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Productive development, structural change and international capital flows: The role of macroprudential policy for transformative post-Covid recovery

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About the COVID-19 Response and Recovery project

This paper is an output from the project "Response and Recovery: Mobilising financial resources for development in the time of COVID-19", which is co-ordinated by the Debt and Development Finance Branch of UNCTAD and jointly implemented with ECA, ECLAC and ESCAP. This project is one of the five UN Development Account short-term projects launched in May 2020 in response to the COVID-19 crisis.

The project aims to enable low-income and middle-income developing countries (LICs and MICs) from Africa, Asia-Pacific, and Latin America and the Caribbean to diagnose their macro-financial, fiscal, external financial and debt fragilities in the global context, and design appropriate and innovative policy responses to the COVID-19 pandemic leading toward recoveries aligned with the achievement of the Sustainable Development Goals (SDGs).

Abstract

In this report, we stress the importance of structural change and productive development as leading engines of post-Covid economic recovery. We do so by first putting emphasis on the perverse relation between underdeveloped productive structures and the intensity of the Covid-19 crisis. We then look at factors that may have harmed productive development in emerging and developing (EDE) countries over the last forty years. We investigate the role of (non-FDI) net capital inflows as a potential source of premature de-industrialization in a wide range of EDE countries, Latin American ones in particular, in the context of increasing financial integration. Our analysis intends to verify whether periods of abundant capital inflows to EDE economies may have fed perverse structural changes away from those sectors, namely manufacturing, traditionally recognized as prime sources of long-run development. We consider a sample of 36 countries from 1980 to 2017. We find that manufacturing employment and GDP shares tend to contract more substantially, and the economic complexity index decreases during episodes of financial bonanza. Given this evidence, we discuss policies that may support transformative post-Covid recovery. We first consider available space for expansionary fiscal policy and public investment-centered recovery plans as influenced by the degree of financial integration characterizing EDE countries. We then analyze whether macroprudential policies taming international capital mobility may bear positive effects for long-run productive development on top of their implications for (short-term) financial and macroeconomic stability.

Keywords: Covid-19; Structural Change; Capital Inflows; Macroprudential Policies

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1. Introduction

After more than one year since its outbreak, most economies worldwide are struggling to recover from the Covid-19 crisis. In 2020, the drop in world GDP has been steeper than what observed in 2009 after the last financial crisis. It has been the deepest recession since the Great Depression, with global trade in goods and services estimated to have decreased by 7.6 percent (UN, 2021). Economic activity is expected to rebound in 2021, but enduring confinement measures and the scars from the 2020 downturn may give rise to square-root shaped recovery and long-lasting stagnation.

The Covid-19 crisis has taken different degrees of intensity in different regions. Among emerging and developing countries (EDE henceforth), economic dynamics slowed down but remained positive in East Asia and China. Latin America, instead, stands out as the most affected region of the World together with South Asia (UN, 2021). If we look at the sanitary aspects of the pandemic, whilst Latin America represents about 8% of world population in 2020, it accounts for roughly one-fourth of world Covid-19 infections and one-third of the total death toll (Allin *et al.*, 2020). When it comes to the economy, Latin America's GDP is estimated to have contracted by around 8.0 percent according to UN's World Economic Situation and Prospects 2021 and IMF World Economic Outlook (IMF, October 2020a). Such a decline is more than two times larger than that observed in Sub-Saharan Africa. Economic recovery in Latin America is expected to languish around a mere 3-2 percent in the next three years, even lower than that attributed to advanced economies.

There is not a unique factor that can explain the tremendously high toll paid by Latin America to Covid-19. According to Aguilera (2020), Latin American countries are developing and emerging economies that nevertheless suffer from advanced economy-type diseases such as obesity and hypertension. On the one hand, such diseases tend to worsen the effects of the contagion and more likely turn infected people into intensive care. On the other hand, higher pressures on fragile healthcare systems can raise the death toll and, at the same time, induce local governments to more stringent and prolonged lockdown measures, with obvious harsh repercussions for the economy. The pandemic has led all governments worldwide to adopt discretionary fiscal measures in support of their economies. Latin American governments do not make an exception and have implemented fiscal packages broadly consistent with those of other EDE economies, although smaller than the fiscal response of advanced countries (see more on this below). Fiscal reaction, however, has been heterogenous among Latin America countries. Mexico, for instance, is a striking case of fiscal inactivism. According to the IMF's Fiscal Monitor Report 2020 (IMF, 2020b), fiscal reaction to Covid-19 in Mexico amounts to a mere 2 percent of GDP, so that Swarnali *et al.* (2020) suggest a fiscal twist by adopting more counter-cyclically measures now and postponing fiscal adjustments over the medium term. In 2019, the Mexican economy represented almost 27 percent of the whole Latin American GDP. It is easy to see how lack of counter-cyclical fiscal measures and a deepening crisis in Mexico could have perverse spill-over effects for the economy of the entire region. Perhaps more importantly for the sake of our analysis, there is some evidence that the negative medium-term economic implications of Covid-19 may become more acute in the context of fragile and relatively underdeveloped productive structures characterized by widespread informality, high inequality standards, large dependence on natural resources and/or contact-intensive services (Hevia and Neumeyer, 2020). This is the case of Latin American economies, even in comparative terms with respect to other EDE economies, so that Latin American may have turned out to be particularly exposed to the current shock.

The perverse relation between underdeveloped productive structures and the intensity of the current crisis puts structural change at the heart of any development strategy that aims at feeding recovery and increasing resilience to any similar shock in the future. In this report, we address this issue by looking at factors that may have harmed productive development in EDE countries over the last forty years. More specifically, we investigate the role of non-FDI capital flows as potential source of premature de-industrialization in EDE countries in the context of increasing financial integration in the world economy. In a way, our work intends to empirically test economic theories according to which periods of abundant capital inflows to EDE economies may have fed changes in domestic productive structures away from those sectors, namely manufacturing, traditionally recognized as prime sources of long-run sustainable development (Benigno and Fornaro, 2014; Botta, 2021).

Our work takes into account a wide range of EDE countries. Nevertheless, special attention is dedicated to Latin America. Indeed, each section of this report will include a specific paragraph dedicated to the study of the six largest Latin American economies, i.e., Argentina, Brazil, Chile, Colombia, Mexico and Peru. The structure of our work is as follows. Section 2 will provide a brief overview about how and why weak underdeveloped productive structures may have contributed to aggravate the economic implications of the pandemic. Section 3 will move to the core issue of this report, i.e., the link between structural change, productive development, and financial integration. Finally, Section 4 will pay attention to the way forward and to policies that may support a transformative recovery in the context of a more resilient economy. More specifically, we will first consider available space for public investment-centered fiscal policies given the level of financial integration characterizing EDE countries and the constraints to fiscal expansions they had traditionally to deal with. We will then analyze whether macroprudential policies taming international capital mobility may also bear positive effects for the long-run productive development of EDE economies on top of their implications for (short-term) financial and macroeconomic stability. Section 5 will draw some final remarks.

2. Productive development and economic resilience to Covid-19

Various factors may contribute to deepen or soften the economic impact of the pandemic: the effectiveness of early confinement measures; the generosity of discretional fiscal stimuli; the speed of the vaccination campaign. Emerging empirical evidence suggests that different productive structures may also help to explain cross-country differences in the intensity of the crisis. There are at least three ways through which differences in productive structures may affect the economic vulnerability to Covid-19. They are related to (i) the quality of employment that different productive structures generate; (ii) the sector-specific exposure to Covid-related confinement measures; (iii) the more general dependence of an economy on specific productive “assets” (read natural resources), and the way the related sectors respond to global shocks.

EDE countries usually present poorly diversified productive structures, at least in relative terms with respect to advanced economies. They lag behind the technological frontier and are characterized by a negative productive gap. The industrialization process if often incomplete as the capital good sector

is underdeveloped and backward and forward linkages are not adequately exploited. Following La Porta and Shleifer (2014), lack of productive development is generally mirrored in *dual* economic structures, where a large and seemingly permanent informal sector co-exists alongside a small formal economy[1]. Informality in low-middle income countries has become even more important in time of Covid-19 as it may be disproportionally affected by the economic consequences of the pandemic. First, small informal firms are characterized by shorter "surviving periods" than (relatively) larger formal companies and are more exposed to bankruptcy in the absence of revenues during lockdowns. This is due to the fact that small informal firms or self-employees usually accumulate less capital and cash reserves than formal companies and are more easily excluded from credit and financial markets due to the lack of valuable collaterals (Cespedes *et al.*, 2020; Valensisi, 2020). Second, informal entrepreneurs or employees do not usually benefit of any form of insurance or social protection against unemployment and/or inability to work. This fact considerably increases the difficulties of national governments to cushion the economic effects of the pandemic since that they may have to create some universal social protection schemes from nihilo. On top of this, the lack of adequate social safety nets could make the contraction of family income particularly acute. Whilst this may not be captured by official statistics, it could equally show up in the form of sharp drops in domestic demand injections, private consumption first and foremost (see more on this below).

Covid-19 is an economy-wide crisis that negatively affected almost all productive sectors. The crisis, however, did not hit homogenously all the industries. In general terms, the service industry seems to have been more severely affected than manufacturing and agriculture, although considerable heterogeneity exists even inside these three macro sectors[2]. According to ECLAC (2020), activities in the hospitality, transportation, tourism, retail trade, repair and, more broadly, commerce are those that suffer the most. On the one hand, this is due to the intrinsic nature of the services they offer, as they are "*contact-intensive*" services almost completely banned during lockdowns. On the other hand, firms in these sectors are characterized by considerably shorter "survival times" than manufacturing companies (Bosio *et al.*, 2020). Economic systems that more heavily rely upon these industries may experience tougher economic contractions than other countries.

The outbreak of the pandemic has also caused significant fluctuations in the price of primary commodities. The reaction has not been uniformed across sectors. Price indexes for agricultural products and metals did not decline so intensively as in the wake of the 2007-2008 financial crisis. The

[1] In the last three decades, following the original contribution by De Soto (1988), several economists have developed a more "positive" view of informality. According to this approach, informality is seen as an open choice of economic actors in response to excessive regulation and bureaucratic costs of the formal economy that enable firms to be flexible and to avoid formal sector's rigidities (Maloney, 2004). La Porta and Shleifer (2014) contrast this approach. They provide a comprehensive empirical description of informal businesses as far less productive, less profitable and producing lower quality goods than formal activities. The scope for innovation and investment is minimal, and there is no real competition between informal and formal firms. Indeed, "informal entrepreneurs would gladly close their businesses to work as employees in the formal sector if offered the chance, even if wages in the formal sector are taxed while income in the informal sector is not" (La Porta and Shleifer, 2014, p.112). In a way, La Porta and Shleifer defend a more traditional Lewis-type perspective of informality in which it is an unvoluntary feature of dualist economies due to lack of productive development and that may spontaneously shrink if and when countries develop, and the formal economy expands. Following Loayza (2018), informality may be the result of both underdeveloped productive systems and inefficient governance depending on country-specific factors. The recognition of this last possibility does not make structural change and productive development less important for the absorption of informality. In this report, we will pay prevalent attention to how productive development, by squeezing informality, may increase economic resilience to Covid-19 and possible future pandemics.

[2] Following UN (2021), world trade in the automotive sector contracted massively in 2020. Trade in office machineries and communication equipment increased by around 10 percent, instead.

price of agricultural products has actually increased since January 2020. In the case of metals, after an initial modest reduction, it is now above its pre-crisis level. According to the World Bank Commodity Market Outlook (WB, October 2020a), however, the price index for the energy sector, oil in particular, decreased by almost 60 percent in the first quarter of 2020. It has partially rebounded thereafter, but remains about one-third lower than its pre-crisis level and it is expected to halve over the next two years. Heterogenous evolutions in the market for primary commodities may have led resource dependent economies to be less negatively affected than in previous global shocks. Nonetheless, the pandemic has demonstrated once more the potential exposure of some EDE countries to *volatility* in the price of primary commodities. The initial drop and subsequent volatility in the price of the energy sector seem to emphasize the quest for productive diversification in those economies that depend upon exports of oil and natural gas as primary source of foreign currency. In these countries, economy-wide uncertainty may increase during times of high volatility in commodity prices. The external balance constraint may get significantly tighter when the price of exported commodities declines, leading economic growth to an abrupt halt[3]. This is even the more so since that international financial markets seem to offer these countries small space for protracted current account deficits (Vernengo and Perez Caldentey, 2020).

2.1 Covid-19 and "vulnerable" productive structures in Latin America

Productive structures in Latin American countries seem to present some specific features that can make them more vulnerable to the economic consequences of the pandemic even in comparison to other EDE economies.

First, Latin American countries present the highest informal sector's *GDP share* among EDE economies together with Sub-Saharan Africa (see World Bank, 2019; Islam and Lapeyre, 2020).[4] This fact may contribute to exacerbate the negative consequences of Covid-19. Official statistics cannot capture the full drop in informal sector's output. Nonetheless, we can somehow infer the implicit and indirect economy-wide consequences of Covid-led contraction in informal income by looking at the dynamics in the different demand components of GDP. Indeed, it is reasonable to assume that Covid-related damages to informal employment may be somehow reflected in the relative behavior of private consumption vis-à-vis other demand components. Information about the components of real GDP in 2020 are still largely missing, in particular for EDE countries. However, available data[5] indicate that, in Latin America, the bulk of the drop in annual GDP is imputable to the contraction in domestic private consumption. In Chile and Argentina, private consumption contributed up to 85 and 94 percent of the overall reduction in domestic income, respectively[6]. Improvements in the trade balance, mainly due

[3] In external balance constrained economies, economic growth and capital accumulation strongly rely upon capital goods' imports, which in turn depend on the availability of "hard currency" via exports. From a historical point of view, declining and volatile terms of trade of "peripheral" countries versus "central" economies have recurrently forced the former to curtail investment and slow down economic growth.

[4] This is not the case for the *employment* share, as informal sector's employment share in Latin America is relatively smaller than in African, Asian or Arab countries (Islam and Lapeyre, 2020). This is due to the fact that informal activities in Latin America are relatively more productive than what observed in other parts of the developing world.

[5] Available data about demand components of real GDP in 2019 and 2020 have been collected from OECD at https://stats.oecd.org/index.aspx?queryid=60702.

[6] We computed the contribution of different demand components to the most recent evolution of real GDP according to the following accounting rule: $\frac{Y_t-Y_{t-1}}{Y_{t-1}} = \frac{C_t-C_{t-1}}{C_{t-1}}\frac{C_{t-1}}{Y_{t-1}} + \frac{G_t-G_{t-1}}{G_{t-1}}\frac{G_{t-1}}{Y_{t-1}} + \frac{I_t-I_{t-1}}{I_{t-1}}\frac{I_{t-1}}{Y_{t-1}} + \frac{NX_t-NX_{t-1}}{NX_{t-1}}\frac{NX_{t-1}}{Y_{t-1}}$, where "Y" stands for real

to the collapse of imports, have partially counteracted the decline in domestic demand. The picture is somehow different in other developing countries such as South Africa and Indonesia, or in developed countries that have been harshly hit by the crisis such as Italy and Spain. In South Africa and Indonesia, the reduction in private consumption explains less than 60 percent of the overall decrease in real GDP in 2020. In the case of Italy and Spain, it is about 73 and 64 percent, respectively. Both Italy and Spain experienced sizeable contractions in the trade balance due to the tough crisis in the tourist and hospitality industry.

Second, Latin America is the region with the highest share of *contact-intensive* employment (over total employment) in the World (IMF, 2020c). To a large extent, this is due to a "perverse" regional productive specialization in relatively low-skill "contact-intensive" sectors such as transport, hotels and restaurant, trade, and storage[7]. Following the UN (2021), there are quite striking productive asymmetries between Latin America and emerging (see China and India) or newly industrialized (see South Korea and Singapore) Asian countries. Whilst the former relies upon relatively "low value-added" services that have been more heavily exposed to the pandemic, the latter have increased their participation to high-skill high value-added services such as ICT, finance, education, R&D and business-related services. This structural divergence is of paramount importance given that high-skill high-value added services have been less affected by Covid (they can be more easily performed via homeworking); they are increasingly traded in international markets[8]; they are characterized by economies of scale and offer wider opportunities for innovation and learning-by-doing[9]. Such structural productive asymmetries among EDE countries may help to explain why, after the outbreak of Covid-19, Latin America has suffered the most acute drop in employment compared to both developed and other emerging economies (IMF, 2020c).

Third, even neglecting for a second diverging productive structures in the service industry, Latin American countries have been penalized by "bad" specialization in or participation to global value chains of those industrial sectors that have been hit the most by the crisis. This is the case, for instance, of the oil and energy industry in Colombia and Ecuador. The collapse in the global price of energy products, which only partially rebounded in the second half of 2020, may significantly restrain capital accumulation in these oil-dependent economies. A similar line of reasoning may apply to Mexico and Brazil for the case of the automotive industry. When looking at trade statistics, trade in the automotive sector declined by almost 20 percent in the first half of 2020. On the contrary, trade in office machines and communication equipment, i.e., staple productive sectors in emerging Asian countries, expanded by around 10 percent (see UN, 2021). In the end, Latin American vulnerability to Covid-19 may be partially attributed to the traditional high dependence on natural resources, energy products in particular, and to a far less developed service sector. In addition, it may also come from the idiosyncratic exposure to the economic implications of the pandemic characterizing the few medium/high-tech Latin American manufacturing industries.

GDP, "*C*" represents private consumption, "*G*" is final government purchases, "*I*" is gross capital formation and "*NX*" is net exports in goods and services. The subfix "*t*" refers to 2020, whilst "*t – 1*" to 2019.

[7] The high dependence of Latin American economies on contact-intensive non-teleworkable jobs is also due to lack of ICT infrastructures such as access to broadband internet.

[8] The 2021 UN World Economic Situation and Prospects (UN, 2021) notes that trade in high-skill services has increased faster than trade in goods over the last 15 years. Interestingly, the increasing participation of emerging economies to this type of services has mostly concentrated in emerging and newly industrialized Asian countries.

[9] According to Baldwin and Forslid (2020), high-skill services may somehow present similar growth-enhancing properties traditionally attributed to manufacturing.

3. Financial integration, capital inflows and productive development in EDE countries.

The possible role of underdeveloped productive structures in exacerbating the economic implications of Covid-19 brings back structural change and productive development as central goals of any policy aiming at feeding a sustained and sustainable post-Covid recovery. The analysis of available policy options first requires the identification of the factors that may have been source of enduring productive backwardness in EDE countries. In this report, we will pay attention to the relation between productive development and non-FDI capital flows.

The literature about the causal relation between capital flows and growth in EDE countries is quite abundant. It now shows quite a large consensus among economists about the fact that surges in capital inflows, perhaps stimulated by financial liberalization reforms, may eventually increase macroeconomic instability (Taylor, 1998; Kaminsky and Reinhart, 1999; Ocampo *et al.*, 2008) whilst paying relatively little, if anything, in terms of faster growth (Ostry *et al.*, 2016). The detrimental effects of increased financial integration might not be limited to short-run fluctuations only, but may well extend to medium/long-run dynamics if financial and currency turbulences or full-fledged crises are followed by enduring "balance sheet" depressions, permanent output losses and slack economic recoveries (Cera and Saxena, 2008, Koo, 2014).

Despite the economic literature has dedicated considerable attention to the link between financial liberalization, international capital movements and macroeconomic dynamics, it has largely neglected to investigate whether capital inflows, short-term volatile portfolio investment and international credit in particular, may also shape long-run development trajectories by affecting structural change and the evolution of the productive structure of EDE economies[10]. At the best of our knowledge, a small bunch of contributions has tried to address, implicitly or explicitly, such a topic.

Taylor (1998) analyzes the unstable macroeconomic dynamics of some emerging economies in the aftermath of financial liberalizations at the end of the 1980s or beginning of the 1990s. In doing so, he spots the significant connection between large capital (speculative) inflows, episodes of financial euphoria and hypertrophic real estate sectors in Mexico and Thailand. In the case of Mexico, he notes that easy access to international finance enabled credit to housing to increase by 1000 percent in a few years, whilst productive investment barely recovered above 20 percent of GDP from the slump of the lost decade in the 1980s.

Gallagher and Prates (2014) analyze the growing importance of financial investors (via speculation in the derivative market) for the determination of commodity prices and exchange rate dynamics in Brazil in the first decade of the 2000s. In their view, the interplay between large inflows of (speculative) capitals and the commodity boom may have exacerbated the resource curse and the process of premature de-industrialization Brazil has been experiencing for a long time. Botta *et al.*

[10] Acosta *et al.* (2009) analyze the possible Dutch disease-like effects of international remittances, while Rajan and Subramanian (2011) study the role of international aid.

(2016) provide empirical evidence of similar finance-led structural changes in Colombia. In this case, initial increases in natural resource-oriented FDI attracted booming portfolio inflows that caused even stronger appreciations of the Colombian peso and a statistically significant squeeze in the contribution of manufacturing to domestic GDP.

Benigno *et al*. (2015) and Bortz (2018) provide more general empirical evidence about the effects of large capital inflows on the productive structure of recipient economies. Bortz (2018) shows that there is a positive correlation between the increase in *gross* capital inflows towards some EDE countries and the variation in the contribution of the financial, real estate and commerce sectors to GDP. Benigno *et al.* (2015) consider a sample of 70 high-middle income countries and analyze the sectorial reallocation of productive inputs (i.e., sectorial employment and investment shares) during periods of large capital inflows, as proxied by historically large current account deficits. They find that periods of *net* capital inflows bonanza are associated to the squeeze (at least in relative terms) of manufacturing. To some extent, the findings from Benigno *et al.* (2015) complement the evidence of *premature* de-industrialization in several EDE countries (with the exception of Asia) put forward by Rodrik (2016). Premature de-industrialization could be partially due to the long-term structural effects carried out by increasing capital inflows towards more financially integrated EDE economies.

In the present report, we want to expand further this emerging and still underdeveloped stream of literature. More specifically, we take inspiration from the regression analysis carried out by Rodrik (2016) and try to identify the causes of premature de-industrialization that Rodrik captures but leaves unexplained through simple time-specific dummy variables. We will try to assess the role played by capital inflows, volatile portfolio investment and international credit in particular. Our analysis goes beyond Benigno *et al.* (2015) since that we take into account *direct* data about (some types of) net capital inflows rather than indirect evidence provided by current account data. Also, we expand the set of dependent variables measuring productive development by considering the broader Economic Complexity Index (ECI) on top of more conventional measures related to manufacturing. The details and the results of our empirical analysis are described in sub-section 3.2. Before that, sub-section 3.1 discusses, from a theoretical point of view, the possible mechanisms through which capital inflows to EDE economies may influence the development of their productive structures.

3.1 Financial integration, capital flows and productive structures in EDE countries: a theoretical overview

Few contributions have theoretically investigated what Benigno and Fornaro (2014) label the "financial" resource curse and Botta (2017, 2021) defines the financial Dutch disease. Lartey (2008) and Benigno and Fornaro (2014) present mainstream new-Keynesian models where large access to foreign capitals may give rise to consumption booms and to standard Dutch disease-like phenomena by increasing the (relative) price of non-tradable goods versus tradable ones[11].

In the mainstream real economy supply-side framework adopted by Lartey (2008), capital inflows *de facto* boil down to foreign-made investment goods used as productive inputs in the production of domestic manufactured products. As a consequence, Lartey (2008) completely ignores all the financial and monetary aspects related to international capital movements such as the determination of domestic and international interest rates and of the spread between them, the determination of the nominal (and hence real) exchange rate in the FX market, or changes in the confidence of international investors. In Benigno and Fornaro (2014), episodes of large capital inflows are modeled as a reduction in the exogenously given interest rate that encourages larger international borrowing, widening current account deficits and a consumption boom in the home economy. Adjustments in the economy mainly take place via changes in relative prices in the context of an optimizing inter-temporal traverse towards the long-run equilibrium. Once again, there is no attention whatsoever to crucial financial mechanisms such as (short-term) speculation in different sectors, financial instability, the determination of financial variables in domestic and international financial markets. Botta (2017) and Botta (2021) partially address these lacks by describing finance-led processes of de-industrialization (read reductions in the relative importance of manufacturing) that take place due to changes in the level and in the volatility of leading macro-financial prices such as the nominal exchange rate and/or the expected returns on speculative (read real estate) assets[12].

On the basis of the above-mentioned contributions, it is possible to identify four channels through which abundant capital inflows, portfolio investment and international (bank) credit more specifically, may affect structural changes in the real side of the economy. We list them in Figure 1 below.

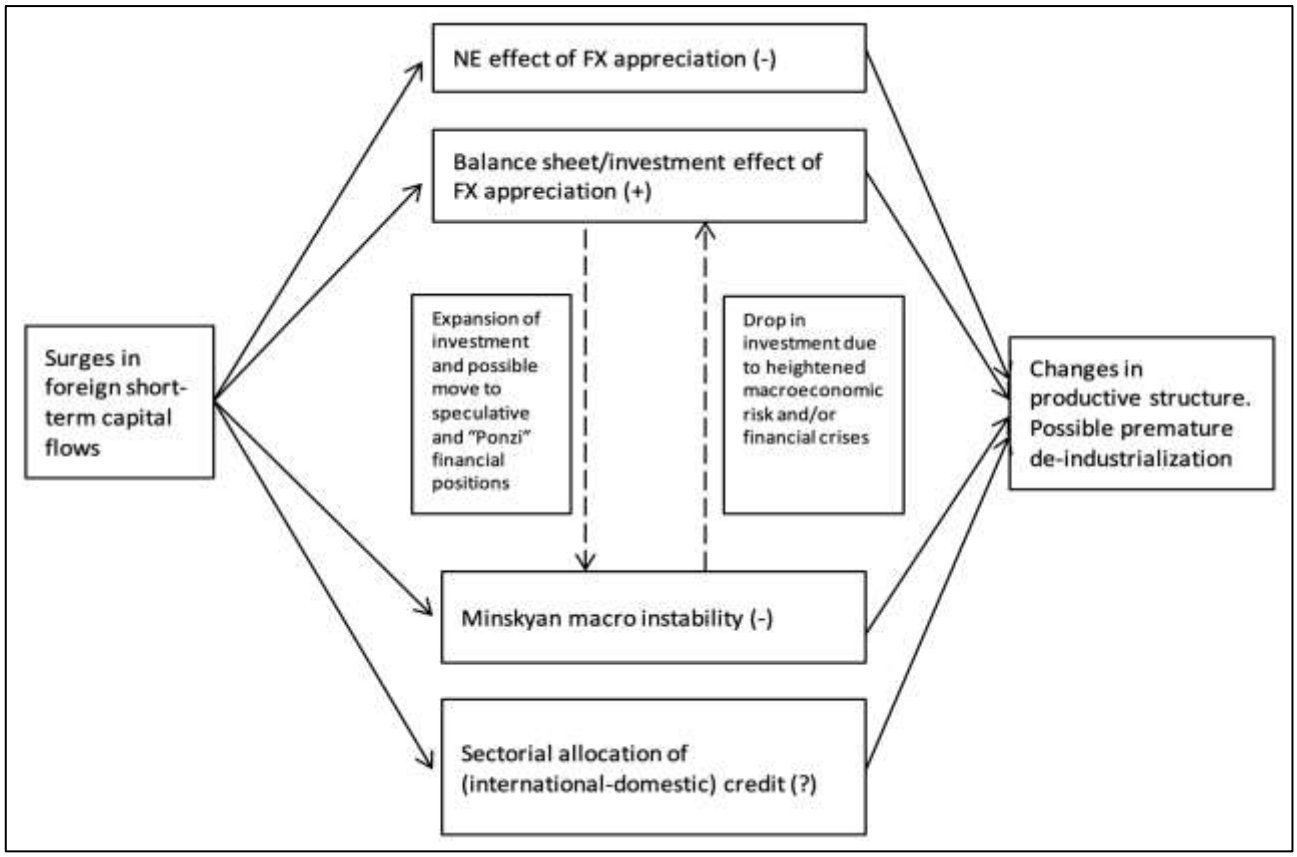
The first channel is related to the real-side effect that surges in portfolio inflows and international credit may bring about by affecting the nominal and real exchange rate and, therefore, the price competitiveness of home-made goods and services. This is the traditional "Dutch disease-like" effect. At least in the short-medium term, say in the expansionary phase of the financial cycle, abundant

[11] Lartey (2008) claims that appropriate monetary policy may actually impede such a finance-led Dutch disease to take place. In his view, this happens when monetary authorities adopt a "generalized" Taylor rule and fix the domestic interest rate by also considering price inflation of non-tradable goods and the dynamics of the discrepancy between the nominal and real exchange rates with respect to their steady state values.

[12] Taylor (1991, ch.6) presents a structuralist model capturing the economic consequences of financial bubbles and speculative waves in countries such as Kuwait in the 1980s and Chile in the 1970s in the aftermath of the military coup. In the initial review of the empirical phenomena that model formalizes, Taylor (1991) describes financial booms as having very poor connection, if any, with the development of the non-traditional non-commodity tradable sector, say manufacturing, but stronger linkages with the (over-) expansion of the financial industry and/or the real estate. Taylor (1991) does not put foreign capitals at the center of his analysis as financial booms unfold via internal mechanisms. Nevertheless, he explicitly admits that foreign capitals can play a relevant role in triggering or feeding financial booms.

international capitals could feed domestic credit booms and the general expansion of the economy. Depending on the reaction of domestic monetary authorities, prices may increase, in particular those of non-tradable goods and services[13]. The *real* exchange rate may appreciate and productive factors find more profitable to move away from "non-traditional" tradable sectors (read manufacturing) and to relocate towards non-tradable ones. It is important to note that such real-side mechanism could be complemented and reinforced by the appreciation of the *nominal* exchange rate that large capital inflows may generate in the FX market. Although financial booms may not last long and may actually be followed by a reversal, "perverse" structural changes may be permanent if the (relative) squeeze of the tradable sector is associated with a widening irreversible technological and productivity gap (Botta, 2021).

Figure 1 – Relation between short-term capital inflows and changes in the productive structure



The nominal exchange rate is not only a component of the real exchange rate and of relative prices between imported and home-made goods. It is also a "financial price" since that it determines the domestic currency equivalent of foreign currency-denominated assets and liabilities. The "financial side" of the nominal exchange rate plays a fundamental role in causing changes in the balance sheets of firms with a currency mismatch between foreign currency-denominated liabilities and domestic currency-denominated assets. Since 2010, this is increasingly the case of companies in emerging economies, and of Latin American ones in particular (Chui *et al.*, 2016; Perez-Caldentey *et al.*, 2019). In this context, the appreciation of the nominal exchange rate caused by booming capital inflows

[13] The asymmetric effects of (international) credit-led domestic expansions over prices in different sectors may be due to the fact that, in small open economies, prices of tradable goods and services are at least partially determined in the international goods market rather than by internal economic mechanisms.

makes the balance sheet of domestic firms more solid. This, in turn, may induce them to raise investment, not only because the price of imported capital goods declines, but because a stronger balance sheet may allow them to scale up purchases of new vintage capital equipments. This is the second channel portrayed in Figure 1. This channel is potentially beneficial for long-run productive development if higher investment help to fill the technology gap and to introduce process and product innovation that may support the strategic integration of the economy in the international goods market.

Albeit potentially positive, channel 2 may emerge as consequence of the booming phase of a traditional Minskyan financial cycle in EDE countries (Frenkel and Rapetti, 2009). A perverse destabilizing feedback between surges in capital inflows, the accumulation of foreign debt in particular, and the exchange rate dynamics is worth mentioning here. During periods of financial "bonanza", relatively cheap and abundant international liquidity may induce companies in EDE countries to issue large amounts of *corporate bonds* in international markets (see again Chui *et al.*, (2016) and Perez-Caldentey *et al.* (2019) for some recent empirical evidence). From a balance sheet point of view, the increase in the external liabilities of domestic companies is mirrored in the rise of capital inflows (i.e., larger amounts of foreign assets, debt instruments in this case, held by international creditors in EDE countries)[14]. These may cause a (temporary) appreciation of the exchange rate, which reduces the burden of foreign debt and may encourage domestic companies to get even more indebted in international financial markets. Past empirical evidence suggests that this positive feedback does not last long and most likely sets the stage for an abrupt reversal. When conditions in international financial markets become less favorable or "intolerance" against allegedly excessive external debt mounts (Reinhart *et al.*, 2003), international capitals stop flowing in, the exchange rate depreciates and the debt burden becomes unsustainable. Financial turmoil, an exchange rate crisis and economic recession may eventually "knock at the door" of EDE countries all together. In this context, the above-mentioned increase in (productive?) investment may be short-lived. It may actually concur in generating "speculative" or "Ponzi" positions at micro level. At macro level, fragile financial positions can bring about perverse externalities by paving the way to the burst of the bubble and cause an enduring drop in investment (when firms try to deleverage from accumulated debt) that more than compensates for the initial increase (see the central block of Figure 1). Over the medium-to-long run, what initially appeared as a positive contribution to productive development may turn into a highly negative one if the demand for productive investment reacts strongly negatively to heightened macro instability. Early empirical evidence seems to suggest that this might be the case for the last financial cycle affecting Latin America in the 2000s and lasting up until about 2015 (see more on this below).

Surges in foreign capital inflows have frequently fueled credit booms in developing and emerging economies (hence the need to analyze capital controls as policy tools complementing and overlapping with macro-prudential regulation). Credit booms may in turn affect the productive dynamics of the economy according to the different industries that benefit the most from the expansion of credit opportunities. Easy credit that prevalently finances investment in the non-traditional tradable good

[14] Portfolio capital inflows may also take the form of investment in equities. This type of capital inflows may contribute to bring about temporary appreciations of the domestic currency, with possible consequences for the structural (sectorial) evolution of the home economy, as much as foreign investment in debt instruments do. Implications in terms of financial solidity and debt sustainability, however, are different, as equity purchases do not provide foreign investors with the "privileges" recognized to creditors.

sector can likely bear different long-term development implications than credit bubbles inflating the non-tradable sector, say real estate. We stress the importance of the sectorial pattern of (foreign capital-led) increases in credit to the private sector through channel 4 at the bottom part of Figure 1. This point may play a relevant role not only because of its direct effect on the evolution of the productive structure of the economy, but also because it may feed back on the financial position of domestic firms by increasing or not currency and/or maturity mismatches in their balance sheets. On the one hand, foreign capital-financed investment by companies in the tradable sector that may increase their external competitiveness and lead to a rise in export may be even associated to a reduction in the currency mismatch and a more solid financial position of domestic companies. On the other hand, if foreign capital mainly fuels companies in the non-tradable sector, the currency mismatch will increase as does the exposure to external shocks. Which sector(s) grabs most of the funds made available in the economy is a vital aspect of the short-medium-term stability and long-term development implications of financial integration and foreign capital booms.

3.2 Financial integration, capital flows and productive structures in EDE countries: an empirical analysis

Following Rowthorn and Ramaswamy (1997) and Palma (2005), the productive structure of an economy usually changes alongside the broader development process. In the early take off stages of development, an increasing share of the labor force relocates from agriculture to industry, manufacturing in particular. The share of manufacturing increases both in terms of total employment and GDP. At more advanced stages, however, service expands both in absolute and in relative terms. The share of manufacturing contracts giving rise to an inverted U-shaped trajectory. This is the (expected) de-industrialization phase of the whole development process, which Tregenna (2009) identifies with the *joint* reduction in the contribution of manufacturing to total employment and (nominal) GDP[15].

Given such "fundamental" evolution, *premature* de-industrialization takes place if the contraction in the share of manufacturing kicks in at a lower level of per-capita GDP (or of the manufacturing share itself) than usual (say with respect to what historically observed in advanced economies or in the whole sample of countries taken into consideration). Rodrik (2016) tries to detect premature industrialization for a sample of developed, emerging and developing countries. He does so by introducing period-specific dummy variables in a regression analysis featuring per-capita GDP and the size of population, both in squared terms, as "fundamental" variables capturing the inverted U-shaped trend characterizing (the share of) manufacturing. In this report, we aim at empirically investigating the possible link between capital inflows and changes in the productive structure of EDE economies by building upon and developing Rodrik's analysis further. Whilst Rodrik (2016) detects but does not explain premature industrialization, we try to verify whether periods of abundant capital inflows, say periods of financial bonanza, may be an additional source of de-industrialization on top of the structural factors mentioned above.

[15] Statistical evidence about de-industrialization is far less evident if one takes data about manufacturing GDP share in *real terms*. The contribution of manufacturing to real GDP is more stable through time once it reaches the peak, and the subsequent decline far smaller. This stylized fact may be partially due to difficulties in the computation of sectoral deflators as well as to different dynamics in the prices of tradable and non-tradable goods.

From a technical point of view, our analysis is based on a sample of 36 countries including both developed, emerging and developing economies. Our sample significantly overlaps with Rodrik's one but for six countries (Ethiopia, Malawi, Morocco, Taiwan, West Germany and Zambia) for which updated data are not available either for the dependent variables or the financial explanatory ones. Our dataset covers the period from 1980 to 2017. Table A.1 in the Appendix presents the full list of countries included in our study. Table A.2, in turn, reports the sources of our data as well as descriptive statistics. We take most of data from either the updated Groningen Growth and Development Center (GGDC) dataset or international institutions such as the IMF, the World Bank (WB) and ECLAC. Data about the Economic Complexity Index (ECI) are taken from the Atlas of Economic Complexity[16].

In order to perform our analysis, we have expanded the baseline regression model (without period-specific dummies) in Rodrik (2016) by including a set of additional explanatory variables, see Equation (1) below:

$$y_{i,t} = \beta_0 + \beta_1 x_{i,t} + \beta_2 x_{i,t}^2 + \beta_3 pop_{i,t} + \beta_4 pop_{i,t}^2 + \beta_5 d_{i,t}^{FIN} + \beta_6 topen_{i,t} + \beta_7 g_{i,t}^{ROW} + \beta_8 r_{i,t}^{NR} + \epsilon_{i,t} \quad (1)$$

In Equation (1), $y_{i,t}$ stands for the various dependent variables we use to measure industrial development and, more broadly, the degree of technological and productive complexity characterizing an economy. Consistent with Rodrik (2016), we first consider the share of manufacturing over total employment (*manemp*) and over GDP, both in nominal (*nommanva*) and real terms (*realmanva*). We also use ECI as originally computed by Hidalgo and Hausmann (2009) as additional robustness check for the effects of capital inflows over productive development.

On the right-hand side of equation (1), $x_{i,t}$ stands for the level of real per-capita GDP. $pop_{i,t}$ is the level of population. Different from Rodrik (2016), we do not take natural log transformations of these variables in order to maintain consistency with the other explanatory factors included in our analysis. In Equation (1), the list of control explanatory variables includes $topen_{i,t} = (exp + imp)/GDP$, which measures the degree of trade openness characterizing an economy. It is defined as the ratio of exports (*exp*) plus imports (*imp*) over GDP. $g_{i,t}^{ROW}$ is the rate of growth of the Rest of the World (ROW), whilst $r_{i,t}^{NR}$ is the share of natural resource rents over GDP as measured by Lange *et al.,* (2018).

In Equation (1), $d_{i,t}^{FIN}$ is "our" financial variable. It is meant to capture the role of (abundant) capital inflows over the productive structure of the recipient economies. We use two different specifications of this variable. We first compute $d_{i,t}^{FIN}$ as a financial *dummy* variable that takes value 1 during periods of large capital inflows and 0 otherwise (see below for the definition of periods of large capital inflows). Second, as a robustness check, we re-run our model using the "original" data about net non-FDI capital inflows in place of the financial dummy variable just mentioned. By doing this, we want to

[16] The ECI index depends, among other factors, on the degree of sectorial diversification characterizing the economy. Indeed, this influences the extent by which the economy may develop comparative advantages in a wide range of industries or not. Following Imbs and Warzciag (2003), countries tend to follow an inverted U-shaped pattern of diversification along the overall development process. The ECI index may display a similar evolution and, to some extent, mimic the process of industrial development described by Rowthorn and Ramaswamy (1997). In our analysis, we rescale the original ECI index in the (0-100) range to maintain consistency with other variables included in our estimations.

verify that our definition (and computation) of periods of "financial bonanza" does not bias our findings in any way.

We compute our financial variable based on net non-FDI capital inflows. In doing this, we depart from Benigno *et al.*, (2015), who use just an *indirect* measure of net capital inflows based on deficits in the current account plus variations in foreign reserves. Also, we do not consider the full range of capital flows. More specifically, we do not include FDI and changes in the amount of foreign reserves in our analysis, but we focus on private sector's portfolio investment and international credit only. On the one hand, the purpose of this report is to investigate the long-term effects of the supposedly most volatile components of capital flows, hence the focus on portfolio investment and international credit. On the other hand, changes in foreign reserves may be somehow the results of discretional actions taken by domestic monetary institutions to control the evolution of the exchange rate and as a form of macro-prudential policy. They cannot be directly associated to the behavior of the "private" sector of the economy we are primary interested in (although decision making by economic actors can certainly be influenced by the economic consequences of the accumulation of foreign reserves and/or sterilization measures).

In this analysis, we consider *net* rather than gross capital inflows. We do this because empirical data tell us that, from 1980 to 2017, net capital inflows have been more volatile than gross figures[17]. This (perhaps unexpected) result is due to procyclical movements in international financial transactions involving domestic capitals. In the case of EDE countries in particular, at the start of a financial boom, positive foreign capital inflows are magnified by the (at least partial) repatriation of domestic capitals that were previously invested abroad. Symmetrically, the outbreak of financial turmoil may reduce gross foreign capital inflows and encourage domestic capitals to leave the country in search for safer foreign assets. Consistent with the theoretical analysis developed in sub-section 3.1, heightened financial volatility is one way through which international capital movements may affect the productive development of an economy. We try to capture this aspect by taking the most volatile measure of capital inflows

Before implementing our estimations, we run a battery of tests about the presence of heteroskedasticity, autocorrelation and cross-sectional dependence in our data. The results of our tests are reported in Table A.3. Pearson test suggests that our data are not characterized by cross-sectional dependence. Heteroskedasticity and auto-correlation, in turn, are present. For this reason, we implement our analysis by using an Ordinary Least Square Panel Corrected Standard Error (OLS-PCSE) estimator in order to properly take into account these features of our dataset.

3.2.1 Periods of large net capital inflows and productive development

Since the beginning of the so-called "neoliberal" era in the second half of the 1970s, foreign capitals towards EDE economies have been mostly described as moving in waves and characterized by booms and bursts (Diaz-Alejandro, 1985; Calvo *et al.*, 1996; Frenkel and Rapetti, 2009). Financial deregulation, capital account liberalization and increasing integration in global financial markets have facilitated

[17] If we take standard deviation (SD) as synthetic measure of volatility in capital flows, SD characterizing net non-FDI capital inflows towards EDE countries is equal to 7.82 for data from 1980 to 2017. It is considerably higher than the corresponding statistics for *gross* non-FDI capital inflows, which is equal to 3.64.

surges in capital inflows (Kaminsky and Reinhart, 1999). Both pull and push factors have concurred to generate periods of "financial bonanza", with the latter being more relevant in the case of portfolio flows and international credit (Eichengreen *at al.*, 2017).

The 2007-2008 world financial crisis and, more relevantly, extraordinary monetary policies undertaken in the aftermath to stabilize the global financial system may have caused a structural break in the behavior of international capitals. Unprecedentedly low interest rates in the center of the global financial system (say North America and Europe) and the enormous amount of liquidity injected onto financial markets by leading central banks may have triggered off an unusually long period of abundant (net) capital inflows. A simple two-sample t-test on international capital data before and after 2008 (see Table 1 below) confirms that net non-FDI capital inflows towards EDE countries have increased remarkably since 2009. This result holds true even if we exclude the "lost decade" of the 1980s from our dataset, which traditionally featured very meagre capital inflows towards EDE countries in the wake of the 1982 external debt crisis. In the case of Sub-Saharan African countries, relatively large capital inflows seem to have targeted this region for the first time in history. In Latin America, the post-2008 rise in net non-FDI capital inflows is always statistically significant regardless we consider the 1980s or not. Moreover, net non-FDI capital inflows to Latin America seem to have become less volatile than before.

Table 1 – Structural break in net non-FDI capital inflows before and after 2008

	Mean net non-FDI capital inflows (% of GDP)			Standard deviation	
COUNTRY\PERIOD	1980-2008	2009-2017	Difference	1980-2008	2009-2017
Full sample	4.05	6.81	2.75*** (0.0001)	7.36	12.29
EDE countries	2.13	5.98	3.85*** (0.0000)	5.83	12.74
Latin America	2.12	5.33	3.21*** (0.0000)	4.63	3.93
Asia	5.05	7.66	2.61* (0.0746)	10.08	9.40
Sub-Saharan Africa	0.87	6.52	5.65*** (0.0070)	2.31	24.45
Country\Period	1990-2008	2009-2017	Difference	1990-2008	2009-2017
Full sample	5.59	6.81	1.22 (0.1344)	8.23	12.29
EDE countries	3.03	5.98	2.95*** (0.0006)	6.53	12.74
Latin America	2.96	5.33	2.37*** (0.0001)	4.28	3.93
Asia	7.22	7.66	0.44 (0.8017)	11.85	9.40
Sub-Saharan Africa	1.31	6.52	5.21** (0.0428)	2.74	24.45

*Note: ***($p < 0.01$); **($p < 0.05$); *($p < 0.1$).*

The statistical evidence reported in Table 1 might describe a sort of post-2008 boom-*without*-burst dynamics in the behavior of the most speculative component of international capitals. This fact notwithstanding, two caveats are to take into account about such seemingly "new normal" in international financial markets. First, our findings confirm that "exogenous" push factors continue to play a key role in the determination of portfolio investment and international credit towards EDE countries. The most recent data about capital movements in 2020 corroborates this perspective. Indeed, the dramatic rebound in international capitals to EDE countries in the second half of 2020 after the collapse registered in the first quarter is largely due to the new huge load of liquidity created by most relevant central banks worldwide in response to Covid-19. Secondly, and consistent with the previous point, there is no guarantee this long period of large capital inflows will last forever. Indeed, international capitals towards EDE countries suddenly dropped and reverted their direction as soon as Covid-19 spread through several developed countries in March 2020, as they did in 2013 with "Taper Tantrum" (see IIF, 2020a). In the end, whilst volatility in international capitals may have temporarily gone, it certainly should not be forgotten.

Given these features in the recent evolution of international capitals, we identify periods of large capital inflows by following a similar approach to Benigno *et al.*, (2015). We focus on "unusually" high *levels* of net non-FDI capital inflows rather than on marked changes in their dynamics (see Reinhart and Reinhart (2008), for instance). More specifically, we define periods of large capital inflows as follows:

Definition: large capital inflows are periods during which (i) net non-FDI capital inflows are not negative or equal to zero; (ii) they present positive values for at least three years in a row; (iii) the sub-period average is higher than the full-period country-specific average adjusted (increased) by ten percent of one standard deviation.

Similar to other contributions adopting an "event identification-based" approach, our definition of large capital inflows is somehow discretional. Yet, the three criteria just mentioned may present some useful properties. First, they put emphasis on periods of large capital inflows that extend beyond the short run and that may be long enough to induce enduring consequences on the productive structure of an economy. Other way around, our definition may help us to exclude from our analysis isolated spikes in international capital flows that may hardly bear any structural economic implication. Second, it tends to select periods of time characterized by some "internal" pattern or consistency with financial markets' "conventions" about recipient economies, i.e., capital flows are relatively stable and do not abruptly switch from positive to negative values. Third, it may take in due account countries' peculiarities by paying attention to country-specific averages and variability. Forth, our definition seems to be able to capture all the major episodes of large capital inflows already tracked by the economic literature for the set of countries at stake (say, financial booms in Latin America and Asia in the 1980s or 1990s, as well as pre-2007 large capital inflows to peripheral eurozone countries).

We identify 60 episodes of large capital inflows from 1980 to 2017. They are listed in Table A.4 in the Appendix. We include in our list also periods of time that, strictly speaking, fall shorter than a three year span, but are part of well-known episodes of large capital inflows that started before 1980 and that would conform to our definition if considered in their entirety (see Argentina 1980-1981, for

instance). Years of large capital inflows are given value "1" in the computation of the financial dummy variable $d_{i,t}^{FIN}$.

Tables 2 – 5 below report the results of our regression analysis incorporating the definition of large capital inflows just described. Table 2 looks at manufacturing employment share. Tables 3 and 4 pay attention to nominal and real manufacturing GDP share, respectively. Table 5, finally, put emphasis on the ECI index. We estimate equation (1) for the full sample, as well as for developed and EDE countries taken separately.

Our results well replicate Rodrik's findings when we look at the structural factors (GDP per capita and population) that may account for the natural process of de-industrialization characterizing economies all along the whole development process. More importantly for the sake of our analysis, Tables 2 – 5 witness the existence of a *negative correlation* between periods of large capital inflows (as captured by "our" financial dummy variable) and our measures of productive development (i.e., the relative importance of manufacturing and the ECI index). When net non-FDI capital inflows are particularly abundant, the manufacturing share tends to contract and the economic complexity index decreases. Other way around, large net non-FDI capital inflows may be source of premature de-industrialization or declining productive complexity, i.e., a lower degree of diversification of the economy and loss of comparative advantages in high-skill intensive productive sectors.

The negative correlation between periods of large capital inflows and productive development is statistically significant in all our "full sample" regressions (column (1) in Tables 2 – 5) but the estimations related to the real manufacturing GDP share (*realmanva*). In this case, the coefficient associated to the financial dummy variable remains negative, as expected, but turns statistically insignificant. This result is consistent with Rodrik's findings and the general recognition of far less solid evidence of de-industrialization when attention is on the *real* manufacturing GDP share.

When we split the analysis between advanced countries and EDE economies, there is clear evidence that the long-term detrimental effects of large capital inflows are more serious in the latter than in the former. EDE countries always experience statistically significant *contractions* (at least at 10% confidence level) in the manufacturing employment share, in the manufacturing *nominal* GDP share and in the economic complexity index when net non-FDI capital inflows stand at "higher than normal" levels (column (2) in Tables 2, 3 and 5). Such a negative effect seems to be particularly strong in the case of the economic complexity index. Consistent with the economic theory outlined in Figure 1, large net non-FDI capital inflows may fuel and feed the expansion of non-tradable sectors rather than (non-traditional) tradable ones. They may also lead to protracted periods of appreciation of the nominal and real exchange rate. These facts may in turn harm EDE countries' capabilities to compete in international goods market for manufactured products and cause a premature decline in the degree of complexity (and diversification) of emerging and developing economies.

In the case of developed economies, instead, the coefficient associated to the financial dummy variable becomes statistically insignificant in the case of the manufacturing employment share (see column (3) in Table 2). It turns into positive, albeit statistically insignificant, in the case of manufacturing nominal GDP share (column (3) in Table 3). The financial dummy variable continues to display a statistically significant (at 10% confidence level) negative correlation with the economic

complexity index even in advanced economies (column (3) in Table 5). Nonetheless, such an effect is roughly half that observed in EDE economies.

Among the other explanatory factors included in our analysis, the coefficient associated to the natural resource variable is always negative, as expected. However, it is statistically insignificant in most of the estimations. Remarkable exceptions are the negative correlation with the manufacturing employment share when we consider the full set of countries and, more importantly, the ECI index. In this last case, such a negative correlation becomes statistically significant (and larger in size than in the full sample regression) in the specific case of EDE economies.

Table 2 – Econometric estimations for manufacturing employment share (manemp), 1980 – 2017

VARIABLES	(1) All Countries	(2) EDE Economies	(3) Developed Economies
GDP per capita	0.000616***	0.000876***	-0.000641***
	(5.29e-05)	(6.51e-05)	(8.92e-05)
GDP per capita, squared	-1.00e-08***	-2.01e-08***	4.40e-09***
	(1.09e-09)	(1.81e-09)	(1.17e-09)
Population	-4.82e-06*	3.37e-07	2.43e-05***
	(2.46e-06)	(2.65e-06)	(8.24e-06)
Population, squared	0***	0	-9.43e-11***
	(0)	(0)	(0)
Financial boom dummy	**-0.253****	**-0.235***	-0.0667
	(0.114)	(0.122)	(0.184)
Trade Openness	0.00657*	0.00381	0.0166***
	(0.00366)	(0.00490)	(0.00305)
ROW GDP growth rate	0.00126	0.00121	0.00226
	(0.0102)	(0.00873)	(0.00917)
Total natural resources rents (% of GDP)	-0.0183	-0.00124	-0.000676
	(0.0186)	(0.0197)	(0.189)
Constant	8.218***	6.430***	31.92***
	(0.566)	(0.475)	(1.706)
Observations	896	647	249
R-squared	0.789	0.763	0.941
Number of c_id	36	26	10

*Note: Standard errors in parentheses (*** p<0.01, ** p<0.05, * p<0.1)*

Table 3 – Econometric estimations for manufacturing nominal value added share (nommanva), 1980 – 2017

VARIABLES	(1) All Countries	(2) EDE Economies	(3) Developed Economies
GDP per capita	0.000215***	0.000584***	-0.000587***
	(5.85e-05)	(0.000124)	(0.000134)
GDP per capita, squared	-4.87e-09***	-1.82e-08***	4.70e-09***
	(1.07e-09)	(3.85e-09)	(1.74e-09)
Population	4.92e-06	1.25e-05**	2.11e-05*
	(4.80e-06)	(5.11e-06)	(1.12e-05)
Population, squared	0	-0	-1.30e-10***
	(0)	(0)	(0)
Financial boom dummy	**-0.392*** **	**-0.576*** **	0.227
	(0.142)	(0.167)	(0.258)
Trade Openness	0.00923**	0.00980	0.0104**
	(0.00465)	(0.00724)	(0.00421)
ROW GDP growth rate	0.0195*	0.0186	0.0280**
	(0.0106)	(0.0126)	(0.0138)
Total natural resources rents (% of GDP)	**-0.0554***	-0.0492	-0.0648
	(0.0292)	(0.0316)	(0.226)
Constant	18.19***	15.75***	34.28***
	(0.900)	(0.969)	(2.552)
Observations	888	639	249
R-squared	0.748	0.737	0.920
Number of c_id	36	26	10

*Note: Standard errors in parentheses (*** p<0.01, ** p<0.05, * p<0.1)*

Table 4 – Econometric estimations for manufacturing real value added share (realmanva), 1980 – 2017

VARIABLES	(1) All Countries	(2) EDE Economies	(3) Developed Economies
GDP per capita	0.000192***	0.000764***	-0.000334***
	(5.43e-05)	(0.000108)	(0.000107)
GDP per capita, squared	-2.84e-09***	-1.92e-08***	3.65e-09***
	(1.09e-09)	(3.59e-09)	(1.39e-09)
Population	-1.40e-06	5.58e-06	3.22e-05***
	(4.73e-06)	(4.49e-06)	(1.09e-05)
Population, squared	0*	0	-1.73e-10***
	(0)	(0)	(0)
Financial boom dummy	-0.0644	-0.142	-0.0480
	(0.101)	(0.134)	(0.255)
Trade Openness	0.00382	-0.00129	0.0115***
	(0.00467)	(0.00594)	(0.00321)
ROW GDP growth rate	0.0140**	0.0144	0.0267**
	(0.00715)	(0.00879)	(0.0127)
Total natural resources rents (% of GDP)	-0.00427	-0.00721	-0.272
	(0.0156)	(0.0202)	(0.190)
Constant	15.90***	13.09***	24.55***
	(0.733)	(0.801)	(2.029)
Observations	894	648	246
R-squared	0.756	0.764	0.898
Number of c id	36	26	10

*Note: Standard errors in parentheses (*** p<0.01, ** p<0.05, * p<0.1)*

Table 5 – Econometric estimations for Economic Complexity Index (ECI), 1980-2017

VARIABLES	(1) All Countries	(2) EDE Economies	(3) Developed Economies
GDP per capita	0.00221***	0.00219***	0.000583**
	(8.63e-05)	(0.000199)	(0.000268)
GDP per capita, squared	-2.28e-08***	-3.62e-08***	-4.17e-09
	(1.60e-09)	(6.04e-09)	(3.30e-09)
Population	1.85e-05***	3.10e-05***	0.000110***
	(6.47e-06)	(6.24e-06)	(3.03e-05)
Population, squared	-0	-0***	-3.80e-10***
	(0)	(0)	(9.53e-11)
Financial boom dummy	**-1.135*** **	**-1.032*** **	**-0.489***
	(0.305)	(0.354)	(0.281)
Trade Openness	-0.0159**	0.0404***	-0.0225**
	(0.00663)	(0.0135)	(0.00897)
ROW GDP growth rate	0.00150	0.000841	-0.00600
	(0.0263)	(0.0282)	(0.0199)
Total natural resources rents (% of GDP)	**-0.256*** **	**-0.307*** **	-0.138
	(0.0894)	(0.0882)	(0.297)
Constant	33.89***	30.24***	66.68***
	(1.232)	(1.465)	(5.234)
Observations	896	648	248
R-squared	0.904	0.846	0.972
Number of c_id	36	26	10

*Note: Standard errors in parentheses (*** p<0.01, ** p<0.05, * p<0.1)*

In order to verify the robustness of our findings, we re-run the regression model specified in Equation (1) by using straight data about net non-FDI capital inflows (as a percentage of GDP) rather than the financial dummy variable. Our goal is to ascertain that the construction of the financial dummy variable does not generate any bias in the results reported in Tables 2 – 5. Tables 6 – 9 below present the outcomes of the robustness check. They provide further support to our analysis and confirm the hypothesis that large capital inflows may bear negative structural consequences in terms of productive development and economic complexity.

In Tables 6 – 9, the correlation coefficients of the net non-FDI capital inflows are always negative. If we restrict our focus to the regressions for the full sample of countries and for EDE economies, such negative correlation is statistically significant in all cases but the manufacturing employment share. Differently from the previous findings, it turns weakly significant (at 10% percent confidence level) even in the case of the *real* manufacturing GDP share. In developed economies, in turn, the coefficient for net non-FDI capital inflows is always insignificant (albeit negative). Importantly, this now applies also to estimations using the ECI index as dependent variable. This is an important difference with respects to estimations including the financial dummy variable as explanatory factor.

Tables 6 – 9 also confirm our findings related to the role of natural resources. The higher the rents "extracted" from the exploitation of natural resources, the lower is the contribution of manufacturing to either GDP or total employment, as well as the economic complexity index. This negative relation is statistically significant for nominal manufacturing GDP share and for complexity index in the "full sample" regression and in the case of EDE economies. We have run an additional battery of regressions for emerging and developing economies considering alternative measures of the "natural resource curse" variable. More specifically, we have considered the share of natural resource sectors over GDP and the weighted price index of exported commodities[18]. In both cases, results (not presented here for the sake of space but available on request) are in line with and reinforce those already discussed. Larger dependence on natural resources, whatever measure we take, always give rise to sizable and statistically significant negative effects over our indicators of productive development. The unique exception is represented by the coefficient associated to the exported commodity price index in the regressions for the real manufacturing GDP share. In this case, the estimated coefficient is statistically insignificant and gets very small counter-intuitive positive values.

3.2.2 Latin America in a comparative perspective

Lack of a sufficient number of observations restrains the possibility to carry out the econometric analysis just described at a more disaggregated regional level. Nonetheless, some simpler summary statistics may be useful to provide an overview, even though at more descriptive level, of the dichotomic evolution of the productive patterns in Latin America with respect to other EDE economies, Asian ones first and foremost.

[18] Weights are given by the share of each single commodity over total commodity exports.

Figures 2 – 4 below, for instance, describe the comparative evolution of the "manufacturing gap" in Latin America and in Asian economies included in our sample (excluding Japan). We compute the manufacturing gap as the difference between the actual contribution of manufacturing to either GDP or employment with respect to what would have been expected according to the "fundamentals" source of industrialization/de-industrialization identified in Rodrik (2016). This difference is then presented as a ratio of the "expected" (Rodrik-type) level of manufacturing development. Positive values stand for levels of manufacturing development that are higher than "normal". Negative values indicate that a process of premature de-industrialization is taking place.

Regional differences emerging from Figures 2 – 4 are quite striking. On the one hand, Asian countries always score very large positive values for the three measures of manufacturing gap (either related to the manufacturing employment share or to the contribution to nominal or real GDP) we consider. On the other hand, in Latin America, the manufacturing gap is negative most of the time. The only partial exception is real manufacturing GDP share, which scores very small positive values (but still considerably lower than what recorded in Asia) in the 1980s and at the beginning of the 2000s.

Regional differences in the *levels* of manufacturing development tend to widen over time due to different trajectories. Despite some fluctuations, the relevance of manufacturing seems to remain broadly constant or to increase in the case of Asian economies. In Latin America, in turn, the economy-wide contribution of manufacturing seems to follow a downward-sloping trend, at least since the beginning of the 1990s. Even in the more nuanced case of real manufacturing GDP share, de-industrialization processes (i.e., a negative and widening manufacturing gap) seem to take momentum during periods of large capital inflows, i.e., during the 1990s and since 2007 onwards. These findings are consistent with Rodrik (2016), who stresses how premature de-industrialization is a well-established feature of productive developments in Latin America, whilst Asia has been following a completely different development path featuring a "larger than normal" importance of manufacturing.

We dig further into the possible relation between premature de-industrialization and periods of large capital inflows by looking at some specific country experiences. We consider the six major Latin American economies already mentioned in the introduction of this work and we compare them to "first tier" and "second tier" East Asian countries. The comparison is carried out with respect to the manufacturing gap in the employment share, for which data are available since 1960[19]. Figure 5 portrays changes in the manufacturing employment share gap in the three largest Latin American economies, i.e., Argentina, Brazil and Mexico. Figure 6 shows data for Chile, Colombia and Peru. In

[19] Tregenna (2009) rightly observes that a proper analysis of de-industrialization should consider the evolution of sectorial employment shares together with empirical evidence about output. Indeed, a reduction in the manufacturing employment share should be interpreted differently if it comes together with positive growth in manufacturing output (and even the more so if the manufacturing GDP share increases) with respect to a scenario where both employment and output decline. In the first case, diverging dynamics between employment and output could be explained by technological progress and rising manufacturing productivity, so that it might actually be inappropriate to talk about de-industrialization. For the sake of space, in this part of the report we focus on employment data only. Nonetheless, our approach is consistent with Tregenna (2009). First of all, we focus on the manufacturing employment *gap*. Other way around, we analyze evolutions in the manufacturing employment share that differ from what would be expected given "natural" structural changes in the economy taking place all along the whole development process. Second, this part of the study should be considered as integrated with previous analysis about manufacturing contribution to GDP. Structural differences between Latin America and Asia stand out very clearly.

Figure 7, we focus upon the "first tier" East Asian newly industrialized countries, i.e., South Korea, Singapore and Taiwan. Figure 8, finally, shows the case of "second tier" East Asian countries: Indonesia, Malaysia and Thailand. In all figures, we highlight periods of large capital inflows (grey areas) as detected in our econometric study. Three points are worth stressing.

First, the quite long time span covered by Figures 5 – 8 enables us to identify two well distinguished development patterns between Latin America and East Asia. With the exception of Mexico, most of the time Latin American countries presented manufacturing gaps that were *negative* (Brazil, Chile, Colombia, Peru and, since mid 1990s, Argentina), positive *but declining* (Argentina before mid 1990s), or a *mix* of both (Argentina and Chile in the last two decades).

Table 6 – Robustness check for manufacturing employment share (manemp) using net non-FDI capital inflows, 1980 – 2017

VARIABLES	(1) All Countries	(2) EDE Economies	(3) Developed Economies
GDP per capita	0.000604***	0.000804***	-0.000614***
	(5.28e-05)	(7.10e-05)	(7.86e-05)
GDP per capita, squared	-9.76e-09***	-1.80e-08***	4.07e-09***
	(1.09e-09)	(1.88e-09)	(1.02e-09)
Population	-5.62e-06**	-9.46e-07	2.46e-05***
	(2.71e-06)	(3.63e-06)	(7.23e-06)
Population, squared	0***	0	-9.29e-11***
	(0)	(0)	(0)
Net non-FDI capital inflows (% of GDP)	-0.0150	-0.00468	-0.0199
	(0.00992)	(0.00656)	(0.0125)
Trade Openness	0.00658*	0.00176	0.0174***
	(0.00371)	(0.00488)	(0.00252)
ROW GDP growth rate	0.000288	0.000418	0.00141
	(0.00934)	(0.00662)	(0.0107)
Total natural resources rents (% of GDP)	-0.0166	-0.00187	-0.115
	(0.0176)	(0.0163)	(0.214)
Constant	8.300***	6.939***	31.50***
	(0.583)	(0.535)	(1.480)
Observations	896	647	249
R-squared	0.786	0.728	0.936
Number of c_id	36	26	10

*Note: Standard errors in parentheses (*** p<0.01, ** p<0.05, * p<0.1)*

Table 7 – Robustness check for manufacturing nominal value added share (nommanva) using net non-FDI capital inflows, 1980 – 2017

VARIABLES	(1) All Countries	(2) EDE Economies	(3) Developed Economies
GDP per capita	0.000242***	0.000451***	-0.000548***
	(5.55e-05)	(0.000125)	(0.000131)
GDP per capita, squared	-5.13e-09***	-1.57e-08***	4.39e-09***
	(1.02e-09)	(3.64e-09)	(1.70e-09)
Population	3.06e-06	1.41e-05**	2.12e-05*
	(4.61e-06)	(5.89e-06)	(1.11e-05)
Population, squared	0	-0	-1.32e-10***
	(0)	(0)	(0)
Net non-FDI capital inflows (% of GDP)	**-0.0386*** **	**-0.0337*** **	-0.0207
	(0.0128)	(0.0126)	(0.0152)
Trade Openness	0.00836*	0.0183**	0.0108***
	(0.00450)	(0.00772)	(0.00411)
ROW GDP growth rate	0.0193*	0.0161	0.0267*
	(0.0114)	(0.0108)	(0.0142)
Total natural resources rents (% of GDP)	**-0.0552***	**-0.0557***	-0.124
	(0.0304)	(0.0297)	(0.228)
Constant	18.06***	15.81***	33.66***
	(0.888)	(1.043)	(2.492)
Observations	888	639	249
R-squared	0.761	0.703	0.920
Number of c_id	36	26	10

*Note: Standard errors in parentheses (*** p<0.01, ** p<0.05, * p<0.1)*

Table 8 – Robustness check for manufacturing real value added share (realmanva) using net non-FDI capital inflows, 1980 – 2017

VARIABLES	(1) All Countries	(2) EDE Economies	(3) Developed Economies
GDP per capita	0.000234***	0.000758***	-0.000328***
	(4.83e-05)	(0.000102)	(0.000113)
GDP per capita, squared	-3.67e-09***	-1.88e-08***	3.63e-09***
	(9.85e-10)	(3.40e-09)	(1.46e-09)
Population	-2.87e-06	5.40e-06	3.17e-05***
	(3.94e-06)	(4.72e-06)	(1.12e-05)
Population, squared	0**	0	-1.73e-10***
	(0)	(0)	(0)
Net non-FDI capital inflows (% of GDP)	**-0.0246****	**-0.0246***	-0.00765
	(0.120)	(0.0133)	(0.0137)
Trade Openness	0.00296	-5.87e-05	0.0117***
	(0.00431)	(0.00592)	(0.00343)
ROW GDP growth rate	0.0152*	0.0141*	0.0239*
	(0.00816)	(0.00856)	(0.0122)
Total natural resources rents (% of GDP)	-0.0108	-0.00726	-0.201
	(0.0181)	(0.0195)	(0.176)
Constant	15.87***	13.05***	24.43***
	(0.689)	(0.795)	(2.133)
Observations	894	648	245
R-squared	0.775	0.764	0.903
Number of c_id	36	26	10

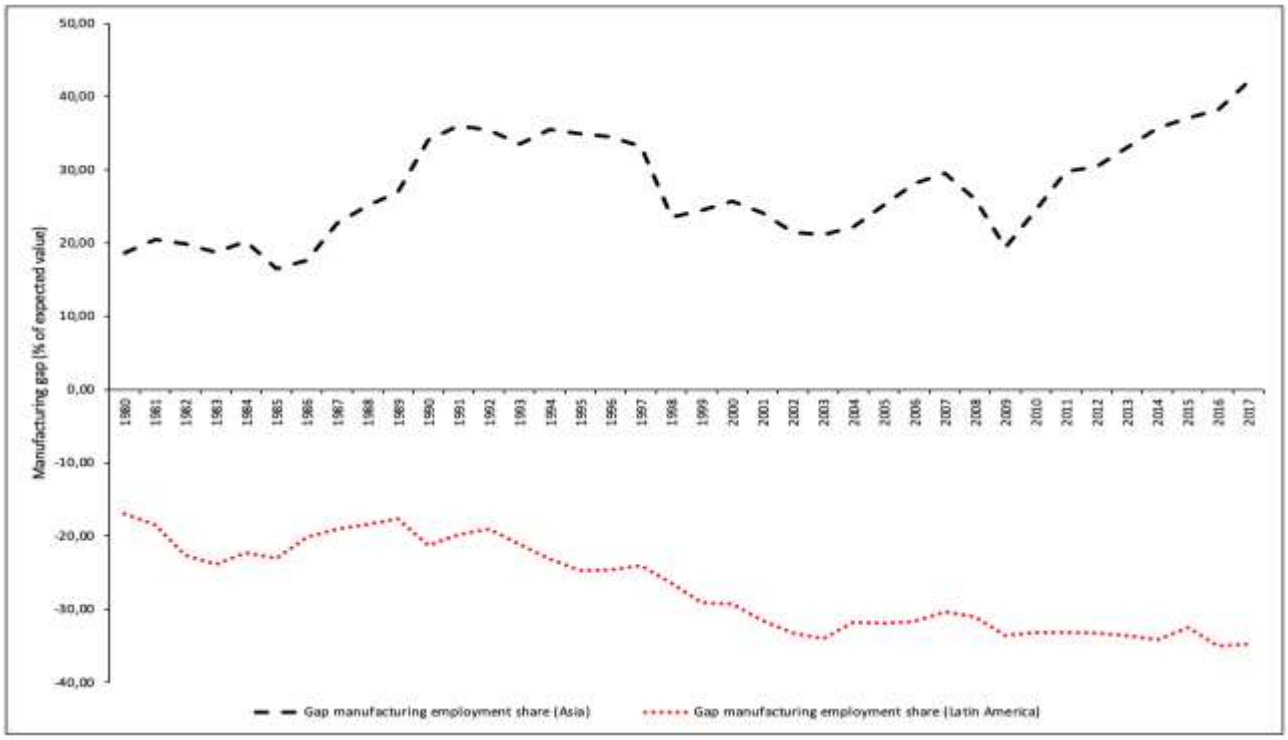
*Note: Standard errors in parentheses (*** p<0.01, ** p<0.05, * p<0.1)*

Table 9 – Robustness check for Economic Complexity Index (ECI) using net non-FDI capital inflows, 1980-2017

VARIABLES	(1) All Countries	(2) EDE Economies	(3) Developed Economies
GDP per capita	0.000121***	0.000117***	3.36e-05**
	(4.51e-06)	(9.81e-06)	(1.24e-05)
GDP per capita, squared	-1.24e-09***	-1.87e-09***	-2.04e-10
	(8.23e-11)	(2.86e-10)	(1.53e-10)
Population	8.80e-07**	1.55e-06***	5.77e-06***
	(4.05e-07)	(4.28e-07)	(1.31e-06)
Population, squared	-0	-0*	-0***
	(0)	(0)	(0)
Net non-FDI capital inflows (% of GDP)	**-0.00489*** **	**-0.00526*** **	-0.00163
	(0.00146)	(0.00165)	(0.00127)
Trade Openness	-0.000728*	0.00237***	-0.00146***
	(0.000375)	(0.000718)	(0.000396)
ROW GDP growth rate	-3.36e-05	-6.82e-05	-0.000667
	(0.00144)	(0.00153)	(0.00124)
Total natural resources rents (% of GDP)	**-0.0137*** **	**-0.0154*** **	-0.00957
	(0.00488)	(0.00468)	(0.0176)
Constant	-0.979***	-1.168***	0.777***
	(0.0691)	(0.0776)	(0.250)
Observations	895	648	247
R-squared	0.651	0.432	0.872
Number of c_id	36	26	10

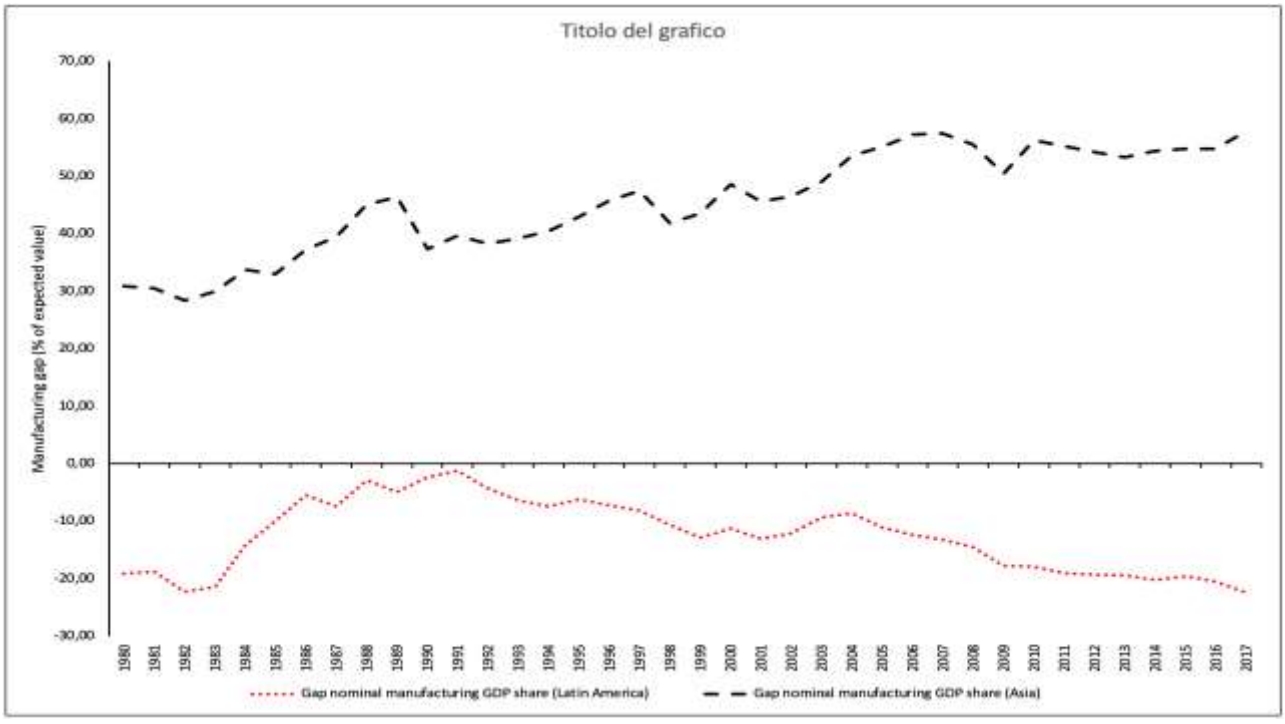
*Note: Standard errors in parentheses (*** p<0.01, ** p<0.05, * p<0.1)*

Figure 2 – Manufacturing employment share gap in Latin America and Asia, 1980 – 2017



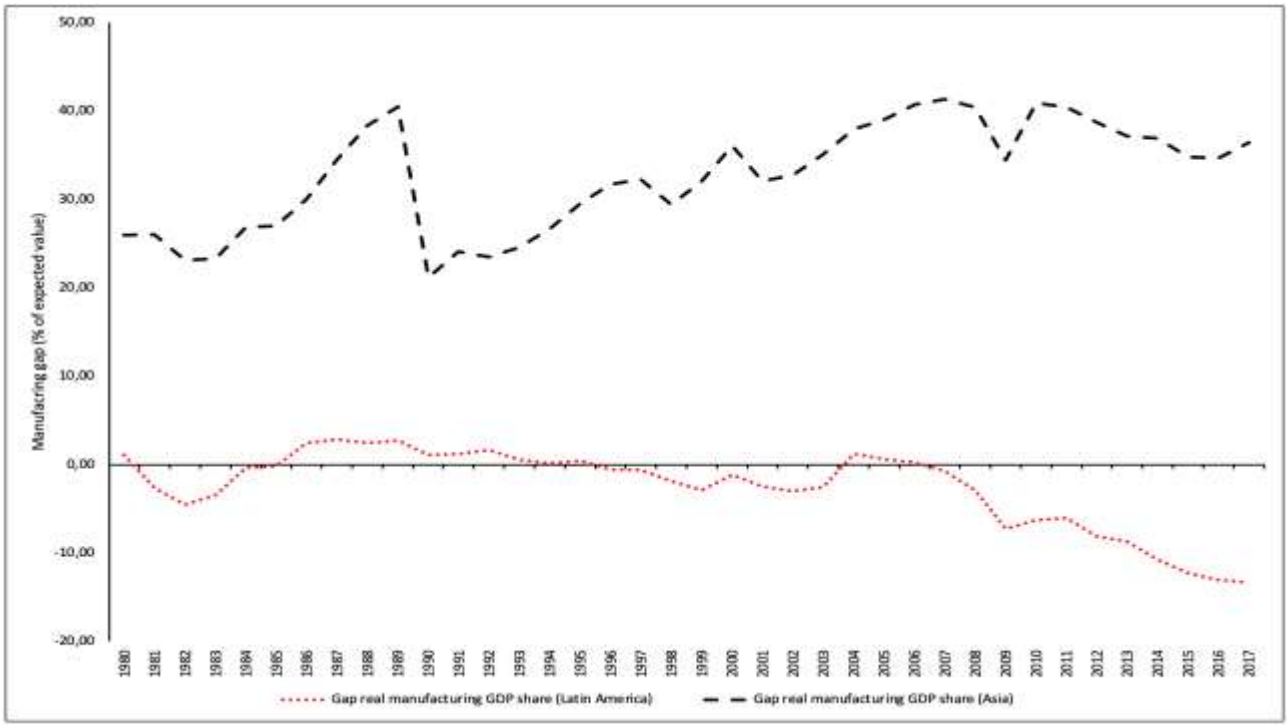
Source: Authors' computations on the basis of data from GGDC.

Figure 3 – Nominal GDP manufacturing share gap in Latin America and Asia, 1980 – 2017



Source: Authors' computations on the basis of data from GGDC.

Figure 4 – Real GDP manufacturing share gap in Latin America and Asia, 1980 – 2017

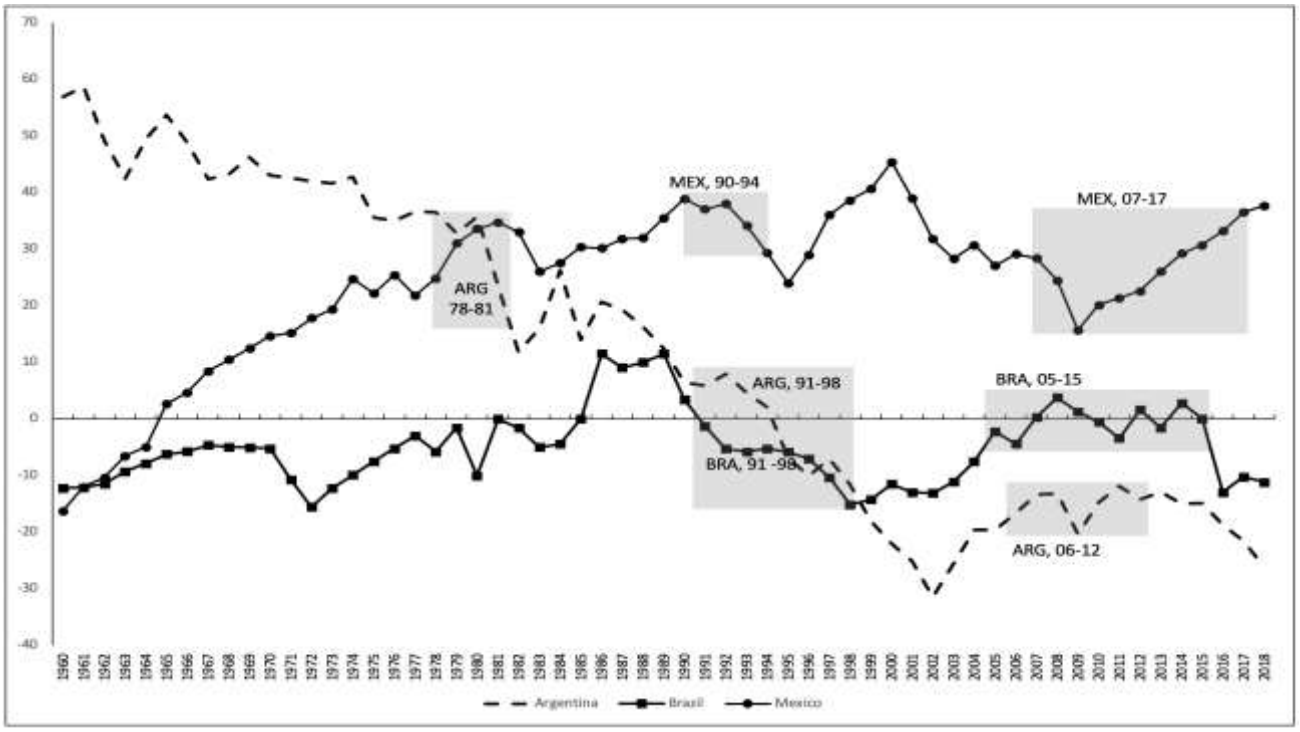


Source: Authors' computations on the basis of data from GGDC.

"Active" industrial policies in the 1960s and in the 1970s may have temporarily contributed to compensate for the sub-dimensioned size of domestic manufacturing by encouraging domestic substitution for imported goods (see, for instance, Chile before 1973 and Brazil between 1974 and 1978). The switch to neoliberal policies since 1980s, instead, may have prompted a further "relative" downsizing of domestic manufacturing. Mexico is the noteworthy exception to this, as its productive structure went through a considerable shift towards (maquila-based) manufacturing after Mexican integration in the North American Free Trade Agreement (NAFTA). Given these general trends, periods of large capital inflows may have *accelerated* or *exacerbated* the process of premature de-industrialization in Latin America (see more on this below). The picture related to East Asian countries is somehow opposite. All East Asian countries started with more or less acute negative manufacturing (employment) gaps, which however followed a long-term *positive* trend over time and became, in most of the cases, largely positive. Malaysia and Thailand now present manufacturing sectors, whose size is comparable to the Mexican one. In "first tier" East Asian countries, their *positive* manufacturing employment share gap ranges from being about two times (see South Korea) to more than six time larger than that of Mexico. In East Asian countries, periods of large capital inflows did not seem to revert such long-run trends, which are likely rooted in the different type of industrial and macroeconomic policies followed in East Asia with respect to Latin America (Ocampo and Porcile, 2020) – see more than this below.

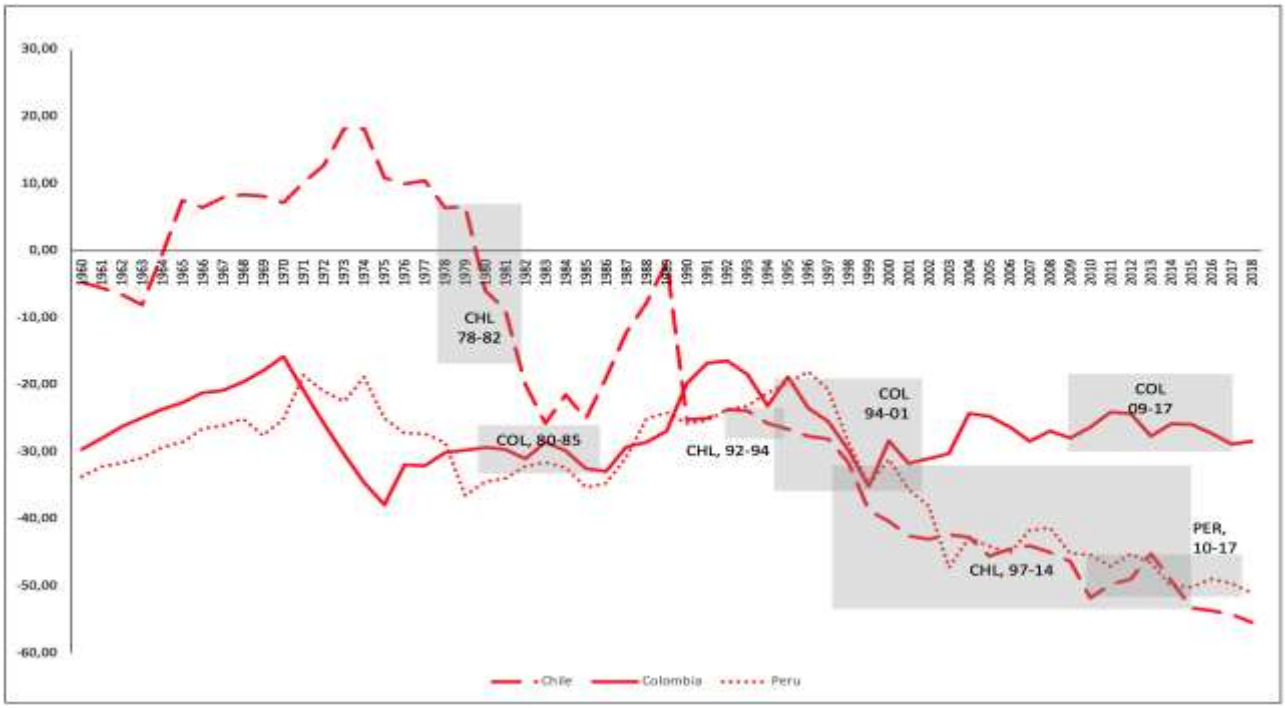
Second, the actual share of manufacturing employment and, as a consequence, the manufacturing employment *gap* seem to move pro-cyclically. In general, the manufacturing employment gap worsens during major domestic and/or "imported" international economic crises. It may improve, instead, during periods of strong domestic or worldwide economic growth, also depending on the capability of the economy of benefitting from upward phases in global business cycles. This seems to be a common pattern among Latin American and East Asian countries. See, for instance, the dramatically negative values taken by the manufacturing employment gap in Argentina at the heights of the Argentinian crisis at the beginning of the 2000s (see Figure 5), the case of Mexico in 1995 *after* the outbreak of the "Tequila" crisis (see Figure 5), or the downswing observed in East Asian economies in correspondence of the 1997 East Asian crisis (see Figures 7 and 8). Alternatively, see "relative" throats in the evolution of the manufacturing gap recorded in most if not all the economies, Latin America and East Asia alike, at about the time of the 2007-2008 financial crisis. Latin American economies, however, also present some noteworthy exceptions to such a stylized fact. Take the case of Mexico at the beginning of the 1990s *before* the "Tequila" crisis. In that period, up until the end of 1994, large net non-FDI capital inflows contributed to boost Mexican growth, at least with respect to economic stagnation during the "lost decade" of the 1980s (Krugman, 1999). Yet, manufacturing employment share contracted quite substantially, and the manufacturing gap decreased by almost 15 percentage points even in a fast-growing economy. We can observe very similar structural dynamics in expanding economies in about the same period in Brazil and Argentina, as well as in Chile and Colombia. Even before that, Chile experienced a sizable contraction of the manufacturing employment share and worsening manufacturing gaps during the short-lived foreign capital-led economic boom it went through at the end of the 1970s and the beginning of the 1980s. Indeed, Chile is usually considered a frontrunner of financial integration among EDE economies. In that period, very large capital inflows (international credit in particular) fueled Chilean economic rebound after painful neoliberal reforms were introduced by the military junta in 1974 and 1975. It is however quite clear that large capital inflows did not target the development of domestic manufacturing but pushed for the relative (likely unsustainable) expansion of other sectors, as they also seem to be doing since 1997 on.

Figure 5 – Manufacturing employment gap and large net non-FDI capital inflows in large Latin American countries: Argentina, Brazil and Mexico, 1960 – 2018



Source: Authors' computations on the basis of data from GGDC and ECLAC

Figure 6 – Manufacturing employment gap and large net non-FDI capital inflows in small Latin American countries: Chile, Colombia and Peru, 1960 – 2018

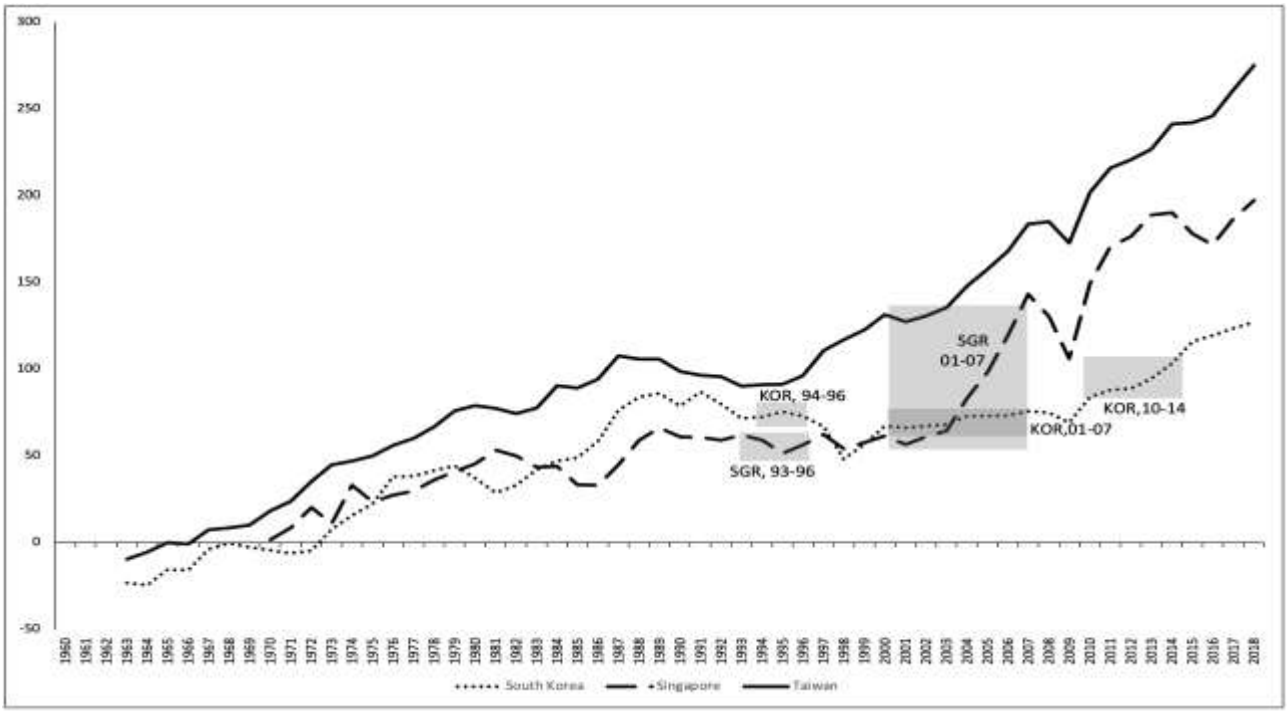


Source: Authors' computations on the basis of data from GGDC and ECLAC.

Third, the effects of periods of large capital inflows on the structural features of East Asian countries in the 1990s seem to be quite different than that experienced by Latin American economies. In the case of South Korea and Singapore, abundant capital inflows did not bring about the relative expansion of manufacturing (employment), but they did not prompt or contribute to its squeeze either, as we instead observed in Latin American economies (see Figure 7). In "second tier" East Asian countries, surges in capital inflows were associated to quite steep initial increases in the importance of manufacturing that flattered out or partially reverted thereafter (see Figure 8).

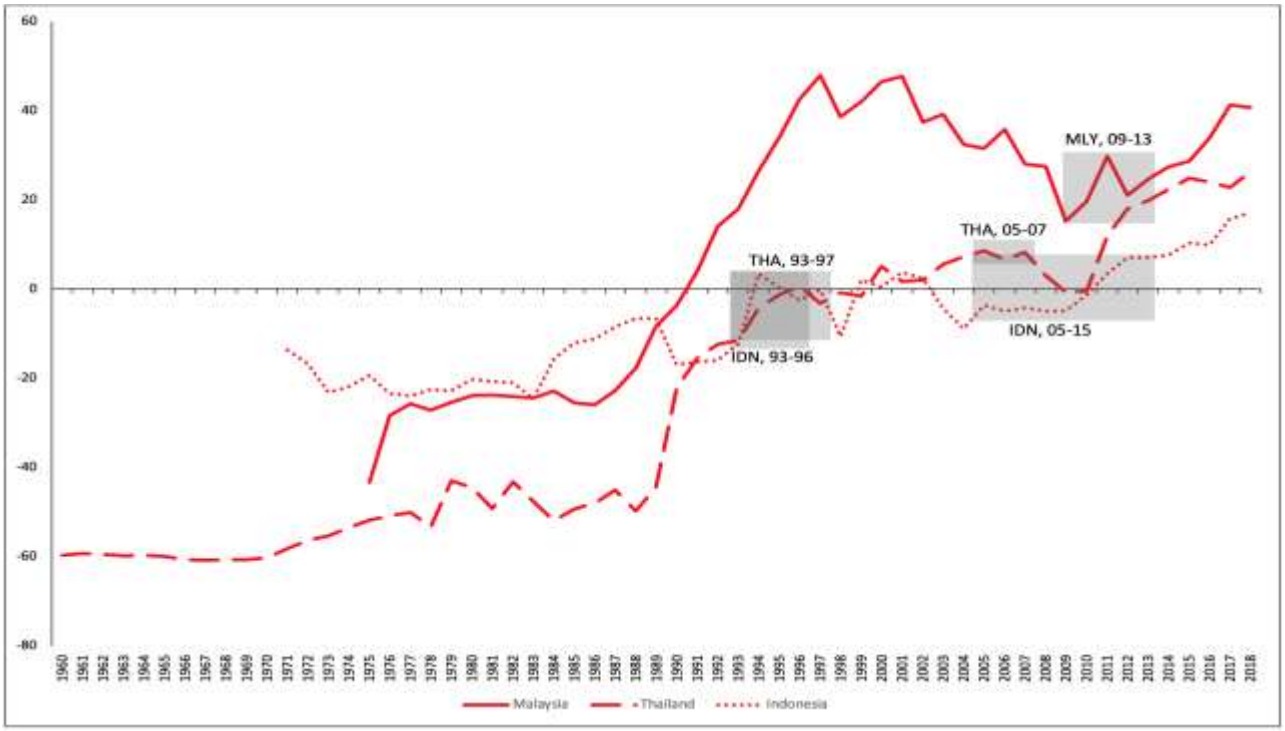
These different regional patterns may be partially explained by the asymmetric way through which surges in capital inflows influenced consumption and investment in Latin America and Asia, respectively. Whilst abundant capital inflows gave rise to a temporary consumption-led economic boom in the former region, investment was the demand component that benefitted the most from larger external finance in Asia (Calvo *et al.*, 1996). Following Cimoli *et al.*, (2020), the two regions also differed as to the role played by "active" industrial and "developmental" macroeconomic policies in the context of a general process of financial liberalization. After 1982 (and even before in the case of Chile and Argentina), most Latin American countries adopted a "shock therapy" approach according to which financial liberalization was implemented together with the dismantling of active industrial policy. In East Asian countries, instead, increasing liberalization of trade and financial flows notwithstanding, national governments kept "new developmentalist" industrial and macroeconomic policies well in place (Bresser-Pereira, 2012). They actively kept on pursuing the development of high-tech tradable sectors and tried to tame finance-led appreciations in the real exchange rate that could harm productive development. Indeed, "the effects of financial shocks crucially depend on the country's combination of macroeconomic and industrial policies" (Cimoli *et al.*, 2020, p.1). The above-mentioned differences in the type of institutions and policies accompanying (and perhaps contrasting) the effects of financial liberalization may help to explain why large capital inflows may have affected manufacturing development differently in Latin America and East Asia in the 1990s. By the same token, the (partial) rediscovery of (some) industrial policy tools in Latin America (see Cimoli *et al.*, 2020), together with increased awareness about long-run effects of exchange rate appreciation, may have led Latin American governments to more actively contrast the perverse structural implications of large financial inflows in the 2000s.

Figure 7 – Manufacturing employment gap and large net non-FDI capital inflows in "first tier" East Asian countries: South Korea, Singapore and Taiwan, 1960 – 2018



Source: Authors 'computations on the basis of data from GGDC and ECLAC.

Figure 8 – Manufacturing employment gap and large net non-FDI capital inflows in "second tier" East Asian countries: Malaysia, Thailand and Indonesia, 1960 – 2018



Source: Authors' computations on the basis of data from GGDC and ECLAC.

The search for sustained and sustainable recovery out of the economic pains inflicted by Covid requires national governments and international organizations to tackle the causes of structural productive weaknesses. On top of this, recovery plans should take into account the additional difficulties that the pandemic itself created, read increased public and private debt and, therefore, expected weak private investment and stagnant consumption in the near future. There is now quite solid consensus among economists that fiscal stances should remain quite expansionary in order to avoid protracted stagnation. At least, this seems to be the stand taken by most developed countries, as witnessed by the ambitious public investment plan announced by the Biden administration in the USA and the Next Generation EU recovery plan in Europe. It makes sense to wonder whether EDE economies may have similar fiscal leeway. In section 4 of this report we try to assess the space for (public investment-based) fiscal expansions in EDE countries, Latin American ones in particular. We do so in three steps. First, we will briefly consider the fiscal burden that the pandemic left on the shoulders of national governments by forcing them to keep economic systems alive during periods of forced "hibernation". Second, we will return to the role of international capitals by considering how financial integration and unfettered capital mobility might restrain fiscal responses in EDE countries. Finally, we will discuss the role of macro prudential policy in opening more space for fiscal expansions and tackling structural productive weaknesses by taming large capital inflows and reversals.

4. Policies for transformative post-Covid recovery: A complex mix between fiscal expansions, public investment and macro-prudential policy

4.1 Fiscal response to Covid and the way forward

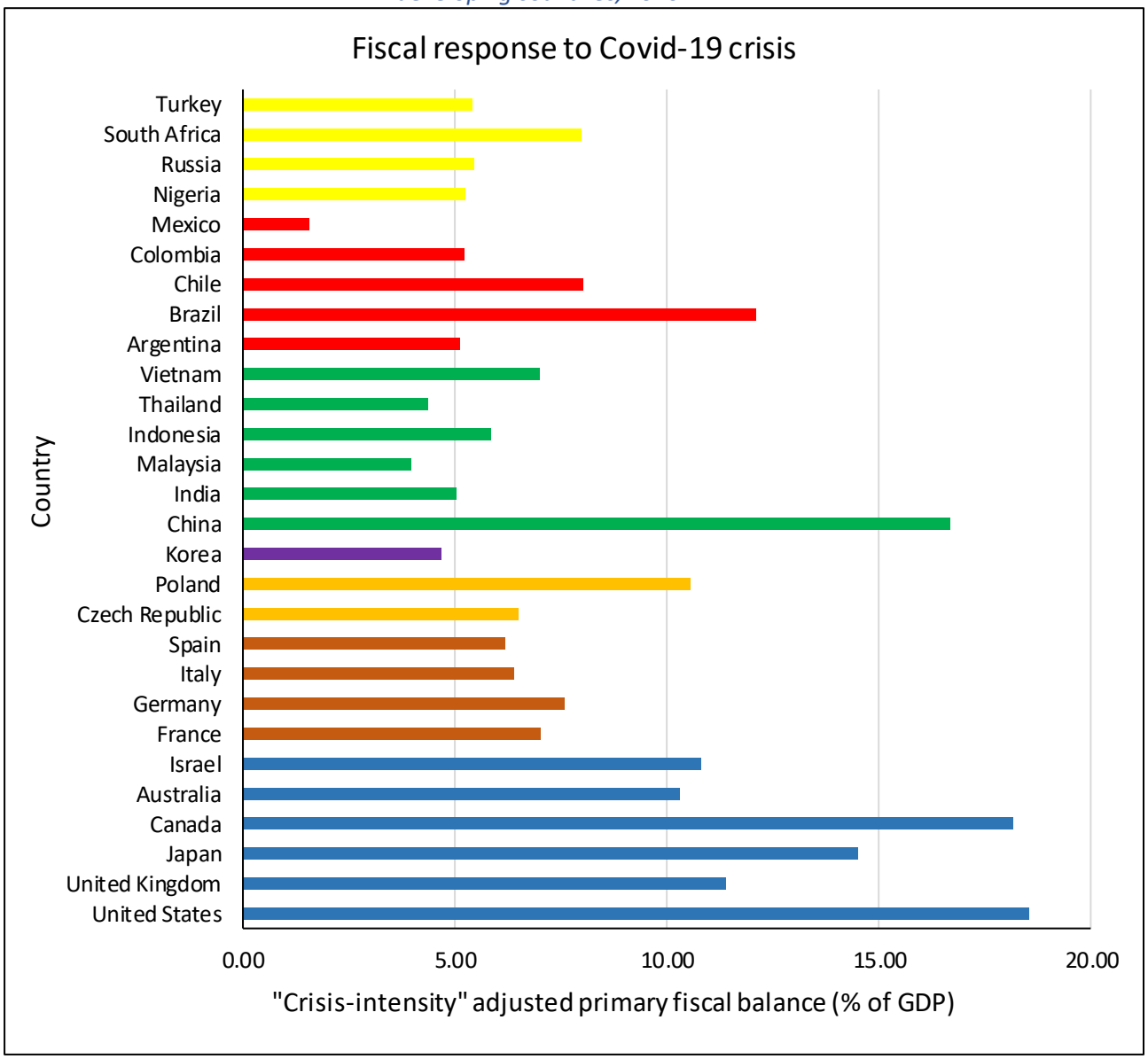
The spread of Covid-19 and the ensuing confinement measures aimed at containing the pandemic have de-facto "frozen" the functioning of the world economy. In response, most national governments have implemented bold fiscal actions providing income support to people unable to work, stopping lay-offs and avoiding firms' bankruptcies. The costs in terms of fiscal deficits have been huge. In order to measure them, we take IMF's estimates of *primary* public budget deficits ($pfd_{i,t}$) as rough measure of fiscal expansion. We then adjust them for an index capturing the degree of Covid-related economic contractions in different countries. The purpose is to rescale fiscal stimuli so as to reflect the discretional nature of such policies. Whilst it is somehow normal that fiscal balances deteriorate during deep economic recessions, fiscal expansions in the case of economic slowdowns but still positive growth rates may represent "truly" discretionary measures. The adjustment index is constructed on the basis of the *normalized deviation* of country's "*i*" growth rate ($g_{i,t}$) from the mean

sample growth rate ($\overline{g_t}$) – see Equation (1) below. $g_{max,t}$ and $g_{min,t}$ are the highest growth rate and the deepest recession registered in 2020 in our sample of countries, respectively. In Equation (1), "*adFR*" is the *adjusted* fiscal response to Covid[20]:

$$adFR = pfd_{i,t} * \left[1 + \frac{(g_{i,t} - \overline{g_t})}{(g_{max,t} - g_{min,t})}\right] \quad (1)$$

Figure 9 below provides an overview of cross-country heterogeneity in the fiscal response to Covid.

Figure 9 – "adjusted" Fiscal response to Covid-19 economic crisis, selected developed, emerging and developing countries, 2020



Source: estimations of primary public deficit and annual growth rates taken from IMF's World Economic Outlook database, October 2020.

[20] In computing *adFR*, we do not consider public guarantees backing, say, private loans. We do so because these are *hypothetical* expenditures that might take place in the event of borrowers' defaults, but do not represent *actual* fiscal outlays. In the case of Italy, public guarantees to private loans could escalate the costs of emergency fiscal packages up to 35 percent of GDP (from current estimates of about 9.44 percent). Given the aleatory nature of such disbursements, we prefer to exclude them for the computation of current fiscal expenditures.

Once we take in due consideration the depth of the crisis, advanced economies have generally unleashed more substantial expansionary emergency fiscal packages than EDE countries. This is particularly true for so-called advanced "monetarily sovereign" countries (the USA, the UK and Japan, for instance), where fiscal expansions by home governments can more easily benefits of discretional accommodating support from home central banks. The economies of the eurozone represent a partial exception. To some extent, this might be due to the peculiar institutional setting characterizing the eurozone, where the ECB is tightly detached from national governments. This, in turn, might create some sorts of "institutionalized" brakes to Member States' fiscal expansions, even in the absence of a centralized EU federal budget and during a deep crisis[21]. Note, however, that figures for eurozone countries are influenced by the fact that we excluded *aleatory* disbursements related to public guarantees of private loans from the computation of "adjusted" fiscal responses to Covid. As reminded in footnote 19, data reported in Figure 9 would change quite substantially if we had included such hypothetical expenditures in our calculi.

Fiscal responses by EDE countries have been milder, on average, with respect to advanced economies. There are, however, considerable differences between the very substantial fiscal expansion implemented in China (and, to a lesser extent, Brazil) and Mexican fiscal inertia. In any case, Figure 9 may offer a prima-facie evidence of the more limited fiscal space available to EDE countries in the frontline response to Covid (see also IMF, 2021). More than this, given relatively large fiscal deficits in 2020 and the ensuing increase in the stock of public debt, it makes sense to wonder whether global financial markets will allow EDE countries to maintain expansionary fiscal stances over the upcoming years[22]. This question appears even more reasonable since that national governments are expected to play quite relevant roles in counteracting the enduring consequences of the pandemic. Indeed, worldwide 2020 economic disruption will leave households with lower income than before, and firms burdened with higher debts. Income and wealth inequality will worsen (Furceri *et al.*, 2020). In such a context, the private sector is unlikely to take the lead of the recovery, with private investment remaining substantially low for quite a long time. Governments, supported by monetary authorities, will have to take responsibility to feed the recovery, in particular with ambitious public investment programs in strategic areas such as green technologies, the digital agenda, the healthcare and education system – see UNCTAD (2020). This is even the more so in the case of Latin American economies, since they present considerable gaps in terms of both physical and social infrastructures, also with respect to other EDE countries. On the one hand, such backwardness impeded Latin American economies to diversify their productive structures and compete internationally in expanding sectors such as high value-added high-skill tradable services. On the other hand, investment in those areas will be strategic source of innovation and employment in the near future. According to Serebrisky *et al.*, (2020), public investment in green and digital infrastructures in Latin America could have an income multiplier as high as 1.5 over a five-year time span.

[21] Despite the conservative approach to fiscal policy embedded in European institutions, it is worth reminding that the EU has decided to suspend the application of the Stability and Growth Pact until 2023. Also, the ECB has considerably eased national governments' access to financial markets by launching the Pandemic Emergency Purchasing Program (PEP) of national public bonds.

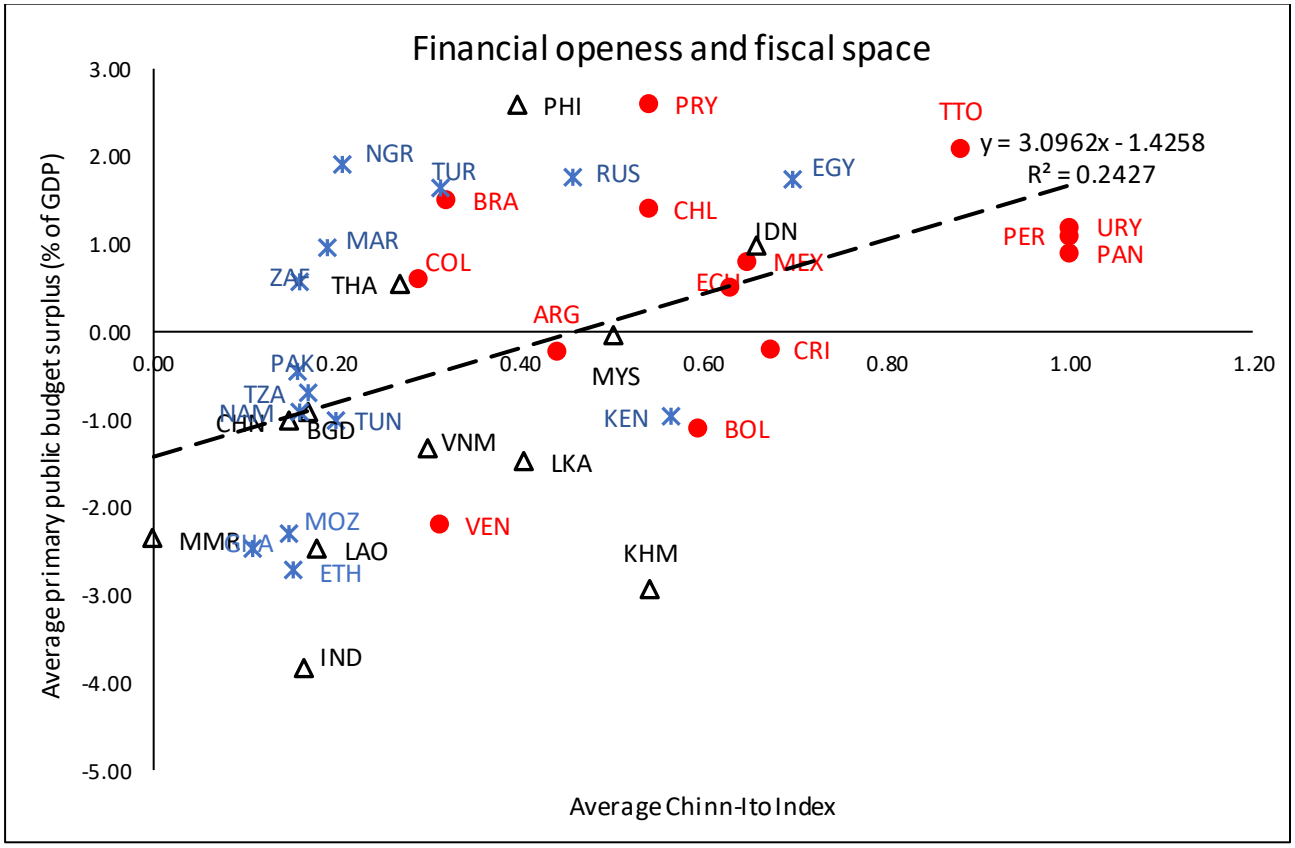
[22] The reference to international financial markets is motivated by the fact that, in the own words of ECLAC (2021a) "countries that issue widely accepted reserve currencies have much greater scope to increase spending than countries in the region, which in many cases must borrow in foreign currency" (ECLAC, 2021a, p.22).

4.2 Financial integration, international capital and fiscal space in emerging and developing countries

According to the well-known literature about financial repression (McKinnon, 1973; Shaw, 1973), financial deregulation, capital account openness and financial integration were supposed to boost investment and growth by allowing for the emergence of a more developed and efficient financial system, on top of sounder fiscal and monetary policies. Such financial reforms were meant to impose a sort of market-driven discipline over fiscal dominance, removing inefficiencies in credit allocation, the crowding out of private investment by public expenditures, and the implementation of inflation-biased macro policies (Jafarov *et al.*, 2020). "Bond vigilantes", together with the need of maintaining (foreign and domestic) investors' confidence, would have impeded fiscal profligacy, unsustainable fiscal stances and, eventually, "twin-deficits" crises to occur.

The fact that financial openness may discourage developing and emerging economies from embarking into substantial fiscal expansions obviously becomes a core topic in a period during which strong fiscal stimuli might be badly needed. The in-depth analysis of the relation between financial integration and fiscal policy stance goes well beyond the main goals of this study. Yet, the simple correlation analysis included in Figure 10 below offers preliminary evidence about the potential bias in favor of more conservative fiscal stances (i.e., small deficits or large public budget surpluses) possibly created by financial openness. The scatter plot portrayed in Figure 10 shows the correlation between financial openness as captured by (average) Chinn-Ito Index, and (average) primary public budget surplus (as a share of GDP). We consider an extended sample of countries for which enough fiscal data are available including a wide set of Latin American countries together with fast-growing South-Eastern Asian economies and "other" relevant EDE economies from Middle East and Africa. The full list of countries, together with the time coverage of our data, is reported in Table A.5 in the Appendix.

Figure 10 – Financial openness and primary budget surplus, selected developing and emerging economies



Source: Authors' computation on the basis of data from IMF World Economic Outlook Database and Chinn-Ito database.

Figure 10 reveals that, ceteris paribus, there seems to exist a positive and quite strong correlation between the average Chinn-Ito index and primary fiscal surpluses in EDE economies. The more countries are financially open and integrated in the world economy, the more likely they will be inclined to run relatively restrictive fiscal policy giving rise to primary budget surpluses. Latin American and South-Eastern Asian countries seem to locate at the opposite side of the spectrum. Latin American countries record, on average, the highest degree of financial openness and tend to pursue rather restrictive fiscal policies. South-East Asian countries, on the contrary, are, in general, less integrated on international financial markets and seem to have adopted more expansionary fiscal policies.

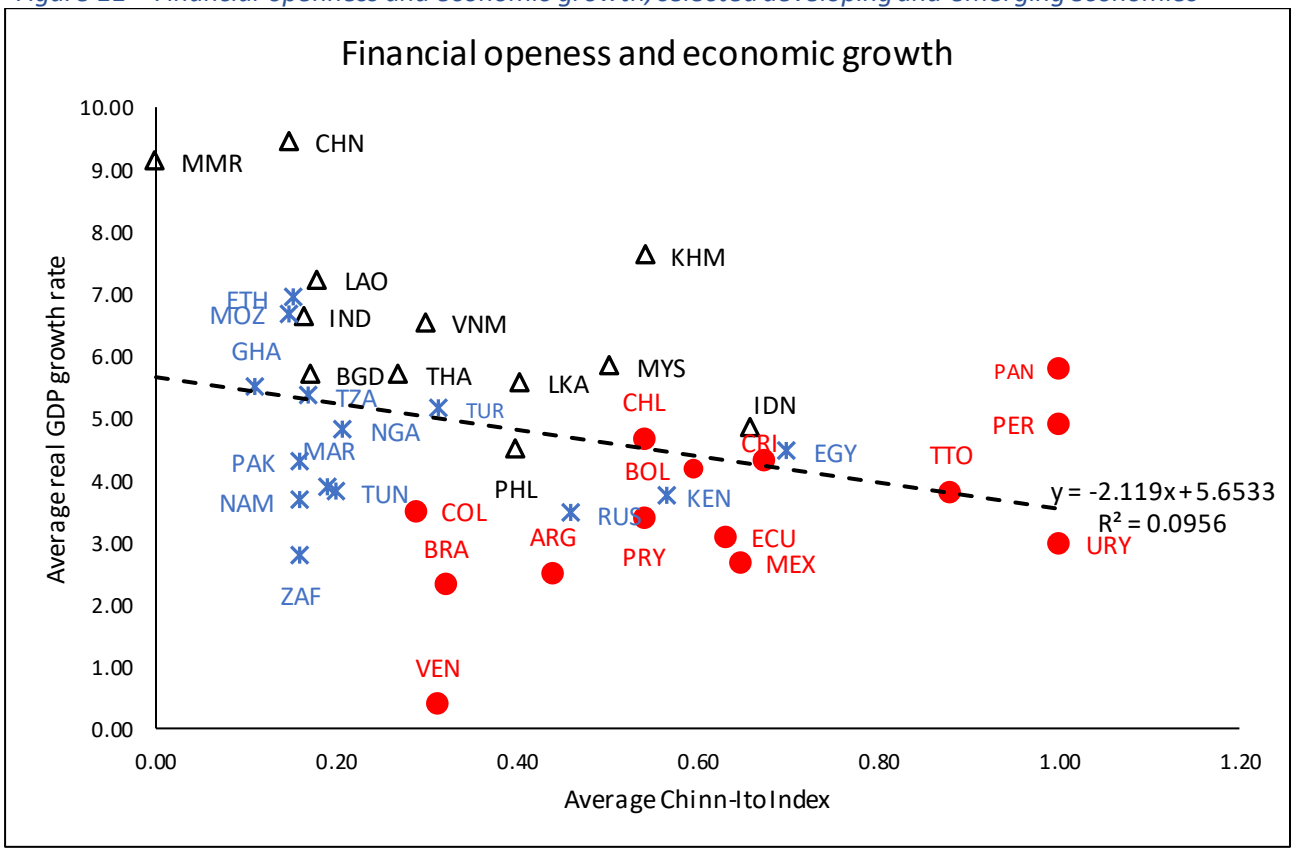
The statistical evidence emerging from Figure 10 may be affected by the inclusion of some outliers in our sample of countries. In order to verify the robustness of our findings, we have performed some simple robustness checks. First, we have taken into account shorter time periods for the computation of average Chinn-Ito and primary fiscal balances. Second, we have removed potential outliers (i.e., countries in which average primary fiscal deficits deviate more than one standard deviation from sample average) from our sample potential outliers. Third, we have considered an alternative *de-facto* measure of financial openness à la Lane and Milesi-Ferretti (2003)[23] with respect to the *de-jure*

[23] Financial integration is measured as the ratio between total foreign assets and liabilities over GDP.

measure provided by the Chinn-Ito index. All the three checks confirm the positive relation between financial openness and primary fiscal surpluses emerging from Figure 10.

Also, it is important to stress that the positive correlation between financial openness and primary fiscal surpluses does not seem to be the result of a spurious relation due to the effects of financial integration on economic growth (and, therefore, tax revenues). Indeed, Figure 11 may suggest that there seems to be *no relation* between financial openness and growth, negative if anything. The empirical evidence emerging from Figure 11 is in turn consistent with Ostry *et al.*, (2016), when they claim that "the impact of other flows [with respect to FDI] – such as portfolio investment and banking and especially hot, or speculative, debt inflows – seems neither to boost growth nor allow the country to better share risks with its trading partners" (Ostry et al., 2016, p.39).

Figure 11 – Financial openness and economic growth, selected developing and emerging economies



Source: Authors' computation on the basis of data from IMF World Economic Outlook Database and Chinn-Ito database.

According to Figures 10 and 11, the idea that bond vigilantes could actively act against fiscal dominance may find some ground in the data. Bond vigilantes would not necessarily represent bad news for the stability of EDE economies if they were to enforce the implementation of truly *anti-cyclical* fiscal policies, i.e., fiscal surpluses in times of financial bonanza matched by fiscal deficits during recessions. Problems come when financial openness, together with recommendations from international financial institutions, establish a sort of "institutionalized" bias towards fiscal austerity, in which *pro-cyclical* fiscal policy deepens downturns (Akyüz, 2006; Ocampo, 2011).

Financial integration can more easily expose EDE countries to "global financial cycles" and make the "autonomous" management of some leading macro variables harder. This is the case, for instance, of the exchange rate and of interest rates on EDE countries' private and public bonds. Rey (2018) provides evidence that such macro prices are not determined by country-specific factors only and cannot be considered as reflecting country-specific idiosyncratic risks. On the contrary, they are strongly influenced by global factors and by period-contingent levels of liquidity and confidence characterizing global financial markets. Table 10 below offers a simple, perhaps superficial, but yet telling view of the role played by global financial cycles in the determination of FX and bonds' interest rates in EDE countries. In column (a), Table 10 shows the coefficient of correlation between the VIX index, i.e., a standard measure of confidence in international financial markets, and the JP Morgan Emerging Markets Bond Index (EMBI) spread. In column (b), in turn, we report correlation with the spot FX rate versus the US Dollar[24]. We consider a selected group of EDE countries for which enough data are available. We use quarterly data from 2006Q1 to 2020Q2. We choose to rely upon this time span in order to remove the effects of past country-specific crises (ex: the Argentinian 2000-2002 debt crisis) from our data, and to better focus on the effects of global shocks (i.e., the 2007-2008 financial crisis and the Covid-19 shock) in the "periphery" of the world financial system.

Table 10 – Coefficient of correlation between VIX index and: (a) JP Morgan Emerging Market Bond Index (EMBI) spread; (b) Local currency – US Dollar nominal exchange rate (FX). 2006Q1-2020Q2

Country	(a) VIX-EMBI correlation coefficient (2006Q1-2020Q2)	(b) VIX-FX correlation coefficient (2006Q1-2020Q2)
ARG	0.54	-0.02
BRA	0.41	0.40
CHL	0.74	0.75
COL	0.76	0.78
MEX	0.54	0.57
PER	0.83	0.71
CHN	0.30	0.39
IND	-	0.18
IDN	0.81	0.66
MYL	0.68	0.62
ZAF	0.56	0.60
TUR	0.53	0.40
RUS	0.67	0.32

Source: Authors' computations on the basis of data from CBOE and the World Bank.

[24] Quarterly FX data have been detrended by using a four-period moving average filter to better disentangle fluctuations possibly due to global financial factors from changes linked to longer-term country-specific factors in the evolution of the exchange rate itself.

Table 10 shows that there is a quite strong and positive correlation between the VIX index and EMBI's spread. When international financial markets enter periods of higher volatility and stress (i.e., a higher VIX index), the risk premium EDE economies have to pay on international bonds may increase substantially. The same applies to the exchange rate. There is a positive association between higher (lower) values of the VIX index and positive (negative) deviations of the exchange rate from trend. Argentina is an exception, largely due to somehow country-specific dynamics of its own nominal exchange rate with respect to the US Dollar. [25]

Interestingly, Table 10 may also suggest that countries that are relatively closed to international financial movements such as China and India might be better able to control and insulate the determination of such variables from external factors. In the end, our data tell us that there might be a positive correlation between the degree of financial integration characterizing an economy and the strength of the VIX-EMBI and VIX-FX relations[26]. Accordingly, it makes sense to wonder whether stricter capital controls should be considered by EDE countries as useful tools to "gain" (more) autonomous control over such relevant macroeconomic and financial "prices".

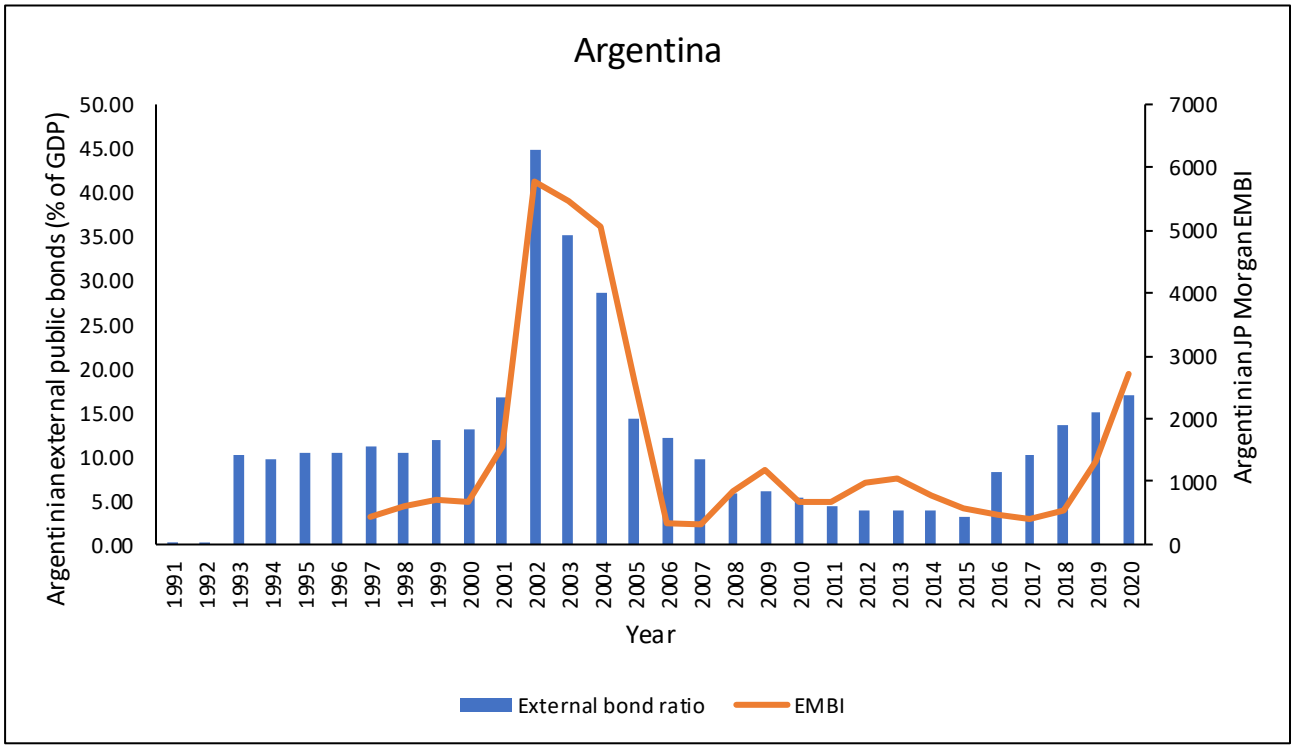
4.2.1 Financial integration and fiscal space in EDE countries: A focus on Latin America

If we look at the six Latin American economies at the center of our study, we may formulate some conjectures about external constraints to fiscal expansions by confronting actual data about dollar-denominated public bonds issued in international markets (as percentage of GDP) to past historical values (left axis). We also consider EMBI's spread as indicator of perceived country riskiness (right axis). Figures 12.a – 12.f present our findings.

[25] Since 2006, after a period of substantial stability, the Argentinian peso has progressively depreciated with respect to the US Dollar according to a strong and clear exponential trend. This trend has emerged very clearly since 2017. It does not show any relevant fluctuation and does not seem to have been influenced by turbulences in international financial markets. Internal economic and geopolitical factors may have likely played a predominant role in the determination of the Argentinian exchange rate.

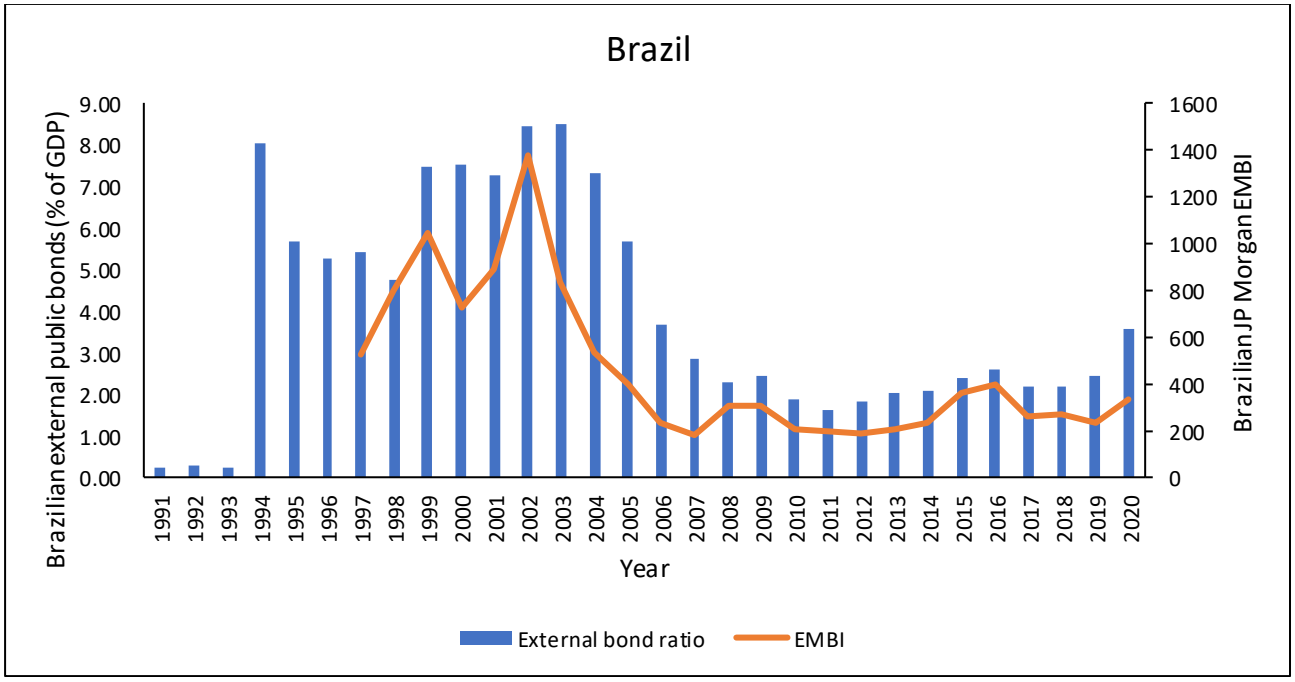
[26] Correlation coefficients between the average 2006-2020 Chinn-Ito index and the strength of VIX-EMBI – VIX-FX relations in the above set of countries are equal to 0.42 and 0.39, respectively.

Figure 12.a – Argentina: outstanding amount of external public bonds (as a percentage of GDP) and JP Morgan Emerging Market Bond Index (EMBI) spread, 1991 – 2020, yearly data



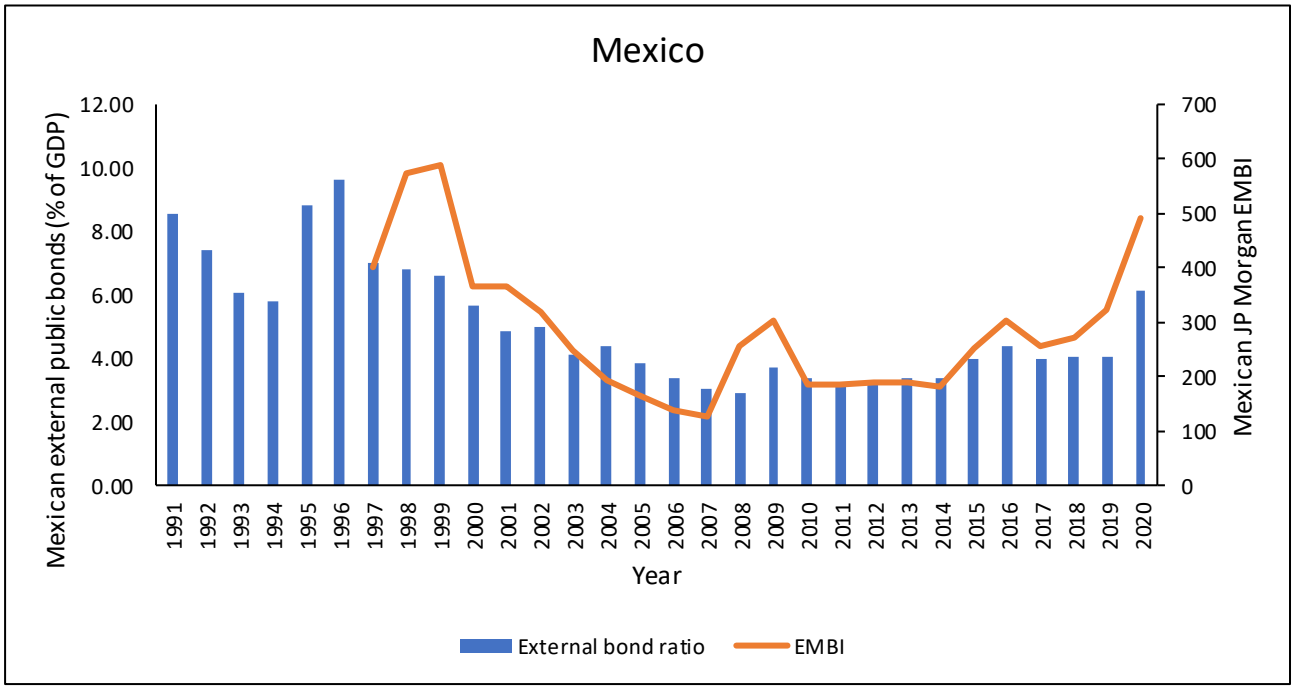
Source: Authors' computation on the basis of data from Bank of International Settlements, the IMF and World Bank.

Figure 12.b – Brazil: outstanding amount of external public bonds (as a percentage of GDP) and JP Morgan Emerging Market Bond Index (EMBI) spread, 1991 – 2020, yearly data



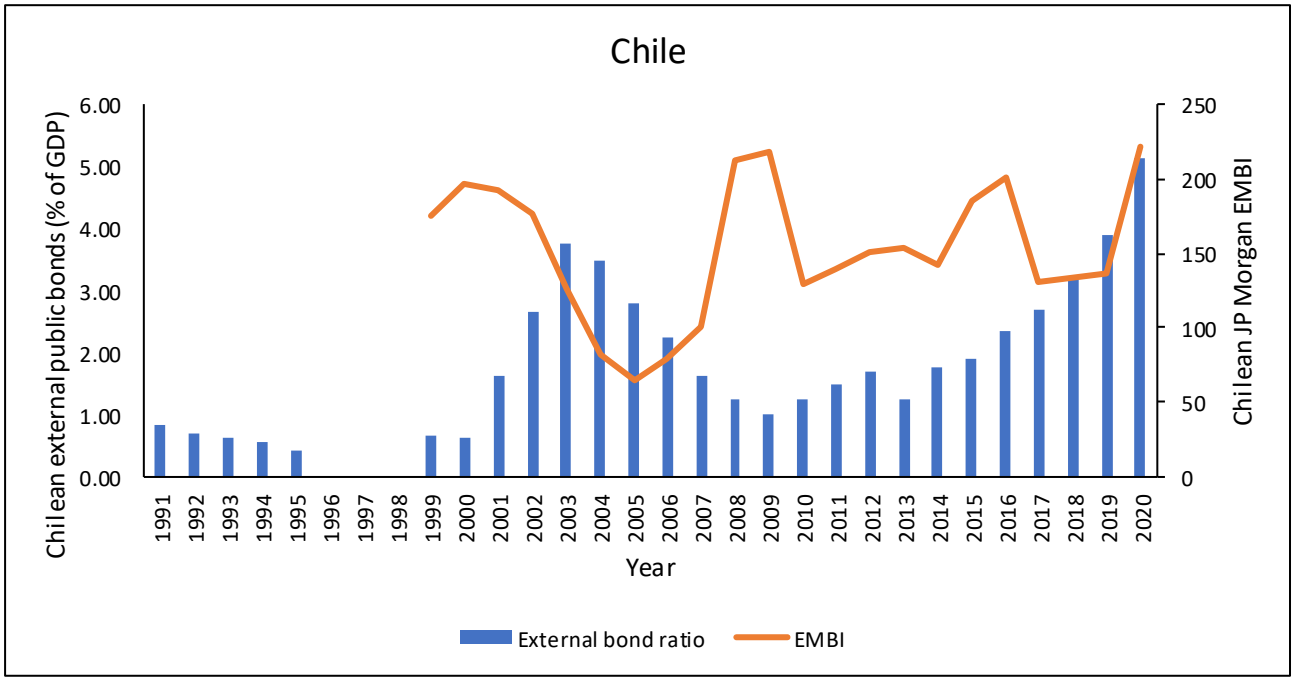
Source: Authors' computation on the basis of data from Bank of International Settlements, the IMF and World Bank.

Figure 12.c – Mexico: outstanding amount of external public bonds (as a percentage of GDP) and JP Morgan Emerging Market Bond Index (EMBI) spread, 1991 – 2020, yearly data



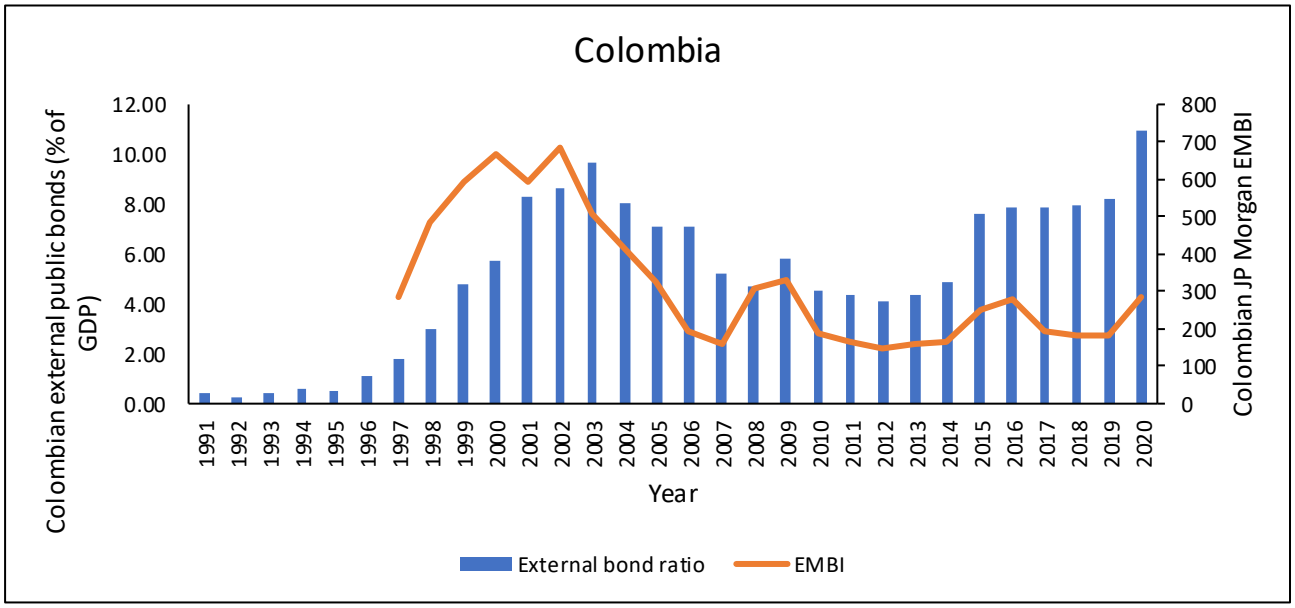
Source: Authors' computation on the basis of data from Bank of International Settlements, the IMF and World Bank.

Figure 12.d – Chile: outstanding amount of external public bonds (as a percentage of GDP) and JP Morgan Emerging Market Bond Index (EMBI) spread, 1991 – 2020, yearly data



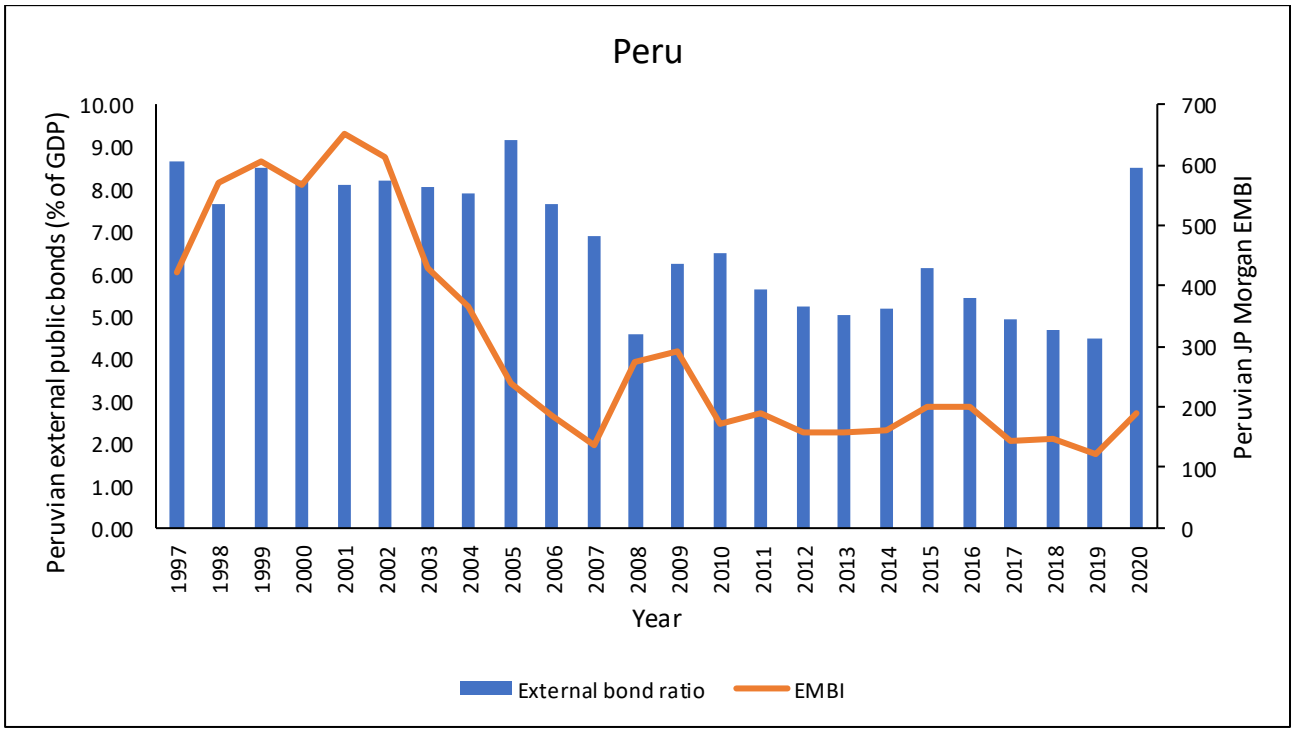
Source: Authors' computation on the basis of data from Bank of International Settlements, the IMF and World Bank.

Figure 12.e – Colombia: outstanding amount of external public bonds (as a percentage of GDP) and JP Morgan Emerging Market Bond Index (EMBI) spread, 1991 – 2020, yearly data



Source: Authors' computation on the basis of data from Bank of International Settlements, the IMF and World Bank.

Figure 12.f – Peru: outstanding amount of external public bonds (as a percentage of GDP) and JP Morgan Emerging Market Bond Index (EMBI) spread, 1997 – 2020, yearly data



Source: Authors' computation on the basis of data from Bank of International Settlements, the IMF and World Bank.

In general, the current outstanding value of external public bonds is low. With the partial exception of Argentina, external bond ratios are lower than (Brazil, Mexico, Chile and Peru) or close to 10 percent of GDP (see Colombia). From this point of view, it might be reasonable to believe that, at the moment, international financial markets will not set major restrictions to external funding and fiscal expansions in Latin America. This positive impression may be reinforced by emerging evidence according to which several Latin American governments have been capable to increase debt issuances denominated in local currencies, thus reducing exposure to exchange rate fluctuations (see Bertaut *et al.*, 2020). Other factors, however, may suggest a more cautious approach.

First, the amount of external public bond liabilities, although generally low, is increasing[27] and, in some cases, it is already close to or higher than those observed in the past before major financial/exchange rate crises. For instance, this is the case of Argentina (when compared to its position in 2000 and 2001), Mexico (with respect to 1994), or Brazil (in comparison to 1998). This fact recalls us previous evidence about the so-called "debt intolerance" (Reinhart et al, 2003): EDE countries, Latin American ones among them, may find themselves cut off from international lending even at levels of external debt far lower than those observed in developed economies.

Second, there is a twofold negative relation between the evolution of the exchange rate, exchange rate devaluations in particular, and the sustainability of external debt. On the one hand, the external debt burden, although currently low, can suddenly increase when depreciations occur due to currency mismatch between foreign currency denominated liabilities and tax revenues in domestic currency. On the other hand, FX devaluations may bear contractionary effects if they impair the balance sheets of domestic actors and cause large drop in investment that outstrip improved net exports (Bebczuk *et al.*, 2010; Nalin and Yajima, 2020), and if they cut consumption by redistributing income away from wage earners (Taylor, 1991).[28] Output falls obviously exacerbate external debt's unsustainability by reducing tax revenues and increasing expenditures. In this sense, the spread of Covid-19 and sudden turbulences in international financial markets brought to sharp devaluations of most Latin American currencies with respect to the US dollar in the first part of 2020 (ECLAC, 2020). Local currencies recovered, at least partially, in the second half of 2020. Nonetheless, similar fluctuations in the future might endanger apparent safe external debt positions portrayed in Figures 12.a – 12.f[29].

[27] There is a certain regional heterogeneity in the factors causing the recent rise in the external bond ratios. In Argentina, for instance, the external debt ratio slightly increased in 2020 even *despite of* negative net issuances and a substantial exclusion from international financial markets. The contraction in Argentinian GDP, together with increases in the cost of external finance and the depreciation of the exchange rate, were more than enough to (slightly) deteriorate Argentinian external debt position. Peru, Colombia, and Chile had much easier access to international financial markets. However, the cost of external borrowing is increasing, and this could set a limit to new issuances of external liabilities in the proximate future .

[28] Contractionary devaluations could also materialize as a consequence of restrictive stances taken by domestic monetary authorities in the attempt of preventing surges in imported inflation, and therefore in overall domestic inflation rate, via the exchange rate-domestic prices "pass-through" rule.

[29] The depreciation of local currencies and the increase in EMBI spread was particularly strong in March and April 2020, when the spread of Covid-19 clearly became a world issue and pandemic was officially declared by the World Health Organization. The external macroeconomic environment partially returned to pre-crisis conditions in the second half of 2020, when the enormous amount of liquidity injected in financial markets by major central banks via extraordinary emergency-related quantitative easing measures also allowed EDE countries to receive abundant capital inflows. According to early empirical evidence provided by the Institute of International Finance (2020), EDE economies experienced the strongest increase in non-residential portfolio inflows since 2012Q1 in Q4 2020. In a way, these facts represent additional evidence of the exposure of EDE countries to external factors mostly determined in developed countries and in the center of the world financial system.

Third, following Bertaut *et al.*, (2020), lower exposure to exchange rate volatility has been partially compensated by increasing instability in the provision of external finance by those foreign investors (mutual funds chiefly) that invested in local currency denominated public bonds. Other way around, whilst the exchange rate risk has moved to foreign lenders, domestic governments are now more exposed to abrupt cut-off in foreign funding. Carstens and Shin (2019) label these developments as "original sin redux". In the end, what matters is not only the currency in which debt is denominated, but also who "owns" the debt. Large dependence on foreign capitals won't enable Latin American countries to completely eradicate the "original sin".

Fourth, the safer stand apparently taken by the public sector in the 2000s is somehow compensated by more fragile financial positions of local non-financial corporations. These two opposite evolutions go hand-in-hand and need to be taken jointly. Since 2009, higher financial credibility enjoyed by local governments and lower country risks enabled corporations in EDE countries, Latin American among them, to get easier access to international financial markets. At the same time, non-financial corporations also took advantage of historically low interest rates and very abundant liquidity in the global financial system. The problem is that rising external indebtedness of non-financial corporations has not been mirrored by commensurate increases in real fixed investment perhaps aimed at expanding and diversifying exports. Quite the opposite, according to Chui *et al.* (2016), "microeconomic data suggest that many borrowers have increased foreign currency borrowing to finance local currency investments (notably in local property markets" (Chui *et al.*, 2016, p.26). "Developments since 2010 throw doubt on the earlier consensus in Latin American studies that it is usually exporters who borrow more in foreign currency […] Companies producing non-tradables (e.g. property developers) have raised funds in dollar bond markets. Other borrowing was to finance increased production of oil and other primary commodities" (Chui *et al.*, 2016, p.25). The increasing currency mismatch that characterizes the balance sheet of non-financial corporations in Latin America has economy-wide implications. On the one hand, it makes the financial position of non-financial corporations more vulnerable to external shocks. Increases in international interest rates, drops in international liquidity and exchange rate depreciations may cause widespread bankruptcies and throw the economy in a recession. On the other hand, it poses a tough policy dilemma to national government. If external shocks happen, they may leave private companies to their faith and bear the costs of (likely) painful economic contractions. Alternatively, national government may be tempted to step in and bail out private companies. This, however, will throw public budgets under strain and raise again the risk of sovereign debt crises thereafter.

4.3 International capital flows, structural change and the role of (external) macroprudential policy

Periods of large capital inflows in EDE countries have been usually described as following boom-and-burst patterns. Frenkel and Rapetti (2009) stress how these episodes tend to present typical Minskyan features, albeit in a different way with respect to advanced economies. In their view, *exogenous* events such as changes in the domestic (macroeconomic) policy paradigm (say the move to trade liberalization, financial integration and neoliberal policies in the 1990s) or in the prevailing conditions in international financial markets (changes in FED's monetary policy, for instance) are the main triggers of unstable phases of financial euphoria in EDE countries. This point by Frenkel and Rapetti (2009) has

many things in common with increasingly acknowledged exposure of EDE countries to global financial cycles (Rey, 2018) or "push" factors.

The most recent and perhaps unusually long period of large capital inflows to EDE countries that started in the 2000s, and in the aftermath of the last financial crisis in particular, did not prompt any initial *acceleration* in the growth process of recipient economies, Latin American ones at least. If we look at the six Latin American economies considered so far, all of them actually experienced a decline in the average growth rate after the start of the episode with respect to mean growth in the three years before. This is quite a substantial difference with respect to the 1990s, during which financial booms effectively gave rise to remarkable but short-lived growth spells in all the six economies but Colombia[30]. To some extent, following Erten and Ocampo (2016), this might be the appreciable result of Latin American economies being more capable to tame finance-led macroeconomic instability thanks to the reconsideration and re-introduction of capital controls dismantled before.

Despite an initial finance-led growth boom did not take place in the 2000s and the burst is yet to come, relevant similarities between the current episode of large capital inflows and the previous ones are still worth noticing. First, current financial (and economic) dynamics continue to be strongly influenced by external factors. After 2008, abundant liquidity from central banks in advanced economies via repeated rounds of quantitative easing and the drop in international interest rates significantly contributed to originate the surge in international capital. This view is reinforced by financial flights observed in 2020. On the one hand, the outbreak of the pandemic and the increase in perceived global risk explain most of the deepest post-2008 reversal in capital flows and peak in JP Morgan EMBI experienced by Latin American and other EDE countries in the first quarter of 2020 (IIF, 2020a and 2020b; ECLAC, 2021b). On the other hand, bold reactions by leading monetary institutions helped to ease external financial constraints to "peripheral" countries (read a downward swing in the EMBI) in the second half of the last year, and to resuscitate capital inflows, although on a relatively weak basis, in Latin America in particular, with respect to the post-2008/2009 rebound (IIF, 2020a and 2020b). Second, Following Chui *et al.*, (2016) and Perez-Caldentey *et al.*, (2019), Latin American and other EDE countries non-financial corporations have taken advantage of enduring favorable international financial conditions to raise cheap external funds in foreign currency. In doing this, however, their balance sheet has become more vulnerable to currency mismatch and exchange rate fluctuations (read depreciations). In Latin America, non-financial corporations have increasingly moved towards fragile speculative or "Ponzi" financial positions (see Perez-Caldentey *et al.*, (2019)). In the end, stability may continue to breed instability, very much in line with Minsky.

Finance-led instability, together with possible perverse sectorial effects of large capital inflows, bring capital controls and (external) macroprudential policy back to the center of the economic debate. Indeed, mainstream economic theory has made a quite remarkable U-turn in its view about capital flows management (CFM) measures. Since the 1970s up to the 1990s, there was widespread consensus about the virtues of financial integration, and about economic and efficiency gains that

[30] A very preliminary analysis of growth dynamics in the 2000s for the six Latin American economies at stake reveals that they all scored negative values in the *difference* between average real GDP growth rate during the last recorded period of large capital inflows (see Table A.4) and average growth in the three years before the start of the episode. Data are as follows: Argentina (-4.58); Brazil (-0.45); Chile (-2.68); Colombia (-1.96); Mexico (-1.50); Peru (-1.38). When we look back to the 1990s, the picture is almost opposite: Argentina (+9.37); Brazil (+2.85); Chile (+0.31); Colombia (-2.04); Mexico (+1.75); Peru (+4.94).

could be reaped by lifting restrictions to capital mobility. Since the beginning of the 2000s, and even the more so after the 2007-2008 financial crash, several mainstream economists reconsidered the usefulness of regulatory and/or market-based limits to unfettered capital flows (Klein, 2012). In a similar vein, the literature trying to empirically assess the effectiveness of these measures have been flourishing in the last decade or so.

Ostry *et al.*, (2012) provide a useful classification of the various instruments available in the CFM toolkit. For instance, they distinguish between capital (inflow) controls and "*external*" FX-related macroprudential policies. The first type of measures looks at residency of actors as "discrimination" criteria for limiting financial transactions between them. External FX-related macroprudential regulation, instead, may restrict the accumulation of certain financial assets or liabilities depending on the currency they are denominated in whatever is the residency of actors involved. The two set of policies, although conceptually different, may de facto overlap each other as to the goals the pursue (ex: reducing financial instability caused by external borrowing in foreign currency); in the variables they influence (ex: the exchange rate and foreign indebtedness); in the phenomena they try to control (ex: domestic credit booms fueled by foreign capitals)[31]. Similar overlaps also exist between capital controls and the broader range of internal macroprudential measures (Rey, 2018) to the extent that limits to, say, domestic lending may eventually dampen foreign borrowing.

The empirical evidence about the effectiveness of these measures is mixed. Klein (2012), for instance, tend to downgrade the role of CFMs. In his view, neither long-standing capital controls ("walls") nor episodic restrictions ("gates") seem to have relevant effects on domestic financial variables, although they may reduce surges in gross capital inflows. Other contributions, however, present quite opposite results. Ostry *et al.*, (2012), for instance, find that capital controls and FX-related macroprudential measures do not change the overall amount of gross capital inflows. Nonetheless, they modify their composition away from debt instruments (and towards equities) and reduce the relevance of FX-denominated credit in domestic lending. Both facts are taken as evidence of strengthened financial solidity. Forbes *et al.*, (2015) reach similar conclusions. In their study, capital controls and external macroprudential policies do not seem to prevent in a significant and consistent way surges in capital inflows and exchange rate appreciations. Yet, they may tame domestic credit booms and reduce domestic financial fragility (as captured by increases in domestic banks' leverage and credit provision). Ahnert et al., (2021) note that FX-related macroprudential policies tend to reduce financial sector and aggregate economy-wide exposure to exchange rate risk, even though this is partially moved to the non-financial corporate sector. Erten and Ocampo (2016), finally, claim that, once the problem of endogeneity is properly considered in econometric analyses[32], then capital controls and external macroprudential policy stand out as effective measures against sources of macroeconomic instability, namely appreciation of the real exchange rate and foreign currency "pressures"[33].

[31] See Mendoza and Terrones (2008), among many others, about the strong association between capital inflows and credit booms in EDE economies in particular.

[32] Indeed, whilst capital controls and external macroprudential policies may influence capital inflows, they often emerge as *endogenous* policy responses to surges in foreign capitals themselves. Neglecting this endogeneity issue might generate a downward bias in the estimated effects of the former over the latter.

[33] Erten and Ocampo (2016) measure foreign exchange "pressures" as a weighted average of real exchange rate appreciations and accumulation of foreign reserves. In their view, this could capture the extent by which domestic monetary institutions might have to intervene in financial markets to manage the "external channel" of money creation and its implications in terms of exchange rate and inflation dynamics, as well as liquidity expansion.

This report does not aim at contributing to such an empirical debate. The provision of new empirical evidence about the relation between capital controls, external macroprudential policy, and macroeconomic and financial instability goes well beyond our goals. Nonetheless, we want to spot two ways through which, from a theoretical point of view, external macroprudential policy may also address the long-term sectorial consequences of periods of large capital inflows.

1) External macroprudential policy, foreign reserves and monetary policy independence: Since the beginning of the 2000s, increasing concern about foreign capital-led appreciations in the nominal and real exchange rate has led EDE countries to accumulate large amounts of foreign reserves. Monetary institutions in Latin American countries do not make an exception despite they switched to more flexible (free floating or managed) exchange rate regimes than in the 1990s. Figure 13 below documents the unprecedent increase in the stock of foreign reserves (as a percentage of total external debt) held by Latin American countries in the 2000s.

Figure 13 – Stock of foreign reserves (as percentage of total external debt), Latin America, 1971 – 2019

Source: World Bank

Large stock of foreign reserves can certainly enable EDE countries to better control the exchange rate, in particular to prevent exchange rate crises during periods of financial turbulences. Nonetheless, they may imply non negligible implicit or explicit costs. First, following Akyüz (2021), there is a negative income transfer from EDE countries to developed ones due to differences in the yields on their respective foreign investments. Whilst foreign reserves of EDE countries are usually invested in low-yield safe assets issued by developed countries (US Treasury bonds or bills,

for instance), investors from developed countries purchase much more remunerative liabilities of EDE countries. Second, the accumulation of foreign reserves comes with intrinsic contradictions. When accumulating foreign reserves, domestic monetary authorities expand domestic liquidity. Despite the *nominal* exchange rate may be under control and appreciations avoided, domestic inflation may accelerate and lead, in one way or the other, to uncompetitive *real* exchange rates. The accumulation of foreign reserves may reduce financial instability but may be quite ineffective in avoiding the crowing out of non-traditional tradable sectors that could originate from real exchange rate appreciations. Alternatively, central banks in EDE countries may sterilize the extra liquidity created via the external channel by selling domestic bonds in open market operations. This way, however, yields on domestic public bonds will increase and the space for active expansionary fiscal policy narrow. Possible constraints to fiscal policy become even more worrisome in the present context in which expansionary fiscal measures, public investment in particular, may play a leading role in feeding transformative post-Covid recovery.

External macroprudential policies that discourage external borrowing in foreign currency may be very useful tools to reduce the "subtle" costs of large holdings of foreign reserves. Consistent with Erten and Ocampo (2016), they may weaken pressures on the appreciation of the nominal (and therefore real) exchange rate. This will in turn allow domestic monetary authorities to take milder positions in the FX market, to reduce average holding of foreign reserves, and to avoid the adoption of sterilization measures. Following Rey (2018), all this may permit domestic monetary policy to become more independent from global financial cycles.
This is even the more so if external macroprudential policies also enable EDE economies to more easily adopt *managed* exchange rate regimes by lowering the scale of international capital flows. Indeed, managed exchange rate regimes seem to perform better than fixed and free-floating ones in reducing the sensitivity of domestic credit and housing prices to global financial shocks (see Obstfeld *et al.*, 2018), hence strengthening financial stability. In a similar vein, managed exchange rate regimes may soften the "original sin redux" and dwindle foreign investors' reactions to swings in the exchange rate (Hofmann *et al.*, 2021) by dampening exchange rate volatility itself. In the end, once reduced the vulnerability to global financial shocks, domestic monetary authorities may gain wider margins of maneuver for pursuing "developmentalist" goals. National strategies for post-Covid sustainable recovery, in particular, could contemplate more independent monetary policies that more easily *accommodate* the implementation of ambitious publicly financed recovery plans putting emphasis on public investment, public (social and physical) infrastructures and, eventually, structural change.

2) Sector-specific external macroprudential policy: Whilst point 1 somehow refers to the "pure" macroeconomic implications of external macroprudential policies, the designing of such measures should also take explicitly onboard the sectorial effects of large capital inflows. Other way around, regulatory or market-based restrictions to financial integration should pay attention to which sectors are mostly affected by inflows of foreign funds, either directly via foreign investors' purchases of home securities or intermediated by the domestic financial system.
From the point of view of productive development, it makes a difference whether foreign funds fuel housing booms in the domestic real estate, whether they finance the expansion of the domestic service industry, or whether support productive investment in the non-traditional (say, non-natural resource) tradable sector. Consistent with this view, external macroprudential

policies should impose restrictions to foreign capitals that differ from sector to sector. Consider (non-interest bearing) deposit requirements or direct taxes levied on foreign borrowing, for instance. On the one hand, these measures should become tighter when foreign debt is denominated in foreign currency. On the other hand, they should foresee and apply tougher "penalty" rates on foreign borrowing by corporations in the non-tradable sector with respect to companies in the non-traditional tradable one. In a similar fashion, given foreign currency-denominated debt of the domestic banking system, macroprudential policy should discriminate against credit to non-tradable industries and favor banks' loans to activities that are capable to generate "hard currency" revenues.

The purpose of sector-specific differential external macroprudential measures is twofold. First, consistent with the primary goal of broader macroprudential regulation, additional restrictions imposed at sectorial level may further concur to reduce economy-wide currency mismatches and tame financial instability when perceived global risk and exchange rate volatility increase. Second, they go beyond avoiding excessive external borrowing, and try to influence the *allocation* of collected funds with the aim of creating a more diversified technologically advanced productive system with stronger export capacity. On the one hand, by doing this, industry-specific measures explicitly tackle and try to counteract the perverse squeeze in tradable activities that large capital inflows may prompt via Dutch disease-like mechanisms. On the other hand, they recognize and try to embed in concrete policy actions the fact that the accumulation of technological knowledge and the diversification of the productive system may be the ultimate necessary conditions for macroeconomic stability (Chang and Lebdioui, 2020). It is perhaps not by chance that, from an historical point of view, higher export orientation and more advanced industrialization in East Asia than in Latin American made the former mostly immune to external debt crisis in the 1980s (Sachs, 1985) and quicker in post-crisis recoveries thereafter. The latter, instead, was at the epicenter of the crash in 1982 and has continued to suffer from more acute recurrent financial and economic instability since then.

Given these general guidelines, Table 11 offers a list of possible policy measures pursuing the two main goals mentioned above. We first recommend the implementation of *quantitative limits* to external borrowing that should be applied *horizontally* throughout the entire economy. They could take the form of ceilings imposed to firms' external debt-own fund ratios or to the debt service ratio (as a percentage of profits). Such limits are meant to avoid speculative/Ponzi financial positions to emerge at firm level and unstable Minskyan cycles to unfold at macro level. In doing so, they may contribute to reduce "foreign currency pressures" and provide domestic institutions with more leeway in the control of the exchange rate, the management of foreign reserves and the implementation of monetary policy.

The design of quantitative limits to international borrowing should adopt a broad definition of external debt. They should obviously discourage the (excessive) issuance of foreign currency-denominated corporate bonds. Nonetheless, they should also target bonds denominated in domestic currency and purchased by international lenders. Indeed, both types of transactions and the connected capital

inflows can cause the appreciation of the exchange rate and Dutch disease-like phenomena[34]. On top of this, such a comprehensive definition may help to address the "original sin redux": who owns the debt, foreign or domestic creditors, also matters as much as the currency of denomination does.

[34] In the case of foreign currency-denominated bonds, "foreign currency pressures" may materialize *ex-post* when domestic borrowers try to convert foreign currency into the domestic one. In the case of domestic currency-denominated bonds, such pressures may emerge *ex-ante* when foreign creditors purchase domestic currency in the FX market in order to then purchase assets denominated in that same currency.

Table 11 – Economy-wide and sector-specific capital control and external macroprudential policy measures

ECONOMY-WIDE HORIZONTAL MEASUES		
MEASURE	TARGET VARIABLE	MAIN PURPOSE
Quantitative limits to external borrowing	External debt/own fund ratio Debt service ratio	1. Tame Minskyan cycles 2. Reduce "foreign currency pressure" 3. Create more leeway for FX control and autonomous monetary policy
SECTOR-SPECIFIC MEASURES		
MEASURE	TARGET VARIABLE	MAIN PURPOSE
Sector-specific reserve requirements on foreign borrowing	Relative costs of foreign borrowing	1. Contrast Dutch disease effects of capital inflows 2. Direct external funding towards non-traditional tradable sectors 3. Discourage overexpansion of non-tradable sectors 4. Reduce currency mismatch
Sector-specific taxation of portfolio capital inflows	Financial returns/capital gains	1. Squeeze returns/capital gains on short-term investment 2. Tame stock exchange/real estate bubbles

Quantitative limits to external debt should pay attention to the residency of the actors involved in financial transactions (rather than their nationality). This criterion aims at impeding legal practices that may enable counterparts to circumvent capital restrictions. For instance, quantitative limits should apply to, say, "*internal*" transactions between domestic branches and off-shore subsidiaries of a company that may have been set with the (hidden) purpose of escaping capital controls. By the same token, they should be levied upon local subsidiaries of foreign companies that may collect foreign funds via their headquarters and subsequently intermediate them in the domestic economy.

Restrictions to external funding should be better conceived as permanent "walls" rather than temporary "gates" so as to avoid untimely implementations due to the complex identification of upswing and downswing phases in financial cycles. Given a permanent base, "walls" can nevertheless be progressively raised whenever factors causing surges in capital inflows become more prominent. According to the literature about global financial cycles, policy makers in EDE countries should primarily pay attention to global push factors. It is time for tougher quantitative restrictions to foreign debt when foreign monetary policy becomes strongly expansionary, unconventional monetary measures are at work and/or liquidity overflows in the center of the global financial system. A large and widening positive gap between the domestic policy rate and that prevailing in international markets or the VIX index constitute natural indicators policy makers may look at in order to determine updates in quantitative limits to foreign borrowing.

The second set of measures reported in Table 11 are meant to explicitly and directly address the long-term productive and sectorial implications of periods of large capital inflows. The general goal here is to channel external funds, when admitted according to economy-wide quantitative restrictions, to those sectors that can generate "hard currency" revenues by exporting non-traditional tradable goods and services, rather than non-tradable sectors whose foreign indebtedness is source of currency mismatch. For instance, these measures may try to tame bubbles in the real estate that are fueled by foreign capitals, whilst favoring investment in new activities producing tradable goods and services.

The measures at stake are complementary to the quantitative limits we have just discussed. Given their goals, they should be modulated according to different levels of tightness and intensity among different sectors. In Table 11, we suggest the adoption of *sector-specific* reserve requirements on foreign borrowing that implicitly increase the relative costs of foreign borrowing (with respect to internal borrowing), and even the more so in the case of non-tradable sectors. Measures at sectoral level may also include the imposition of differentiated tax rates on returns to short-term portfolio investment. More specifically, we think about the taxation of capital gains on investment in equities that may fuel bubbles in the financial sector or, again, in the real estate. Following Taylor (1991), this is far from being an unknown event in the history of EDE countries, in particular in the aftermath of the privatization of strategic state-owned companies. These measures may contribute to "neutralize" possible destabilizing feedbacks between asset price inflation and debt accumulation (Taylor and Rada, 2008), and reduce, at least partially, the long-term (productive) distortions that even temporary episodes of financial frenzy may bring about.

5. Conclusions

In this report, we document the perverse effects that non-FDI net capital inflows may bring about long-run productive development. More specifically, by taking inspiration from a previous study by Rodrik (2016), we provide empirical evidence according to which large capital inflows may be source of premature de-industrialization and technological backwardness by exacerbating (anticipating) the relative squeeze of manufacturing and by reducing the degree of complexity of domestic productive systems. We show that these phenomena are particularly acute and more worrisome in the case of emerging and developing (EDE) economies with respect to developed countries. In this general picture, we also notice that heterogeneity exists among EDE countries themselves. Premature de-industrialization is far ahead on its way and the detrimental effects of large capital inflows appear significantly stronger in Latin America than Asia.

The economic effects of Covid-19 seem to be particular harsh in EDE countries characterized by reduced space for expansionary fiscal policies and relatively weak, poorly diversified productive structures that largely depend on natural resource exports, participate to low-skill intensive stages of global value chains, and did not develop high-skill intensive tradable services in the last decades.

In light of this evidence, any national strategy for post-Covid sustained and sustainable recovery should put structural change and productive development at the core of its agenda. Given the long-lasting scars that the pandemic will likely leave in the balance sheet of both households and private business (read lower income and higher debt stocks), it is reasonable to expect publicly financed large public investment plans to take the lead in feeding economic recovery. Once again, however, financial integration may significantly constrain the viability of such plans by reducing the space for expansionary fiscal measures.

All these considerations may strengthen and spread even further increasing recognition by economic literature that capital flow management measures (CFMs), i.e., capital controls and external macroprudential policies, may contribute to improve the economic performance and financial stability of EDE economies. More than that, we stress that positive effects of CFMs may go well beyond increased resilience to global financial shocks. Indeed, external macroprudential policies may also bear positive consequences for the long-run development trajectory of EDE economies by counteracting perverse Dutch disease-like phenomena triggered off by large non-FDI net capital inflows. External macroprudential measures may do this by enabling EDE economies to reduce the implicit costs of large foreign reserves' holdings, to more easily adopt managed exchange rate regimes, and by increasing the degree of independence of domestic monetary policy from global financial cycles. Policy makers could magnify these desirable effects of external macroprudential measures by designing them with sector-specific differential restrictions and opportunities. External macroprudential measures should limit excessive external borrowing, but they should also prompt a "virtuous" allocation of funds towards the non-traditional export-generating tradable sector and away from non-tradable activities.

6. References

Acosta, P.A., Lartey, E.K.K., and F.S. Mandelman (2009) – "Remittances and the Dutch disease", *Journal of International Economics*, vol.79 (1), 102 – 116.

Aguilera, R. (2020) – "Covid-19 in Latin America: were we doomed from the start?", *LSE Blog Paper 8th August 2020*, freely available at https://blogs.lse.ac.uk/latamcaribbean/2020/08/19/covid-19-in-latin-america-was-the-region-doomed-from-the-start/

Ahnert, T., Forbes, K., Friedrich, C., and D. Reinhart (2021) – "Macroprudential FX regulations: Shifting the snowbanks of FX vulnerability?", *Journal of Financial Economics, vol.140 (1), 145 – 174.*

Akyüz, Y (2006) – "From liberalization to investment and jobs: Lost in translation", *ILO Working Paper no.74.*

Akyüz, Y (2021) – "External balance sheets of emerging economies: low-yielding assets, high-yielding liabilities", *Review of Keynesian Economics*, vol.9 (2), 232 – 252.

Allin, S., Haldane, V., Jamieson, M., Marchildon, G., Morales Vazquez, M., and M. Roering (2020) – "Comparing policy responses to Covid-19 among countries in the Latin American and Caribbean (LAC) region", *World Bank Report no. AUS0001968.*

Bebczuk, R., Galindo, A., and U. Panizza (2010) – "An evaluation of the contractionary devaluation hypothesis", in: Esfahani, H.S., Facchini, G., and G.J. Hewings (eds.) – "*Economic development in Latin America. Essays in honor of Werner Baer*", London, Pargrave Macmillan, 102 – 117.

Benigno, G., and L. Fornaro (2014) – "The financial resource curse", *The Scandinavian Journal of Economics*, vol.116 (1), 58 – 86.

Benigno, G., Coverse, N., and L. Fornaro (2015) – "Large capital inflows, sectorial allocation, and economic performance", *Journal of International Money and Finance*, vol.55 (1), 60 – 87.

Bertaut, C., Bruno, V., and H.S. Shin (2020) – "Original sin redux", freely available at: https://ssrn.com/abstract=3820755.

Bortz, P.G. (2018) – "Flujos de capital y endeudamiento externo: algunas reflexiones para Aerica Latina", in: Abeles, M., Perez-Caldentey, E., and S. Valdecantos (eds.) – "*Estudios sobre financierizacion em America Latina*", Santiago de Chile: United Nations Press.

Bosio, E., Jolevski, F., Lemoine, J., and R. Ramalho (2020) – "Survival of firms in developing economies during economic crisis", in: *Djankov, S., and U. Panizza (eds.)* – "Covid-19 in developing countries", *London: CEPR Press, 157 – 174.*

Botta, A., Godin, A., and M. Missaglia, (2016) – "Finance, foreign (direct) investment, and the Dutch disease. The case of Colombia", *Economia Politica*, vol.33 (2), 265-289.

Botta, A. (2017) – "Dutch disease-cum-financialization booms and external balance cycles in developing countries", *Brazilian Journal of Political Economy*, vol.37 (3), 459 – 477.

Botta, A. (2021) – "Financial liberalization, exchange rate dynamics and the financial Dutch disease in developing and emerging economies", in: *Bonizzi, B., Kaltenbrunner, A., and R.A. Ramos (eds.)* –

"Emerging economies and the global financial system. Post-Keynesian analysis", London: Routledge.

Bresser-Pereira, L.C. (2012) – "Structuralist macroeconomics and the new developmentalism", *Brazilian Journal of Political Economy*, vol.32 (3), 347 – 366.

Calvo, G.A., Leiderman, L., and C.M. Reinhart (1996) – "Inflows of capital to developing countries in the 1990s", *Journal of Economic Perspectives*, vol.10 (2), 123 – 139.

Carstens, A., and H.S. Shin (2019) – "Emerging markets aren't out of the woods yet", *Foreign Affairs*, March 2019.

Cerra, V., and S.C. Saxena (2008) – "Growth dynamics: The myth of economic recovery", *American Economic Review*, vol.98 (1), 439 – 457.

*Cespedes, L.F., Chang, R., and A. Velasco (2020) – "*Macroeconomic policy responses to a pandemic", *in: Djankov, S., and U. Panizza (eds.) –* "Covid-19 in developing countries*", London: CEPR Press, 175 – 186.*

Chang, H-J., and A. Lebdioui (2020) – "From fiscal stabilization to economic diversification: A developmental approach to managing resource revenues", *WIDER Working Paper no.2020/108.*

Chui, M., Kuruc, E., and P. Turner (2016) – "A new dimension to currency mismatches in the merging markets: non-financial companies", *BIS Working Paper no.550.*

Cimoli, M., Ocampo, J.A., Porcile, G., and N. Saporito (2020) – "Choosing sides in the trilemma: international financial cycles and structural change in developing economies", *Economics of innovation and new technology*, vol.29 (7), 740 – 761.

De Soto, H. (1988) – "The other path: The invisible revolution in the Third World", New York: *Harper & Row.*

Diaz-Alejandro, C. (1985) – "Good-bye financial repression, hello financial crash", *Journal of Development Economics*, vol.19 (1), 1 – 24.

ECLAC (2020) – "*Economic survey of Latin America and the Caribbean. Main conditioning factors of fiscal and monetary policies in the post-Covid-19 era*", Santiago de Chile: United Nations Press.

ECLAC (2021a) – "*Fiscal panorama of Latin America and the Caribbean. Fiscal policy challenges for transformative recovery post-Covid-19*", Santiago de Chile: United Nations Press.

ECLAC (2021b) – "*Capital flows to Latin America and the Caribbean: 2020 year-in-review in times of Covid-19*", Santiago de Chile: United Nations Press.

Eichengreen, B., Gupta, P., and O. Masetti (2017) – "Are capital flows fickle? Increasingly? And does the answer still depend on type?", *World Bank Policy Research Paper no.7972.*

Erten, B., and J.A. Ocampo (2016) – "Macroeconomic effects of capital account regulations", *IMF Economic Review*, vol.65 (2), 194 – 240.

Forbes, K., Fratzscher, M., and R. Straub (2015) – "Capital-flow management measures: What are they good for?", *Journal of International Economics*, vol.96 (S1), S76 – S97.

Frenkel, R., and M. Rapetti (2009) – "A Developing Country View of the Current Global Crisis: What should not be forgotten and what should be done", *Cambridge Journal of Economics*, vol.33 (4), 683 – 702.

Furceri, D., Loungani, P., Ostry, J.D., and P. Pizzutto (2020) – "Pandemics and inequality: Assessing the impact of Covid-19", in: Djankov, S., and U. Panizza (eds.) – "*Covid-19 in developing countries*", London: CEPR Press, 200 – 213.

Gallagher, K.P., and Prates, D (2014) – "Financialization and the resource curse: The challenge of exchange rate management in Brazil"*, Gegi Working Paper no. 8.*

Hevia, C., and A. Neumeyer (2020) – "A perfect storm: Covid-19 in emerging economies", in: *Djankov, S., and U. Panizza (eds.)* – "Covid-19 in developing countries", *London: CEPR Press, 25 – 37.*

Hidalgo, C.A., and R. Hausmann (2009) – " The building blocks of economic complexity" *Proceedings of the National Academy of Sciences of the U.S.A., vol.106 (26), 10570–10575*.

Hofmann, B., Patel, N., and S. Pak Yeung Wu (2021) – "The original sin redux: A model based evaluation", freely available at https://abfer.org/media/abfer-events-2021/annual-conference/papers-immb/AC21P1047_The-original-sin-redux-a-model-based-evaluation.pdf.

IIF (2020a) – "Global Macro View – The EM flow recovery".

IIF (2020b) – "Capital Flows Report – A slow and uneven recovery".

Imbs, J., and R. Warzciag (2003) – "Stages of diversification", *American Economics Review*, vol.93 (1), 63 – 86.

IMF (2020a) – "World Economic Outlook 2020 (October): A long and difficult ascent", October 2020, Washington DC.

IMF (2020b) – "Fiscal Monitor 2020: Policies for the recovery", October 2020, Washington DC.

IMF (2020c) – "Latin American labor market during Covid-19".

IMF (2021) – "Fiscal Monitor 2021 (April): A fair shot" April 2021, Washington DC.

Islam, I., and F. Lapeyre (2020) – "Transition to formality and structural transformation. Challenges and policy options", *Geneva: ILO Publishing.*

Jafarov, E., Maino, R., and M. Pani (2020) – "Financial repression is knocking at the door, again. Should we be concerned?", *IMF Working Paper no. 19/211 (May 2020 updated version).*

Kaminsky, G.L., and C.M. Reinhart (1999) – "The twin crises: The causes of banking and balance-of-payments problems", *American Economic Review*, vol.89 (3), 473 – 500.

Klein, M.W. (2012) – "Capital controls: Gates versus walls", *Brookings Papers on Economic Activity*, Fall 2012, 317 – 367.

Koo, R.C. (2014) – "Balance sheet recession is the reason for secular stagnation", in: Teulings, C., and R. Baldwin (eds.) – "*Secular stagnation: Facts, causes and cures*", London: CEPR Press, 131 – 142.

Krugman, P. (1999) – "The return of depression economics", *New York: W.W. Norton & co.*

La Porta, R., and A. Shleifer (2014) – "Informality and Development", *Journal of Economic Perspectives*, vol.28 (3), 109 – 126.

Lane, P.R., and G. Milesi-Ferretti (2003) – "International financial integration", *IMF Working Paper no. 086.*

Lange, G. M., Wodon, Q., and K. Carey (eds.) (2018) – "The changing wealth of nations 2018: Building a sustainable future" Washington, D.C.: *The World Bank Press.*

Lartey, E.K.K. (2008) – "Capital inflows, Dutch disease effects, and monetary policy in a small open economy", *Review of International Economics*, vol.16 (5), 971 – 989.

Maloney, W.F. (2004) – "Informality revisited", *World Development*, vol.32 (7), 1159 – 1178.

McKinnon, R. (1973) – "*Money and capital in economic development*" Washington: *Brookings Institution.*

Mendoza, E., and M.E. Terrones (2008) – "An anatomy of credit booms: Evidence from macro aggregates and micro data", *NBER Working Paper no.14049.*

Nalin, L., and G.T. Yajima (2020) – "Balance sheet effects of a currency devaluation: A stock-flow consistent framework for Mexico", *Levy Economics Institute Working Paper no.980.*

Obstfeld, M., Ostry, J.D., and M.S. Qureshi (2018) – "Global financial cycles and the exchange rate regime: A perspective from emerging markets", *CEPS Discussion Paper DP12696.*

Ocampo, J.A. (2011) – "Macroeconomy for development: Countercyclical policies and production sector transformation", *Cepal Review*, vol.104 (August 2011), 7 – 35.

Ocampo, J.A., Spiegel, S., and J.E. Stiglitz (2008) – "Capital market liberalization and development", in: *Ocampo, J.A., and J.E. Stiglitz (eds.)* – "Capital account liberalization and development", Oxford: *Oxford University Press, 1 – 47.*

Ocampo, J.A., and G. Porcile (2020) – "Latin American industrial policies: A comparative perspective", in: Oqubay, A., Cramer, C., Chang, H-J., and R. Kozul-Wright (eds.) – "The Oxford Handbook of Industrial Policy", Oxford: *Oxford University Press.*

Ostry, J.D., Ghosh, A.R., Chamon, M. and M.S.Qureshi (2012) – "Tools for managing financial-stability risks from capital flows", *Journal of International Economics*, vol.88 (2), 407 – 421.

Ostry, J.D., Loungani, P., and D. Furceri (2016) – "Neoliberalism: Oversold?", *Finance and Development* (June 2016), 38 – 41.

Palma, J.G. (2005) – "Four sources of "de-industrialization" and a new concept of the "Dutch disease"", in*: Ocampo, J.A. (ed.)* – "Beyond reforms: Structural dynamics and macroeconomic vulnerability", Palo Alto: *Stanford University Press.*

Perez Caldentey, E., Favreau Negrot, N., and L. Mendez Lobos (2019) – "Corporate debt in Latin America and its macroeconomic implications", *Journal of post-Keynesian Economics*, vol.42 (3), 335 – 362.

Rajan, R.G., and A. Subramanian (2011) – "Aid, Dutch disease and manufacturing growth", *Journal of Development Economics*, vol.94 (1), 106 – 118.

Reinhart, C.M., Rogoff, K.S., and M.A. Savastano (2003) – "Debt intolerance", *Brookings Papers on Economic Activity*, vol.34 (1), 1 – 74.

Reinhart, C.M., and V.R. Reinhart (2008) – "*Capital flow bonanzas: An encompassing view of the past and present*", NBER Working Paper no.14321.

Rey, V. (2018) – "Dilemma not trilemma: The global financial cycle and monetary policy independence", NBER Working Paper series no.21162.

Rodrik, D. (2016) – "Premature deindustrialization", *Journal of Economic Growth*, vol.21 (1), 1 – 33.

Rowthorn R., and R. Ramaswamy (1997) – "*Deindustrialization: Causes and implications*", IMF Working Paper WP/97/42.

Sachs J. (1985) – "External Debt and Macroeconomic Performance in Latin America and East Asia", *Brookings Papers on Economic Activity*, vol.1985 (2), 523 – 573.

Serebrisky, T., Brichetti J.P., Blackman, A., and M. Mesquita Moreira (2020) – "Sustainable and digital infrastructure for post-Covid-19 economic recovery of Latin America and the Caribbean: A roadmap to more jobs, integration and growth", *Inter-American development Bank report.*

Shaw, E. (1973) – "Financial deepening in economic development", New York: *Oxford University Press.*

Swarnali, A.H., Keiko, H., and Raissi, M (2020) – "Mexico needs a fiscal twist: Response to Covid-19 and beyond", *IMF Working Paper no. 20/215.*

Taylor, L. (1991) – "Income Distribution, Inflation, and Growth", Cambridge, MA, USA: MIT Press.

Taylor, L. (1998) – "Capital market crises: liberalization, fixed exchange rates and market-driven destabilization", *Cambridge Journal of Economics*, vol.22 (6), 663 – 676.

Taylor, L., and C. Rada (2008) – "Debt-equity cycles in the 20th century: empirical evidence and a dynamic Keynesian model", in: *Flaschel, P., and M. Landesmann (eds.)* – "Mathematical economics and capitalist dynamics: Goodwin's legacy continued", London: *Routledge, pp. 219 – 246.*

Tregenna, F. (2009) – "Characterizing deindustrialization: An analysis of changes in manufacturing employment and output internationally", *Cambridge Journal of Economics*, vol.33 (3), 433 – 466.

UNCTAD (2020) – "Trade and Development Report", Geneva*: United Nations Press.*

United Nations (2021) – "World economic situation and prospect 2021", New York: *United Nations Press.*

Valensisi, G. (2020) – "Covid-19 and global poverty: A preliminary assessment", *in: Djankov, S., and U. Panizza (eds.)* – "Covid-19 in developing countries", London*: CEPR Press, 188 – 199.*

Vernengo, M., and E. Perez Caldentey (2020) – "Modern Money Theory (MMT) in the Tropics: Functional finance in developing countries", *Challenge*, vol.63 (6), 332 – 348.

World Bank (2019) – "Global Economic Prospecs 2019", Washington D.C.: *World Bank Press.*

World Bank (2020a) – "Commodity Markets Outlook: Persistence of commodity shocks", October 2020.

7. Appendix

Table A.1 – List of countries included in the regression analysis

COUNTRY	COUNTRY CODE	SUB-SAMPLE
Argentina	ARG	Emerging and developing (EDE)
Bolivia	BOL	Emerging and developing (EDE)
Botswana	BWA	Emerging and developing (EDE)
Brazil	BRA	Emerging and developing (EDE)
Chile	CHL	Emerging and developing (EDE)
China	CHN	Emerging and developing (EDE)
Colombia	COL	Emerging and developing (EDE)
Costa Rica	CRI	Emerging and developing (EDE)
Denmark	DNK	Developed
Egypt	EGY	Emerging and developing (EDE)
France	FRA	Developed
Ghana	GHA	Emerging and developing (EDE)
Honk Kong	HKG	Emerging and developing (EDE)
India	IND	Emerging and developing (EDE)
Indonesia	IDN	Emerging and developing (EDE)
Italy	ITA	Developed
Japan	JPN	Developed
Kenya	KEN	Emerging and developing (EDE)
Malaysia	MYS	Emerging and developing (EDE)
Mauritius	MUS	Emerging and developing (EDE)
Mexico	MEX	Emerging and developing (EDE)
Nigeria	NGA	Emerging and developing (EDE)
Netherlands	NLD	Developed
Philippines	PHL	Emerging and developing (EDE)
Peru	PER	Emerging and developing (EDE)
Senegal	SEN	Emerging and developing (EDE)
Singapore	SGP	Developed
South Korea	KOR	Emerging and developing (EDE)
South Africa	ZAF	Emerging and developing (EDE)
Spain	ESP	Developed
Sweden	SWE	Developed
Tanzania	TZA	Emerging and developing (EDE)
Thailand	THA	Emerging and developing (EDE)
Venezuela, RB	VEN	Emerging and developing (EDE)
United Kingdom	GBR	Developed
United States	USA	Developed

Table A.2 – Data source and descriptive statistics, full country sample

SOURCE	LABELS	(1) N	(2) mean	(3) sd	(4) max	(5) min
IMF (IFS) and Cepalstat	Non-FDI net capital inflows	940	4.602	8.630	146.4	-19.64
IMF (IFS) and Cepalstat	Financial dummy	940				
GGDC	Manufacturing Employment Share	1,296	13.62	6.019	41.20	1.231
GGDC	Manufacturing Nominal Value Added	1,287	19.78	6.948	38.00	1.070
GGDC	Manufacturing Real Value Added	1,283	17.52	6.439	32.49	1.087
Atlas of Economic Complexity	Economic Complexity Index (ECI)	1,290	56.01	19.42	100	0.501
GGDC	Population	1,296	116,657	256,320	1.380e+06	1,340
GGDC	Population, squared	1,296	7.926e+10	3.074e+11	1.905e+12	1.795e+06
GGDC	GDP per capita	1,296	14,757	13,097	67,331	699.2
GGDC	GDP per capita, squared	1,296	3.892e+08	6.058e+08	4.533e+09	488,919
WB	Trade openness index	1,255	71.90	71.70	442.6	6.320
WB	ROW GDP growth rate	1,252	5.769	5.409	24.66	-6.990
WB	Total natural resources rents (% of GDP)	1,287	5.050	6.252	37.29	0.000311
Number of years		1980-2017	1980-2017	1980-2017	1980-2017	1980-2017
Number of countries		36	36	36	36	36

Table A.3 – Econometric tests for autocorrelation, heteroskedaticity and panel data cross-sectional dependence

	HYPOTHESIS TEST	(1) Manufacturing Employment Share	(2) Manufacturing Nominal Value Added	(3) Manufacturing Real Value Added	(3) Economic Complexity Index (ECI)
Woolridge test for serial correlation	H0: no first-order autocorrelation	Prob > F = 0.0000 (rejected)	Prob > F = 0.0000 (rejected)	Prob > F = 0.0000 (rejected)	Prob > F = 0.0000 (rejected)
LR Maximum likelihood Test for Heteroskedasticity	H0: no heteroskedasticity	Prob > chi2 = 0.0000 (rejected)	Prob > chi2 = 0.0000 (rejected)	Prob > chi2 = 0.0000 (rejected)	Prob > chi2 = 1.0000 (not rejected)
Modified Wald statistic for groupwise heteroskedasticity	H0: no groupwise heteroskedasticity	Prob>chi2 = 0.0000 (rejected)	Prob>chi2 = 0.0000 (rejected)	Prob>chi2 = 0.0000 (rejected)	Prob>chi2 = 0.0000 (rejected)
Pearson test for Cross-sectional dependence	H0: no cross-sectional dependence	Pr = 0.475 (not rejected)	Pr = 0.466 (not rejected)	Pr = 0.466 (not rejected)	Pr = 0.485 (not rejected)

Note: Test interpretation in parentheses

Table A.4 – Periods of large capital inflows

EPISODE NUMBER	CODE	COUNTRY	TIME SPAN	EPISODE NUMBER	CODE	COUNTRY	TIME SPAN
1	ARG	Argentina	1980 - 1981	31	JPN	Japan	2014 - 2017
2	ARG	Argentina	1991 - 1998	32	KEN	Kenya	2012 - 2016
3	ARG	Argentina	2006 - 2012	33	MEX	Mexico	1990 - 1994
4	BOL	Bolivia	1992 - 1994	34	MEX	Mexico	2007 - 2017
5	BOL	Bolivia	1996 - 1998	35	MYS	Malaysia	2009 - 2013
6	BOL	Bolivia	2001 - 2005	36	NLD	Netherlands	1997 - 2006
7	BOL	Bolivia	2008 - 2017	37	NGA	Nigeria	2005 - 2015
8	BWA	Botswana	2001 - 2003	38	PER	Peru	1994 - 1997
9	BWA	Botswana	2006 - 2009	39	PER	Peru	2002 - 2007
10	BRA	Brazil	1991 - 1998	40	PER	Peru	2010 - 2017
11	BRA	Brazil	2005 - 2015	41	PHL	Philippines	1992 - 1995
12	CHL	Chile	1980 - 1982	42	PHL	Philippines	2002 - 2006
13	CHL	Chile	1992 - 1994	43	SEN	Senegal	2013 - 2015
14	CHL	Chile	1997 - 2014	44	SGP	Singapore	1993 - 1996
15	CHN	China	2000 - 2002	45	SGP	Singapore	2001 - 2007
16	CHN	China	2005 - 2007	46	KOR	South Korea	1994 - 1996
17	COL	Colombia	1980 - 1985	47	KOR	South Korea	2001 - 2007
18	COL	Colombia	1994 - 2001	48	KOR	South Korea	2010 - 2014
19	COL	Colombia	2009 - 2017	49	SWE	Sweden	1995 - 2011
20	CRI	Costa Rica	2002 - 2008	50	ZAF	South Africa	1994 - 2000
21	CRI	Costa Rica	2010 - 2017	51	ZAF	South Africa	2004 - 2007
22	DNK	Denmark	1999 - 2010	52	ZAF	South Africa	2009 - 2014
23	FRA	France	1998 - 2009	53	ESP	Spain	1998 - 2007
24	IDN	Indonesia	1993 - 1996	54	THA	Thailand	1993 - 1997
25	IDN	Indonesia	2005 - 2013	55	THA	Thailand	2005 - 2007
26	IND	India	2001 - 2005	56	GBR	United Kingdom	1995 - 2001
27	IND	India	2009 - 2014	57	GBR	United Kingdom	2003 - 2007
28	ITA	Italy	1994 - 2000	58	USA	United States	1995 - 2007
29	ITA	Italy	2003 - 2006	59	VEN	Venezuela	1990 - 1994
30	JPN	Japan	2004 - 2007	60	VEN	Venezuela	1997 - 2011

Table A.5 – List of countries included in the correlation analysis between financial openness and fiscal space

Country	Country code	Data coverage	Average Chinn-Ito index	Average public primary surplus	Average RGDP growth rate
Argentina	ARG	1993-2018	0.44	-0.21	2.50
Bolivia	BOL	1990-2018	0.59	-1.10	4.17
Brazil	BRA	1996-2018	0.32	1.50	2.31
Chile	CHL	1990-2018	0.54	1.40	4.67
Colombia	COL	1990-2018	0.29	0.60	3.51
Costa Rica	CRI	1990-2018	0.67	-0.20	4.31
Ecuador	ECU	1995-2018	0.63	0.50	3.09
Mexico	MEX	1990-2018	0.65	0.80	2.67
Panama	PAN	1994-2018	1.00	0.90	5.79
Paraguay	PRY	1990-2018	0.54	2.60	3.39
Peru	PER	2000-2018	1.00	1.10	4.91
Trinidad &Tobago	TTO	1990-2018	0.88	2.10	3.82
Uruguay	URY	1999-2018	1.00	1.20	2.98
Venezuela, RB	VEN	1990-2018	0.31	-2.20	0.40
Latin America Chinn-Ito index			0.63		
Bangladesh	BGD	1990-2018	0.17	-0.93	5.70
Sri Lanka	LKA	1990-2018	0.40	-1.48	5.56
India	IND	1990-2018	0.16	-3.85	6.63
Indonesia	IDN	1993-2018	0.66	0.96	4.84
Malaysia	MYS	1990-2018	0.50	-0.06	5.82
Philippines	PHL	1990-2018	0.40	2.58	4.49
Thailand	THA	2000-2018	0.27	0.54	5.70
Vietnam	VNM	1998-2018	0.30	-1.35	6.53
China	CHN	1990-2018	0.15	-1.03	9.45
LAO	LAO	2000-2018	0.18	-2.49	7.22
Myanmar	MMR	1998-2018	0.00	-2.37	9.12
Cambodia	KHM	1996-2018	0.54	-2.94	7.61
South-East Asia Chinn-Ito index			0.31		
Pakistan	PAK	1993-2018	0.16	-0.46	4.29
Turkey	TUR	2000-2018	0.31	1.62	5.15
Russia	RUS	1997-2018	0.46	1.76	3.45
Egypt	EGY	1999-2018	0.70	1.73	4.46
South Africa	ZAF	2000-2018	0.16	0.55	2.77
Mozambique	MOZ	1990-2018	0.15	-2.31	6.67
Ethiopia	ETH	1990-2018	0.15	-2.74	6.92
Kenya	KEN	1990-2018	0.57	-0.97	3.73
Nigeria	NGA	1990-2018	0.21	1.89	4.80
Tunisia	TUN	1991-2018	0.20	-1.02	3.79
Morocco	MAR	1990-2018	0.19	0.94	3.88
Ghana	GHA	1990-2018	0.11	-2.48	5.49
Namibia	NAM	1994-2018	0.16	-0.92	3.65
Tanzania	TZA	1991-2018	0.17	-0.70	5.34
Other emerging economies Chinn-Ito index			0.26		