

# **The metamorphosis of external vulnerability from ‘original sin’ to ‘original sin redux’: Currency hierarchy and financial globalisation in emerging economies**

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## **Abstract**

How has financial globalisation changed the nature of external vulnerability of emerging economies? To answer this question, we first present an overview of the changes in international capital flows involving emerging economies from the 1970s to the COVID 19 crisis, and then identify relevant recent shifts in financial globalisation. We expand the concept of currency hierarchy to consider the most recent features of financial globalisation. To better understand the metamorphosis of these vulnerabilities, we deploy a stylised balance sheet analysis, providing a framework to assess complex new financial risks related to foreign debt denominated in foreign and in domestic currency of EMEs.

*Keywords:* external vulnerability; currency hierarchy; financial globalisation; emerging markets economies

*JEL Classification:* F32; F34; F62

*Area:* Economia

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## 1. Introduction

Global crises of diverse nature are hitting the world with increasing frequency, each of them, even if by different motives, affecting also global capital flows to emerging market economies (EMEs)<sup>1</sup>. The economic and financial COVID-19 crisis brought special hardship to most EMEs. They have been suffering – as it happened at the global level – from local lockdown measures and the interruption of global value chains, while they were especially hit by capital outflows never seen before. And the more recent war in Ukraine again sent shock waves through global financial markets, with strong destabilizing effects for many EMEs.

The unprecedented pro-cyclical response of global financial investors especially in the beginning of the pandemic certainly relates to the new level and form of integration into financial globalisation. Here, we are confronted with a complex picture: on the one hand, we observe a wave of external debt accumulation during the 2010s (World Bank, 2020), while at the same time most EMEs have accumulated high levels of foreign exchange reserves, and – to different degrees – the share of those investors' assets denominated in EMEs domestic currency has increased. This new wave of instability places the new configurations of external vulnerability under the spotlight.

Financial globalisation is subject to fierce debate. Here, we draw on strands of critical discussion that emphasise the inherent instability of capital flows (i.e. Stiglitz and Ocampo, 2008). Especially relevant for the case of EMEs are concepts that consider the asymmetric nature of financialisation and financial globalisation (Kaltenbrunner and Paincera, 2017; Bonizzi *et al.*, 2019), and the centre-periphery configuration of the international monetary system, such as the concept of currency hierarchy (Paula *et al.* 2017; Fritz *et al.* 2018; see also Andrade and Prates, 2014).

Departing from the perspective of an asymmetric of EMEs into financial globalisation, we ask how we can understand and systematically depict the *new patterns of external vulnerability of EMEs and its implications in terms of risks?* What is the metamorphosis of this vulnerability along the different phases of financial globalisation? Our main hypothesis is that external vulnerability overall has not decreased, but rather it has changed its nature and the channels through which it affects EMEs. The main contributions of this paper are to work out and to visualize, based on descriptive data

<sup>1</sup> Here we define EMEs as peripheral countries that have engaged in financial globalisation. We will use EMEs and emerging economies as synonyms.

analysis and with the use of agents' balance sheet analysis, a more systematic periodization of global capital flows involving EMEs, and to analyse the specific risks

associated with different patterns of capital flows and their implications for external vulnerability of EMEs

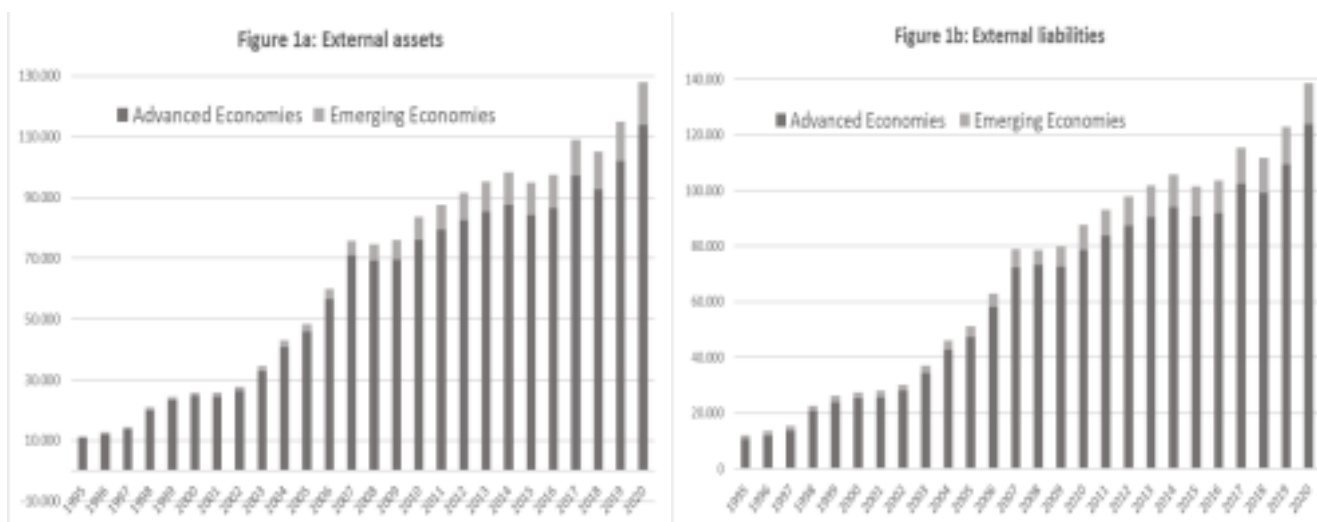
The paper is divided in five sections. Section 2 provides an overview of the main changes of financial flows to EMEs, together with a periodisation for the regimes of financial internationalisation and globalisation from the 1970s to today, including the behaviour of capital flows during the COVID-19 crisis. Section 3 presents two versions of a model of currency hierarchy, for each of the identified periods. Section 4 provides a synthetic balance sheet analysis for these different regimes to systematically assess the metamorphosis of external vulnerability that EMEs have been going through since then. Finally, Section 5 concludes.

## 2. New patterns of capital flows and cross-border stocks involving EMEs

### 2.1 Overall picture: Ever greater volumes, diversified channels and actors

Since the mid-1990s, there has been a remarkable and steady expansion in cross border global capital flows in the world and consequently of cross-border stocks. EMEs still account for a small, albeit growing share of these stocks (Figure 1). However, despite the residual nature of capital flows directed to these economies, their potentially destabilising effects on their financial markets and exchange rates are significant, since the volume allocated by global investors is not marginal in relation to the size of these markets. This financial asymmetry stems from that fact that international financial integration takes place between ‘unequal partners’ (Stuart, 2006).

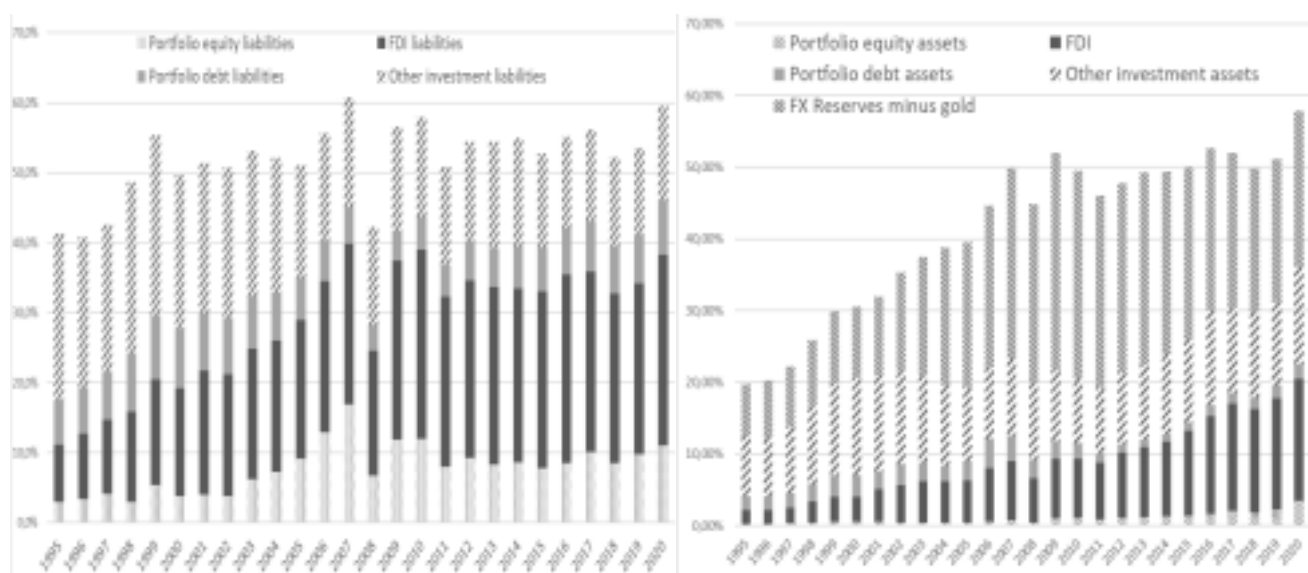
**Figure 1. Global external assets (left) and external liabilities (right)\* (US\$ billion)**



Source: Authors' elaboration with data from Milesi-Ferretti (2021).

Note: (\*) Major EMEs: Argentina, Brazil, China, Indonesia, India, Mexico, Poland, Thailand, Turkey and Russia; Major AEs: Australia, Canada, Euro Area, Japan, Korea, Switzerland, United Kingdom, United States and Taiwan

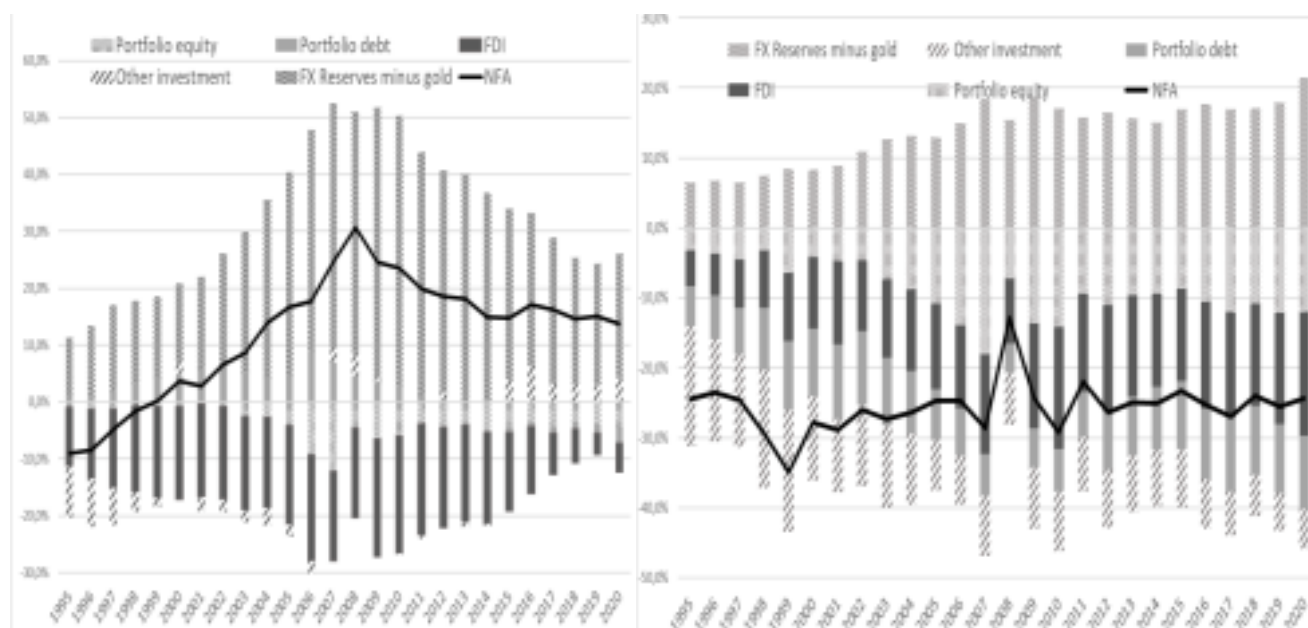
The value of EMEs' gross foreign assets and liabilities has significantly increased in absolute terms, and to a lesser extent as a proportion of GDP, being accompanied by significant changes in the structure of external balance sheets (Figure 2). The unprecedented increase in foreign reserves – as a form of self-insurance to prevent a sudden reversal of speculative capital flows in EMEs – is the largest change on the asset side (more than 50% of total assets on average in 2004-2020, according to our calculations using data from Milesi-Ferretti, 2021). Foreign exchange reserve accumulation mostly originates from capital inflows, while only in a few countries is this the result of cumulative current account surpluses. At the same time, foreign direct investment (FDI) increased from 2.2% of GDP in 1997 to 15-17% in 2017-2020, thanks to the emergence of transnational firms in major EMEs such as Brazil, China, India, and Turkey. On the liability side, where the composition has been more diversified, the share of both FDI and equity portfolio has grown at the expense of other investments (where private external debt has been growing faster than public external debt), reducing their share on GDP from 7.3% in 1995 to less than 14% in 2016-2020, while FDI increased from 8.2% of GDP in 1995 to more than 24% of the total liabilities since 2009.



Source: Authors' elaboration with data from Milesi-Ferretti (2021).  
 Note: see Figure 1

Figure 3 shows the net financial assets of EMEs (without China, and only China), that is total external assets less external liabilities: the composition of the net position is more or less similar, as both have a predominance of foreign reserves and FDI, which is still negative for both despite its growing participation in external assets, although with a clear decline trend in China since 2015 due to the increase of foreign investments abroad. Only China has been a net creditor since 2000 due to its enormous foreign reserve accumulation (declining since 2011 due to the increase of GDP), enabled by the combination of a currency account surplus and large FDI, while other EMEs have been net debtors (Figure 3). Another difference between China and other EMEs is net other investments, that is positive to China since 2015 due to an enormous increase in loans and financing abroad, while in other EMEs the net balance is still negative, showing the permanence of foreign indebtedness. Indeed, China growing weight in global economy activity and policy developments have more recently increasingly shaped capital flow patterns of EMEs.

**Figure 3. Net financial assets: Major EMEs\* (without China, left) and China (right) – as percentage of GDP – 1995-2020**



Source: Authors' elaboration with data from Milesi-Ferretti (2021).

(\* Argentina, Brazil, Indonesia, India, Mexico, Poland, Thailand, Turkey and Russia. Note: Net external position = external assets minus external liabilities)

Another new trend in the composition of several EMEs' external liability in the 2000s is the increasing proportion of public debt, denominated in domestic currency, held by non-residents. According to Akyüz (2015a, p. 41), this share accounts for more than 25% of total in most EMEs in 2013 (Indonesia, Malaysia, Mexico, Peru, Philippines, Russia, South Africa and Turkey). A similar pattern has evolved in non resident holdings in stock markets (portfolio equity) as a percentage of market capitalisation (Table 1). The greater reliance on local-currency denominated public debt mitigated the currency mismatch in the balance sheet of the EMEs' governments, reducing the vulnerability to exchange rate volatility, but frequently creating maturity mismatches (given the shorter maturity of domestic treasury bonds) and shifting the currency mismatch to the foreign investor's balance sheets who have assets in EMEs currency but obligations in their currency.

**Table 1. Non-resident holdings in stock markets (% of market capitalisation)**

Country	2001	2007	2012
Argentina	1.4	5.7	8.2
Brazil	18.2	21.2	23.4
China	2.5	6.6	13.5
India	12.1	18.1	19.8
Indonesia	15.6	19.0	19.9
Malaysia			

10.5 20.8 17.0 Mexico 32.2 29.9 22.1 Philippines 8.3 18.5 10.8 Russia 14.4  
12.4 16.7 South Africa 9.3 10.2 19.7 Thailand 27.8 29.0 27.0 Turkey 9.4 17.0  
20.2 Source: Azyuz (2015, p.22), World Bank WDI and IMF

## 2.2 Financial internationalisation and globalisation: A periodisation of capital flow cycles to EMEs

The increasing volume of capital flows to EMEs and the resulting changes in the dimension and composition of their external liabilities and assets, as described above – together with the diversification of financial instruments and investors – has led to a growing internationalisation of finance in EMEs. This in turn is part of a broader global regime shift.

Part of the mainstream literature sustains that this new era of financial globalisation promises more stability to the world economy due to a greater share of less volatile FDI and equity flows, even if volatile capital flows bring the risk of financial contagion (McKinsey, 2017). Against this, we argue in this paper that these structural changes have created new transmission channels of financial shocks through international capital flows and new sources of external vulnerability to EMEs (see section 4).

After the Great Financial Crisis, two trends of capital flows to EMEs in force since the 1990s have deepened. The first one is the increasing share of foreign capital channelled through investment funds and other portfolio investors to capital markets due in part to the withdrawal of advanced economies' banks from international lending. Consequently, in many countries, portfolio investors have surpassed banks as the largest source of foreign credit. The second is the phenomenon called “financialization” of FDI, related to the rising complexity of corporate structures and consequent rise in intra-firm transactions, as transnational companies pursue different financial and tax strategies in

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order to reduce costs, Furthermore, loans from parent multinational companies to subsidiaries are booked as FDI in spite of the fact that they are debt (Akyüz, 2015b). The rising importance of portfolio investors and financialisation of FDI exposed EME to new risks (CGFS, 2021).

These two trends are key features of what Chesnais (1996, pp. 10-11) called *financial globalisation*, which was triggered in the early-1990s by the rapid increase in liquidity and the huge decline in interest rates in the US and Japan, followed by a sovereign debt restructuring in Latin America and the capital account liberalisation of many EMEs. The previous phase of internationalisation finance in EMEs, called *financial internationalisation*, began in the 1970s with the increase in international commercial lending (mainly from “Eurodollar” markets), driven by a rapid expansion of international liquidity associated with oil surpluses and growing US external deficits, and it ended with

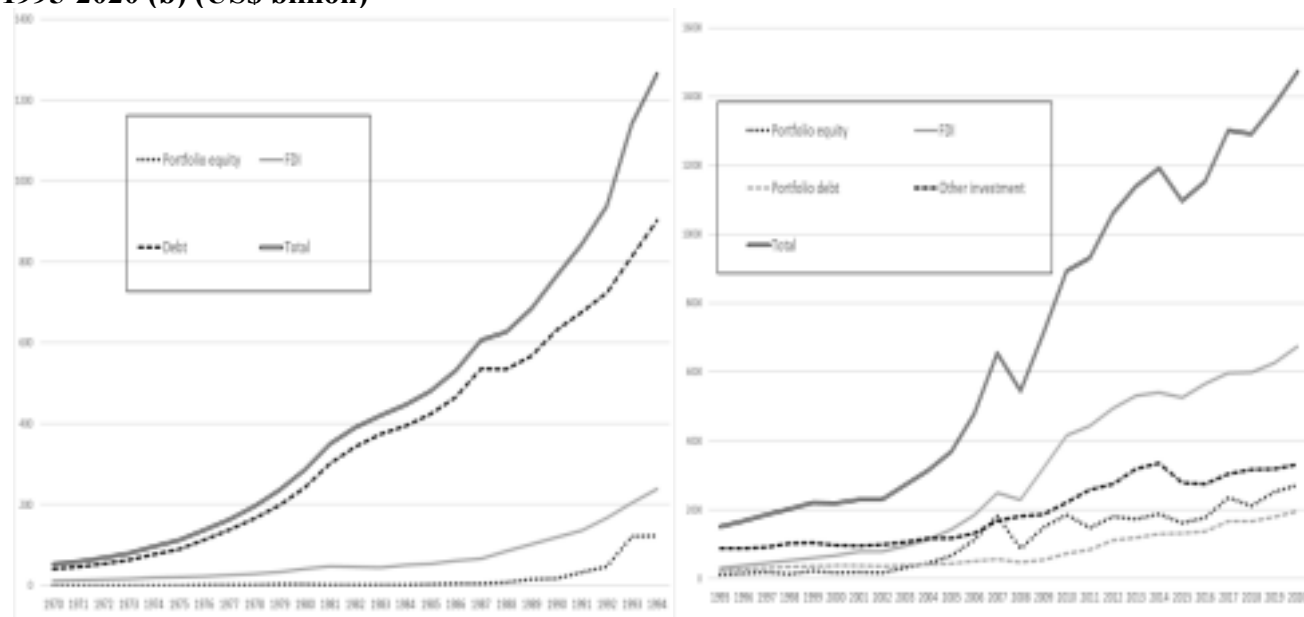
an external debt crisis in Latin America in the 1980s.

Taking a closer look at the unfolding of financial globalisation and its impact in EMEs, we can identify three main sub-periods. The first started at the beginning of the 1990s and ended with a sequence of financial crises in Latin America, East Asia and Russia at the end of that decade. The second wave began with the new millennium, coming to an abrupt halt in 2008 with the global financial crisis. Triggered by aggressive policies of quantitative easing by AEs central banks, a third cycle of financial globalisation started, with greater and more diversified capital flows to EMEs<sup>2</sup>. The inherent volatility of these flows reached its peak in the months immediately after the outbreak of the COVID-19 crisis.

While debt operations (mainly bank loans) predominated during the cycle of financial internationalisation, the first cycle of financial globalisation began with some change in the composition of capital inflows, with a gradual increase in FDI. However, it is in the second and third capital flows' waves of financial globalisation that major changes occurred. Besides the much larger total flows, their composition became more diversified, favoured – among others – by carry-trade operations to explore interest differentials, the internationalisation of global value chains, the enormous push of FDI to and from China, and the liberalisation of local capital markets to foreign investors (see Figure 4; for an overview over the different periods see also Table A1).

<sup>2</sup> According to CGFS (2021, p.1), “[T]hese changes reoriented rather than reduced concerns about the potentially adverse impacts of exceptionally large or volatile flows. In particular, extreme swings in non resident inflows still pose a significant risk to macroeconomic and financial stability“.

**Figure 4. External liabilities of major emerging economies\* – 1970-1994 (a) and 1995-2020 (b) (US\$ billion)**



Source: Authors' elaboration with data from Milesi-Ferretti (2020).



Note: (i) Major emerging economies: Argentina, Brazil, China, Indonesia, India, Mexico, Poland, Thailand, Turkey and Russia; (ii) On the left graph: debt = other investment plus portfolio debt.

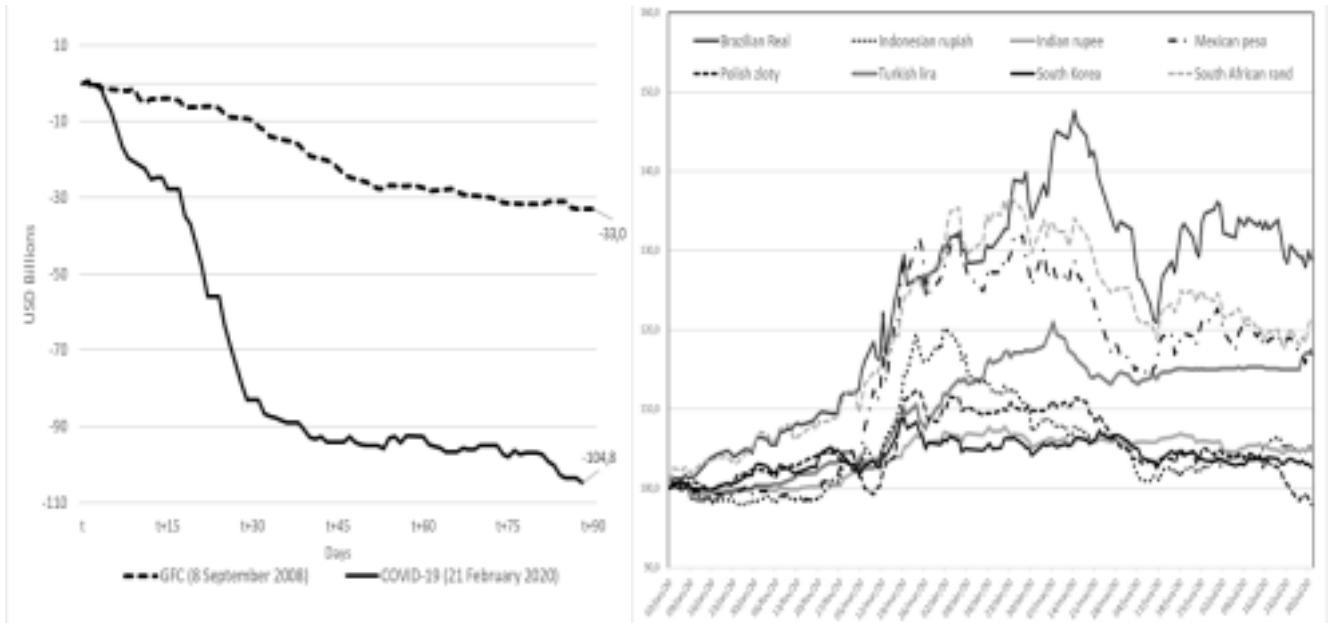
### 2.3 Capital flows under COVID-19

The COVID-19 pandemic led to the burst of the third wave of capital flows under financial globalisation. The high uncertainty related to the spread of the pandemic hugely increased fears about the future, triggering unprecedented portfolio outflows from EMEs, first reaching equity markets and in the sequence, bond markets, resulting in deflation in equity prices, a sharp increase in bond spreads and abrupt currency depreciation. Net outflows amounted US\$ 104.8 billion during the COVID-19 crisis, more than three times the US\$ 33 billion recorded in the global financial crisis (Figure 5). However, since April 2020, this movement lost momentum with the partial recovery of portfolio capital inflows to EMEs, which has led prices of many assets return close to the levels that they held prior to the panic sell-off (Wheatly, 2020). As central banks of major AEs have unleashed unprecedented amounts of liquidity in response to the COVID-19 crisis, and the Fed provided large amounts of US dollar liquidity at the global level, of example by providing central bank swaps to key partner central banks, this led to a re-stabilisation of very low interest rates for USD-denominated assets. Thus, global investors have had little choice

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but to search yield in EMEs, gearing a dramatic rebound in international capitals to EMEs in the second half of 2020 after the collapse registered in the first quarter.

**Figure 5. Net portfolio outflows from selected EMEs\* – US\$ billion (left) and exchange rate (US\$/local currency; 100 = 2 Jan.), January-July 2020 (right)**



Source: UNCTAD secretariat calculations based on IFF Daily Emerging Market Portfolio database (\*) Selected: Brazil, China, India, Indonesia, Mexico, Pakistan, Philippines, Qatar Republic of Korea, Saudi Arabia, Sri Lanka, South Africa, Thailand, Turkey, and Vietnam.

One determinant of the record capital outflows from EMEs during COVID-19 crisis is the increasing importance of benchmark-driven funds – that follow a flagship benchmark index with a predefined list of countries and securities with specific weights (JP Morgan EMBI or Morgan Stanley’s MSCI) – which are much more strongly influenced by push factors: the behaviour of these funds contributed to the strong correlation across asset managers’ portfolio decisions during the COVID-19 crisis, reinforcing the herding behaviour of investors that is typical in such circumstances. Consequently, the influence of “push factors” and the common movement of portfolio flows across EMEs increased, turning them even more exposed to unexpected changes in those conditions.

The combination of the COVID-19 crisis and the steep decline in oil prices led to sharp currency depreciation in EMEs between the end of February and mid/late-March

2020, in a trend that continued in April in some countries like Brazil, South Africa and Turkey more than in others<sup>3</sup>(Figure 4).

The greater presence of foreign investors in local capital markets has increased the transmission of international financial shocks to these markets, as surges in the entry and exit of non-residents affect not only asset prices but also exchange rates. Indeed, huge currency depreciations have a strong impact on EMEs. First, as most EMEs accumulated

corporate external debt prior to the COVID-19 crisis, driven by historically-low borrowing costs and various incentives favouring debt over equity, free-falling exchange rates along with a sharp rise in spreads have increased the costs to borrowers paying foreign currency debt (OECD, 2020). Second, the reduction of financial assets' values in foreign investors' home currency terms eventually triggered the sale of financial assets by non-residents, which resulted in further capital outflows (Hofmann *et al.*, 2020).

### 3. Currency hierarchy: A concept adjusted to the regimes of financial internationalization and globalization

Critical discussion regarding the effects of financial globalisation on EMEs – in particular related to the more recent boom-bust cycles – comes from diverse strands. Especially relevant are the concepts of centre-periphery and currency hierarchy and global financial asymmetry as EMEs that issue what we call peripheral currencies (i.e. currencies that are not accepted at the international level) have a subordinated insertion in the international monetary system (see also Ocampo 2001).

In this vein, in other works (Paula *et al.*, 2017; Fritz *et al.*, 2018; see also Andrade and Prates, 2014) we have applied the structuralist concept of an asymmetric global economy divided into two poles – centre and periphery – to the analysis of the international monetary system. This approach states that currencies are hierarchically positioned according to their degree of liquidity, whereby the key currency (currently the US fiduciary dollar) is placed at the top of the hierarchy because it has the highest degree of liquidity. The currencies issued by the other centre (or advanced) countries/regions (such as the euro and yen) are in intermediate positions and they are also liquid currencies.

<sup>3</sup> Hannan (2018, p.13-14) provides a clue for understanding the different EMEs reactions to an external financial shock: “The more recent work shows that while the incidence of capital flow surges depends on external factors, whether a particular emerging market economy receives that surge depends on domestic factors, including the extent of financial market liberalisation and global financial market integration.”

At the opposite end are the currencies issued by peripheral economies, which are non liquid currencies as they are incapable of performing the basic functions of money (medium of exchange, denomination of contracts and international reserve currency) at the international level.

Indeed, with its formalisation of the liquidity premium in relation to other valuation attributes of assets, the concept of currency hierarchy enables more precisely capturing the effects of financial globalisation in EMEs, especially in the recent cycles.

To compensate the differences in liquidity premia between centre and periphery

assets, less liquid currencies need to offer higher total returns to be attractive to international investors, such as higher interest rates and/or higher capital gains (through asset price and/or exchange rate appreciation) when compared with AEs' currencies. Expressed formally, in the face of the lower liquidity premium ( $l$ ), to make a global investor hold their assets, EMEs have to offer higher monetary returns ( $a + q$ ) – where  $a$  is the expected appreciation/depreciation of the currency and  $q$  is the yield of the securities (measured by the interest rate) – and/or reduce the carrying cost by reducing regulation on the capital account ( $c$ ). In equilibrium, we have:

$$a_N + q_N - c_N + l_N = a_S + q_S - c_S + l_S \quad (1)$$

where  $S$  denotes Southern or EMEs, and  $N$  denotes Northern or AEs. As  $l_S < l_N$ , this difference has to be compensated by higher returns, so that:

$$(a_S + q_S - c_S) > (a_N + q_N - c_N) \quad (2)$$

Taking account of the recent changes in the composition of capital flows with the increasing share of portfolio debt<sup>4</sup> and equity in external liabilities, we additionally consider the valuation variation generated by changes not only in exchange rates but also in asset prices (equities, bonds).

Therefore, we extend the formal concept of currency hierarchy (formula (1)) by incorporating the yield differentials and assets' capital gains/losses, so that:

$$l_S < l_N \Rightarrow (a_{c;S} + a_{a;S} + q_{r;S} + q_{y;S} - c_S) > (a_{c;N} + a_{a;N} + q_{r;N} + q_{y;N} - c_N) \quad (3)$$

<sup>4</sup> As we have already pointed out the division between portfolio debt and FDI is regulatory, with different limits of form shares in different countries, and not a functional one, part of what formally is defined as FDI, might enter here.

where  $a_c$  is currency appreciation/depreciation,  $a_a$  is asset price appreciation/depreciation,  $q_r$  is the monetary returns derived from loans' interest rates and  $q_y$  is the yield derived from fixed income securities (portfolio debt).

To better understand how the different liquidity premia shape foreign investors' portfolio decisions along boom-bust cycles, we bring in Minsky's (1986) financial fragility hypothesis. He emphasises the inherent tendency of economic units to move from the state of robustness to financial fragility over time, "due to shift in expectations that occurs over the course of a business cycle, and the way this shift is transmitted through the financial system" (Dymski and Pollin, 1992, p. 40). This behaviour results in the adoption of increasingly smaller safety margins, giving rise to a growing financial

fragility in the economy. To cite Minsky's (1982, p. 101) most well-known aphorism: "*Stability – or tranquillity – in a world with a cyclical past and capitalist financial institutions is destabilising*" (italics added).

During *booms* of capital inflows – i.e. stability and tranquillity – in the international financial markets (most of them geared initially by an expansionary monetary policy in the United States), global investors' preference for liquidity decreases, leading to a fall in the weight given to the liquidity premium differential and a rise in global investors' demand for EMEs securities, associated with the favourable interest rate differential (bonds) or expectation of capital gains (equity) in local markets (see formula 3 above)<sup>5</sup>. This 'search for yields' results in an appreciation of the emerging currency, leading to an expectation of further appreciation (rise in  $a$ ), which further increases the expected return differential, thus further stimulating capital inflows and reinforcing the currency appreciation.

Two features of EMEs underlie these self-feeding interactions that increase the financial fragility over the boom and can lead to destabilising dynamics in the bust phase. First, these investors are more likely to be drawn to exchange rate returns that are greater for EMEs' currencies due their higher volatility, stemming from their subordinated position in the currency hierarchy. Consequently, they tend to respond more quickly to a first exchange rate appreciation. Second, the demand from a few money managers is sufficient to trigger self-feeding interactions due to the already-mentioned financial asymmetry.

<sup>5</sup> For a formalisation of the relationship between liquidity preference and liquidity premium, see Ramos (2019).

Over the boom phase, the continuity of investors' low liquidity preference leads to a sustained and gradual increase in the demand for EMEs assets and hence a gradual currency appreciation path. Conversely, over the bust phases, by virtue of changes in the monetary policy in the AEs and/or an increase in the international liquidity preference, sudden capital outflows trigger deflation of EMEs' financial assets and an abrupt depreciation of EMEs' currencies, which are the main victims of global investors' 'flight to quality' (Ramos, 2019; see also Paula et al., 2017).

#### 4. The metamorphosis of external vulnerabilities: A balance sheet analysis

This section aims to present stylised balance sheets of EMEs for the periods of both financial internationalisation and financial globalisation to systematically assess how their vulnerability to external financial shocks has changed over time (see also Table A1 in

the Annex for a summary). Balance sheet analysis allows for a conceptualization of the hierarchical interdependencies of the global monetary and financial system. It consists of the balance sheets of stylized key agents, such as central banks, commercial banks and investors, firms and the treasury, each in the country of a Northern and a Southern currency, interlocked through the financial contracts they hold as assets and liabilities. This adds up to a fully self-referential financial system in which each asset is another agent's liability.

Drawing on multiple ancestries – comprising scholars such as Stützel (1978), and especially Minsky (1986) – balance sheet methodology has always been used mostly outside the mainstream, allowing for a fundamentally monetary analysis where the disposition over liquidity, being for precautionary or for speculative purposes, is in the center of analysis. Scholarship using balance sheet methodology has been developing in multiple academic fields in parallel – for instance in historical central bank research (Bindseil 2004), Post Keynesianism (Godley and Lavoie 2007), the Money View (Mehrling 2020), International Political Economy (IPE) under the label of critical macro finance (Gabor 2020; Dutta et al. 2020; Murau 2020), development economics (Nitsch 1999), and within the BIS (Aldasoro et al. 2020).

Balance sheet analysis is thus highly suitable to model a Keynesian view of financial processes as a series of bank-like institutions which make and take payments from one another. It allows to present the hierarchical nature of the global currency system along our concept of currency hierarchy. Given the difference in the liquidity premium,

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the impact of changes in the yields, and/or in the expected value of assets especially in the Northern currency, and thus the impact of changing positions of assets and liabilities of Northern agents on those of the South can be made visible, and thus analytically clearer. Interconnectedness of positions allows to make explicit the exposure to interdependent effects of changes of position of one agent on other agent in other area (currency), and the potential cascade of different currency mismatches, depending the on currency denomination

In other fields such as New Keynesian Dynamic Stochastic General Equilibrium (DSGE) models, or Post- Keynesian Stock Flow Consistent models also provide a simplified representation of real-world institutional configurations and then feed them with statistical data to analyze and predict variables such as prices, quantities, or interest rates. Our model variations, by contrast, do not have as their primary goal to be calibrated with quantitative data, but provide a research framework for future empirical research, applied to specific periods and/or country cases.

For our purpose, we consider the changes in the nature of cross-border financial

flows involving EMEs that shape the profile of their net external position, as described in section 2. These changes stem from a set of factors – such as the level of financial liberalisation, the characteristics and degree of complexity of financial instruments, the actors involved, and the links between the domestic and international financial sectors – that create diverse transmission channels of external shocks. We will use our extended concept of currency hierarchy to analytically distinguish the building up and the unfolding of external vulnerabilities (see section 3). Our use of balance sheets for the two different global financial regimes is to get a more precise grip on the metamorphosis of these vulnerabilities in EMEs is also inspired by Minsky’s framework for agents’ portfolio decisions and their balance sheets.

#### 4.1 Traditional vulnerability under conditions of financial internationalisation: Balance sheet effects from original sin

During the period considered here (1970s-1980s), the term ‘emerging economies’ did not even exist, as developing countries (the dominant general term for peripheral countries then) adopted significant restrictions on capital flows in this period, except for FDI and external loans. Back then, external debt mainly entered in the form of syndicate loans of

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Northern universal banks operating in the Euromarket and FDI<sup>6</sup>, with floating interest rates, long maturity and being denominated in Northern currency (N\$), i.e. USD (see arrow (1) in Figure 6 below). This phenomenon of foreign currency-denominated debt has been labelled as ‘*original sin*’ (Eichengreen *et al.*, 2002), reflecting the inability of an economy to borrow abroad in one’s own currency. The borrowers could be Southern banks, which would pass on lending to domestic firms (often in Southern currency (\$\$), arrow (2)), but in some cases also in or denominated in N\$, or they could be domestic firms directly (arrow (3)).

As in Southern economies  $cs$  was high and constant in this period due to non liberalised capital accounts, and  $as$  was stable due to the dominance of fixed exchange rate regimes, international creditors’ motivation concentrated on the yield differential ( $q_s - q_N$ ), which had to compensate the liquidity premium differential ( $l_N - l_s$ ), whose weight given by them in their portfolio decisions decreased due to the lower liquidity preference during the boom.

This first post-war capital flow cycle lost speed with mounting debt levels in developing countries, especially in Latin America, although the death knell came with the interest rate shock by the Fed in 1979, which led to an increase in  $q_n$ . The subsequent rise

in the liquidity preference of international creditors triggered a credit crunch in the syndicated loan markets. Sovereigns, domestic banks, state-owned and private firms came under liquidity stress, as a consequence of maturity mismatch from the shortening of lending terms, interest rate increases and the impact of currency devaluation.

The key vulnerability to a global financial shock for countries tainted with ‘original sin’ is that the Southern central bank has a truncated capacity to act as a lender of last resort (LLR) for solvent domestic banks indebted in \$N. While the central bank can act as an LLR for domestic financial institutions in its own currency – as pointed out by Bagehot’s (1873) seminal work (arrow (4)) – the central bank’s LLR capacity in \$N is limited to its foreign reserves. This inability to handle \$N-related liquidity problems triggers a shift from liquidity to solvency problems in the domestic financial and productive sectors.

At the moment when the burden of external debt grows abruptly due to an external shock, the level of foreign exchange reserves may prove to be insufficient to maintain the

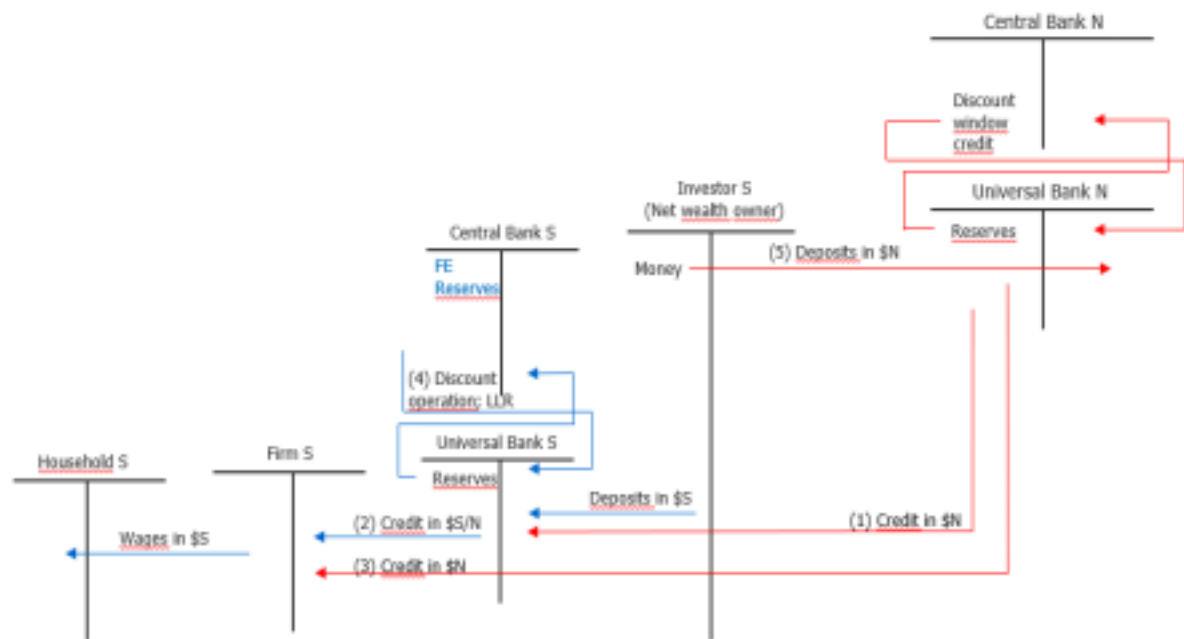
<sup>6</sup> For the sake of simplification, we only assess financial flows, and do not consider FDI. Against the neoclassical conception of households, here we distinguish between private households as wage earners without net financial richness, and investors who are net wealth owners.

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balance of payments in equilibrium. This in turn may lead to exchange rate devaluation, i.e. a currency crisis given the fix or semi-fix exchange rate regimes. Such a crisis is even more probable if illegal capital flights from Southern investors (arrow (5)) place additional pressure on these reserves. In the face of high uncertainty and cumulative devaluation expectations, the yield differential ( $q_S - q_N$ ) is no longer sufficient to compensate the liquidity premium differential ( $l_N - l_S$ ), whereby these Southern wealth owners also wish to switch to \$N.

## **Figure 6. Balance sheet of Southern country under financial internationalisation**





Source: Authors' elaboration, adapted from Nitsch (1999) and Bindseil (2004). Notes: LLR = Lender of last resort; blue: domestic transactions; red: cross-border transactions; arrow direction: creditor to debtor.

#### 4.2 Increased interconnectedness and new vulnerabilities under financial globalisation: 'Original sin redux'

Most EMEs entered the 1990s opening their capital accounts (cs↓) for inflows and outflows, in a process that would gradually continue over the next two decades. This came together with a shift to flexible exchange rate in the 2000s, the second sub-period of financial globalisation. All three capital flow cycles of financial globalisation were driven by periods of low global interest rates. However, especially the third sub-period of quantitative easing during the 2010s – and recently during the COVID-19 crisis – launched an intensified global 'search for yield'.

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The interconnectedness with international financial markets has become much more intensive, diverse and complex (see Figure 7 below). The share of cross-border activities increased with the emergence of new agents and diversified and complex financial instruments such as derivatives, especially from the 2000s onwards.<sup>7</sup> All kinds of wealth owners (i.e. institutional investors or money managers, from pension funds to hedge funds) emerged in Northern as well as Southern countries, and Southern treasuries entered the field as borrowers with cross-border links with these investors.

During boom periods of international capital flows to EMEs, the Southern firm has continued to borrow in \$N\$ from Northern banks (arrow (1)), and partially also from

banks in their own country (arrow (2)). This is the same pattern as during financial internationalisation, albeit at a higher level, especially during the latest sub-period, due to a record-low  $q_{rN}$ . New to this period is the issuing of securities by Southern banks and firms (in  $\$N$  in the international capital market and in  $\$S$  or  $\$N$  in the domestic market, arrow (6)). Moreover, the Southern firm has become financialised (Bonizzi *et al.*, 2019), investing in financial assets in  $\$N$  and  $\$S$  (arrows (8) and (10)). As a result, the typical Southern firm has seen the two sides of its balance sheet boosted during the tranquillity phase: the asset price inflation would increase the value of its assets ( $a_{aN}\uparrow$ ; and  $a_{aS}\uparrow$ ; see formula (3) in section 3). This would enhance its capacity of borrowing in  $N\$$  and  $S\$$ , hence pushing up the value of its liabilities.

The idealised Northern investor has invested in EMEs in securities in  $\$N$  and  $\$S$  in the international and domestic financial markets (arrow (6)). Moreover, it receives investment from Southern investors (arrow (7)) and Southern firms (arrow (8)) both in  $\$N$ . The Southern treasury has issued bonds in  $\$N$ , and increasingly also in  $\$S$ , both to be increasingly held by international investors (arrow (9)).

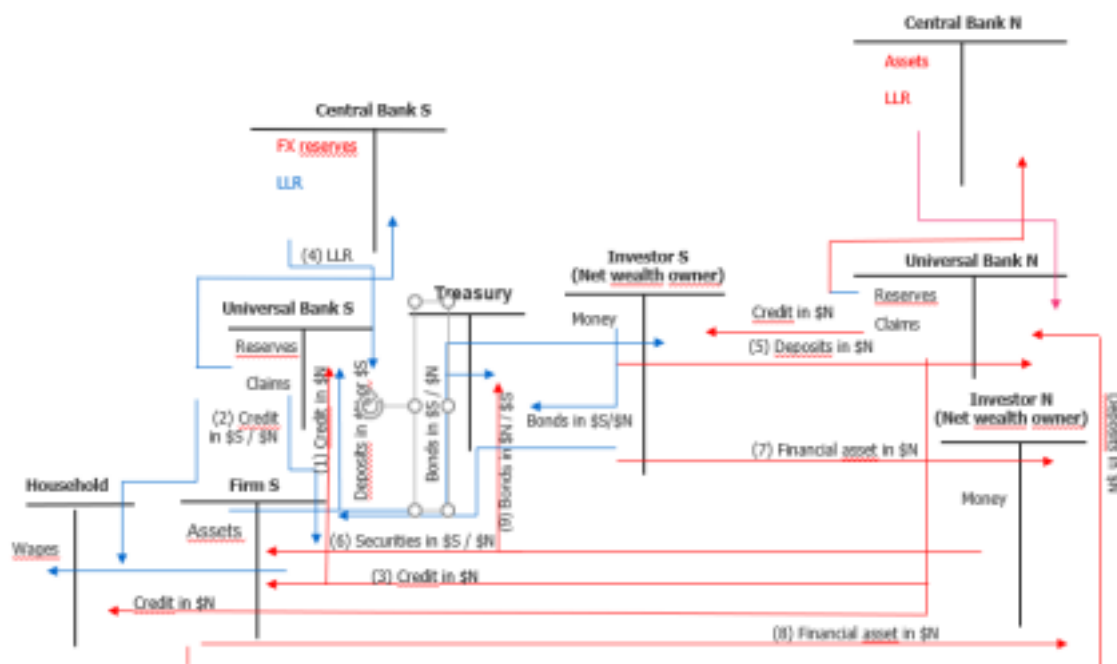
While busts of capital flows to EMEs are often associated with a  $q_{rN}\uparrow$ , the global financial crisis – and especially the latest bust of the COVID-19 global shock – were triggered by a radical increase in uncertainty, resulting in a sharp rise in the liquidity preference of Northern agents and the weight given to the liquidity premium differential ( $l_N - l_S$ ). When looking at the more recent bust periods – and especially the COVID-19 sudden stop – we detect a much more complex pattern of balance sheet effects.

<sup>7</sup> The balance sheet analysis in this section supposes an emerging economy with full capital account openness and permission for domestic financial transactions in (or denominated in)  $\$N$ . For the sake of simplicity, it only includes transactions in spot markets, thus excluding derivatives, for example.

For cross-border debt in  $\$N$ , we essentially detect the same kind of negative balance sheet effects due to ‘original sin’ and the limited capacity of the Southern central bank to act as an LLR (arrow (4)) as in the period of financial internationalisation. Again, Southern debtors in  $\$N$  suffer from the problem of debt revaluation expressed in Southern currency due to currency depreciation, which eventually leads to a situation of insolvency. However, the level of complexity attached to these negative balance sheet effects has significantly increased. While these were previously limited to Northern banks and Southern banks and firms indebted in  $\$N$ , now they affect nearly all sectors of the Southern economy, including the public sector. This new complexity of currency

mismatches creates liquidity problems all over the economy and further reinforces currency depreciation and financial instability in the case of a sudden stop. Economic literature started to grasp the nature and explosive implications of this kind of balance mismatches after the series of financial crises in EMEs in Asia and Latin America (i.e. Calvo *et al.*, 2004).

**Figure 7. Balance sheet of Southern country under financial globalisation**



Source: Authors' elaboration loosely inspired on Bindseil (2004) and Nitsch (1999)  
 Notes: LLR = lender of last resort; blue: domestic transactions; red: cross-border transactions; arrow direction: creditor to debtor.

In view of this, the increased investment of global investors in securities in \$\$ appears to be very good news, as it shifts the balance sheet effects of a currency

depreciation from Southern borrowers to Northern creditors. Consequently, EMEs' exposure to this kind of external vulnerability declines. Indeed, the greater reliance on local-currency denominated debt has mitigate the currency mismatch in the balance-sheet of domestic agents (government and firms), reducing the vulnerability to exchange rate volatility. The Southern treasury, for example, remains isolated from the direct effects of a currency depreciation when its bonds in \$\$ are held by global investors, with the latter recording losses, measured in \$N.

However, this new pattern of EMEs' liabilities held by global investors creates new channels of transmission of financial shocks, and with this a new source of external vulnerability. To date, such a new phenomenon has remained rather unperceived in

academic work and policy guidance, to our knowledge<sup>8</sup>.

‘Original sin redux’ is the term coined by economists of the Bank for International Settlement (BIS) (Carsten and Shin, 2019; Hofmann *et al.*, 2020) to grasp this new type of vulnerability. The authors stress that as foreign investors have assets in EMEs’ currencies but obligations to beneficiaries in their own currency (\$N), an EME’s currency depreciation might trigger sales of EMEs’ bonds and equity.

“The exchange rate plays an important amplifying role in the portfolio adjustment of global investors [lending in EMEs currencies] (...). In this context, a generalized EME currency depreciation further lowers the value of assets in the foreign investors’ home currency terms, tightening their risk constraints more than otherwise. When risk capacity is limited, EME currency depreciation may trigger sales or ex post hedging, pushing up EME bond spreads due to the exit of foreign investors” (Hofmann *et al.*, 2020, p. 2).

Thus, even if Northern investors have to bear the direct costs of an *acs* decrease, their reaction will trigger self-feeding interactions in the opposite direction to that observed in the boom phase (see section 3), i.e. further capital outflows to cover prior losses, reinforcing *acs* devaluation. The reaction to these effects due to ‘original sin redux’ will thus increase the balance sheet effects linked to the ‘original sin’ of Southern debtors in \$N.

This multiplied herding behaviour of investors who originally invested in different currencies and assets but reacted to shocks in the same direction augments the volatility of capital flows and EME exchange rates and financial asset prices, therefore influencing

<sup>8</sup>One exception is Kaltenbrunner and Paineira (2015), that following a Minskyan analysis, showed the changing nature of Brazil’s external vulnerability, in which the surging share of foreign investors in Brazilian assets shift the currency mismatch from domestic economic units to international financial investors, increasing the link between exchange rate movements to international market and funding conditions.

the transfers of wealth between EMEs and AEs. While for specific agents the net costs will depend on a series of variables such as the ratio of debt held in \$\$ to that in \$N and the net effects of asset price changes on the share of each currency on his/her asset and liability sides, for the EME economy as a whole the result is augmented capital flow and exchange rate volatility, with all of its damaging effects for growth, employment and productive investment.

## 5. Conclusion

In this paper, we have asked how new patterns of capital flows and cross-border stocks under financialisation and financial globalisation influence the external vulnerability of EMEs. We departed from the Keynesian-structuralist idea of an asymmetric configuration of the global monetary system, formalised in a concept of currency hierarchy that is

shaped by the difference in the liquidity premia attributed to currencies of the centre (Northern) and peripheral (Southern) countries. We then extended this formal concept to theoretically grasp the increased relevance of portfolio flows and global investment in EMEs' currencies that we identify.

Our balance sheet analysis inspired by Minsky's framework is based on an idealised EME, with its capital account nowadays fully open to all kinds of financial operations by domestic and international agents in the period of financial globalisation. This allows us to systematically assess the metamorphosis of these vulnerabilities. For the period of financial internationalisation, we identify as the main vulnerability the negative effects of the so-called 'original sin' in the balance sheet of Southern agents indebted in Northern currency. The resulting currency mismatch leads to a revaluation of their debt in domestic currency in the case of an external shock with a currency devaluation. On the one hand, 'original sin' effects have augmented in the period of financial globalisation, with increased debt volumes and financial sophistication.

On the other hand, these effects of 'original sin' have not been eradicated, but contained by increasing global investment also in securities denominated in EMEs' currencies.

Indeed, due to having liabilities in Northern currencies and assets in Northern and Southern currencies, now Northern investors' balance sheets are tainted by potential currency mismatches. Here, it is those investors who suffer the losses from EMEs' currency depreciation. These will be greater, the longer the period of tranquillity and build-up of financial fragility. In theory, this should thus reduce EMEs' external

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vulnerability. However, what we found is that this has created new sources of external vulnerability, which economists from the BIS recently labelled as 'original sin redux'. This also helps us to better grasp the new and complex vulnerabilities of EMEs that the COVID-19 crisis has brought to light. Radical uncertainty in the first weeks of the pandemic – and with this a sharp increase in the liquidity preference of global investors – led to an unprecedented sudden stop and capital outflow of EMEs, followed by a quick – even if partial and selective – rebounding of capital flows, linked to aggressive quantitative easing in the North and the subsequent decline in the liquidity preference at the international level.

Our explanation based on our balance sheet analysis is twofold: first, the wave of new debt accumulation in the latest sub-period of financial globalisation – together with new investment strategies such as the benchmark-driven management of EMEs funds – further increased problems of 'original sin' and with it global investors' herding behaviour. Second, 'original sin redux' further pushed capital outflows, as international investors were running from dropping asset prices in Southern domestic financial

markets, exerting even stronger pressure on EMEs' exchange rates. However, when asset prices reached record lows, these investors with their recovered hunger for yields gradually returned to investing in EMEs' assets denominated in both Northern and Southern currencies.

The new pattern of vulnerabilities has thus created an unprecedented level of complexity, where it becomes more and more difficult to foresee gains and losses for agents in global markets in periods of global turmoil, and where reactions to shocks turn increasingly brusque, exposing EMEs to ever higher volatility of capital flows and exchange rate variations, with all of its damaging effects for growth and sustainable development.

With our contribution, we also seek to open up new fields for research. This may be quantitative analysis to better grasp the effects of 'original sin redux'. Also, there are relevant differences among EMEs regarding their asymmetric integration into global financial markets, which have been disregarded here but are highly relevant, and which require careful case studies to assess the relative weight of the old and new external vulnerabilities and their entanglement. Finally, the idealised balance sheets that we have presented here might serve as an analytical tool for the new complex distribution of gains and losses across borders and the resulting wealth transfers, as well as their cumulative effects for EMEs in periods of global turmoil.

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**Table A1. Phases of the metamorphosis of external vulnerabilities**

<b>Features Financial internationalization (1970-80s)</b>	<b>Stage of financial liberalization in EME</b>			
<b>Financial globalization</b>	Low Liberalization ↑↑ Liberalization ↑			
<b>1990s 2000s to GFC Post-GFC to 2020</b>	Fix, but adjustable Fix/semi-fix Flexible with dirty floating Flexible with dirty floating			
<b>Exchange rate regime</b>				
<b>Currency denomination for public / private debt</b>	debt in \$N Bond issuance in \$N (public and private); starting portfolio investment in	sovereign bonds and, mainly, in equity in \$S ↑Portfolio investment in equity and,	mainly, sovereign bonds in \$\$; ↑ private debt in \$N Further ↑ in portfolio	investment in sovereign bonds in \$\$ and in private debt \$N
All international	Original sin Original sin predominant Original sin ↓	Original sin ↓ Original sin redux ↑↑	Original sin ↓ Original sin redux ↑↑	
<b>Balance sheet effects</b>	Original sin redux ↑			

Source: Authors' elaboration.