement uses the consolidated methodology despite the fact that the Seventeenth Transitional Provision of the LPP established that the public debt limit of 40% of GDP does not apply for the 2018-2021 period.

The IMF's use of a consolidated methodology can be read as accommodating the government's political weakness, given that, according to IMF projections (2019a, p. 7), the limit of 40% of GDP could only be possibly reached in "2023". If the aggregate debt definition were used, the percentages would be higher and the timeline longer. This confusion in the presentation of borrowing limits and financing needs is a disguised form of accepting the use of the consolidated methodology and concealing the inability to reach the goals set by the MEF as part of the LPP.

Beyond just presenting the debt data, it is also possible to compare how much the amounts received under the EFA represent with respect to the policy measures undertaken before the EFA was signed (Table 3).

Table 3.
Agreement Compared to the Policy Measures Implemented in 2019 (in millions of USD and percentage of GDP)

	Millions of USD	**% of GDP**
Financing Needs for 2018	8,889	
Amount of Agreement for one year	1,403	1.30%
Total losses due to Law of Productive Promotion (LPP):		-1.20%
- Tax amnesty LPP 2018		-1.00%
- Tax incentives LPP 2018		-0.20%
Difference		**0.10%**

Elaboration: Authors.
Source: IMF, 2019b (p. 16, 38).

Table 3 shows that the LPP has negative implications for the 2019 fiscal year (1.2% of GDP). In other words, the money provided in one year by the EFA merely compensates for the allowances the government had provided in the previous year. For 2017, the last year on record, tax expenditures represented 4.7% of GDP (Chiliquinga & Ocampo, 2018).

With the new incentives, tax expenditures on incentives are now equivalent to 2.9% of GDP, to which should be added the reduction of 3 points in corporate income tax established by the Production Code of 2010. This reduced the rate to 22%, with a consequent impact on tax revenues of USD 300 million per year.

When comparing what has been received from the IMF against the impact of the latest approved tax measures, we can see that the agreement represents 0.1% of GDP compared to what was lost by the LPP. However, due to political considerations, the agreement had to be marketed positively. The IMF contribution was presented together with USD 2,241 million quota increases from three multilat-

eral organizations, and the credits these organizations had already provided to the country were omitted.

Origins of the Agreement

Interestingly, the negotiations that led to the agreement with the IMF coincided with a drastic change in Ecuadorian foreign policy.

To demonstrate that Ecuador was relocating its international relations policy within the "acceptable" Western Hemisphere field, at the same time as reaching out to the IMF, the Ecuadorian Foreign Ministry aligned itself with the interests of the United States. The Ecuadorian ambassador to Washington, Francisco Carrión, admitted that "We are well aware of the influence of the United States within multilateral organizations, and that has benefited our country" (Vaca, 2019).

The national government began by requesting assistance from the U.S. in anti-narcotics operations, and consequently granted permission for "observation" flights over our national territory by U.S. armed forces. Julian Assange's political asylum was then withdrawn. The operation of U.S. ships in national waters was authorized on the grounds of combating drug trafficking. The non-intervention in the internal affairs of other nations policy (a basic principle maintained for decades by Ecuadorian diplomacy) was abandoned, with consequent pronouncements on Venezuela. Ecuador moved closer towards relations with the Lima Group, while the dissolution of UNASUR was also proposed.

There is a major concurrence between the changes in foreign policy and the EFA. It can be assumed that the Government ceded to U.S. demands as part of a different foreign policy from the previous government's one, the purpose of which was to obtain the support needed. In the words of the aforementioned Ambassador Carrion, "countries function according to their interests" (Vaca, 2019), which have a *quid pro quo* logic.

The withdrawal of Julian Assange's political asylum, who was lodged at the Ecuadorian embassy in London, was unprecedented in International Law. The arguments used to justify it were shameful, appealing to base instincts or false alarms about the presence of Russian hackers in the country. This could only be understood as a way of obtaining support from the United States in relation to the EFA.

Assange is undoubtedly controversial, but no less controversial is the way Ecuador allowed the British police to enter its embassy, or the consequent actions of the Foreign Ministry in delivering Assange's belongings to the country requesting his extradition.[2] Carrion acknowledges that "there was informal interest on the part of some United States authorities" (Vaca, 2019).

[2] Several senior United Nations officials have raised various concerns about Assange's detention, his current situation in prison, and the fate of his belongings (EFE, 2019).

However, the EFA negotiation does not end there. The U.S is now authorised to use Baltra airport on the Galapagos Islands, which hosts refuelling facilities for the US fleet: an unthinkable act, even as part of the most submissive of bilateral relationships.

To conclude with regards to the support received, U.S. Vice President Mike Pence visited Ecuador in July of 2019, offering 'major' support for migration issues. This amounted to USD 35 million. For years Ecuador had assumed major responsibility for the displacement resulting from the armed conflict in Colombia, which had globally totalled seven million people by 2016 (Unhcr, 2018). It is worth noting that Plan Colombia was signed at the end of 1999, and, as a result, the neighbouring country received U.S. aid of approximately USD 5,000 million over five years (Veillette, 2005).

The Moreno government also withdrew from spheres of regional integration that had previously been promoted by Alianza País. The most controversial, even for Bello (2019), was the announcement that the country would leave Unasur, the headquarters of which were located in Quito, and is now in talks regarding the country's incorporation into the Pacific Alliance.

All this generated euphoria on the part of economists linked to influential groups and international organizations. However, after subtracting what was lost due to the LPP, the "support of the international community" (Finanzas & Gobierno, 2019) from the IMF amounted to only one tenth of one point of GDP, or 15.8% of the financing needs in 2018. This was much less than the tax incentives Ecuador provided, which represent fiscal sacrifices. In other words, we are content to receive nothing after handing over everything.

Debt, Country, and Risk as Justifications for the Agreement

After the electoral campaign and the assumption of control by the new government, the major issue of debate was the recurring public deficit that had assumed particular importance in the last three years of the Correa regime.

A discourse was constructed, and widely disseminated by the official and private media, regarding the unworkable nature of the public sector. Its role in the economy was seriously questioned.

One of the central elements in the construction of the discourse was the amount of public sector debt. According to those narrators, it had exceeded the legal limit of 40% of GDP that was stipulated in the Public Planning and Finance Code. The result was not only a legal problem, but also represented possible problems relating to fiscal sustainability.

At a press conference on March 14, 2018, the acting State Comptroller General, referred to a report written by the institution over which he presided, that indicated that the ratio of debt to GDP had reached 52.54% between 2012 and May 2017, thus exceeding the limit of legal indebtedness (Comptroller General, 2018). A few

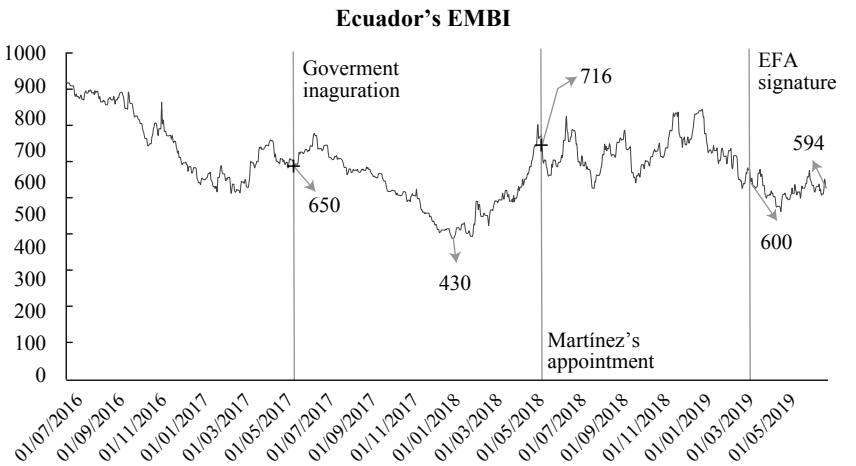
months later, the current Minister of Economy, Richard Martínez, was even more pessimistic when he stated that the amount was USD 58,980 million, or 57% of GDP, adding that: "Citizens need to know how their resources are being managed" (Reuters, 2018).

The surprise came a few months later when the agreement with the IMF was announced. Without so much as a blush, the national government and its control agencies accepted the multilateral agency's version, which showed a public debt to GDP ratio of 44.6% (IMF, 2019b). This was close to 13 percentage points less than what was publicly stated by the Minister of the Economy, who was signatory to the agreement. That value also included debt assumed during the Moreno government, which, between May and December, increased debt stock by 2.4% of GDP (BCE, 2019c).

One could be excused for asking who was exaggerating or who was underestimating the amount of debt, and for what reason? Whatever the answer, the way these events unfolded exposes the use of measurable issues for constructing political discourse. If the principle of transparency that Minister Martínez apparently defends is not evident in this case, what credibility can the word of government spokespeople have with regard to other aspects of the economy, such as the necessary scope of fiscal adjustment, or the situation of public companies? The same questions are pertinent with respect to the Comptroller General of the State and the economic analysts who joined in the chorus of political pronouncements.

It would be useful to look at the country risk indicator in order to see Ecuador's position in capital markets when it was planning to contract external debt (Graph 1).

Graph 1.
Evolution of the Emerging Market Bond Indicator for Ecuador - EMBI (in points)



Elaboration: Authors.
Source: BCE (2019b).

The country risk at the time the Moreno government assumed power was approximately 650 basis points, and this subsequently fell to 430 during Carlos de la Torre's tenure as Minister of Economy, although it rebounded when he left on March 6, 2018. María Elsa Viteri's time as Minister was very short and led to an increase in the indicator, while during Richard Martínez's time, who announced his desire to sign an agreement with the IMF, there has been no reduction in the external perception of risk.

The signing of the Letter of Intent (LOI) with the IMF led to a fall in the country risk for a very short period, without this translating into improved credit conditions. Based on calls for an agreement with the IMF, it had been assumed that the mere fact of resorting to that institution would mean improving financing conditions (Marchesi, 2003), but so far this has not been the case for Ecuador.

On June 10, 2019, with the signed EFA, the government carried out a 2015-2020 Bond repurchasing operation. The reduction in the amount of the debt was USD 50.4 million in bonds listed above 100% of their nominal value. This amount is minimal compared to what is being paid in excess for the bonds at 10.75% coupon rate, issued in January 2019: at least USD 9 million, or USD 90 million over ten years. They have postponed the rest of the capital payment to 2029, i.e. USD 1,125 million, while in the following year USD 324.6 million will have to be spent on capital that was not repurchased.

If the country risk decreases, the interest on debt is also supposed to fall, but this did not happen. The average rate of the 2020 bonds was 9.5%. It is now 9.85% with a lower country risk, and the debt service will now last until 2029 (King, 2019).

It was a deceptive, unsuccessful, and finally detrimental operation, and although the LOI with the Fund is a type of guarantee for the bond buyers, which according to the government reduces the country risk, this has not translated into an improvement in financial conditions.

In other words, the economy was presented to be the core of the problem, and it became part of a submissive discourse that served the political needs of the government in the internal sphere. This is not exactly rare in current times and in international politics.

SECTORIAL ANALYSIS OF THE COMMITMENTS OF THE EFA

The following subsection presents an analysis of Ecuador's commitments in four sectors that are part of the EFA (monetary-financial-banking, external, fiscal-taxation and real-labour) in order to evaluate the direction of the policies established and their possible effects.

Monetary – Financial – Banking

The fundamental requirement introduced by the EFA in this sector is the independence of the Central Bank of Ecuador (CBE), something initially envisaged for the end of May 2019.

Yet modifying the independence of the Central Bank makes little sense in a fully dollarized economic system, given that the country does not issue money. The Central Bank only circulates a limited amount of tokens, which are fractions of a dollar placed in the hands of the public to prevent prices from having a dollar as the minimum reference. The other important functions of the CBE include acting as a repository for public sector funds and national reserves or bank reserves. And although almost 20 years have passed since dollarization, the CBE also has assets of various kinds –financial and non-financial– resulting from the 1999 banking crisis.

The independence of the ECB, a topic widely discussed during the 1990s (see for example, Alesina & Summers, 1993), is part of the neoclassical logic that assumes that in order to contain inflation, stabilize prices and promote growth, the CBE must decide on monetary policy independently of the government. The objective of this approach is to ensure that the executive exerts no influence over monetary, financial, and credit policy.

An analysis of the EFA shows that with an independent CBE a new State-Banking sector relationship will be constructed, which appears to be characterized by having the State watch over the private banking system based on the argument of possible systemic risk. The financial system is unstable by nature, so granting independence to the CBE would not change this, but it could open the doors for banks, especially the largest, to regulate themselves, which was what happened in the United States in 2008 (Hudson, 2018) or during the 1999 crisis in Ecuador (Salgado, 2000).

In addition to this obligation, the EFA stipulated the following requirements. Their objective was to consolidate the position of the private banks in the financial market:

- Eliminate the possibility that a portion of the liquidity be injected into the economy through public banks and the National Corporation of Popular and Solidarity Finances (CONAFIPS). CONAFIPS operates as a second-floor public bank, whose clients are credit unions, mutual funds, savings, and community banks. In this way, financing alternatives are limited by excluding public banks and cooperatives (except for exporters) from receiving excess liquidity resources.
- Eliminate the ceiling on interest rates. This will make it likely that these will increase; thus, the cost of investment and consumption projects will also increase, and, in turn, increase the probability of a deeper and longer recession, especially considering the multiplier effects of investment.
- Eliminate the domestic liquidity coefficient (DLC) that establishes 60% of the banks' liquidity must be lodged within the country (Resolution 028-

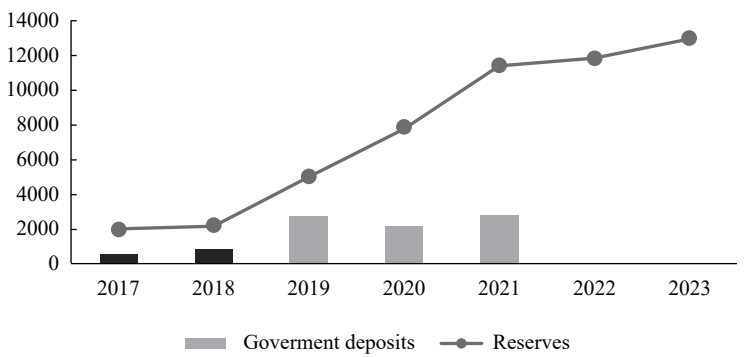
2012); this will facilitate capital flight and weaken the domestic monetary system. Ocampo (2015) considers that an administrative regulation is preferable to price regulation. In the LOI, currency exit tax is reduced and the domestic liquidity coefficient (administrative regulation) is eliminated.

With regards to financial resilience, reference is made to capital requirements and other regulations from Basel 3; these could potentially affect credit unions by allowing private banks to expand their market share and, in the worst-case scenario, to even absorb credit unions.

In addition to the above, the major economic policy change that could result from the creation of an independent Central Bank is the accumulation of international reserves, as foreseen by the EFA. The importance of this lies in the effects the measure would have on a fully dollarized economy.

Although there is no consensus (De la Torre, 2019 and Villalba, 2019 have an opposite view), we argue that in a dollarized economy it is not necessary for the Central Bank to hold international reserves in order to guarantee the exchange of goods and services with other countries. While people, businesses, government, and financial system entities use the U.S. dollar as a currency, international reserves are superfluous as they exist primarily to convert national currency into foreign currency.

Graph 2.
International Reserves and Government Deposits, Present and Projected (millions of USD)



Elaboration: Authors.
Source: IMF, 2019b (p. 13).

However, in the EFA agreement, Ecuador has committed itself to substantially increasing international reserves, and the CBE will be the custodian. As is well known, international reserves or freely available international reserves, as they are commonly known in Ecuador, are made up of public sector deposits and bank reserves.

The IMF demands that these international reserves either more than double between 2018 and 2019 or maintain a significant rate of accumulation until reaching approximately USD 12,000 million. This resource accumulation plan has profound implications for fiscal and monetary policy, and contradicts the need for less external indebtedness.

First, and as previously mentioned, there are two major sources available to achieve this accumulation of resources: non-financial public sector deposits and bank reserves or reserve requirements. The EFA (IMF, 2019b) establishes that most of the variation or growth in international reserves will come from the accumulation of resources by the central government: USD 7,647 million between 2019 and 2021. This implies creating collateral for the debt programmed with multilateral organizations that is equivalent to 74.4% of the loans provided. The ability to finance the estimated budget is, therefore, severely limited and therein lays the need to spend, sell state businesses, and contract more debt. In other words, Ecuador is facing a perverse plan focused on weakening the public sector by granting independence to the CBE and giving it the capacity to sterilize a large amount of resources. Second, the agreement will also have repercussions on the money supply. As we know, in a fully dollarized economy such as that of Ecuador, the money supply is largely endogenous, depending on the outcome of all external operations. It follows that the main exogenous element available to increase the amount of money is repatriation of capital or government and private sector external borrowing. If the role of the CBE within the EFA is to sterilize a significant amount of public sector resources, it can be concluded that the IMF has found a way to create a typical structural adjustment programme by contracting the money supply through the retention of public sector funds. Comparing the sum of on demand and quasi-money deposits as of June 2019 (BCE, 2019a),[3] the accumulation of funds in international reserves for that year is equivalent to 7.1%.

Why diminish the money supply in this way? In light of what has been said, and given that the country does not have an inflation problem associated with public spending, the most plausible answer is to suffocate the public sector and ensure the destruction of the type of society that was promoted in the 2008 Constitution. Moreover, in the last few years, the presence of significant fiscal deficits accompanied by a reduction in inflation have been observed. We can then return to one of this research's conclusions: that the IMF and governmental economic authorities' diagnoses are biased and have a mediocre understanding of the macroeconomic functioning of a fully dollarized economy.

[3] This comparison is made because, in a dollarized economy, the amount of money in circulation is unknown despite the ECB making estimates that could reach USD 15,845 million dollars (BCE, 2019a) in same month. In addition to that calculation, the accumulation of international reserves implies a contraction of 5% of total liquidity. However, if the monetary base variable is considered for the calculation (made up of the sum of the estimate of the types of money in circulation, fractional currency, bank reserves, ECB cash, and financial system entities), the contraction could be 12.2%.

It is also possible, however, that the accumulation of reserves is intended to mitigate the effects of a possible banking crisis, given that the recession induced by the EFA will be difficult for some financial institutions.[4] If this is true, the State-Banking relationship indicated at the beginning of this section could be more fully understood.

There is no doubt that a collateral effect of the policy will lead to a significant reduction in imports and a fall in the trade deficit. A surplus could, therefore, be achieved in the external sector, which is something that would expand the money supply, but at the cost of a tremendous recession.

External

In this section, the aim is to gradually eliminate the currency exit tax (CET) that is applied on currency that leaves the country and currency from exports that are not repatriated (Echeverría Villafuerte, 2018). According to the LPP, this tax does not apply to new investments, which could encourage the return of some capital flight, and would be a gift for those who do not comply with fiscal obligations by keeping resources abroad.

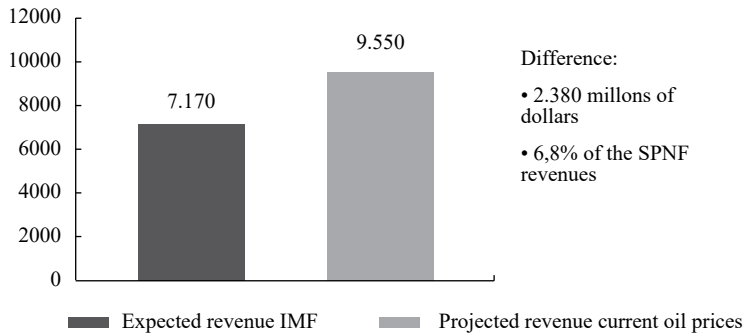
With this measure, it is quite likely that capital flight, a chronic problem in Ecuador, will be further encouraged. Together with the accumulation of international reserves, this could lead to a monetary contraction so severe that the recession and consequent destruction of employment and the fabric of business would entail a serious setback for the country.

Financial Action Task Force (FATF) rules, such as anti-corruption legislation, are to be promoted at the end of September 2019. However, in relation to the country's needs, the legislation largely amounts to saluting the flag, as it does not deal with tax evasion and avoidance through commercial operations: one of the economy's fundamental problems. Within the country, 70% of imports have unit prices of less than one dollar, which provides strong indications of a weak customs system: one that encourages undervaluation as a way of paying less tax. Importers want no safeguards at all, and to be able to bring in whatever they like. Abusive transfer pricing is also used in exports and for currencies that are not repatriated. Hong, Cabrini, and Simon (2014) find that the undervaluation of Ecuadorian banana exports to the United States over a period of ten years represented 82% of the fiscal deficit accumulated between 2000 and 2009.

The assumptions about the external sector's performance are based on the trajectory of oil exports, as this occupies first place in external sales and, in addition, is an important source of fiscal revenue. Surprisingly, the IMF assumes that in 2019

[4] The Liquidity Fund constituted by the Ecuadorian financial system (not counting credit unions), amounted to USD 2.7 billion in July 2019. For its part, the Deposit Insurance Fund has accumulated USD 2.08 billion. More information is available at the following link: https://www.cosede.gob.ec/publicaciones-estadisticas-pem/#ac_844_collapse1

Graph 3.
Oil Revenues of the Non-Financial Public Sector, Expected by the IMF and Projected at Current Prices (in millions of USD)



Elaboration: Authors.
Source: IMF, 2019c (p. 13).

the average price per barrel will be USD 47.8. This is a reduction of 21% compared to the previous year, and is a price that implies maintaining both the value of exports and the fiscal income when, in fact, a 15% increase in export volumes is expected due to the incorporation of production from the Yasuní protected area.

If this case is analysed using the average price between January and June 2019 of USD 57.05 dollars per barrel, it is likely that the non-financial public sector oil revenues will be 6.8% higher than estimated – some 2,380 million dollars: a figure that almost doubles the annual IMF disbursement. Likewise, the external deficit estimated by the Fund will fall. According to the EFA, oil exports will fall by 8.7%, which is equivalent to 765 million dollars, despite the fact that up to June this year exports have grown by 3.7% due to a 9% increase in the amount of oil sold (BCE, 2019a).

Fiscal – Taxation

The Ecuadorian Constitution guarantees rights, and tax collection must, therefore, finance the provision of social services, regardless of whether we use them or not. The General State Budget has increased in recent years with respect to GDP, as the State now has the obligation to provide health, education, social security, housing and infrastructure to the entire population.[5]

However, as was previously mentioned, public sector financing became part of an alarmist strategy. When it was incessantly repeated that the fiscal issue was the big

[5] It is known that studies are needed to determine if it is possible to find mechanisms for spending less by providing the same services, and even improving them, and expanding coverage in line with the Constitution.

problem, what in reality was being questioned was the type of society the Constitution should protect.

The objective is clearly to present austerity and taxation as a strictly "technical" issue. Adjustment was inevitable, something for which there is no alternative, and, as a result, privatizations could be easily sold. However, privatization only finances temporarily the fiscal deficit but does not reduces it and is detrimental to comprehensive coverage of social services, unless the government establishes a regulatory institution that has sufficient power to control the provision and quality of concessioned public services (Kikeri & Nellis, 2004). However, this has not been discussed.

Together with privatizations, a strategy inherited from the previous government that has been extended by the current one, the aim is to generate more income by exploiting natural resources: a sector that is used as an adjustment variable (Samaniego, Vallejo, & Martínez-Alier, 2017) rather than establishing a more equitable and redistributive tax system. The EFA insists on a tax reform (by the end of August 2019) based on indirect rather than direct taxes, explicitly contradicting Article 300 in the Constitution (Asamblea, 2008), which establishes that the tax regime will prioritize direct and progressive taxes. Such a decision will have recessive (Carrillo, 2015) and inflationary effects, and will lead to a poorer distribution of income, explicitly contradicting the supposed benefits of the programme developed in Washington as well as the explicit principles of the "Prosperity Plan" (Finanzas & Gobierno, 2019). This is the misleading name given by the government to the set of policies contained in the EFA.

Despite government and IMF rhetoric, there is another way to finance the budget without these types of damaging and inequitable policies. Using measures including the control of import sub-invoicing, export transfer prices, a progressive income tax, the expansion of tax controls in all orders, and an adequate projection of oil revenues, the financing needed to sustain public spending in accordance with the constitutional principles would be much less, and much more manageable. It would, consequently, be unnecessary to ask an international organization to design a recession using fiscal, monetary, and financial policy.

Real Sector and Labour Market

The labour reforms are part of the neoclassical logic which affirms that in order to increase growth, it is necessary to boost supply through structural "labour market reform" (IMF, 2019b, p. 76). As a result, the authorities have included tax expenditures as tax incentives that do not guarantee the creation of more jobs, and, in terms of growth, have even been questioned by the Fund itself (Orozco, 2019).

Reducing labour rights in the public sector will be achieved by laying off workers and offering new contracts with lower salaries, a process that is already under way. Public officials' salaries are being questioned to match those in the private sector.

This idea is based on a flawed analysis, given that a large number of public sector employees have a higher level of education than workers in the private sector, which would explain the difference in light of the neoclassical theory of human capital (Psacharopoulos & Patrinos, 2004). In other words, the plan is to compare doctors, nurses, teachers, etc., with workers in the private sector. While in the public sector 73% of employees have university education, the figure is 48% in the private sector according to the Enemdhu in December 2018 (Inec, 2018).

The labour reform legislation has not yet been tabled and could include an increase in probationary periods as well as the facilitation of dismissal. The reform could also include instruments that would make workers' employment situation more precarious, in contrast to the subsidies or tax benefits that capital receives. The latter could even provide an incentive for companies to declare themselves bankrupt without assuming their worker liabilities, which would then return as new investment, even as 'foreign' investment.

The promotion and consolidation of privatizations will also involve an increase in public service tariffs, a tactic that failed when an attempt was made to increase the public electricity rate and some consumers bills rose. Such increases will clearly affect the household purchasing power and reduce overall demand in the economy, thus further aggravating the recessive cycle.

Finally, it is repeatdly heard in the labour sphere that the social security system is broken, and voices are speaking in favour of instituting individual accounts: something that will only weaken the solidarity of the current distribution system.

IMPLICATIONS OF THE EFA FOR STRUCTURAL CHANGE AND FINANCING IN A FULLY DOLLARIZED ECONOMY

With the adoption of the EFA as the principal economic policy instrument, and in the absence of a programme or strategy to change the productive structure (King & Samaniego, 2019), the other major economic imbalance not dealt with is the external sector trade deficit.

In the 2007-17 presidential period, the various versions of the National Development Plan all had the revitalization of the productive sectors as their principal objective, and moving from an economy based on the extraction of natural resources to one in which goods with high-value-added content were produced as a priority. Despite the limited results, there was an effort to reflect on and design policies and to point out the difficulties.

What we wish to highlight in referring to these public policy instruments, is that in the current period of government not only are free trade agreements privileged as the only strategy, but also that planning has been completely abandoned.

What we have witnessed is a regression, a fundamental setback due to the fact that 'macroeconomic stability' is now considered to be equivalent to the control of public spending: i.e. the mechanism necessary for the proper functioning of the other sectors of the economy. Stated another way, as part of the policy of transferring economic planning to the IMF, the notion that the best industrialization policy is the lack of one, has once again become current, which Grabel (2011) has also pointed out.

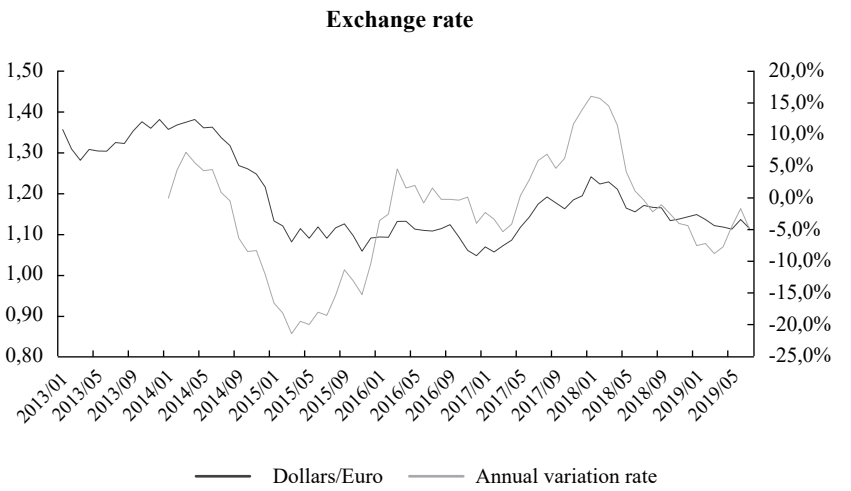
Consequently, the only concrete action, in terms of production and investment, has been the LPP. Through this legal instrument, exemptions from the original legislation were increased, and, as noted above, tax expense was extended, and interest payments and fines for tax debtors were forgiven. In other words, at a time when the economic authorities were arguing that the main problem for the country's economy was the fiscal deficit, public revenues were actually being reduced.

The other mechanism to promote production is the deterioration of the conditions of employment, the so-called flexibility, which is also indicated in the EFA as being necessary for promoting future growth. With the government's complicity, the EFA has, therefore, obliged the country to adopt the demands of business sectors that have been talking about the need to increase productivity since dollarization was introduced. After almost 20 years, these sectors are once again speaking of labour costs as the main, almost exclusive cause of the competitiveness problems faced by country's exports, and of the increasingly difficult task of competing with imported products in the local market.

The U.S. dollar has gone through a phase of appreciation since the collapse of primary product prices during the last months of 2014, and there has been a clear phase of depreciation between May 2017 and May 2018. As a consequence, the real Ecuadorian exchange rate suffered the same fate, that is, it gained in value, and exports subsequently became more expensive while imports fell in price. If wages become the adjustment variable for changes in the nominal and/or real exchange rate, as the EFA intends, then the economy is clearly not viable as this implies that domestic consumption will be as volatile as the exchange rate. It is therefore necessary to confront the problem and design a production policy appropriate for dealing with these external shocks, which are compounded by the fact that the country does not have its own currency.

In this context, it is clear that production policy will be exclusively based on the fiscal balance. While the possible signing of more trade agreements could have some impact on foreign direct investment, these would further hinder the competitiveness of domestic production: the entry of cheaper imports in a scenario of domestic demand, compressed by the economic policy contained in the EFA, will make the reactivation of productive activity impossible. The adopted decisions are clearly aligned with the powerful importing sectors' demands that consider these the only way to reactivate the economy.

Graph 4.
Evolution of the Price of the U.S. Dollar Against the Euro (in dollars per euro and percentage of variation)



Elaboration: Authors.
Source: BCE, 2019a, Monthly Statistical information.

Another implication of the EFA for financing a structural production change strategy is related to the small fiscal space it provides for any future policy of change. The EFA could, therefore, be understood as a way to guarantee both resources for the payment of bondholders and liquid resources in case there are problems in the financial system deriving from the application of the policies set forth in the previous section.

As part of the discussion about which debt methodology to use, and above and beyond the political implications of each one, it is important to note that a consolidated debt definition implies differential treatment of internal debt related to social security (King, 2015). While this could naively be understood as a way to meet the maximum debt ceiling or portray lower amounts of debt, in practice it generates a distortion in savings. If the external debt is guaranteed and the internal debt is not, capital holders will withdraw resources and lend them from abroad, an operation known as 'capital roundtripping' (Beja, 2005). This is even clearer when the debt holders are the banks themselves.

If the LOI with the IMF, the country risk, and what is mentioned above regarding the public sector external debt are taken together, it can be seen that these could provide fertile ground for collusion. On the one hand, a smaller amount of debt is acknowledged, which should have led the markets to provide Ecuador with less punishing credits, and, on the other, the signing of the LOI should have acted in

the same way, as it is assumed that the multilateral agency will monitor the payment of new emissions to reduce public sector spending and the accumulation of reserves in the ECB.

The debt re-profiling operation increases the payment of interest over time, and signals a lack of direction in economic policy, clearly benefitting bondholders.

CONCLUSIONS

Despite the efforts made by the Ecuadorian government to integrate the country into traditional international financial circuits, it has received very little for its efforts in relative terms, compared, for example, to Argentina. Likewise, despite signing the EFA, the issuing of new bonds has not involved a reduction in interest. This could indicate that the external sector's problems, the country's most problematic economic imbalances, are not considered by the EFA in any way. As a result, neither the country risk nor bond interest has been reduced, as was announced by the IMF's *pro bono* advocates in Ecuador before the agreement was signed.

It seems that Ecuador has been obliged to align its international policy with the interests of the U.S., and completely abandoning its historical independence in the process. As the Ambassador of Ecuador in the United States has said, the influence that country has on multilateral organizations is extremely important.

If that is serious, more so is the path taken as a result of commitments assumed in the EFA. If stabilization funds were created after the 1999 economic crisis, in reality their purpose was to establish collateral for the payment of the external debt (Suárez, 2003). This time, an effort has been made to confuse public opinion with a project for the independence of the Ecuadorian Central Bank, whose main objective is to establish reserves or maintain a disproportionate amount of deposits in relation to the economy, perhaps with the purpose of anticipating problems in the financial system associated with the economic slowdown and the already-mentioned problems in the external sector. The creation of this new fund to guarantee payment of the external debt will be at the cost of sterilizing the resources provided by the international financial organizations. In addition to the effects such a policy will have on public spending, which will be stifled, there will be a significant monetary contraction, implying an exceedingly stern test for the viability of the dollarization.

Without doubt, another serious effect is the flexibility of the labour market. The precariousness of working conditions will multiply the hours dedicated to unpaid work within the lower middle class and for the most vulnerable and poorest households. This is work carried out mainly by women, as can be concluded from the analysis that feminist economics makes up the care economy (Rodríguez, 2015). In the same vein, while an adjustment to the public sector has been proposed, another major 'adjustment' will be applied to environmental systems, as the extraction of

more natural resources in order to export metallic minerals and petroleum is to partially circumvent the appreciation of the exchange rate and the lack of competitiveness of a fully dollarized economy.

The central theme of the EFA appears to be the asphyxiation of government and the possible deterioration of the services provided by both public sector companies and entities. The current government, together with the opposition to the previous administration and the help of almost the entire media, continues to assert, repeatedly, that the only problem with the Ecuadorian economy is excessive public sector expenditure. While there are many alternative ways to reduce this, the most important and fundamental aspect of the present economic plan is that it will lead to a restriction of access to the rights enshrined in the Constitution, which are tightly focused on the notion on a holistic view of human wellbeing (Max-Neef, 1993; Sen, 2000).

The LPP reduces tax burdens at a time of shortages, and, together with other projects designed to reduce labour costs, will leave some businessmen as the reforms' major beneficiaries. What seems to have been forgotten is that what is beneficial for everyone is an internal market with adequate purchasing power and a growing economy, not the macroeconomics of recession that the government and the IMF seem to have in mind.

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PAPER

STRUCTURAL CHANGE AND FINANCIAL FRAGILITY IN THE COLOMBIAN BUSINESS SECTOR: A POST KEYNESIAN APPROACH

Gonzalo Cómbita Mora

Cómbita Mora, G. (2020). Structural change and financial fragility in the Colombian business sector: A post Keynesian approach. *Cuadernos de Economía, 39*(80), 567-594.

This paper aims to establish the theoretical and empirical link between structural change and financial fragility based on the theories of Thirllwall's Law and Minsky's financial instability. In order to do so, a descriptive and econometric panel analysis is carried out for 1846 Colombian companies during the period 1996-2015. A new indicator of financial fragility is created, and from this a relationship is established between the company's balance sheets, structural change, economic growth, the size of the firm, and the Minsky effect that measures the endogeneity of the debt cycle.

G. Cómbita Mora
Universidad de la Salle. Universidad Nacional de Colombia. Bogotá, Colombia.
E-mails: gcombitam@unal.edu.co, gcombita@unisalle.edu.co

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Cómbita Mora, G. (2020). Cambio estructural y fragilidad financiera en el sector empresarial colombiano: una aproximación poskeynesiana. *Cuadernos de Economía, 39*(80), 567-594.

Este artículo busca establecer el vínculo teórico y empírico entre el cambio estructural y la fragilidad financiera a partir de las teorías de la Ley de Thirllwall y la inestabilidad financiera de Minsky. Para ello se realiza un análisis descriptivo y econométrico de panel para 1846 empresas colombianas durante el periodo 1996-2015. Se construye un novedoso indicador de fragilidad financiera y desde allí se establece una relación entre los balances de la empresa, el cambio estructural, el crecimiento económico, el tamaño de la firma y el efecto Minsky que mide la endogeneidad del ciclo a la deuda.

Palabras clave: fragilidad financiera; datos panel; teoría poskeynesiana; cambio estructural.
JEL: B26; C23; E12; L16.

Cómbita Mora, G. (2020). Mudança estrutural e fragilidade financeira no setor empresarial colombiano: uma aproximação poskeynesiana. *Cuadernos de Economía, 39*(80), 567-594.

Este artigo procura estabelecer o vínculo teórico e empírico entre a mudança cambio estrutural e a fragilidade financeira a partir das teorias da Lei de Thirllwall e a instabilidade financeira de Minsky. Para isso se realiza uma análise descritiva e econométrica de painel para 1846 empresas colombianas durante o período de 1996-2015. Se constrói um novo indicador de fragilidade financeira e a partir daí se estabelece uma relação entre os balances da empresa, a mudança estrutural, o crescimento econômico, o tamanho da firma e o efeito Minsky que mede a endogeneidade do ciclo à dívida.

Palavras-chave: fragilidade financeira; dados painel; teoria poskeynesiana; mudança estrutural.
JEL: B26; C23; E12; L16.

INTRODUCTION

One of the most important chapters of the Colombian economy was the implementation of the market reforms in the nineties, which for some people sharpened, and for others, initiated a process of productive structural change based on a hypertrophy of the mining and energy sectors which, in turn, meant a decline in the agriculture and industry sectors, causing a noticeable loss in the ability to create jobs.

The speculative growth model based on external booms resulted in one of the worst economic crises in the country at the end of the last century, causing a scenario where several economic agents became financially fragile. Therefore, this document aims to observe if there is a direct connection between the phenomena of structural change and corporate financial fragility in Colombia.

The work empirically consists of two phases; one carries out a descriptive analysis where the value of the Thirlwall Law for the Colombian economy is estimated, and, the other, creates a Minsky-Foley financial fragility index for 1846 Colombian companies which report data to the SIREM database of the Superintendencia de Sociedades.

The index is analysed in order to find the general average of the sample and five macroeconomic sectors that are considered, from a review of the literature, to be the winners and losers of the reforms of the 1990s. The results are then preliminarily put together in a scatter plot in order to be able to make a conjecture about the connection between structural change and financial fragility. Based on the creation of the financial fragility index, several econometric models suitable for a short unbalanced data panel are estimated. The best model used for the entire sample and for nine productive sectors was that of fixed effects adjusted for robust errors.

In these models, the financial fragility indicator is taken as a dependent variable in accordance with macroeconomic variables of structural change and economic activity, and other financial microeconomics such as the Minsky effect, which is inspired by the second theorem of the financial instability hypothesis of Minsky (1992), where he mentions that during periods of prosperity the economy moves from stable financial relationships to more unstable ones due to greater indebtedness.

Several interesting results stand out. Firstly, two phenomena are theoretically and empirically connected which are rarely explained together in both orthodox and heterodox approaches. Secondly, Thirlwall's Law is estimated by finding four phases of structural change in the Colombian economy since 1990, and a new Minskian financial fragility indicator is developed. Thirdly, it shows how macroeconomic phenomena affect microeconomic variables, such as the financial fragility of each company. And in general, it is found that long-term Colombian economic growth has speculative characteristics because it is based on sudden external booms that end up impacting the financial balances of the agents.

The document has four main sections. The first is the background, the second is the theoretical framework, the third is the descriptive analysis for financial fragility and structural change, and the last is the econometric analysis of the data panel.

BACKGROUND

The academic efforts made to link structural change (SC) and financial fragility (FF) in Colombia have been few and far between; on the contrary, the issues have been approached separately, which is partly explained by the dominant theoretical position, the neoclassical view, which considers currency, debt and financing neutral with respect to real variables. But from the heterodox views, such as post Keynesian, structuralist, or French Regulation School approaches, the SC and the FF are rarely linked.

In this document the previous academic works in Colombia are reviewed and grouped together under the categories SC and FF from heterodox and neoclassical (orthodox) approaches in Table 1, which organizes horizontally the specialization of the work consulted in SC and FF. On the contrary, if we advance to intermediate positions, an interest in mixing the two topics is evidenced, just as the present investigation intends. Likewise, the inclination of the analysed work is presented vertically to neoclassical or heterodox positions.

Table 1.
Bibliographic review of structural change and financial fragility in Colombia

<table>
<tr><th></th><th colspan="2">(+) Structural change</th><th colspan="2">Financial fragility (+)</th></tr>
<tr><td rowspan="3">Heterodox (+)</td><td colspan="2">Moncayo, 2011; Moreno, 2008; Pérez Fuentes & Ahumada Lagares, 2015; Syrquin, 1987; Zerda, 2016 (Leon, 2002; Misas, 2016, 2019; Moreno, 2017);
Ocampo (2007)</td><td colspan="2">(Botta, Godin, & Missaglia, 2014, 2015; Flóres, 2001; Garcia, 2002; Goda & Torres, 2013; Misas, 2016; Sarmiento, 2014)
Melo (2012), Castro (2010), Moreno y Rodríguez (2011), Pardo (2005)</td></tr>
<tr><td colspan="4">Sarmiento (2002,2013, 2014, 2015a, 2015b 2016)</td></tr>
<tr><td colspan="2">Clavijo, Vera y Fandiño (2012), Echavarria y Villamizar (2006), (Vileikis, 2013)</td><td>Goda y Torres (2013, 2015)</td><td>Gomez, Silva, Restrepo and Salazar (2012)</td></tr>
<tr><td>Orthodox (+)</td><td colspan="4"></td></tr>
</table>

Source: Self-made.

Beginning with the selection of works studied by SC in Colombia, four different positions were found. The first is the orthodox explanation in which this process is approached as a natural force led by the free market, and explained from a microeconomic vision of static allocation of resources through factorial and sectoral substitution, also financed through loanable funds. This approach is represented

by Echavarria and Villamizar (2006), Clavijo et al. (2012), Vileikis (2013), and Gómez and González (2017) who appear in Table 1 on the bottom left, given that they focus on explaning the SC from an exclusively orthodoxy point of view without linking monetary and financial factors.

The second derives from heterodox approaches to demand, such as (Kaldorian) Moncayo (2011); Moreno (2008), who mention the presence of a regressive SC in Colombia, that is, with negative consequences on factors such as the incentive to sectors with high productive sophistication, job creation, economic growth, and income distribution. This particular approach considers that it has worsened with the market reforms of the nineties in aspects such as currency and financial markets, the labour market, commercial and financial openness, social security systems, and in general reforms of the forms of the State (García , 2002; Misas, 2016). Some of the work in this field include Syrquin (1987); Moreno (2008); Moncayo (2011); Pérez and Ahumada (2015); Zerda (2016). These authors are located in the upper left corner of Table 1 given their specialization in sources and consequences of the SC.

The third position considers the SC as a political process in which the social class conflict and its interests are objectively manifested. Thus, the SC shows the history of exclusion from the Colombian accumulation model, led by productive and income extractivism, and managed by allied elites, while sometimes, taking into account foreign interests. This never allowed for the consolidation of an internal mass market, nor the possibility of resolving the conflict through democratic channels. From this point of view, there are investigations such as those from Leon (2002); Misas (2016, 2019); Moreno (2017). These authors are distributed differently from the previous ones in the Table1 because, although, Leon (2002) only addresses SC explanations from multidisciplinary (heterodox) approaches and is located in the upper left corner of the table, the other authors indirectly address monetary factors in their SC explanations as income distribution.

The fourth position reflects the idea of the dominance of the balance of payments; in this vision we have Flóres (2001); García (2002); Goda and Torres (2013); Botta et al. (2014, 2015); Sarmiento (2014) and Misas (2016). They show that, after the 1990 reforms, the SC showed two periods of dependence on capital flows of the balance of payments, which impacted the exchange rate; in turn, inducing a regressive SC.

On the side of financial fragility (FF) we have two visions; one orthodox and the other alternative, and these, in turn, are divided into microeconomic and macroeconomic analyses.

From the neoclassical approach, financial fragility arises from microeconomic imperfections that result in externalities on the financial sector. The work of Gómez et al. (2012) leans toward this direction given that it seeks to look at the relationship of capital flows and financial stability. It also studies the FF based on the probability of insolvency of firms based on some financial indicators. However, this work lacks a clear theoretical approach and obeys what Bejarano (1984)

calls empirical without theory. But given that it is published in the Banco de la República, it is considered to be approved by orthodox standards; therefore, this work and the previous one are located in the upper right corner of Table 1.

The heterodox path of the study of financial fragility has been based on the post Keynesian Minskian approach that adapted the work of the Foley model (2003) to Colombia in three directions: one uses macroeconomic data to estimate the rate of profit, accumulation and financing, such as the works of Pardo (2005) and Rojas (2016). The second adaptation is done using data at a company level - Moreno and Rodriguez (2011). The third way was to theoretically improve the work of Foley (2003) by introducing changes in the Castro (2010) and Melo (2012) exchange rates. They appear in the lower right corner of Table 1 given their heterodox approach.

An additional dimension of Table 1 would show positions that have managed to reconcile the SC with the FF. For example, Sarmiento (2002, 2013, 2014, 2015a, 2015b, 2016) considers that opening the market to external trade caused a debacle in the industry as well as the agriculture sectors, together with a problem of persistent insufficient demand, which is remedied with credit to achieve full employment, but at the cost of greater financial fragility. This author appears in the centre of Table 1, slightly inclined toward heterodoxy, considering that he continues to use neoclassical tools such as the interest rate to balance the market of loanable funds and the IS-LM model.

Other works include those of Ocampo (2007) and Ocampo and Martínez (2011) which, from a neo-structuralist approach, address the relationship between SC and FF from the balance of payment movements that generate FF as a result of the external and internal credit cycle, which could be implicitly related to the SC.

Flóres (2001); García (2002); Goda and Torres (2013, 2015); Botta et al. (2014); Botta, Godin and Missaglia (2016); Botta (2017, 2018) argue that in Colombia the specialization in the exportation of commodities has caused a regressive SC produced by a real and nominal exchange rate appreciation due to a large flow of capital, which has, as a counterpart, a current account deficit due to the loss of competitiveness that destroys industry and national agriculture, added to the drainage of profits of multinationals abroad through the net factor resources account.

Therefore, this research aims to explain the connection between the SC and the FF from a Minskian microeconomic approach by creating a theoretical and empirically novel approach in order to study the case of the Colombian business sector.

RESTRICTED GROWTH DUE TO BALANCE OF PAYMENTS AND FINANCIAL INSTABILITY

A difficult problem in this section is to show the importance of studying the SC, the FF, and their interconnections, while, in turn, outlining the theoretical basis on which the explanation of the phenomenon in Colombia will be developed. The

hypothesis is that the SC, understood as the change in the composition of employment, production, sectoral and global productivity, sophistication and diversification of the productive processes of an economy (Felipe, 2012), could explain the variations in the currency flows of the agents that participate in the economic activity, while modifying the accumulation of assets, liabilities, income generation, expenses, and finance, which are the basic forces of the FF. Therefore, if a society specializes in a certain sector, it will affect the job creation capacity, the source of the demand that drives the accumulation process that could come from abroad or from the internal market, the way in which wealth is distributed, the sources of growth, as well as the incentives for investment and innovation.

The SC is relevant because it can explain key variables such as changes in the demand for work, especially the reduction of informality, economic growth, sectoral and aggregate improvements in productivity, absorption and technological diffusion, increasing returns and division of labor into different levels of aggregation and income distribution (Cimoli & Porcile, 2015; Currie, 1989; Felipe, 2012; Hartmann, Guevara, Figueroa, Aristáran, & Hidalgo, 2017; Haussman, 2011; Hidalgo, Klinger, Barabasi, & Hausmann, 2007; Young, 1928). In addition to these works, this article seeks to relate the SC and the FF.

The SC is captured through the strong version of Thirlwal's Law[1] $\varepsilon = x\ \varepsilon_{x;y^*} / \varepsilon_{m;y} = \varepsilon_p / \varepsilon_{c2}$, which is measured through the income elasticity ratio of exportation and importation; for example, an increase in the ratio would reflect a promotion of more complex sectors, allowing to penetrate more easily foreign markets, while on the other hand, it would reduce the demand for importations in favour of national production. In turn, Cimoli and Porcile (2014) relate the Thirlwall Law to the degree of diversification of the productive structure, which is observed in ε = hN, where N is the number of sectors and h is the slope that would show a positive relationship and a decrease between N and ε.

Thus, the introduction of the strong Thirlwall Law allows capturing (i.) the analysis of elasticities as a proxy of demand in the determination of the SC, (ii.) the change in the productive structure in the quotient variations, and (iii.) changes in the monetary income flows of the economy through demand elasticities. Therefore, the more diversified and homogeneous economies can take better advantage of the process of expanding economic activity and income, by capturing a greater volume of demand; in turn, bringing financial health to the balance sheets of entrepreneurs and other agents in the economy.

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[1] The entire Thirlwall Law takes into account the variations in the terms of trade, and the change in the price elasticities of demand for imports and exports, but Thirlwall (2013) considers these last two terms constant, so assessing their importance ends up being a empirical exercise *Ley de Thirlwall completa*: $y_B = [1 + \Delta + \psi](p_d - p_f - e) + \varepsilon(z) / \pi$

[2] $\varepsilon_{x;y^*}$: represents the elasticity of foreign income demand for national or peripheral exports $\varepsilon_{p.}$ $\varepsilon_{m;y}$: the national income elasticity import demand has the center's elasticity as its equivalent.

Precisely, the evolution of the financial balance of each company in the Colombian economy and the impact that the SC has on them is studied using the principle of financial instability[3] of Minsky (1986, 1992, 2008), given that he recognizes the dynamics of capitalism, its inherently instability, and non-neutrality of internal and external financing[4] on the volume of investment, production and employment.

Minsky (1986, 1992, 2008) considers that during the phases of the cycle the economic agents exhibit herd behaviour, so at take-off everyone is optimistic, the moneylenders begin to relax their credit standards and the borrowers begin to acquire new volumes of financing, whereas during a recession their behaviour changes to widespread pessimism, bringing about the liquidation of assets with a subsequent deflation of their price, causing a reduction in investment and consumption, in turn, dragging the economy into a recession. Later in the empirical section this cyclical movement is captured in the so-called Minsky effect, taken from the second theorem of financial instability (Minsky, 1992).

This author says that during upswing firms and lenders become more optimistic, so they take more riskier financial positions that compromise their expected income to debt services. For Minsky (1986, 1992, 2008), any economic agent, or firm in this paper, go through three different financial positions: First, a *hedge position* is when a firm has enough to make interest and principal payments. Second, firms go through a *speculative finance* phase in which the firm cover interest payments, but the principal must be rolled over. The last finance phase is called *Ponzi finance* and takes place when firms need to get other loans in order to pay interests, which is a very fragile scenario because it depends on lender willingness to grant loans.

In order to adapt the financial instability principle to the entrepreneurial context of Colombia, Foley's (2003) work was used, which mathematically formalizes the categories of hedge finance, speculative finance, and Ponzi finance. In order to understand the dynamics of financial fragility firms', three rates of growth are recognized: profit rate (r), asset growth rate (g) and the cost of funding measured by the interest rate (i). Therefore, in his chapter, the author presents the different paths that can occur when these rates differ.

Hedge finance is characterized by having higher income flows than the levels of accumulation and the payment of debt service, so $r > i$ or $r > g$. Speculative finance happens when the accumulation rate is greater than the profit rate, but the profit rate is higher than debt payment. Inasmuch as g > r, the firm must finance its new capacity of production with debt, but condition r > i guarantees that it can cover its current debt services. This position constitutes an advance capitalist economy where the expectations of investment realization allow for the expansion

[3] According to (Toporowski, 2016) this concept and the elements that Minsky introduces were prepared by authors such as Kalecki, Staindl, Breit and Toporowski

[4] Levy-Orlik (2010) explains that Minsky's financial instability hypothesis rejects Modigliani–Miller's theorem, that is, the neutrality of investment in financing.

of the representative firm. But it can also be a burdensome situation for both. The firm "speculates" when investing hoping that future returns increase and exceed the cost of finance and the level of accumulation ($g > r > i$) A Ponzi scenario happens when $i > r$, regardless of g, meaning that income is not enough to cover debt service, so the situation will hold if lenders maintain the trust in borrowers. Table 2 contains a synthesis of the positions derived from Foley's (2003) study.

Table 2.
Foley's 2003 financial positions

Hedge finance	Speculative finance	Ponzi finance
1. $r > i > g$	**1.** $g > r > i$	**1.** $g > i > r$
2. $r > g > i$		**2.** $i > g > r$
		3. $i > r > g$

Source: Rojas (2016).

DESCRIPTIVE ANALYSIS OF STRUCTURAL CHANGE AND FINANCIAL FRAGILITY IN COLOMBIA, 1995-2015

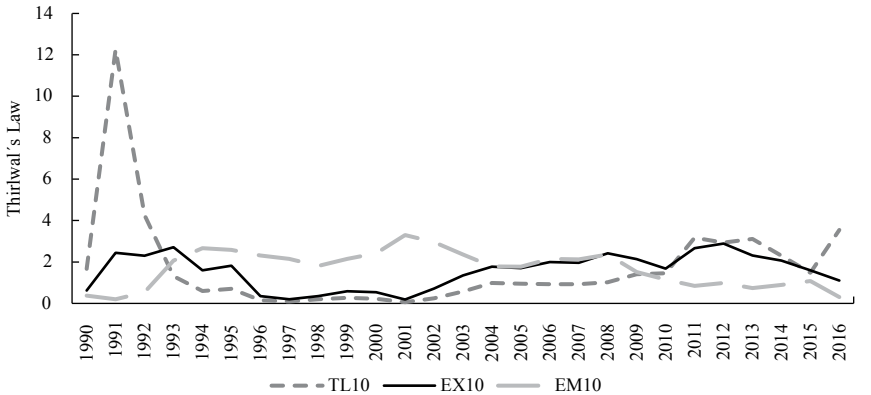
In this section, the calculations and descriptive analyses of the SC measured by the strong version of Thirlwall's Law and the Minskian financial fragility for Colombian companies will be presented, and conclude by surmising the connection between the two issues.

Initially, the export and import demand income elasticities that make up the strong version of Thirlwall's Law were calculated, using Colombian data from 1980 to 2016 according to CEPAL (2012). The elasticity of exports with respect to foreign income (ex10) is included in the numerator, which is estimated as the first difference of the logarithm of exports at constant pesos in 2010, divided by the first difference of the logarithm of real GNP of the United States, also at constant prices in 2010[5]. The income elasticity of imports (em10) is the ratio of the first difference of the natural log of imports and the Colombian real GDP at constant prices in 2010. Next, the moving average of ten periods for each of the elasticities mentioned was calculated in order to soften the cyclical changes, and the result was divided to obtain the strong version of Thirlwall's Law that appears in Figure 1 (Law 10).

The strong Thirlwall Law (Law 10 in Figure 1) shows that Colombian growth restricted by the balance of payments is sustained by sporadic expansions, that can be explained by the implementation of a speculative bet on growth supported by the realization of commodity booms in the primary export sector, which alle-

[5] The data is taken from DANE, Banrep and Macrodatos.com.

Figure 1.
Ten-year moving average of the strong version of Thirwall's Law for the Colombian economy (1990-2016)



Source: Author's calculations using data from Banrep, Dane and Macrodatos.com

viate the external restriction and determine the financial balances of the economic agents. The opposite example is Korea, showing a strong Thirlwall Law that steadily oscillates in a stable manner in a value greater than 2, evidencing the accumulation of an investment in productive capacities, which consolidated a diversified business fabric in the more complex network of sophisticated activities (CEPAL, 2012)[6].

Likewise, two boom periods marked by the increase in export income elasticity, one at the beginning of the 1990s and the other after 2002, can be observed in Figure 1. The first barely lasted four years from 1990 to 1993 as a result of the oil boom at the time (Garay, 1994). The second began in 2002 and peaked in 2007, then slowed down during the financial crisis of 2008, and finally resumed the path of expansion, reaching its top in 2011.

On the other hand, the elasticity of imports at the beginning of the 1990s rose drastically, for reasons such as financial and commercial openness, the strong increase in GDP at the time, and the real appreciation of the exchange rate for financial reasons as mentioned by García (2002) and Misas (2016). After the debacle at the end of the century, the elasticity approaches that of exports, only to end up crashing due to the 2008 crisis.

[6] You can consult the product space map (available at http://atlas.cid.harvard.edu/) which shows in a network analysis the products that each economy exports with revealed comparative advantage. If the network is colored in the center, it indicates a diversified and sophisticated economy, while if the colors are few and concentrate on the periphery of the map, it reflects an economy dependent on natural resources with low capacities built to grow steadily. In fact, the latter would be the reflection of speculative growth.

Combining the above, the emergence of four periods in growth restricted by a balance of payments in Colombia becomes evident. The first is a very strong relief of the restriction by the oil boom from 1990 to 1993, after that comes a period of import boom that lasted until 2001, followed by a period where the two elasticities stabilized at very close levels until 2008, and the last episode shows a fall in both elasticities, but with greater deterioration in imports, in turn easing the external restriction.

Ultimately, this study expects that in the periods where the Thirlwall Law increases, it will result in an improvement in the income flow of companies by reducing their FF on average, and vice versa. Likewise, it would be expected that the Minsky Effect would appear; in other words, during the boom periods the FF would increase, while during crises, the balances would be corrected.

After calculating the SC using Thirlwall's Law, the Minskian FF of Colombian companies is estimated by developing a continuous indicator during the period 1995-2015. To achieve this, the microeconomic data from the financial balances of the Colombian companies provided to the Superintendencia de Sociedades are taken annually from 1995 to 2015 through the SIREM platform. Two adjustments are made to the base to obtain more robust results; first, information was taken from companies that reported a period of 20 years or more. Second, atypical data pertaining to the g and r rate was eliminated, and the year-round information was removed for companies that reported values greater than 10. After performing the two procedures, information was obtained from 1846 companies in which 25% reported information for all periods, and the remaining 75% stopped reporting or the data for one year was deleted.

Next, we proceeded to estimate the rates r, g and i following Foley (2003). The accumulation rate g is the capital growth rate of each company; in other words, the growth rate of the financial balance account called plant and equipment property deflated by the base CPI for 1995. After that, we estimated r, which is the ratio between earnings and total assets of each company; the first data was taken from the income statement and the second from the balance sheet. Then, the calculation of the debt service is presented which, in the absence of an adequate value in the available accounts of the general balance and the income statement, we decided to take the annual active real interest rate of the financial system that was updated with the information from the Banco de la República and the Departamento Nacional de Planeación. This data was multiplied by the debt coefficient of each company, understood to be total liabilities over total assets, as a proxy way to measure the cost of indebtedness of each firm.

Once the calculation of r, g and i was adjusted, we proceed to catalogue the companies in the sample according to the Minskian financing positions in Table 1. From the information obtained, the predominant position among the companies during the 20 years analysed was the Ponzi which was 64%, followed by the hedged with 22.2%, and then the speculative with 13.8%; the latter being an indication of the low investor mood of the companies studied. From the sample it can be appreci-

ated that in 13234 occasions the companies changed their financial position, which represents 35.6% of the positions found, and, at one point in time, 97.2% of the companies changed their Minskian category.

Likewise, 18.6% improved their financial position by changing from Ponzi to hedged, or speculative to hedged, while 16.7% presented a change that worsened their financing position. It was discovered that the transition probabilities between more representative financing positions were as follows: in first position was the probability of remaining in Ponzi with 76.2%, followed by the probability of remaining hedged with 42%, and in third position was the probability of moving from speculative to Ponzi with 40%.

After explaining the results of the financing positions, the way in which the financial fragility indicator (FFI) was constructed is explained. A value was given to the hedged, speculative and Ponzi positions of each company in 1995 as a starting point - the values are 1, 2 and 3 respectively.

Then, it is assumed that each time a company changed its category to a better one, the FFI should decrease; if it goes from Ponzi to hedged, it will decrease by two units, whereas moving from Ponzi to speculative or from speculative to hedged it will only decrease by one unit, and if it worsens its financial position, the opposite will happen.

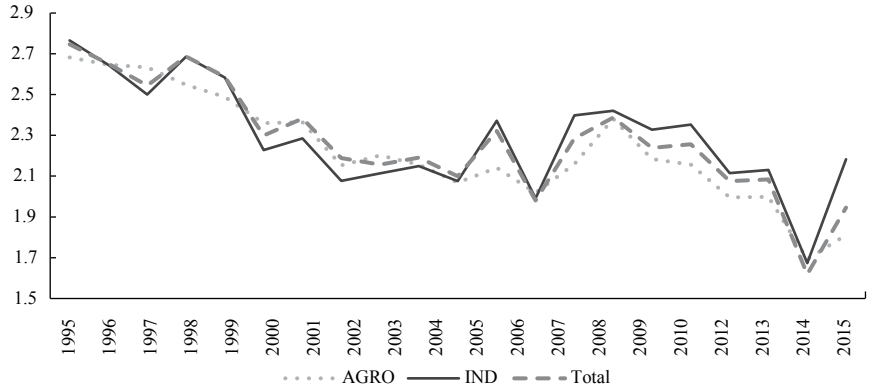
What's more, the degree of depth of each financing position is taken into account; in other words, how Ponzi, speculative or hedged a company will become, as long as it remains in one of the Minskian categories of financing.

In order to do this, the work of Rojas (2016) is taken and the formula that measures the degree of depth of the Minskian financing category is applied to each case. The hedged structure is deepened in the period t+k with respect to t when $min\{r_t - g_t, r_t - i_t\} < min\{r_{t+k} - g_{t+k}, r_{t+k} - i_{t+k}\}$, the speculative structure deepens when $r_t - i_t > r_{t+k} - i_{t+k}$, and the ponzi structure deepens when $i_{t+k} - r_{t+k} > i_t - r_t$. Keep in mind that when the Ponzi and the speculative schemes are deepened, the FFI increases, and when the hedged scheme is deepened, the FFI decreases.

Once the FFI of each company is presented, an average of the aggregate indicator and an average by sectors are obtained by means of an Excel dynamic table. First of all, the year 1995 was eliminated from the analysis because the it did not include the accumulation rate and it distorted the results given that g takes a value of zero for this period.

Hence, Figure 2 summarizes the results of the total average FFI of the sample that is associated with Colombian businesses during the analysis period, and together with those businesses, the industry and agriculture FFI, which for Misas (2016, 2019), Ocampo (2007, 2013) and Sarmiento (2002, 2014) are the big losers in terms of SC, since they have seen their participation in national added value and employment reduced due to the implementation of the market reforms from the 1990s.

Figure 2.
Financial Fragility Indicator aggregate, industrial and agricultural in Colombia 1996-2015



Source: Author's calculations based on SIREM.

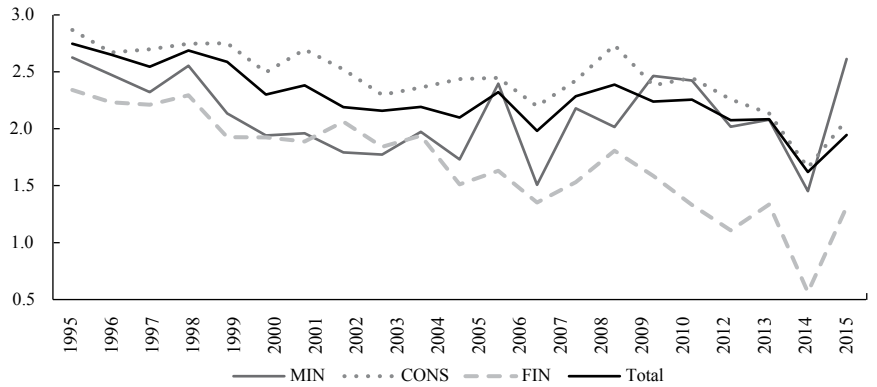
The line denominated total in Figure 2 reflects the behaviour of the average financial fragility of the Colombian business sector during the analysis period. The FFI starts at very high levels close to the Ponzi situation (3) and remains there until 1998 when the worst crisis on national records hit the Colombian economy.

In fact, one result that should be highlighted is that the average FFI is high during economic crises, just like at the end of the century and the subprime. This turns out to be a breakthrough compared to other investigations that found little relationship between the FF and the economic crises. However, it cannot be assured that there is a causal link, but it is clear that the 1999 recession was preceded by a high business FF environment, while the 2008 crisis seems to have caused the deterioration of the balance sheets of the firms. This could indicate the presence of the Minsky Effect during the 1990s, but not during the rise of commodities at the beginning of the 21st century.

FFIs in the industrial and agricultural sectors show a behaviour similar to the national average, which could be due to the size of these sectors within the sample. But it is also an indication of the ability of these sectors to drag on the rest of the economy given their potential for job creation, productive links and their international tradability. Thus, these sectors would act as a kind of Kaldor's first Law, but not in the sense of the one that explains how the growth rate of the industry drags the global growth of the economy down, but instead, it illustrates hows the movements of agricultural and industrial FFI mark the health or deterioration of the balance sheets of the rest of the Colombian companies.

Likewise, Figure 3 shows the national average (total) together with three sectors that are considered winners in terms of added value and employment (Misas,

Figure 3.
Financial fragility Indicator aggregate, financial, construction and mining in Colombia 1996-2015



Source: Author's calculations based on SIREM.

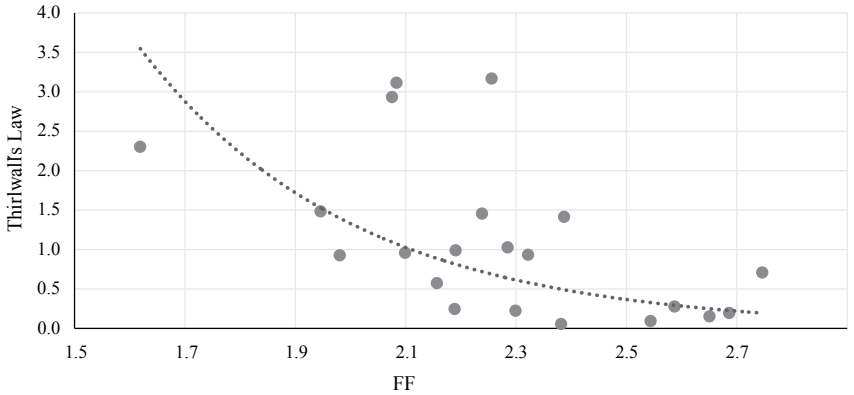
2016, 2019; Ocampo, 2007, 2013; Sarmiento, 2002, 2014). An observable feature is that the construction sector shows the greatest fragility throughout the period, and although it improved in unison with the rest of the economy, it was more sensitive to crises.

The other extreme is the financial sector whose FFI shows a lower level, a greater capacity for reduction during the expansion phases, and a slow deterioration in crises. It is a sector that shows excellent financial health, but in no way benefits the rest of the companies. The foregoing may be evidence of the financialization of the Colombian economy that consolidated an income extractor sector, but has little job creation and low productive links (Villabona, 2015).

On the other hand, the mining sector is very sensitive to changes in commodity prices because during the boom phases it improves its FFI, putting it below the national average, but given an adverse change in prices, like in 2008 or 2014, the FFI reacts sharply and is located above the construction FFI which is usually high. This also indicates that specialization in a sector such as mining introduces greater systemic fragility in financial terms for the Colombian economy; in other words, it translates into speculative growth based on income and sudden booms and external depressions.

Additionally, Figure 4 shows a connection conjecture between the FF and the SC measured using Thirlwall's Law and the FFI general average. A negative nonlinear relationship between the FF and the SC can be observed. It illustrates that in severe periods of external restriction, the FF grows exponentially, while when this restriction is relieved, the reduction of the FF becomes inelastic to the external improvement.

Figure 4.
Moving average of the strong version of Thirlwall's Law and the average FFI for the Colombian economy 1996-2015



Source: Author's calculations – SIREM.

As seen previously, the fluctuation of Thirlwall's Law demonstrates a pattern of sporadic growth, led by speculative and rentier sectors. This is reflected in the poor reaction of the FFI in boom periods, given that the relief of the external restriction is not transmitted to the rest of the economy, but instead, when there is an increase in the restrictions in the balance of payments, the increase in the FFI is exponential, showing an asymmetric pattern of FFI reaction, where the costs are massive and the benefits are individualized.

ECONOMETRIC ANALYSIS OF THE RELATIONSHIP BETWEEN FINANCIAL FRAGILITY AND STRUCTURAL CHANGE IN THE COLOMBIAN BUSINESS SECTOR

This section aims to estimate an unbalanced short panel with 1846 companies for a 20 years period from 1996-2015. The dependent variable selected was the FFI for each of the companies, and as independent variables two data sets were taken: 1. macroeconomic data sets that represent the SC, the economic activity, and the cyclic Minsky Effect, and 2. microeconomic financial indicators[7]. Likewise, the companies in the database were categorized according to size - microenterprises,

[7] Macroeconomic data are calculations based on data from the Central Bank (Banco de la República) -Banrep-, National Planning Department (DNP), National Administrative Department of Statistics (DANE), and CEPALSTAT. Microeconomic data is taken from SIREM.

small, medium and large, in line with Decree 957 of June 5, 2019 of the Ministerio de Comercio, Industria y Turismo[8].

It is proceeded to estimate the regression by ordinary least squares (OLS) with grouped data corrected by robust standard errors using Stata 15.0 software, where statistically significant macroeconomic and microeconomic variables were selected, economically relevant in the sense of the magnitude of the impact that they generate in regards to the FFI and the global econometric stability they offer.

The preliminary results showed that the only relevant macroeconomic variables that can explain the FFI are the Thirlwall Law (tlaw), the square root of the Thirlwall Law (qtlaw) and the economic growth rate (GYM). Likewise, in the macroeconomic variables an economic cycle dummy was estimated, taking the value of one (1) during the boom periods and zero for other periods. This exercise seeks to corroborate the second hypothesis of Minsky's financial instability (1986, 2008) called the Minsky Effect; therefore, it would be expected that during the boom phases the average FF of the different companies will increase[9].

On the side of the microeconomic variables taken from the general balance sheets, it was observed that some were statistically significant and with appropriate signs. The selected variables were short-term (fsrl) and long-term (flrl) financial obligations over total liabilities, given that they showed a positive sign and a significant coefficient, in addition to the short-term financials having a slightly higher impact on the FF than the long-term ones, which is in line with Minsky's financial instability hypotheses (1992, 2008). Although the coefficients of the variables (fsrl) and (flrl) were very small, which takes away the power of economic explanation of the dependent variable; so in turn, it was decided to keep them in the estimate as control variables which improve the efficiency of the model in econometric terms.

A microeconomic variable that was economically relevant and statistically significant was the size of the company, which was tested by creating a multinomial dummy with the numbers 1, 2, 3 and 4 for microenterprises, and small, medium and large companies, respectively. Given that it is a dichotomous variable, the microenterprise is left out; therefore, the results of all the others are compared with respect to this type of company. These variables appear in the model with the numbers mentioned, identified in the estimate as (tama).

[8] The Decree measures the size of the company according to the number of per unit taxes in operating income. Given that Decree 957 only takes into account 3 sectors (industry, commerce and services) while this research covers 9 sectors, it was decided to maintain the classification for the commerce sector, while the classification of the manufacturing industry was extended to the agricultural, construction and mining sectors, and the classification of services included the financial, electricity and transportation sectors. In turn, the per unit tax was calculated in periods prior to 2007, the year until which the DIAN provides information, discounting inflation each year.

[9] The construction of the dummy was constructed by decomposing the GDP using the HP filter for the growth of the annual Colombian real GDP during the period 1977-2017 using a lambda factor 100. The preliminary results obtained are statistically and economically significant.

After selecting the variables for their statistical and economic significance, several panel techniques are estimated to observe the stability of the results and consolidate the best panel econometrics technique. Fixed and random, alone and adjusted effects models are estimated for robust standard errors, together with dummy and between model panel estimators, the generalized MCO regression is also made feasible. The adjustment for robust errors was made because the composite error of the model could be highly correlated over time for an individual in the sample. In fact, running the Wooldridge test to corroborate the presence of Stata 15 autocorrelation, with the xtserial command, the test rejected the null hypothesis; in other words, the model presents serial autocorrelation, so that treatment with robust errors is privileged for both fixed or random effects.

Something that stands out is the fact that the results remain stable in terms of statistical significance, coefficient value and expected sign, independent of the technique assessed except in the case of Between. After presenting different methodologies, the Haussman fixed and random effects test is estimated, which yielded a result of 0.000 in the chi statistic[10], proof that the fixed effects model corrected for robust errors is the most appropriate to continue the analysis.

The use of instrumental variables was also ruled out for two reasons; the first given that an economically and statistically adequate instrument was not found; and secondly, the estimation of the definitive model of robust fixed effects shows that the correlation between the residuals and the explanatory variables is non-existent[11]. The use of dynamic panel methodologies was also ruled out because of the nature of the data due to a short panel, and because the models tested did not pass the overidentified restriction test.

In this way, the selected model is that of robust fixed effects (FE_rob); therefore, the statistical and economic results are analysed. In fact, all the coefficients of the model are statistically significant and maintain the theoretically expected sign; even though, the necessary magnitude of affectation on the FFI is not obtained in all cases. In turn, the highest observed square R is that which occurs within an individual over time, reaching a value of 19.2%, a result which indicates the reason why the fixed effects methodology was followed.

Regarding the coefficients, one can start with the relationship between Thirlwall's Law and the FFI. In the estimation, it was proposed to take Thirlwall's Law (tlaw) and its square root (qtlaw), observing that, if two separate models were made for each of these variables, the square root of R and the standard errors associated with the square root variable were better compared to the results of the other estimate, meaning that the variable analyzed is definitely qtlaw. The selection of this variable corroborates the conjecture that was raised based on Figure 4 where a negative nonlinear relationship between the SC and the FF is evidenced.

[10]Appendix 1 shows the result of the Haussman test for fixed and random effects.

[11] See Appendix 2.

Table 3.
Panel estimates under different techniques 1996-2015

Variable	OLS_rob	FE	FE_rob	RE	RE_rob	FGLS	DUMMIES	BE
qtlaw	-0.2862***	-0.3194***	-0.3194***	-0.3114***	-0.3114***	-0.2228***	-0.3194***	1.2884
gym	-0.0372***	-0.0388***	-0.0388***	-0.0384***	-0.0384***	-0.0319***	-0.0388***	-0.1493
ofcppasm	0.0091***	0.0056***	0.0056***	0.0067***	0.0067***	0.0075***	0.0056***	0.0099***
oflppasm	0.0074***	0.0050***	0.0050***	0.0057***	0.0057***	0.0063***	0.0050***	0.0088***
minskys	0.0969***	0.1222***	0.1222***	0.1161***	0.1161***	0.1001***	0.1222***	-1.8246
tama								
2	-0.1769***	-0.2624***	-0.2624***	-0.2454***	-0.2454***	-0.1780***	-0.2624***	0.0320
3	-0.4456***	-0.6629***	-0.6629***	-0.6161***	-0.6161***	-0.5901***	-0.6629***	-0.0911
4	-0.4172***	-0.7104***	-0.7104***	-0.6468***	-0.6468***	-0.5949***	-0.7104***	0.0517
_cons	2.6628***	2.9700***	2.9700***	2.8955***	2.8955***	2.7744***	2.9700***	2.2596***
N	35564	35564	35564	35564	35564	24618	35564	35564
r2	0.082	0.098	0.098				0.3571	0.1111
r2_o		0.066	0.066	0.072	0.072		0.0006	
r2_b		0.010	0.010	0.023	0.023		0.1111	
r2_w		0.098	0.098	0.098	0.098		0.0001	
sigma_u		**0.599**	**0.599**	**0.519**	**0.519**			
sigma_e		0.910	0.910	0.910	0.910			
rho		0.303	0.303	0.246	0.246			

legend: p < 0.1; ** p < 0.05; *** p < 0.01
Source: Author's calculations - SIREM.

The obtained value in Table 3 for the coefficient of qtlaw is -0.3194, but in order to interpret it a partial derivative is taken on the variable that would give $\frac{\partial FF}{\partial qtlaw} = -0.5 * 0.3194 * 1 / qtlaw^{0.5}$. In addition, two extreme values taken from the Thirlwall Law data for the period 1996-2016 are taken to perform the analysis; 3.1675 and 0.05 consecutively.

By replacing these values in the derivative, it can be noted that when the economy is facing a severe restriction of growth due to the external sector (Thirlwall Law of 0.05), financial fragility increases by 0.6768; meanwhile, when the restriction is eased during a boom period (Law of Thirlwall of 3.1675), the FFI reduction is just 0.089. This confirms what was suggested in the previous section on the asymmetric adjustment of the FF during boom periods and the distorted long-term growth. This asymmetric response is an excellent result that illustratres Colombia's unstable growth and the sensitivity of the productive apparatus to external fluctuations. As previously mentioned, a possible explanation is that during boom periods the beneficiaries are sectors that are not able to transmit these income flows in their companies' balance sheets to the rest of the economy.

Next, we observe the coefficient associated with the growth rate of the economy (GYM) which is statistically significant and indicates an inverse relationship with the FFI. In this case, for each percentage point of growth, the FFI falls 0.038, thus a significant reduction from one period to another of the financial fragility would require a growth of at least two digits.

Another coefficient which is interpreted is that which studies the Minsky Effect. The coefficient observed is 0.1222, which, being positive, corroborates the idea that in the boom phases the FF increases by 0.1222 on average for all Colombian companies in the sample.

Observing the results in terms of company size, it is found that, on average, belonging to the large company group reduces the FF by 0.7104, and if the company is of medium size, the average value of the FF is reduced by 0.6629, while being a small company only reduces the FF by 0.2624; all compared to the microenterprise.

The other coefficients presented are those related to short and long term financial obligations. A congruent sign is observed illustrating that an increase in one percent of each of these shares with respect to the liability raises the FF by 0.0056 and 0.0050, resulting theoretically consistent given that it is assumed that short-term commitments should have a greater impact on the FF indicator. However, the value of the coefficient does not affect the FFI, making the impact of these variables insignificant, but as previously mentioned, in the model they serve as control variables that raise the overall efficiency of the econometric results.

Finally, the model of robust fixed effects is replicated in the different sectors of the economy in order to look at the impact of the productive structure of the econ-

omy on the FF (see Table 4)[12]. The first thing that is observed is that qtlaw has the expected sign for all sectors, its magnitude of reduction is economically important and statistically significant at 1%, except for the energy and mining sector. The financial sector is where the effects of the fluctuations of the economy's long-term growth are presented most acutely; for example, a reduction of the Thirlwall Law to its lowest level generates an increase in the FF to 1.24, and when this law increases to its highest point, the FF is reduced to 0.16. On the other hand, there is the industry which, during a boom period reduces its FF by very little, just 0.068, and during a crisis it increases to 0.51. The above result seems to corroborate how the Colombian long-term growth model benefits the balance sheets of companies in the financial sector followed by those in the service and transportation sector; in contrast, the expansion of the economy does not favour industry and generates intermediate impacts on trade and construction.

On the contrary, the effective growth of the economy seems to favour industry, commerce and transportation; in other words, those which have coefficients with more important and statistically significant magnitudes at 1%. The service, construction and agriculture sectors are on the other side of the scale, benefitting the least from effective growth, while, in the middle, is the energy and mining sector.

The Minsky effect is strong in the energy sector given that the FF increases to 0.7 during boom periods, hence, being statistically significant at 10%, followed by the mining and transportation sectors which have values of 0.27 and 0.29, significant at 1% and 5%, respectively. The sector that creates the least fragility during the take-off phase of the economy is the industry with an additional value of 0.16 in the FF, showing its contribution to its own financial stability, as well as that of the system as a whole. The other sectors are not statistically significant.

Another very strong result is that which is obtained with respect to the size of the companies where it is corroborated, except in the energy sector, where, the bigger the company, the smaller the FF. Each sector shows different incidents regarding the FFI; the mining sector is where the effect of size is the most evident, whereas it is least evident in the construction sector.

Finally, the estimation constant shows that, on average, the sectors with the most FF are the construction, transportation and service sectors, corroborating the results of Figure 3, at least for construction.

[12]However, the Haussman test was not seen model by model in order to identify whether it was of fixed or random effects, all with the purpose of being able to compare the results with the general model.

Table 4.
Panel estimates for robust fixed effects for different productive sectors in Colombia1996-2015

Variable	TOTAL	AGRO	MIN	IND	ELEC	CONS	COM	SER	TRANS	FIN
qtlaw	-0.3194***	-0.3365***	-0.2028	-0.2448***	0.2942	-0.2947***	-0.3057***	-0.5044***	-0.4000**	-0.5884***
gym	-0.0388***	-0.0247***	-0.0340**	-0.0448***	-0.1259	-0.0293***	-0.0482***	-0.0283***	-0.0442**	-0.0106
fsrl	0.0056***	0.0065***	-0.0001	0.0067***	0.0214	0.0024	0.0065***	0.0032**	0.0004	0.0041*
flrl	0.0050***	0.0076***	0.0011	0.0062***	0.0174	0.0025*	0.0034***	0.0038***	0.0057**	0.0031
minskys	0.1222***	0.0429	0.2989**	0.1642***	0.7099*	0.0057	0.1496***	0.0607	0.2715**	0.0136
tama										
2	-0.2624***	-0.2881***	-0.4188***	-0.1569***	-0.1418	-0.1863***	-0.2920***	-0.2511***	-0.5894***	-0.3551***
3	-0.6629***	-0.6800***	-0.9138*	-0.7756***	-0.4982	-0.5730***	-0.7415***	-0.4709***	-0.7646***	-0.5148***
4	-0.7104***	-0.6548***	-0.9955***	-0.6936***	-1.4632*	-0.5496***	-0.6720***	-0.9160***	-0.7053***	-0.7599***
_cons	2.9700***	2.8077***	2.9482***	2.9054***	1.9141	3.0966***	3.0477***	3.0168***	3.3011***	2.4630***
N	35564	3333	614	13011	38	2910	9461	4325	540	1332
r2	0.0983	0.1134	0.0908	0.0961	0.7911	0.0714	0.1065	0.1463	0.1093	0.1391
r2_o	0.0656	0.0886	0.0671	0.1014	0.3163	0.0613	0.0818	0.0490	0.0394	0.0939
r2_b	0.0104	0.0359	0.0130	0.1192	1.0000	0.0319	0.0251	0.0203	0.1884	0.0131
r2_w	0.0983	0.1134	0.0908	0.0961	0.7911	0.0714	0.1065	0.1463	0.1093	0.1391
sigma_u	0.5992	0.5534	0.6376	0.5458	1.3729	0.5206	0.5076	0.7398	0.6462	0.7582
sigma_e	0.9099	0.8633	1.1038	0.9167	0.4464	0.9545	0.8491	0.9372	0.8553	1.0113
rho	0.3025	0.2912	0.2502	0.2617	0.9044	0.2293	0.2633	0.3839	0.3634	0.3598

legend: $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$
AGRO: Agriculture, MIN: Mining, IND: Industry, ELEC: Electricity, CONS: Construction, COM: Commerce, SER: Services, TRANS: Transportation, FIN: Finance.
Source: Author's calculations based on SIREM.

CONCLUSIONS

One of the most important achievements of the document is the establishment of a causal connection between SC macroeconomic variables, growth and cycle on a microeconomic variable such as the FFI for each of the companies in the sample. This is relevant because, in modern literature, the macro-foundation of the agents' behaviours does not exist, and on the contrary, the microfundamented explanation of representative agents whose behaviour is generalized to the aggregate prevails, omitting the emergency forces that arise in the aggregates.

In the theoretical field, two theories are used that are normally not combined in order to explain the dynamics of economies. It is thought that the elasticities of Thirlwall's Law represent the ability to obtain external demand from the Colombian economy; therefore, as this capacity increases and can be sustained, due to the investment and deepening of highly diversified and technologically sophisticated sectors, the financial health of the productive sectors and their companies should be improved.

On an empirical level, several results were obtained. The FFI was established, which is novel in post Keynesian literature, and from the indicator several explanations were developed. For example, it was shown that company size did come into play in terms of their financial fragility, affecting the smaller ones much more. It was established that there is a negative non-linear relationship between growth restricted by the balance of payments and the FF, reinforcing the idea of speculative and asymmetric growth in the costs and benefits brought about by the crises and external booms of the Colombian economy. The Minsky Effect could also be verified by a cyclic dummy.

Finally, in addition to testing the effect of the SC on the FF with the introduction of Thirlwall's Law, a comparison of the data panel was made for different productive sectors, evidencing that sectors such as the financial, construction and mining sectors are very financially fragile during crises, while acting as profit hubs during boom periods. This is evidence of a speculative and exclusive growth that has been configured in the Colombian economy.

Of course, this work is ground-breaking in many regards and therefore the adjustment of the theories that are studied in the short and long term must be examined in more detail, as well as the selection of other measurement and quantification techniques that can contribute to the academic debate.

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APPENDIX 1.

---- Coefficients ----				
	(b)	**(B)**	**(b-B)**	**sqrt(diag(V_b-V_B))**
	fixed	**random**	**Difference**	**S.E.**
qtlaw	-0.3604946	-0.3523202	-0.0081744	.
gym	-0.0310277	-0.0307847	-0.000243	.
fsrl	0.0057895	0.006757	-0.0009675	.0001091
flrl	0.0050867	0.0057107	-0.000624	.0001011
Minsky	0.1651016	0.1586568	0.0064449	.
tama				
2	-0.2502761	-0.2338143	-0.0164618	0.0036144
3	-0.62885	-0.5837364	-0.0451137	0.0047359
4	-0.6771191	-0.6163055	-0.0608135	0.0043404

b = consistent under Ho and Ha; obtained from xtreg

B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2(8) = (b-B)'[(V_b-V_B)^(-1)](b-B)

= 251.11

Prob>chi2 = 0.0000

APPENDIX 2.

F(8,1845) = 268.04 corr(u_i, Xb) = -0.0934 Prob > F = 0.0000	
VARIABLES	**ff**
qtlaw	-0.319***
	-0.019
gym	-0.0388***
	-0.002
ofcppasm	0.00564***
	-0.000
oflppasm	0.00499***
	-0.001
minskys	0.122***
	-0.011
2.tama	-0.262***
	-0.022
3.tama	-0.663***
	-0.030
4.tama	-0.710***
	-0,023
Constant	2.970***
	-0.030
Observations	35,564
Number of id	1,846
R-squared	0.098

Robust standard errors in parentheses
*** p < 0.01, ** p < 0.05, * p < 0.1

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La evaluación toma en cuenta aspectos como la originalidad del contenido, el rigor conceptual, los aspectos metodológicos, la claridad y la coherencia (tanto en la argumentación como en la exposición), y la pertinencia de las conclusiones. Los resultados del arbitraje pueden ser: aprobado sin modificaciones, publicación sujeta a incorporación de cambios y observaciones, reescritura del documento y rechazo del material. La tasa de rechazo de materiales sometidos a evaluación durante 2018 fue de 78%.

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5. The article's title must be explanatory and illustrate the essence of the work.

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La revue a l'objectif de divulguer, dans l'enceinte académique nationale et internationale, les avances intellectuelles dans des théories, des méthodologies et des applications économiques, ainsi que les résultats de recherches et de travaux spécialisés.

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Conmutador: (57-4) 430 90 00
Ext. 46282

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