Analyzing the Integration of

Brazilian Financial Markets

Brasília, 2016

Institutional Remarks

Brazil's economic importance has increased substantially in the past 10 years; the country is consistently ranked among the 10 largest economies in the world. However, despite relevant improvements in the past decade, Brazil's financial and capital markets still have room to grow and to further support long term sustainable economic development. The present report is the product of a UK-Brazil cooperation research project aimed at addressing important challenges to help further integrate Brazil into global financial markets.

The project "*Analysing the Integration of Brazilian Financial Markets"* was supported by the UK Prosperity Fund in partnership with the Central Bank of Brazil and the Brazilian Securities and Exchange Commission (*Comissão de Valores Mobiliários* – CVM).

The initiative included academic research, meetings with private and public sector relevant stakeholders and separate missions to the UK and Latam in the period of two years. The present report summarizes the findings of such desktop and *in loco* research presented in a set of 9 reports, relying on primary and secondary sources, as well as thorough quantitative and qualitative analysis. It is divided into two separate, yet interdependent, sections: Part I: Currency Internationalization; Part II: Regional Financial Integration.

Information gathered and produced in the context of the project was crucial for introducing the discussion surrounding the convenience, risks and benefits of increasing integration and furthering the internationalisation of Brazil's financial system and currency (BRL) especially in Latin America and London.

The main and final objective of the experience gained through this cooperation project is to generate evidence-based discussions and to contribute to important institutional advances in Brazil and note that the findings and policy recommendations presented in this report do not reflect in any way official positions by the institutions hereby quoted and involved in the present project: the Central Bank of Brazil and the *Comissão de Valores Mobiliários*.

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Content

Part I: Currency internationalization

Claes Belfrage

Johannes Jäger

Annina Kaltenbrunner

London

June, 2016

1. The Case for Currency Internationalization[1]

The process by which a currency assumes cross-border roles is called currency internationalization. In this process, foreign nationals acquire the domestic currency to perform (international) money functions. These operations can take place onshore in the domestic financial market, and offshore in international financial markets. The broader and related concept of financial integration includes all financial relations with foreign operators, including those denominated in foreign currency (e.g. US$ denominated debt issued by Brazilian nationals).

Both currency internationalization and financial integration take place within a complex context, the understanding of which requires a comprehensive, yet fine-grained, analytical approach. In analyzing how the Real should be internationalized, it is essential to consider, on the one hand, how financial investors operate within global financial markets and in relation to different currencies, particularly in relation to the Brazilian financial markets and the Real. On the other hand, it is important to consider how the process of currency internationalization could support Brazilian growth in the best manner possible. The decision to be made is *which type* of currency internationalization is appropriate. This decision should depend on the respective costs and benefits of different types of currency internationalization.

This section envisages a strategy for currency internationalization and financial market integration that are supportive of a regionally oriented and virtuous growth strategy that focuses on industrial production and a resilient external sector, the internal market and exports. Section I includes 7 subsections, divided as follows: section 1.1. outlines the analytical framework; section 1.2. describes some important historical experiences of currency internationalization with particular attention paid to the US Dollar and the Chinese Renminbi; section 1.3. highlights the specificities of the Brazilian economy and the experience of internationalization of the Real thus far; finally, sections 1.4. and 1.5. present a detailed analyses, providing a solid explanation for the conclusions and policy recommendations presented in Sections 1.6 and 1.7.

Note that the ideas and suggestions presented in this report are the sole responsibility of the authors and do not reflect the views of any of the entities that supported this research project.

[1] DISCLAIMER: This section condenses more than 250 pages of detailed research presented in previous reports.

1.1. Analytical Framework

Standard neo-classical economic approaches (hereafter Standard Economics) tend to overemphasize the potential benefits of financial market integration and currency internationalization due to the positive experience of core countries. Accordingly, currency internationalization is in principle often assumed to be desirable. A more measured understanding can be gained from considering Post Keynesian approaches, International Political Economy and the Regulation Approach. A somewhat different perspective thus arises, which is arguably more appropriate for semi-peripheral economies like Brazil (Kaltenbrunner 2011).

According to Standard Economics, currency internationalization represents the international usage of a currency that previously was used only domestically: "An international currency is one that is used and held beyond the borders of the issuing country" (Kenen, 2011: 11-12). The US Dollar is the best known international currency, as many other countries use US Dollars to intermediate transactions. They use it for paying for imports, to issue securities, to settle investments and transfer money across bank accounts. A truly internationalized currency is not only used for transactions with that country's residents, but also for transactions between non-residents. The degree of internationalization relates to the basic functions of money as a (i) store of value, (ii) medium of exchange and (iii) unit of account. The better those functions are fulfilled on an international level, the higher the degree of internationalization and the larger the international demand and usage of the currency will be (Chinn and Frankel 2005; Gao and Yu 2011).

Standard Economics draws on the historically most extensive experiences of these processes in the world economy, that is, of the US and the UK. At present, New York and London are the main financial hubs of these economies and their currencies (the US Dollar and the Pound Sterling) enjoy considerable benefits from financial integration and currency internationalization. However, these cities are central hubs in global financial markets, and these currencies are at the top of the international currency hierarchy.

At the time of their internationalization, the US Dollar and the Pound Sterling were the currencies of the most powerful economies in the world, enabling the US and the UK to use them widely for trade, lending and central banking. The US and British economies have benefited from financial integration by subsequently being able to set the rules for financial integration and by having the largest and most innovative financial centers in the world economy. Basing their understanding on these rich, yet unique, experiences, Standard Economics defend that there is

broadly only one type of currency internationalization and financial integration, and that this is desirable. Financial integration, from this point of view,[2] brings benefits such as enhanced market depth and liquidity, which in turn allows for better risk diversification and for a more efficient allocation of financial resources. Similarly, currency internationalization contributes to this by making local markets and assets more accessible and liquid. According to Standard Economics, then, financial integration and currency internationalization should be accompanied by decreasing transaction costs and increasing economies of scale, the right institutional framework and a strong international currency, so that financial markets can contribute positively to economic growth.

By generalizing from these particular experiences, these approaches fail to understand the specific challenges facing emerging market (EM) economies in their efforts to integrate local markets into global financial markets and to internationalize their currencies today. There is little recognition of the institutional and macroeconomic context in which EM economies seek financial integration and currency internationalization, of the fact that financial integration and currency internationalization for EM economies take place in a context shaped by the core economies, financial centers and market actors. For example, the change of the global FX market from a dealer-centric system to one characterized by more widely accessible trading platforms and prime-brokering has contributed significantly to the overall rise in trading volume of EM currencies (Rime and Schrimpf 2013).

In this first part of the report, we provide, stimulated by Post Keynesian insights, a somewhat more nuanced understanding of currency internationalization. Emphasizing the usage of the domestic currency by foreign operators, this perspective highlights the international use of the currency per se for trade settlement and short-term financial transactions, but also the foreign involvement in domestic currency denominated financial assets, such as government bonds and equities. This involvement can take place either onshore, that is for instance in the Brazilian market, or offshore in international financial markets. In contrast to McCauley (2006) we do not consider foreign investors *issuing* securities in the domestic currency as a necessary condition for currency internationalization. Foreign investment into these securities is sufficient.[3]

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[2] Standard Economics do not have one single perspective on financial markets and monetary policy; they differ mainly because of different assumptions regarding the existence and relevance of perfect markets and market imperfections. Yet, these approaches share other assumptions and tend to produce similar policy recommendations.

[3] Whether assets should be considered "currency" or not is made difficult by the fact that in the international context domestic money is not only a financial asset but also the denominator of all

Table 1 shows the six basic dimensions of an international currency, suggested by Cohen (1971) and Kenen (1983). To assess the implications of currency internationalization more comprehensively, we extend the table by two dimensions (presented in bold). First, we consider currencies' role as unit of account, not only in trade relations but also in financial relations. We consider whether a currency is used to denominate financial obligations, in other words, whether it has achieved the status of a 'funding currency' (Kaltenbrunner, 2015). The second extension is through the provision of a more differentiated analysis of a currency's function as investment currency. In this context, we argue that the implications of currency internationalization will depend fundamentally on the type of asset foreign investors hold (e.g. stocks vs. bond) and the time horizons of the foreign investors themselves (e.g. hedge funds vs. institutional investors).

Table 1: An Extended Framework for the Six Dimensions of Currency Internationalization

<table>
<tr><th colspan="4">Functions of money</th></tr>
<tr><th>Levels of analysis</th><th>Medium of exchange</th><th>Unit of account</th><th>Store of value</th></tr>
<tr><td rowspan="3">Private</td><td rowspan="3">Vehicle currency; trade settlement;</td><td rowspan="3">Trade Invoicing; Funding Currency</td><td>Investment currency
Short-term Actor | Long-term Actor</td></tr>
<tr><td>Cash/Derivatives</td></tr>
<tr><td>Debt
Equity
Banking</td></tr>
<tr><td>Official</td><td>Intervention currency; swap lines[4]</td><td>Exchange rate anchor</td><td>Reserve currency; swap lines</td></tr>
</table>

Source*: adjusted from Cohen and Benney (2014)*

domestic assets. The literature generally includes financial assets in the definition of an international currency. This includes foreign participation in the domestic stock market, but not foreign direct investment, which assumes a larger and controlling share in a company.

[4] Analytically, swap lines could be classified as of either intervention and reserve currency function. Although there may not be any actual interventions, the creation of swap lines indicates the demand for a certain currency during times of increased risk aversion. This has been prevalent following the GFC, and significant in processes of currency internationalization (e.g. of the RMB) (Bowles and Wang 2013).

As to the first dimension, recent literature has shown the centrality of currencies' specific functions as international investment or funding currencies (that is, their position in international debtor-creditor relations), for exchange rate dynamics, asset prices and financial stability during international market turmoil (McCauley and Zukunft 2008, McCauley and McGuire 2009, Kohler 2010). The unit of account function of money is not only important with respect to denominating purchasing power and facilitating trade transactions in general, but also for denominating (financial) contracts in particular. This holds true on the asset side of financial transactions, as reflected in currencies' function as investment currency. However, it is important to note that this also applies to the liability side of international balance sheets: this relates to whether foreign investors (or indeed any economic actor) use a domestic currency to denominate their liabilities to raise funding or not and how they do so, for instance through debt or equity.

A currency's function as a funding currency has macroeconomic and microeconomic facets. Both are crucial for estimating the implications of currency internationalization. The macroeconomic dimension refers to the denomination of a country's foreign assets and liabilities, i.e. the currency denomination of its international investment position (Lane and Milesi-Ferreti 1999, Lane and Shambaugh 2010). A country which has more domestic currency assets than liabilities is considered to be the issuer of a funding currency. This is in contrast to a country which predominantly issues foreign currency liabilities. International currencies, and in particular the top currency the US Dollar, are generally funding currencies.

The microeconomic dimension is vital for calculating economic agents' investment exposure and, by implication, systemic risks. The increased internationalization of a currency makes the national balance of payments an indicator of declining reliability for estimating economic agents' investment exposure. For example, a European bank might incur US Dollar liabilities in the US, a transaction which would never show up in the European balance of payments, but which (see below for how this was experienced during the global financial crisis - GFC), will have tremendous implications for exchange rate dynamics in the moment of increased risk aversion. To gain a complete picture of a currency's functions along with the implications, we therefore also need to adopt a microeconomic perspective and analyze the balance sheet positions of internationally operating (financial) actors and their use of currencies.

The second conceptual extension engenders a more differentiated analysis of the dimensions of a currency's function as investment currency. As argued in the literature (e.g. Borio and Disyatat 2011, Obstfeld 2012, Lane 2013, Avdjiev, McCauley et al. 2015), to draw an accurate picture of the different aspects of currency internationalization and their respective costs and benefits, we need to

estimate gross positions as well as identify the outlook of involved actors and the usage of instruments on particular markets. In terms of different financial instruments, we differentiate between foreign bond and stock market investments and banking flows.[5] In terms of actors, we distinguish, where possible, between official and private actors. Amongst private actors, we also distinguish financial and non-financial customers (NFCs). Here, financial customers can be sub-divided into short- and long-term investors.

Complementary to these Post Keynesian insights, we draw lessons from International Political Economy. International Political Economy provides lessons learnt about historical power structures within the international economic system and monetary order, as related to uneven development in the world economy. This should be taken into account when devising a strategy for a country's monetary and financial integration in the world economy (Belfrage et al. 2016). For EM economies, the costs and benefits of currency internationalization will depend on the social and economic context of each country and its strategy of integration into world markets. The dismantling of the Bretton Woods System of fixed exchange rates in the early 1970s spurred global financial integration, accelerated by the widespread abolishment of capital controls. Global financial integration, or "financialization", has altered the global economy at different scales for good and for worse (Epstein 2005; Guttmann 2008, 2012; Stockhammer 2013; Belfrage 2008, 2015; Belfrage, Bergmann and Berry 2015). Among the negative developments could be listed the development of macroeconomic imbalances as well as recurring financial and economic crisis. Financial flows are now much greater, but also have a disciplining effect on economies in general and policy-making in particular.

Core economy governments and financial corporations have been very influential through decision-making in key institutions of global governance and the practices in financial centers in determining the rules of the game of financial markets and norms of policy conduct (Gowan, 1999). Developing economies experienced financial market discipline especially in the 1970s, 1980s and 1990s, not least through the conditions of global market adaptation set for debt finance in the international debt crisis. However, with less developed and diversified economies and weaker financial markets, market adaptation often made developing economies more, not less, vulnerable to financial market discipline and catch-up more challenging (e.g. Stiglitz, 2002; Chang 2003). The large EM economies (the

[5] Regarding the flow of instruments, this includes (short-term) bank deposits and lending. As to lending, international banks remain the most important actors involved with emerging market domestic currency assets and main private sector intermediaries of emerging market debt flows, given the still limited direct exposure of non-financial corporations and households (Lane 2013).

BRICS) in the 1990s and 2000s were nevertheless able to generate significant growth thanks to the relocation of production, unusually advantageous price developments in low to medium value-added markets (especially commodities and retail manufactures), relatively large domestic markets and foreign direct investment, but also often limited market adaptation (e.g. Ban and Blyth 2013). To protect exchange rates, the BRICS accumulated huge foreign currency reserves (e.g. Schmalz and Ebenau 2011). Sustained exchange rates also stabilized evolving global value chains and thus trade flows (imports and exports of goods and services) with core economies, enjoying the deflationary effects and profit-enhancement of low cost production, not least in China (e.g. Milberg 2008). While the commodity boom came to an end at the end of the 2000s, the economic and political sustainability of the exchange rates between core and peripheral currencies is today very much in question, bringing to the fore the market vulnerability of developing, including EM, economies and the difficulties of catch-up.

For present purposes, these asymmetries and hierarchies should be explored in relation to the increasing significance of (short term) capital flows between countries, specifically as a product of international investors' portfolio decisions, explored in detail by post Keynesians. The emphasis on (short term) capital flows stems from its larger volume relative to trade flows (Harvey 1991; Schulmeister 1988). Even though the value of international assets may be related to trade flows in some indirect manner, financial considerations, especially the potential of capital gains from selling an asset in the future, dominate the investors' decision. The volatility of capital flows and exchange rates can be extreme since investment decisions are determined by expectations about an uncertain future and subject to change. According to Harvey (2009), expectations on capital gains are driven by psychological phenomena, social conventions and judgments of the impact of news and "fundamentals", e.g. interest rate, growth rate, trade balance, etc. Expectations concerning the future evolution of the exchange rate itself when buying assets dominating in a foreign currency are especially important. Today's price of a currency itself represents market agents' expectations of its future price. The exchange rate is also volatile due to bandwagon (e.g. buying an appreciating currency) and cash-in effects (e.g. selling the currency to cash-in profits). This generates pro-cyclical boom-and-bust financial flows.

Post Keynesians argue that short-term capital flows determine the exchange rate, and in consequence influence trade flows (Harvey 1991, 2001, 2009). The imbalances in capital flows and current account asymmetries between countries, in the post Bretton Woods era, are therefore a major cause of external shocks. The pro-cyclical nature of capital inflows will therefore most likely create economic euphoria, with potentially negative effects on the income-debt-relation of domestic economic units. On an aggregate level, this perspective thus points to the

connection between a country's outstanding stock of foreign liabilities and its vulnerability to external shocks (e.g. Wolfson 2002; Arestis and Glickman 2002; de Conti et al. 2013). The hierarchical nature of the international economic and monetary systems and the boom-and-bust cycles of capital flows tend to culminate in economic events in "semi-peripheral" rather than in core countries.

This is specifically related to what post Keynesians conceptualize as 'currency hierarchies' and asymmetric financial integration (Andrade and Prates 2013; Fritz et al. 2014; Kaltenbrunner, 2011; 2015). A currency's position within the international currency hierarchy depends mostly on its degree of international liquidity, which is linked to the currency's ability to fulfill the three functions of money on an international level (see equation just below). The US Dollar is at the top of the hierarchy because it offers the highest degree of international liquidity. This liquidity, in turn, represents security in times of distress and enhances the currency's function as an international store of value. For this reason, not only US Dollars, but also assets denominated in US Dollars, are preferred by international investors. In order to compensate for a lesser degree of liquidity (e.g. $l_{USD} > l_{BRL}$), other core and semi-peripheral currencies (and assets denominated in those currencies) might offer a higher yield (q), lower carrying costs (c), and/or a higher expected appreciation (a).

The global financial system contains a fundamental contradiction for policy-makers in the global South, including EM economies, since the policies that prevent financial crisis are the very same that slow down the internationalization process. The international liquidity of a currency is the major determinant of its status within the global financial hierarchy, capital controls (as well as non-convertibility) potentially slow down the internationalization process of a currency and related potential benefits (Kenen 2011). Currency internationalization will increase the role of foreign investors in short-term domestic currency dominated assets and the international trading of the currency as an international asset class (i.e. as an "investment currency"), yet this will also increase the volatility of the currency with its harmful effects (Kaltenbrunner and Painceira, 2015). Here, He and McCauley (2010) and He, Luk et al. (2015)[6] make the important point that the interest rate environment plays a fundamental role in determining whether a currency will assume the status of an international investment or funding currency. Whereas a low interest rate environment is conducive to taking on loans in a currency, making this a funding currency, high

[6] He, Luk et al. (2015) argue that two more factors determine a currency's roles as funding or investment currency: first, the correlation between an economy's output growth and the bilateral exchange rate against an international currency; and, second, the correlation between an international currency and the exchange rate of other international currencies.

interest rates privilege the development of the function of an investment currency. In a similar vein, high exchange rate volatility might attract short-term speculative investors whilst deterring those interested in its value stability, such as non-financial customers and long-termist investors. Kaltenbrunner and Painceira (2012) point to the important feedback relations between the type and nature of central bank operations in the FX and money markets and short-term speculative FX operations. For example, they show that highly predictable, asymmetric (small interventions during appreciation and large and aggressive interventions during depreciation) FX interventions can attract more speculative investors, thus contributing to exchange rate volatility and financial instability. Therefore, with regard to semi-peripheral EM economies, Post Keynesian economists do not believe that these countries should opt for the highest degree of financial openness in order to compete with economies with core currencies.

Although Post Keynesians enhance the analytical precision in relation to real world phenomena and touch in their policy prescriptions on the material interests of different social groups across national spaces, they stay clear of any deeper analysis of social and political struggle in (trans)national domains. Here, they tend to defer to Political Economists, such as Regulationists. How and why social consensus are reached and institutionalized is therefore treated more as a fundamental precondition for policy-making leading to economic stability and prosperity than an object of analysis in and of itself. In other words, while policy-making is the outcome of struggles over (re)distribution, (re)distributive struggles are rather neglected by post-Keynesians.

Regulation Theorists analyze social and political struggles along with institutional stability and change by systematically linking financial institutions to economic issues at the macroeconomic level (Guttmann 2002; Belfrage and Kallifatides 2016a; 2016b). Therefore, this theoretical approach allows for an analysis of the economic and financial structures that shape agents' strategic interactions by clearly linking strategic perspectives and structural analysis (Jessop 1990). The (in)coherence or (in)complementarity of institutional frameworks of regulation and governance define specific "modes of regulation". This includes economic policy-making in a narrow sense, but also norms which themselves are interwoven with economic structures (Jessop and Sum 2006). It is the hierarchy of structural forms that determines the fundamental nature of "regimes of accumulation", and it is the "institutional complementarity" between different policies and institutions, i.e. their mutual fit as opposed to policy-specific international best practice, which renders an accumulation regime coherent and potentially viable (Belfrage, 2015).

Regulationists Becker et al. (2010) claim that three typological axes (or dimensions) of accumulation can be distinguished: productive and financialized accumulation, extensive and intensive accumulation and introverted and

extraverted accumulation. A regime of accumulation is multi-dimensional as it is characterized by a specific combination of elements of these axes of accumulation. The first axis is fundamental. Investment can either be channeled to the productive or financial spheres. Financialized accumulation is based either on the expansion (and increases in the price) of financial assets or on large spreads between active and passive rates of interest. Financial accumulation might gain seeming autonomy from accumulation in the productive sphere. However, financial accumulation cannot be entirely divorced from production. This is because financial assets and credits represent claims on surplus produced outside the sphere of finance (Becker 2002: 75). Productive accumulation can take extensive and intensive forms. Extensive accumulation involves the expansion of the scale and reach of accumulation, typically based on flexible, non-coordinated wage-formation. In contrast, intensive accumulation involves the reorganization of accumulation with the aim of increasing the rate of relative surplus-value. A prerequisite for intensive accumulation is that wage-earner consumption primarily consists of goods bought at the market. Wage-formation in intensive accumulation is typically characterized by collective bargaining and rising consumption norms. The intensive regime of accumulation is more sophisticated with regard to the use of credit and state money (Jessop 1990). Introverted accumulation centers on the domestic market whereas extraverted accumulation involves a strong emphasis on international trade and flows (both inflows and outflows) of productive and money capital. For extraverted accumulation, the direction of extraversion is of great importance. A mixture of some elements of export-orientation and import dependence is not uncommon (Becker 2006). This enables an understanding of how different accumulation regimes around the globe and their asymmetric economic performances and institutional frameworks (or modes of regulation) form interdependent relationships within the global political economy (Benko and Lipietz, 2002; Dannreuther and Petit, 2006; Lagendijk, 2007).

Synthesizing lessons learnt from Regulation Theory and International Political Economy, we learn that the internationalization (and regionalization) of a currency has to be understood in relation to evolving regimes of accumulation and modes of regulation. Recent processes of currency internationalization can be seen as an expression of such changes. As regional integration is shaped by the configuration of institutional forms, so is regional financial integration and monetary policy (e.g. Cafruny and Ryner, 2007). Corresponding to the notion that regional integration should be analyzed in the light of the world economy´s tendency to uneven development, the potential for regional currencies to become a driving force for integral and stable growth are limited due to the hierarchical character of the international monetary order (Becker et al. 2010).

In sum, the analytical frameworks discussed above draw attention to that the evaluation of the costs and benefits of currency internationalization has to be made in relation to historically specific growth models, their constitutive regimes of accumulation and modes of regulation, particularly the nature of its integration in the world economy. Semi-peripheral countries like Brazil are, as a result of currency internationalization, in this preliminary analysis more likely to experience external shocks due to financial deregulation than core countries. For this reason, a strategy to implement the currency internationalization process via wholesale financial deregulation does not seem to be a viable option. Currency internationalization should be complementary to a wider growth strategy focusing on a sustainable export strategy and a balanced (or surplus) current account. Such a virtuous currency internationalization strategy can serve to strengthen the currency and pave the way for further financial integration and currency internationalization. This type of strategy would eliminate the structural tendency of Brazil to experience capital flow boom-bust cycles and contribute to a stable productivist accumulation regime. This means that a type of currency internationalization that is based disproportionately on short-term investors in short-term domestic currency assets should be avoided.

1.2. Experiences of Currency Internationalization

The historical development of money and financial markets shows that they have been subject to continuous power struggle and that their concrete organization has undergone perennial transformation. Yet, albeit frequently changing, the international monetary regime has in this context not only been a crucial variable world economic activity, but has always been a central reference point for national growth strategies.

Although the US has kept its dominant position in the world economy during the second half of the Twentieth century. The internationalization of the US Dollar and its importance as the world's leading reserve currency have their roots in the rise of the US economy as enjoying the world's most dynamic growth model. The US experience has been undeniably positive, benefitting from many factors, including the US Dollar's function as funding currency. The crises of the late 1990s and late 2000s, nevertheless, show that the US has been far from immune to the contradictions inherent in its own finance-led growth model and the asymmetries in the world economy. Yet, this growth model was never seriously in question and the GFC has only illustrated that the US Dollar remains the world's leading reserve currency with markets turning to it as a safe haven resulting in the most significant appreciation of the currency since 1973. The main drivers of this appreciation can be traced to financial markets: the carry trade, hedging and general overall US Dollar shortage (McCauley and McGuire 2009).

Turning to the Euro, an important driver behind its creation in 1998 was not only to further the European single market, but also, relatedly, to challenge the US Dollar's position in the currency hierarchy with its associated benefits. European monetary integration appeared during the 2000s to have been a great success reducing the costs of both labor and credit. However, the Eurozone experience turned sour in 2010, as lopsided integration, i.e. full economic and monetary integration and only very limited political and fiscal integration, made the currency the vehicle of instability (Belfrage 2013).

The internationalization of the Chinese Renminbi (RMB) provides another important experience. Chinese policy-makers have been operating with an acute awareness of the particular risks of currency internationalization pertaining to an EM economy. The current objective appears to be the adoption of a policy mix that allows China to benefit from certain elements of an internationalized RMB (especially trade settlements) without opening the doors to speculative (short-term) capital flows and associated risks. While China's capital account remains

relatively closed, RMB's offshore presence is surging.[7] The Chinese government and the People's Bank of China, the monetary authority, political leadership in the creation of a payment and settlement infrastructure for the RMB offshore in Hong Kong has been crucial. Yet, as highlighted by one official at the Bank of England, the fact that the Chinese Renminbi is not part of the CLS (Continuous Linked Settlement) system is a major impediment to its internationalization (Bank of England 2015).[8] Yet, the introduction of an East Asian regional payment settlement mechanism for intra-regional trade could prove to be significant for increasing regional currency internationalization enabling the RMB to strengthen its trade-related and vehicle currency functions without affecting the domestic bond market (e.g. Rhee and Sumulong 2013). Despite continued currency internationalization and resulting inclusion in the International Monetary Fund's (IMF) Special Drawing Rights basket, a "fully" internationalized RMB is not on the horizon, since such liberalization policies are likely to threaten the Chinese financial system as well as undermine the exchange rate regime and thus its successful export-led growth model (Schmalz 2013; Schmalz and Ebenau 2011; Zhang and Tao 2014; Gao and Yu 2011; Xu and He 2015).

The internationalization of the South African Rand is also an interesting case. The Rand has undergone full internationalization. This has been paralleled by rapid financialization leading to the deprioritization of the development of the real economy. Moreover, it has also exposed both the financial system and the real economy to substantial volatility, which could have been much more severe had not the Chinese-led commodity boom in the 2000s buttressed the economy (Baumann and Gallagher 2013; van den Heever 2013, Habermaier et al 2011). The financial uncertainty following the GFC and the dramatic fall in commodity prices have presented the South African economy with great challenges as it has been particularly damaged by exchange rate volatility, carry trade and loss of commodity demand (Hassan 2015; Sui and Sun 2016).

These historical lessons underline the significance of analyzing the risks and benefits of EM economies' strategies for currency internationalization in conjunction with their respective accumulation regimes. Currency internationalization can be designed in very different ways, and are essentially political decisions. That fundamental lesson is essential, not least for EM economies that will need to consider their currencies' particular position in the

[7] According to the insights generated by the London mission, China is creating holes in these capital account regulations to gradually harmonize onshore and offshore RMB prices.

[8] China launched the CIPS (Cross-border Interbank Payment System (CIPS) in order to rival the SWIFT system in late 2015.

international currency hierarchy and its economies wider insertion into world markets. Meaningful strategies of currency internationalization serve to complement and stabilize an accumulation regime. A non-complementary strategy can be highly destabilizing. The ability of a currency to assume particular functions hinges on currencies' position in the international currency hierarchy. However, these different configurations will have very different implications for external vulnerability, exchange rate dynamics and monetary policy.

1.3. The Brazilian Case

The above discussion has important consequences for policy-making. It shows that policy makers *can* configure currency internationalization in a manner which is compatible with the accumulation regime in place or aspired to, as part of a national and regional economic development strategy. A strategic design of currency internationalization could enable the Brazilian EM economy to contain risks arising, while being able to harness the benefits and opportunities of currency internationalization. If a holistic strategy is implemented, further internationalization of the Brazilian Real could contribute to the creation of a virtuous growth model.

The first question which has to be answered is which kind of accumulation regime would be ideal for Brazil? The current conjuncture in Brazil is characterized by an erosion of the productivist (with an extractivist, commodity focus), intensive and extroverted growth model established with the social democratic shift in the early 2000s and political crisis. This growth model was itself a major alteration of the previous endeavour to bring about a different type of productivist accumulation regime: industrial, intensive and extroverted. The economic and political crises are reinforcing each other. Although most countries in the region are suffering at the end of the commodity boom and abundant global liquidity resulting from post GFC monetary policy, the experience of crisis differs from country to country. In Brazil, the current crisis may finally end either with a revival of productivism in the accumulation regime, or lead to the emergence of a different type of growth model.

In order to simplify the analysis of opportunities and risks of currency internationalization for Brazil, we will analyse two possible ideal-typical, stylized options. Firstly, we will focus on the revival of a productivist regime of accumulation (with a predominant focus on resilience of the external sector). Secondly, we will analyze a possible financialized accumulation regime.

1.3.1. The Productivist regime of accumulation and supportive forms of currency internationalization

Reviving the productivist regime of accumulation would be facilitated by a stable world economic order and further regional integration in terms of trade and production. With commodity prices remaining low and industrialization supporting the Brazilian economy's catch-up through diversification and climbing of global value chains, an industrial, intensive and extroverted type of productivist accumulation regime appears promising. The mode of regulation should be supportive of this regime and enable stable and sustainable domestic demand

based on adequate domestic income policies. An industrial policy supportive of domestic industrial capital would be needed. Compatible macroeconomic and competition policies capable of promoting regional integration and coordinated growth would also be beneficial. However, a crucial element of a coherent mode of regulation is an adequate regulation of the monetary constraint. Still, the monetary constraint here needs to be subservient to the regime of accumulation. Currency internationalization within such a context would be supportive to this end as long as it facilitates and stabilizes a productivist accumulation regime. Using the Brazilian Real for **settling and financing regional trade,** instead of international currencies, could facilitate regional trade and in its extension a regional productivist growth regime.

1.3.2 Financialized accumulation and supportive forms of currency internationalization

If a revival of a productivist accumulation regime does not take place in the medium term, the likelihood of the acceleration of financialization and the establishment of financialized growth models will increase. A financialized accumulation regime could be based either on increasing asset prices and/or on increasing debt levels. In the case of primarily debt-based financialization, accumulation can either emphasise elite-based financialization or mass-based financialization. Which type of financialized accumulation regime emerges depends to some extent on the international environment, but primarily on domestic social structures and above all on the configuration of the monetary constraint. Contrary to the productivist growth model, all forms of currency internationalization which lead to increasing asset prices and debts (in the short and medium term), and which contribute to a corresponding increase of rentier-type income (in the short and medium term), are likely to support the establishment of a financialized accumulation regime.

Since the core logic in a financialized accumulation regime (of whatever type) is to increase asset prices and/or debts, increasing the international (regional) use of the Brazilian Real for **settling and financing trade** is probably the least effective type of currency internationalization. The main reason for this is that these international currency functions are unlikely to lead to increasing debts and/or asset prices. In general, promoting the **investment currency function** of the Real might be more promising to support a financialized accumulation regime by making the currency more attractive to international financial investors. However, if it is possible to initiate strong price developments in Brazil, or to attract rapid capital inflows for instance with high interest rates, in combination with an exchange rate regime set on sustaining the value of the Real in the medium term,

financialized growth could be initiated. This will, however, lead to increasing current account deficits and will inevitable end up with a financial crisis sooner rather than later.

These preliminary considerations of the role of currency internationalization in relation to these two ideal-typical accumulation regimes result in four general conclusions:

1. A process of complete currency internationalization is only possible and recommendable if the country is a top global power (including political), a status which Brazil is unlikely to enjoy in the short- to medium-term.

2. Brazil can, nevertheless, benefit from adopting a measured approach to currency internationalization as part of a virtuous growth model promoting national (and regional) economic development, which targets a balanced external sector aimed at ascending power hierarchies in the global political economy over time.

3. A highly promising strategy to this end may involve the promotion of a trade-related currency internationalization with a regional focus and the careful implementation, as a first step, of very specific types of currency internationalization.

4. This strategy could also serve to benefit the other countries in the region. Mechanisms capable of efficiently redistributing the gains from *currency regionalization* of the Real across the region should be considered.

This strategy of trade-related currency internationalization with a regional focus also appears to be the most promising way to promote São Paulo as a stable regional financial hub in the long term.

1.4. The Costs and Benefits of Different Types of Currency Internationalization

Previous sections have set out our general analytical framework. This section analyzes the costs and benefits of different types of currency internationalization, linked to different types of accumulation regimes.

1.4.1 Benefits

With regards to trade-related vehicle currency internationalization, the increased accessibility of domestic currency to foreign customers should reduce transaction costs for domestic and international NFCs and thus stimulate trade relations (Kenen 2009, Ma and Villar 2014). Moreover, increased convertibility of the domestic currency ought to reduce the exchange rate risk for domestic non-financial customers by allowing them to hedge their operations more effectively (Bowles and Wang 2013). In a similar vein, increased international convertibility of a currency could support its establishment as international invoice currency for trade, which makes the tradable sector less vulnerable to direct effects of the fluctuations in the major currencies. Recent empirical evidence has also shown that the exchange rate pass-through to import prices and domestic prices declines significantly, even at distant horizons, if a significant share of imports of goods and services is invoiced in the domestic currency (Gopinath, Itskhoki et al. 2010).

On the financial side, the potential benefits of currency internationalization are closely related to those of financial integration more generally. The increased participation of foreign investors in domestic currency assets (i.e. its role as international investment currency) could potentially lower the cost of funding and thus increase the volume of financing, thereby stimulating investment and economic growth. Moreover, the increased participation of foreign investors in the domestic financial system should increase competition and thus its efficiency. This is particularly the case where the domestic financial sector is characterized by only a few institutions and maintains high spreads between borrowing and lending rates.

The main direct benefit of investment currency internationalization is the ability to borrow in the domestic currency, that is the reduction of developing countries' "original sin" (Eichengreen, Hausmann et al. 2003, Eichengreen, Hausmann et al. 2003). This should reduce exchange rate and capital volatility. Indeed, short-term foreign currency debt has been identified as one of the main reasons for sudden stops in capital flows and exchange rate crisis (Radelet, Sachs et al. 1998, Calvo, Izquierdo et al. 2004). Moreover, foreign investors are thought to lengthen the

yield curve of domestic currency debt, thus also reducing potential currency mismatches. Finally, the government would need to rely less on costly a large amount of international reserves, since more claims on the country are denominated in the domestic currency (Bowles and Wang 2013).

There are some potential additional benefits if a currency reaches the status of an international funding or reserve currency. With regards to a funding currency, these currencies are generally characterized by lower interest rates as even foreign investors use these currencies to fund their international operations. Moreover, as detailed below, these currencies are subject to very different exchange rate dynamics and reactions to changes in international market conditions. There are obvious benefits of reaching the status of a reserve currency. These include the ability to offer lower interest rates and an inherent value stability to the currency, which brings enhanced policy flexibility and less need to hold foreign reserves.

It is crucial to consider whether these arguments apply to regional currency internationalization. Potentially, regional currency internationalization could be an appropriate compromise capable of bringing some of the benefits of currency internationalization without inflicting the worst possible impacts of full currency internationalization. Again, however, the specific implications will depend on what type of currency internationalization a currency assumes in this regional context. On the one hand, trade-related regional currency internationalization could fundamentally support regional trade relations, thus spurring regional economic growth and coherence. It is also argued that cross-border financial activity could be followed by cross-border trade (e.g. through the increased availability of hedging instruments) and thus help foster wider integration. In a similar vein, regional financial operators may be more sensitive to the needs of the region than global institutions and provide financial expertise particularly suited to the host country. Finally, regional capital market integration creates scope for economies of scale (in particular in the case of relatively small financial markets) and might make the regional more attractive to international financial investors.

1.4.2 Costs

These potential advantages of currency internationalization are next juxtaposed with the potential risks. In line with the argument above, these potential disadvantages will differ according to the type of currency internationalization pursued as well as indirectly with the position of a currency in the international currency hierarchy.

External Vulnerability

The higher the participation of foreign investors in domestic currency assets, the higher the sensitivity to international market conditions, as any change in international portfolio allocation, for example as a result of changing international funding conditions, can lead to domestic exchange rate and asset price movements (Brunnermeier, Nagel et al. 2008, Kaltenbrunner and Painceira 2015). This risk will be higher for currencies which are used as international investment currencies. Trade-related vehicle currencies will hardly be affected by these kinds of financial turmoil. In a similar vein, international reserve, intervention and anchor currencies should be little affected by the portfolio decisions of private financial actors. Finally, the vulnerability to international market conditions of funding currencies should also be negligible. International investors will only have to acquire the funding currency if the financial turmoil emanates in the funding currency itself. In this case, however, the vulnerability is not an external one, rather related to domestic financial conditions.

The external vulnerability risk will also change depending on the type of investment currency assumed. The more short-term oriented the foreign investor in domestic currency assets, the higher the potential impact. . Short-termist investors most frequently also rely on short-term funding sources, which make them more vulnerable to international market conditions.

The impact might also change depending on the asset class. Again, the more short-term the financial asset, the easier this can be sold and the higher and quicker the impact of changes in international market conditions. In contrast to investing in bonds, which is generally approached with a buy-and-hold strategy to take advantage of high interest rates, large parts of the gains made on transactions made on stock and derivatives markets are based on *trading* and ensuing capital gains (including from exchange rate changes). This makes them more fickle and sensitive to changes in financial market conditions. In addition, investors on the stock and derivatives markets tend to be more leveraged (BIS 2009).

Exchange Rate Volatility and Misalignment

The second risk of currency internationalization is the potential occurrence of large, and sometimes very sudden, exchange rate changes that might be unrelated to domestic economic conditions (McCauley 2006, Kenen 2009, Kohler 2010). In the case of domestic currency assets held by foreign investors funded in international currencies, the exchange rate becomes a crucial element of return. That is particularly the case in emerging markets (EMs), where large exchange rate movements can dwarf gains from the interest rate differential. This exacerbates the risk of large exchange rate movements for two reasons: First, due to self-fulfilling and self-feeding bubble dynamics as speculative capital flows appreciate the exchange rate which in turn attracts further capital inflows (and vice versa in

the case of depreciation) (Belfrage, Bergman et al. 2015, Kaltenbrunner 2015). Second, due to the transferal of the exchange rate risk from the domestic issuer to the foreign investor which makes foreign investors more sensitive to (expected) exchange rate changes (Akyüz 2014, Kaltenbrunner and Painceira 2015).

Again, this risk will differ substantially according to the type of currency internationalization. Trade-related vehicle currencies and reserve, intervention and anchor currencies will be, at least to a certain extent, unaffected by these pressures emanating from private financial markets. The case is very different for investment and funding currencies. Investment currencies, that is, currencies with a large net exposure of foreign investment, will be strongly affected by the risk of sudden exchange rate movements. Brunnermeier, Nagel et al. (2008) show that high-yielding investment currencies face strong, sustained appreciation pressures during cycles of abundant liquidity, which are reverted through large and sudden depreciations when international funding conditions change. Funding currencies, on the other hand, will experience the opposite pattern. Depreciation pressures during "good" times will be offset by appreciations during moments of increased market turmoil (McCauley and McGuire 2009).

These different exchange rate patterns, however, have different implications for growth and development. Whereas sustained appreciations interrupted by sudden depreciations might create problem for competitiveness and financial stability in the moment of depreciation, sustained depreciations and sudden appreciations, as in the case of funding currencies, will support the domestic export sector/economy during good times, whereas domestic agents' balance sheets are less affected (or might even gain) during moments of market turmoil.

Financial Instability

External vulnerability and exposure to large exchange rate movements bring risks of financial instability. With large, open net cross-border positions, any change in the exchange rate will have implications for the wealth of a nation (Lane and Milesi-Ferretti 2002, Lane and Milesi-Ferreti 2005, Lane and Milesi-Ferreti 2006a). Yet, even if net positions are relatively small, large gross positions can conceal risks with regards to mismatches in the currency and maturity and whether assets are held by private or official agents. Again, different types of currency internationalization will alter the nature of these risks. Trade related vehicle currencies and reserve/anchor currencies will hardly be affected. The different financial stability implications for investment and funding currencies, however are noteworthy.

Although in the case of investment currency internationalization the currency mismatches move from domestic economic actors to (international) investors, the risk of sudden and large exchange rate movements remains as long as the domestic

currency is not used as funding currency. If these currency mismatches are located in the balance sheets of national economic actors, e.g. banks operating offshore, this will have substantial implications for financial stability.[9] In a similar vein, if foreign financial actors use foreign currencies to fund operations onshore, this might have severe implications for domestic financial stability if international market conditions change (e.g. through a sudden withdrawal of funds or even bank failure). Economic actors who can use the national currency as funding currency will not face these currency mismatches, thus being far less exposed to financial instability.

Even if they do face currency mismatches (e.g. through using the domestic currency to invest abroad), the financial stability implications will be very different. As discussed above, whereas investment currencies are characterised by appreciation tendencies during good times and sharp and sudden depreciations during moments of increased risk aversion, funding currencies experience the opposite patterns. Firstly, this means that funding currencies will experience substantial financial gains during moments of increased risk aversion (potentially exacerbating financial market dynamics). Secondly, for financial stability it matters whether financial price movements happen slowly over a protracted period of time or if they happen very suddenly. Sudden price movements prevent economic agents from protecting themselves against the financial shocks, thus exacerbating their repercussions. [10]

Even when currency mismatches are minimal, maturity mismatches can have substantial implications for financial stability. A short-term maturity liability structure matched with relatively long-term maturity assets (e.g. outward FDI funded by short-term financial investors which is common in EMs) may generate difficulties in the moment of financial adjustment. Potential risks might also arise in the case of a mismatch between private and public actors. Whereas private financial actors are motivated by financial gains, the motivations of public agents will be driven by the desire to preserve wealth, liquidity and security. Mismatches, as are commonplace in many EM economies holding large FX reserves matched by short-term private liabilities, can lead to large asset price movements and financial instability if central banks are not prepared to use all their reserves to meet private outflows.

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[9] This highlights the importance of analyzing risk on a nationality rather than residency basis as highlighted by the BIS.

[10] It is also worth noting that the exchange rate pattern of investment currencies are also conducive to the build-up of traditional external vulnerabilities, that is borrowing in foreign currency to take advantage of favourable exchange rate movements. The exchange rate behaviour of funding currencies generate the opposite incentive reducing financial fragility.

Implications for Monetary Policy

The first potential complication for monetary policy involves the well-known "impossible trinity" (Kenen 2009). Recent evidence shows that many emerging economies, despite officially floating their exchange rates have been very reluctant to leave exchange rate determination to the market which has created conflicts with other monetary policy objectives (Calvo and Reinhart 2000, McKinnon and Schnabl 2004, Levy-Yeyati and Sturzenegger 2007, Kaltenbrunner and Painceira 2012, BIS (Bank for International Settlements) 2013). Even if central banks are prepared to neglect exchange rate movements, interest rate movements will still be affected by a large presence of foreign investors in the domestic financial market (McCauley 2006). In this vein, Helene Rey (Rey 2015) has argued that rather than facing an impossible trinity, capital account liberalization creates an impossible duality, that is forcing a choice between the conduct of independent monetary policy and free capital mobility. Investment currency internationalization could also result in higher domestic interest rates as (foreign) investors require a risk premium to compensate for the increased vulnerability to external shocks and heightened exchange rate volatility.

The second direct complication for monetary policy could be the development of domestic credit booms. Lane and McQuade (2014) show a strong correlation between net foreign debt inflows and domestic credit growth (see also Belfrage, Bergman et al. 2015). The mechanisms through which this monetary expansion takes place vary. The most direct one is through additional borrowing by the domestic banking system. Cross-border inflows into the domestic banking system can provide the marginal funding or an expansion in domestic lending (Allen 2011). More indirectly, such developments could also stem from other foreign investments in domestic currency assets. If channeled through the domestic banking system, domestic banks face a foreign currency overhang which they can use to expand their domestic credit supply. Finally, the excess FX of the domestic banking system could be bought by the central bank in the course of its foreign exchange operations. Again, this will result in increased domestic currency liquidity for domestic banks and thus an expansion in the domestic money supply. Painceira (2012) shows, even if the central bank chooses to sterilize its FX purchases this can result in the expansion of the domestic credit supply as domestic banks use the central bank repos to leverage and increase their own balance sheets.

Although these pressures on domestic credit can also arise from strong FX inflows from the trade balance, this risk is particularly high for international investment currencies. The use of the domestic currency as funding currency, instead, should have little impact on the domestic monetary base. Finally, it is also important to

note that the way a central bank reacts to these pressures, will depend fundamentally on the macroeconomic regime in place. Kaltenbrunner and Painceira (2012) show that an inflation targeting regime might pose particular difficulties for EM central banks to deal with the consequences of large capital flows, due to the potentially stimulating effect of high and rising interest rates and the fiscal complications of large and sustained sterilization operations.

Finally, it is important to consider whether above risks of currency internationalization depend on whether they are conducted onshore or offshore, and whether currency internationalization takes place on the international or the regional level. As to the former dimension, the offshore trade in domestic currency might potentially increase the costs of a strategy of investment currency internationalization due to the larger investor base capable of accessing the domestic currency. This could further increase external vulnerability, and exchange rate and interest rate volatility, when foreign investors adjust their portfolios. This may be exacerbated by a large presence of non-dealer financial agents concentrated in financial centers (Rime and Schrimpf 2013). At the same time, domestic authorities often lack the oversight and regulatory capacity to influence any emerging vulnerabilities and/or maintain control over the domestic money supply. For example, as discussed by (He and McCauley 2010), domestic economic agents can substitute offshore deposits in the domestic currency for onshore deposits. If these in turn are lent back into the economy (so-called "round-tripping"), hard-to-measure and hard-to-control offshore deposits and credit can substitute their domestic counterparts. Similarly, credit extension in domestic currency in offshore centers could significantly weaken the ability of onshore authorities to control such aggregates.

In very general terms, the extent to which the increase in offshore trading of the domestic currency will constrain domestic monetary autonomy (in line with the impossible trinity discussed above) will depend on the degree of separation between the onshore and the offshore market. For example, He and McCauley (2010) show that as long as capital controls are maintained, the authorities can control offshore deposits unilaterally through reserve requirements.[11] In this respect, the Brazilian reality of having a non-deliverable currency offshore also provides the central bank with some ability to influence the offshore operations. More concretely, given the non-deliverability of the currency, any NDF offshore

[11] In the absence of capital controls, experience suggests that it is possible to impose reserve requirements on banks' net funding in domestic currency from offshore markets (He and McCauley 2010).

operation will have an onshore counterparty operation.[12] The BCB retains policy autonomy and regulatory capacity through the continued link with the domestic financial system along with the domestic dealership on the spot market.

Table 2 presents a summary of the compatibility of different types of currency internationalization with accumulation regimes and associated costs and benefits. Given its relevance for Brazil and its accumulation regime, particular focus is placed on the varying implications of trade-related, vehicle currency internationalization and **in**vestment vs. funding currency internationalization.

Table 2: Accumulation regimes and currency internationalization

Currency Internationalization		
	Advantages	Drawbacks
Productivist accumulation regime **supported by trade-related currency internationalization (and funding currency function in the long-term)**	• Lower transaction costs • Lower exchange rate risk • Lower balance of payments pressures • Lower exchange rate pass through to domestic prices >>> Fosters (regional) trade and stable economic growth	• Speculative FX positions by non-financial corporations • Risks related to increased international trade (e.g. regional imbalances)
Financialized accumulation regime **supported mainly by investment currency function**	• Complements domestic savings • Consumption smoothing • Deepening and increased efficiency of domestic financial markets • Reduction of original sin >>> higher domestic growth and reduced external vulnerability	• External vulnerability • Exchange rate volatility and "misalignment" • Financial instability (currency, maturity and agency mismatches) • Loss of control over exchange rate and interest rate developments • Loss of control over domestic credit supply

A productivist accumulation regime could be supported by a type of currency internationalization that facilitates (regional) trade. For this accumulation regime,

[12] This is if the spot currency is required. If no spot currency is required, very often banks still conduct onshore operations due to the high liquidity of the BM&FBovespa.

financially based types of currency internationalization, in particular those strongly favoring investment currency internationalization, should be avoided. Establishing the currency as an international funding currency could be a long-term objective, as supportive of a productivist accumulation regime in the future. While the potential benefits of such a form of currency internationalization are significant, the risks with regards to external vulnerability, exchange rate volatility, financial instability and loss of monetary policy autonomy, would be lower.

Very different concerns arise when considering forms of currency internationalization that are supportive of financialized accumulation. The key to a finance-oriented growth model is the promotion of the international investment currency function. The advantages of such a strategy must be considered in relation to the likely, substantial medium- to long-term risks arising from the strategy. These include increasing external vulnerability, asset price overshooting and collapse, higher exchange rate volatility and resulting complications for monetary policy and the economy more generally.

1.5. An Empirical Investigation of the Implications of different Forms of Currency Internationalization

In the previous section, we introduced different types of currency internationalization and discussed their risks and opportunities in terms of their complementary with ideal-typical accumulation regimes. This section first presents a brief overview of the nature of the internationalization of the Brazilian Real[13] and then tests econometrically the implications of different types of currency internationalization on the exchange rate, the interest rate and external vulnerability.[14]

1.5.1. Mapping the Nature of Brazil's Currency Internationalization

Generally speaking, the internationalization of EM currencies has surged over the recent decade. According to the BIS the daily trading volume in EM currencies on global over-the-counter (OTC) FX markets increased by more than 70% from just over US$ 400 billion in 2007 to more than a trillion US$ in 2013. This compares to an increase of around 34% in the trade of advanced economy currencies (BIS 2013). EM currencies now account for nearly 20% of global FX turnover. Although emerging Asia still accounts for almost half of total EM turnover, turnover in Latin American currencies has experienced the largest increase, by 144% between 2010 and 2013. Trading volume in the Brazilian Real increased by 117%. Daily OTC turnover of the Brazilian Real reached 59.2 billion US$ in April 2013. [15]

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[13] Publicly available data on the different types of currency internationalization are not completely available or exhaustive. Nevertheless, this section is based on the most detailed data on currencies' state of internationalization available at present.

[14] Given the focus on emerging market currency internationalisation, emphasis is placed on the different types of private currency internationalisation. So far no emerging market currency fulfils an official international function (reserve/anchor/intervention currency) on the global level (they might do so on the regional level although that is not the case for the Brazilian Real). It is important to note though that the establishment of bilateral swap lines has been a crucial element of the internationalization efforts of the People's Bank of China. With this comes the acknowledgement that once a currency is used as private means of exchange, store of value and funding currency, sufficient international liquidity in that currency is crucial to maintain confidence in that currency for it to continue performing these international functions.

[15] This number likely underestimates the actual trading volume in Brazilian Real. As indicated above, Brazil has a very active futures market, the BM&FBovespa, which is the locus of BRL/US$ trading. To illustrate, the average daily trading volume of Dollar Futures on the BM&F in the last week of October 2015 was US$ 32 billion - more than half the amount of total OTC turnover.

The increase in EM currency trading was particularly marked in offshore financial centers. In 2013, offshore trading accounted for more than 67% of total EM currency trading. In Latin America offshore trading accounted for just over 75% of total turnover (81% and 77% in Mexico and Brazil respectively). This share is above that of any other EM region (and way above that of countries in emerging Asia, whose offshore trading ratio is around 60%). Moreover, nearly all of this Latin American currencies offshore trading was conducted in international financial centers, primarily the US (41%) and, with a slightly lower share, in the UK (26%). Hardly any trading is done intra-regionally and/or in regional financial centers. Again, this is in stark contrast to Emerging Asia, where more than 25% of trading is conducted regionally.[16] Finally, the BIS (2013) has noted that most of the rise in EM currency trading has been driven by the increased demand for derivatives by non-dealer financial institutions (this includes non-reporting banks, institutional investors, hedge funds and proprietary trading firms, as well as official sector financial institutions).[17]

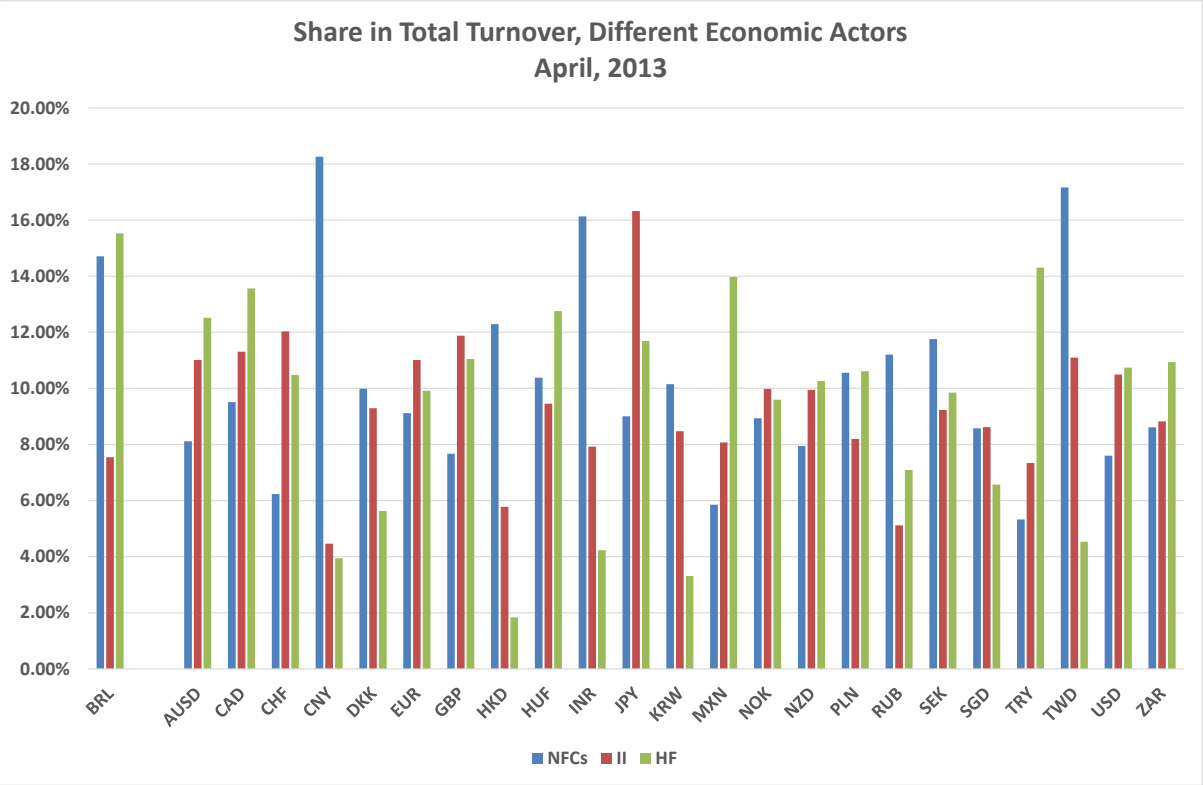
Despite these generally strong increases the BIS data also show that these internationalization processes have taken very different forms across EMs. Whereas Asian currencies, such as the RMB, have seen a trade-related vehicle currency internationalization, the internationalization of the Real can be characterized as a financialized investment currency internationalization.

Figure 1 shows the share of different types of private economic actors in total FX trading for all currencies for which data are available.

[16] Although this share is dominated by the Chinese Renminbi, whose share of regional trading is above 40% (and concentrated to Hong Kong).

[17] According to BIS (2013a), the rise in non-dealer financial institutions on offshore markets has been closely linked to reduced transaction costs, measured by the bid-ask spread, on those markets. In contrast, non-financial customers took much less advantage of the reduced offshore costs and largely stayed onshore. This seems to indicate that rather than transaction costs, what matters to NFCs are stable, often personal relationships with their banks. The rise in derivatives trading has been related to two phenomena. On the one hand, derivatives are an attractive instrument to conduct FX trading per se and are often the first point of entry for international investors into EM markets. On the other hand, derivatives are used to hedge the exchange rate exposure on other domestic currency denominated EM assets.

Figure 1: Different Economic Actors' share in total Turnover, All Currencies, April 2013



Source: BIS (2013)

One can observe that that the share of financial investors is more than 23% in the case of the Brazilian Real. This is one of the highest values after the Australian and Canadian Dollar and the Japanese Yen. This is particularly the case for short-term hedge funds, whose share reaches 15% - the highest value of all currencies. This compares to a share of only 4% in the case of the RMB, for example. In contrast, the share of long-term institutional investors in the Brazilian Real is relatively low. Less than 8% of turnover in the Brazilian Real relates to institutional investors.[18]

The share of non-financial corporations in FX turnover in Brazil is also relatively high, reaching nearly 14%. The participation of NFCs in FX turnover is particularly high in emerging Asian currencies, in particular the RMB, Taiwanese Dollar and Indian Rupee. This reflects on these currencies distinct internationalization path,

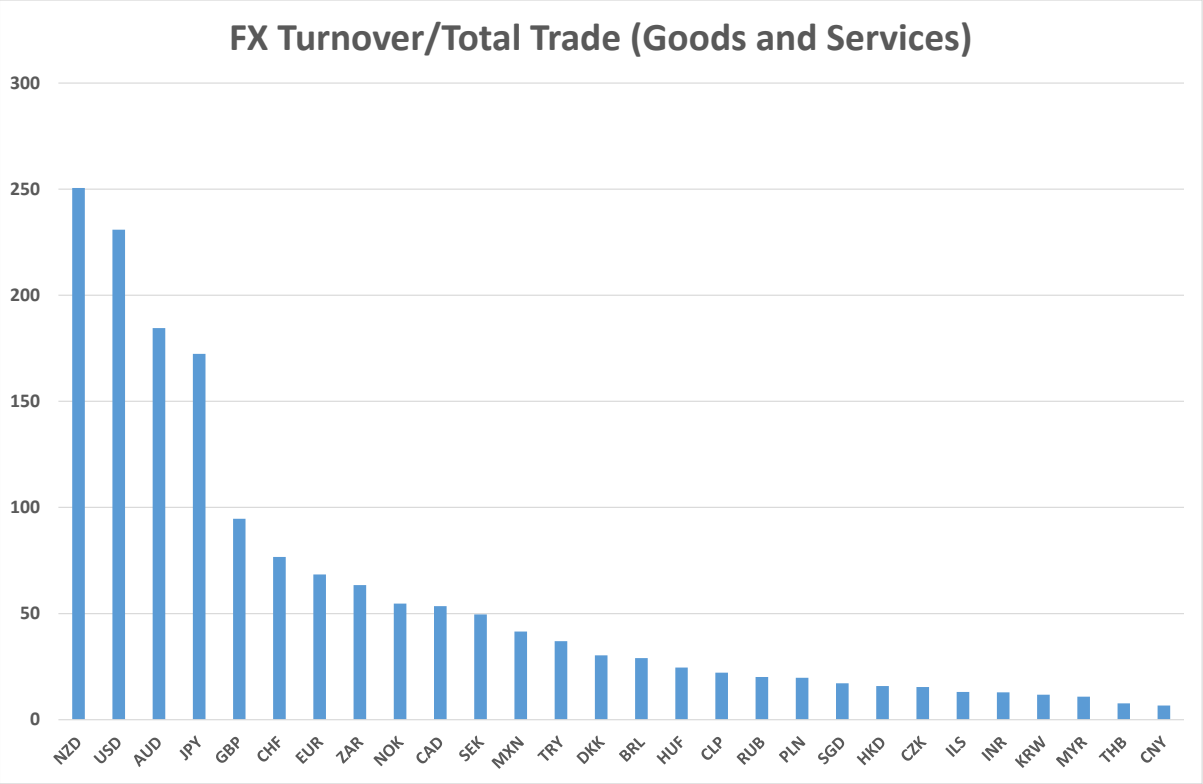
[18] In contrast to dealer banks, hedge funds and institutional investors do not operate on behalf of non-financial clients (at least not related to trade transactions), which implies that their operations are purely financially motivated. Hedge Funds are financial agents with a short-trading horizon (around 3 months) that take relatively large directional positions. They largely treat currencies as an asset class per se. Institutional investors, such as pension funds and insurance companies, have a much longer trading horizon with regards to emerging market currencies (from 6 months) and adopt a buy-and-hold strategy, rather than being active traders of the domestic currency instruments (Kaltenbrunner, 2011).

so far, dominated by trade related medium of exchange and vehicle currency internationalization rather than financial investment currency internationalization. [19]

These distinct internationalization dynamics of EM currencies are also reflected in the relationship between the currencies' total trading volume and the countries' underlying FX needs stemming from trade in goods and services.

Figure 2: FX Turnover/Total Trade,

April 2013



Source: BIS (2013)

One can observe the extraordinary de-linking between the trading in currencies and the underlying trade balance for many of the highly internationalized currencies. For example, the trading volume of the New Zealand Dollar is 250 times bigger than the volume required to facilitate imports and exports in goods and services. The value is also considerable for some of the more widely traded EM currencies. Trading in the South African Rand exceeds the currency requirements

[19] Obviously not all operations by NFCs are motivated by trade related operations. Indeed, Bruno and Shin (2015), for example, show that EM firms have been active speculative operators in FX market over recent years.

posed by South Africa's trade balance by more than 50. The value reaches nearly 30 times in the case of the Brazilian Real. On the other hand, the ratio is relatively small for the currencies from emerging Asia (and lowest for the RMB), testifying to the more trade-related internationalization of these currencies.

The Brazilian Real's limited use as trade related vehicle and invoice currency is also reflected in the currency denomination of Brazil's international trade. Table 3 shows that more than 90% of total Brazilian trade is denominated in US$, compared to just above 2% in Real. The only other currency of any importance in the settling of Brazilian trade is the Euro, accounting for about 3.5% in June 2015, though with a declining trend.

Table 3: Medium of Exchange and Unit of Account – Vehicle Currency: Invoicing of International Trade

Currency	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015 [1]
Danish krone	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Norwegian Krone	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Swedish Krona	0.08%	0.02%	0.08%	0.13%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%
Australian Dollar	0.03%	0.02%	0.02%	0.02%	0.01%	0.02%	0.01%	0.02%	0.01%	0.01%	0.01%
Canadian Dollar	0.01%	0.01%	0.02%	0.01%	0.01%	0.01%	0.01%	0.02%	0.02%	0.01%	0.01%
American Dollar	**93.96%**	**95.28%**	**94.47%**	**94.18%**	**92.92%**	**94.23%**	**94.19%**	**93.51%**	**94.51%**	**94.19%**	**93.77%**
Euro	5.04%	4.04%	4.62%	4.76%	4.51%	3.94%	3.44%	3.54%	3.27%	3.30%	3.56%
French Franc	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Swiss Franc	0.01%	0.01%	0.01%	0.00%	0.01%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%
Yen	0.26%	0.09%	0.15%	0.18%	0.18%	0.09%	0.10%	0.14%	0.12%	0.16%	0.25%
Sterling Pound	0.19%	0.18%	0.21%	0.21%	0.37%	0.39%	0.27%	0.30%	0.25%	0.32%	0.37%
Real/Brasil	**0.43%**	**0.35%**	**0.43%**	**0.51%**	**1.99%**	**1.31%**	**1.96%**	**2.47%**	**1.81%**	**2.00%**	**2.02%**
Grand Total	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**

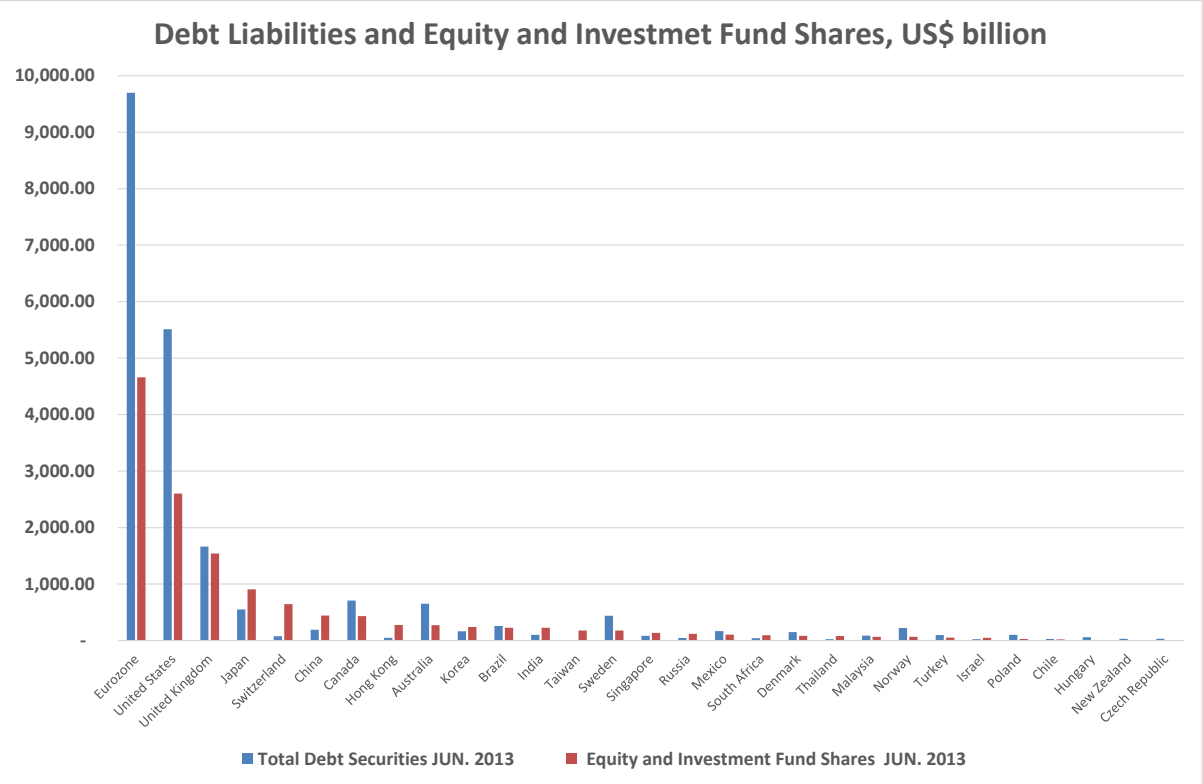
Source: Brazilian Ministry for Development, Industry and Foreign Trade (MDIC); Notes: All values are end of year except for 2015 which is end of first semester

Above discussion has shown the financially dominated character of the Real's internationalization process. This pattern is also reflected in foreign investors' participation in Brazilian domestic currency assets.[20]

[20] In addition to FX trading by foreign investors (as shown in the BIS data above) investment currency internationalization also manifests itself in rising investment in other domestic currency assets. BIS (2013) shows that recent increases in emerging market FX turnover were closely related to investors' increased exposure to other domestic currency assets, such as bonds, equity and bank instruments (Rime and Schrimpf 2013). These investments in turn can be made by different actors, directed towards different asset classes, including cash, bonds, equities and banking flows, and be made onshore or offshore. As discussed in detail above, these different configurations have different implications for exchange rate dynamics, external vulnerability and, consequently, financial stability and monetary policy. Not all these dimensions can be mapped using publicly available data. We present an accurate picture as far as this is possible.

Figures 3 and 4 show approximations[21] of the foreign participation in onshore domestic currency assets, including equities, bonds and bank lending.

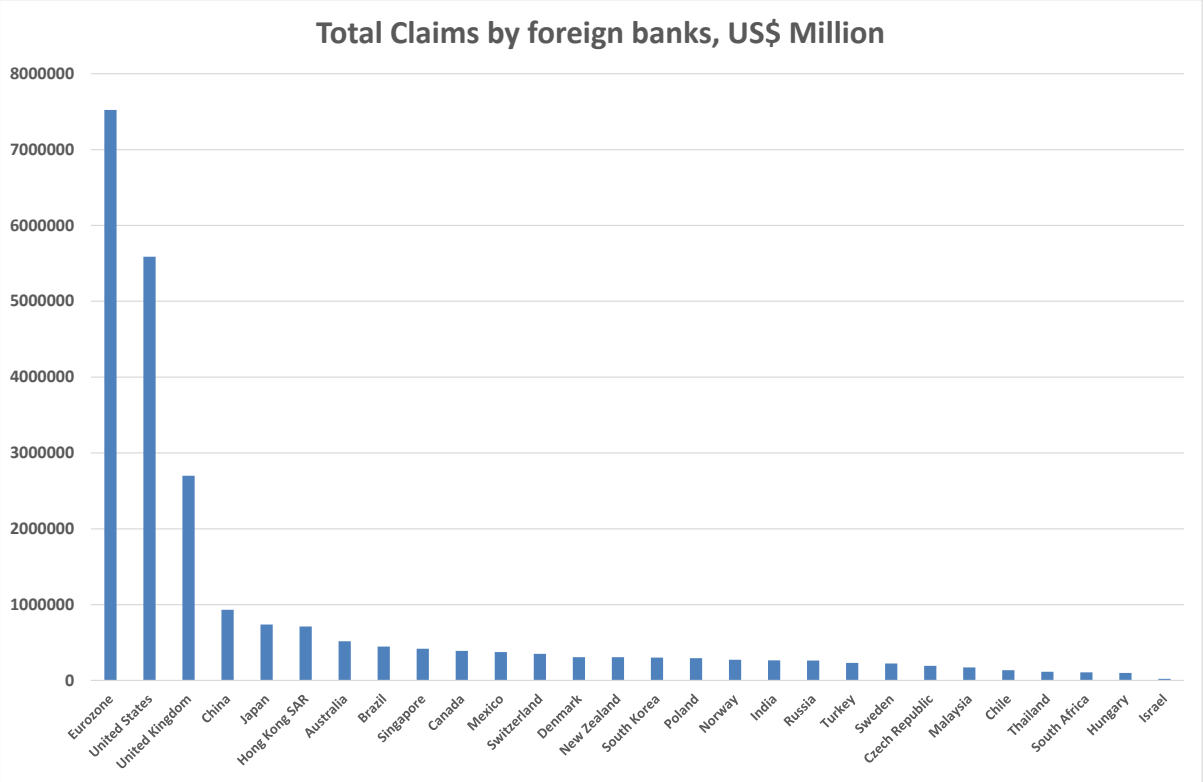
Figure 3: Store of Value – Investment Currency: Portfolio Debt and Equity Liabilities, June 2013



Source: IMF CPIS; Notes: Data are presented for2013Q2 to be comparable with the FX Triannual Survey data

[21] Comparative data on foreign exposure to domestic currency debt markets is not publically available. Based on a comprehensive survey, the BIS (2013) reports that, between 2007 and 2012, the weighted average of foreign ownership to local currency governments bonds rose from 8% to 17%. Foreign ownership of EM equity was generally higher and rose from 15% to 20% (Ma and Villar, 2014). According to data from the Central bank of BrazilBrazilian National Treasury, the share in Brazil reached 20% mid-2015, compared to below 5% in 2007. The best publicly available approximation of comparable onshore foreign exposure to domestic is based on countries' international debt and equity asset and liabilities positions published in the IMF's coordinated portfolio investment survey (CPIS). The major shortcoming of this data is that it does not record the currency denomination of the asset classes involved. Whereas this is not a problem for equity, which is mostly denominated in domestic currency, this is not inconsequential in the case of debt liabilities which could be denominated in foreign currency and are consequently not a part of currency internationalization.

Figure 4: Store of Value – Investment Currency: Total claims of foreign banks, June 2013



Source: BIS International Banking Statistics

Notes: Total claims include cross-border lending and lending by branches of foreign banks located in the country. As in the case of the IMF CPIS data, these are not sensitive to the currency denomination of banking flows

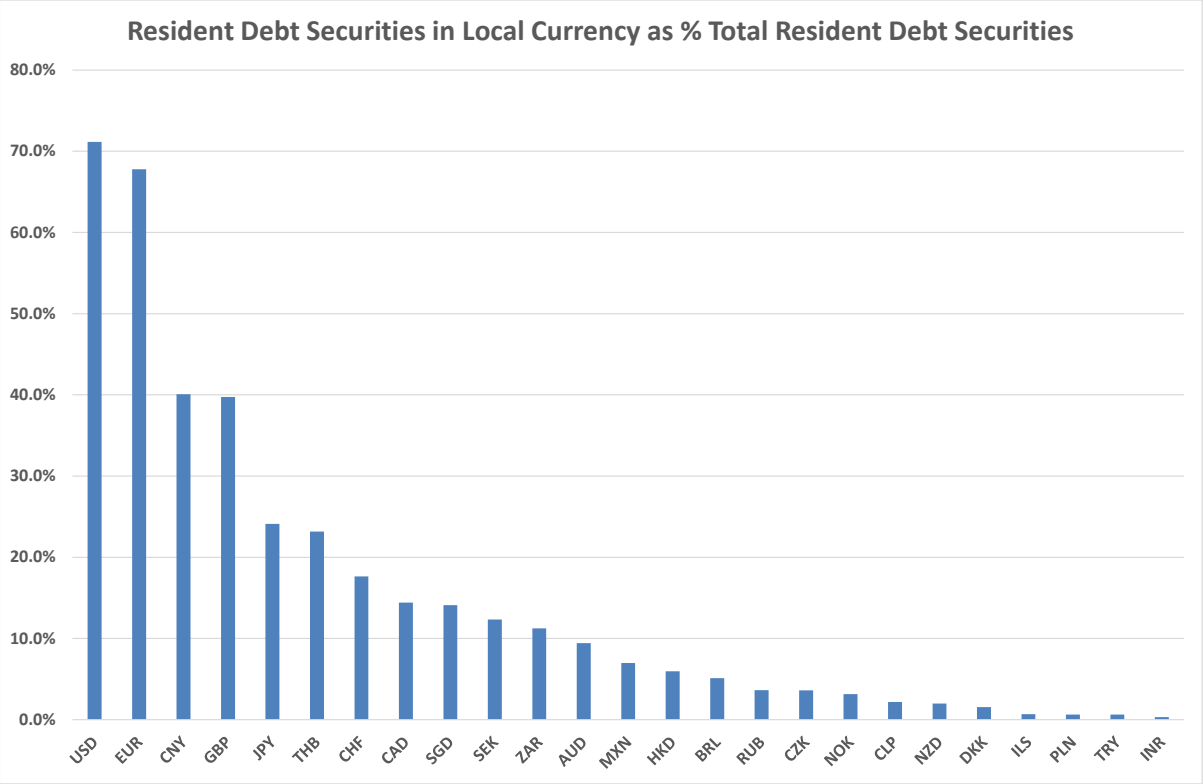
One can observe the massive size of European and American debt and equity liabilities, dwarfing that of other countries. Although much smaller, Brazil's foreign debt liabilities are the 8th largest in the world, ahead of all other emerging economies. The outstanding stock of debt issuance held by foreign investors reached more than US$250 billion in June 2013, more than 60 billion above that of China, the second largest EM debt issuer. More than 99% of Brazil's public debt securities today are denominated in domestic currency. This is less so by NFCs, who still issue in foreign currency.[22]

[22] The importance of countries' debt portfolio liabilities is somewhat different if considered relative to their GDP and size of respective domestic financial market. Expressed as a percentage of GDP, Brazil's size of portfolio liabilities reaches around 11%, compared to, for example, nearly 50% and 30% in Hungary and Malaysia respectively. In line with previous characteristics, China boasts the lowest ratio at only 2.3%.

With regards to equity liabilities, Brazil's occupies the 11th place with around US$ 230bn.[23] According to data from the BM&FBovespa, in Brazil, foreign investors account for around 40% of onshore stock market trading. Brazil occupies the 8th place for international bank lending with a value of nearly US$450bn in 2013.

On the other hand, Figure 5 shows the limited availability of Brazilian residents to fund themselves in domestic currency on international offshore markets.

Figure 5: Store of Value – Investment Currency: International Debt Securities denominated in domestic currency, 2nd Quarter 2015



Source: BIS Securities Statistics

Figure 5 shows the high share of domestic currency securities, relative to total securities, issued by the countries with the four leading currencies (the US, Europe, the UK and Japan). Interestingly, the share is also very high for China. 40% of Chinese bonds issued offshore are denominated in domestic currency; a level nearly as high as that of the UK.[24] The share is much lower in other EMs, including

[23] Again, the picture changes slightly if expressed as a percentage of GDP, with Hong Kong and Switzerland leading as portfolio equity fund recipients. In GDP terms, Brazil is on 19th place, having a share of just below 10%. As the general picture suggests, China's share stands at just above 5%.

[24] Although partly the result of continued capital account restrictions, which ban foreign investors from domestic financial markets, this also may suggest strong investor confidence in the Renminbi.

Brazil. Most of these hardly reach a share of 10% domestic currency denominated assets. Brazil's share stands at 5.1%.[25]

Finally, this first part of the report has argued that an important international function is that of an international funding currency. It has argued that not only is it important to encourage the use of the domestic currency as funding currency to avoid large open currency mismatches, but international funding currencies are also characterized very different exchange rate dynamics which reduce financial fragility, promote development and increase their chance to become international reserve currencies.

As also discussed previously, there are different ways of measuring currencies' role as international funding currencies: at the macroeconomic (country) level, analyzing whether a country is a net foreign currency creditor or debtor, or at the microeconomic level, looking at private actors' international balance sheets. The first macroeconomic indicator analyzed should be a country's short-term international debtor or creditor positions, that is, whether a country holds more domestic currency, short-term foreign assets or liabilities. An international investment currency is characterized by having more domestic currency portfolio liabilities than assets, meaning that, more foreign portfolio investment (i.e. funded on international markets) enters the country than the volume of domestic investment (i.e. funded locally) exiting the country. We again use IMF CPIS data to approximate countries' international investment position.

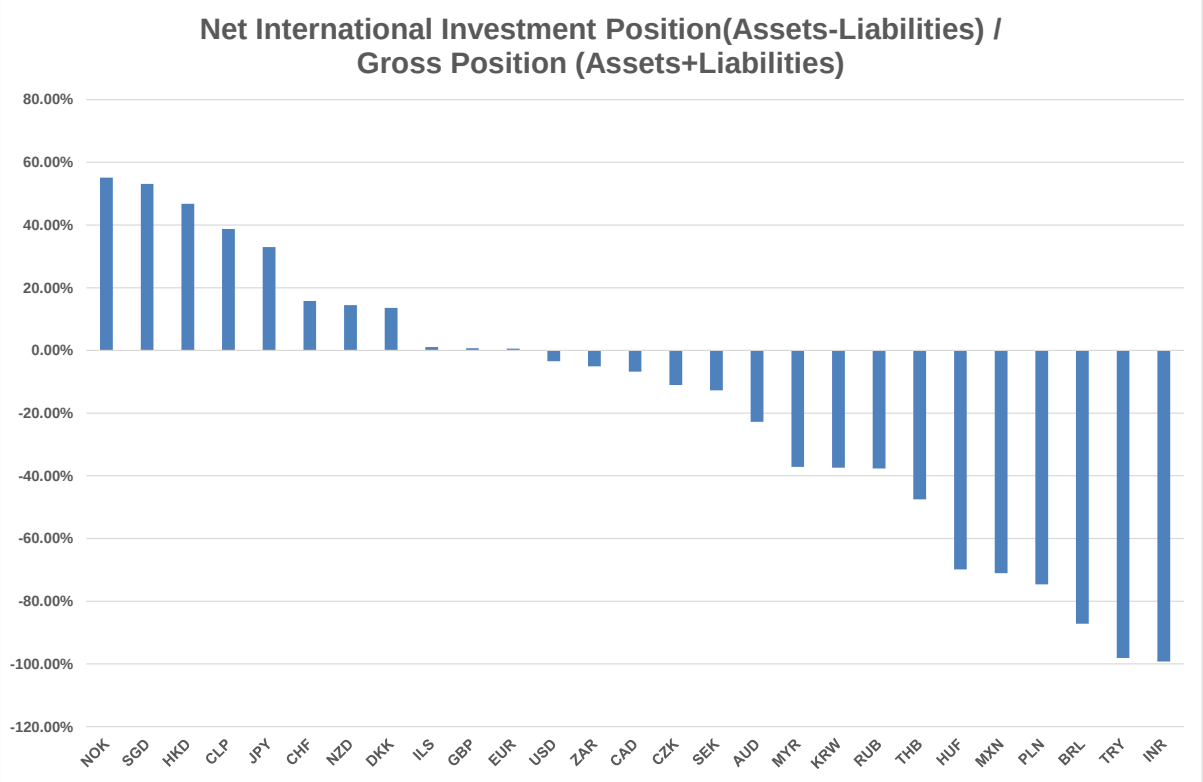
Figure 6 shows Brazil's large negative net international investment position. At the end of 2014, Brazil's net external liabilities were nearly as high as the sum of its outstanding assets and liabilities. Only Turkey and India had a larger net foreign liability position. On the other hand, Norway, Singapore and Hong Kong emerged as large foreign creditors relative to their overall financial integration. In other words, whereas the former currencies are asymmetric investment currencies, Norway, Singapore and Hong Kong show a strong international funding position.

The shortcoming of the CPIS data, its opaqueness to the currency denomination of international operations, is addressed by the extensive work by Phillip Lane (together with Shambaugh and Milesi-Ferrreti). The authors estimate the currency denomination of a country's international investment position based on a wide range of data and calculate an indicator of country's aggregate foreign currency

[25] Most of these were issued by the government. Of the total of US$ 7.8 billion issued in domestic currency, 4.6 US$ billion were from the government, 1.4 US$ billion from banks and US$ 1.3 billion from Non-financial corporations.

exposure. [26] This indicator lies between -1 and 1, where the value of -1 corresponds to a country with zero foreign currency foreign assets and only foreign currency foreign liabilities, whereas +1 corresponds to a country with only foreign currency foreign assets and domestic currency foreign liabilities.

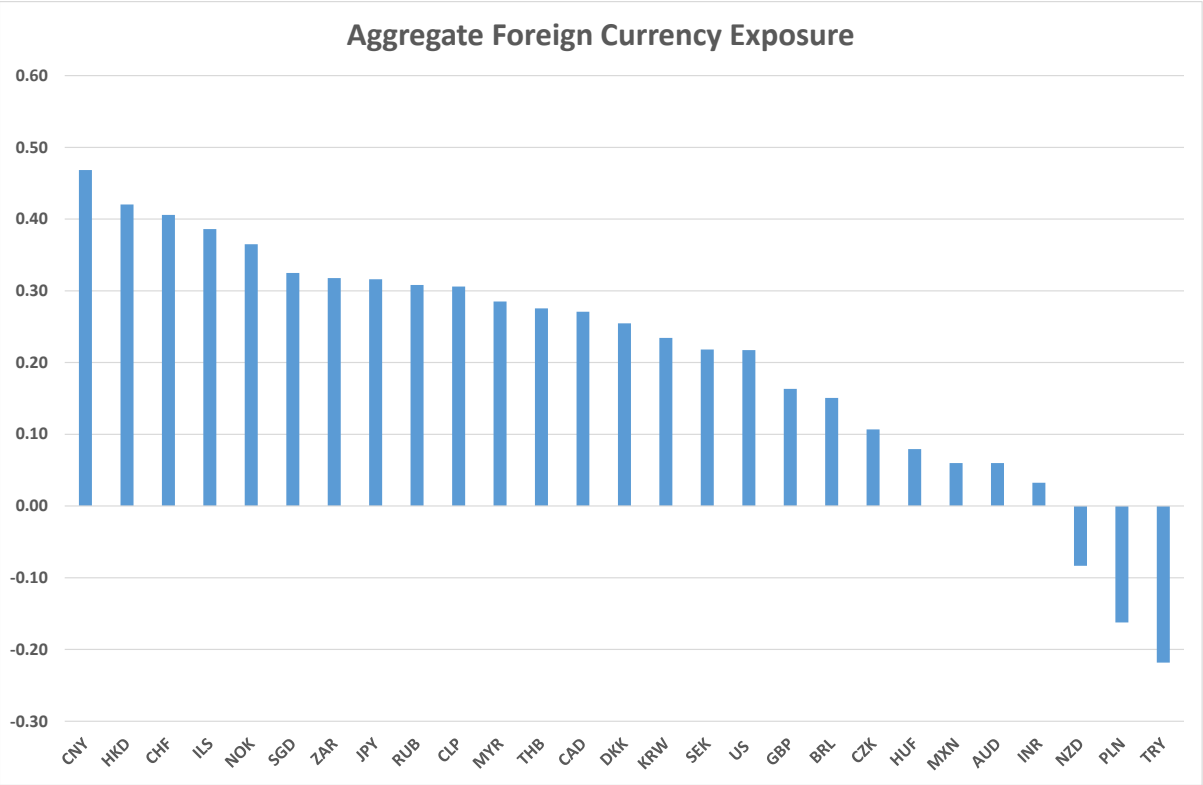
Figure 6: Unit of Account – Funding Currency: Short-term Net International Investment Position/Gross International Investment Position, December 2014



Source: IMF Coordinated Portfolio Investment Survey; Notes: Net International Investment Position is calculated as the difference between Total Portfolio Assets and Total Portfolio Liabilities; Gross Position is the sum of total portfolio assets and total portfolio liabilities

Figure 7: Unit of Account – Funding Currency: Net Foreign Asset Position, 2012

[26] For more detailed information on the methodology and data sources see Lane and Milesi-Ferreti (1999), Lane and Milesi-Ferreti (2005), and Bénétrix, Lane et al. (2015).



Source: (Bénétrix, Lane et al. 2015)[27]

One can observe that most countries, including developing countries, have a positive foreign asset position. According to Bénétrix, Lane et al. (2015) this improvement in developing countries has been driven by reserve accumulation and a switch from debt to equity liabilities. The authors, however, also note that most foreign currency debt liabilities continue to be denominated in US$, reflecting the sustained role of the dollar as the dominant international funding currency. While there was hardly any funding in GBP and relatively little in EU, some countries had accumulated short positions in JPY – often for short-term carry trade operations (Bénétrix, Lane et al. 2015). No countries are short non-global currencies, other than their own. This shows the very limited role of currencies other than the top four currencies as international funding currencies.

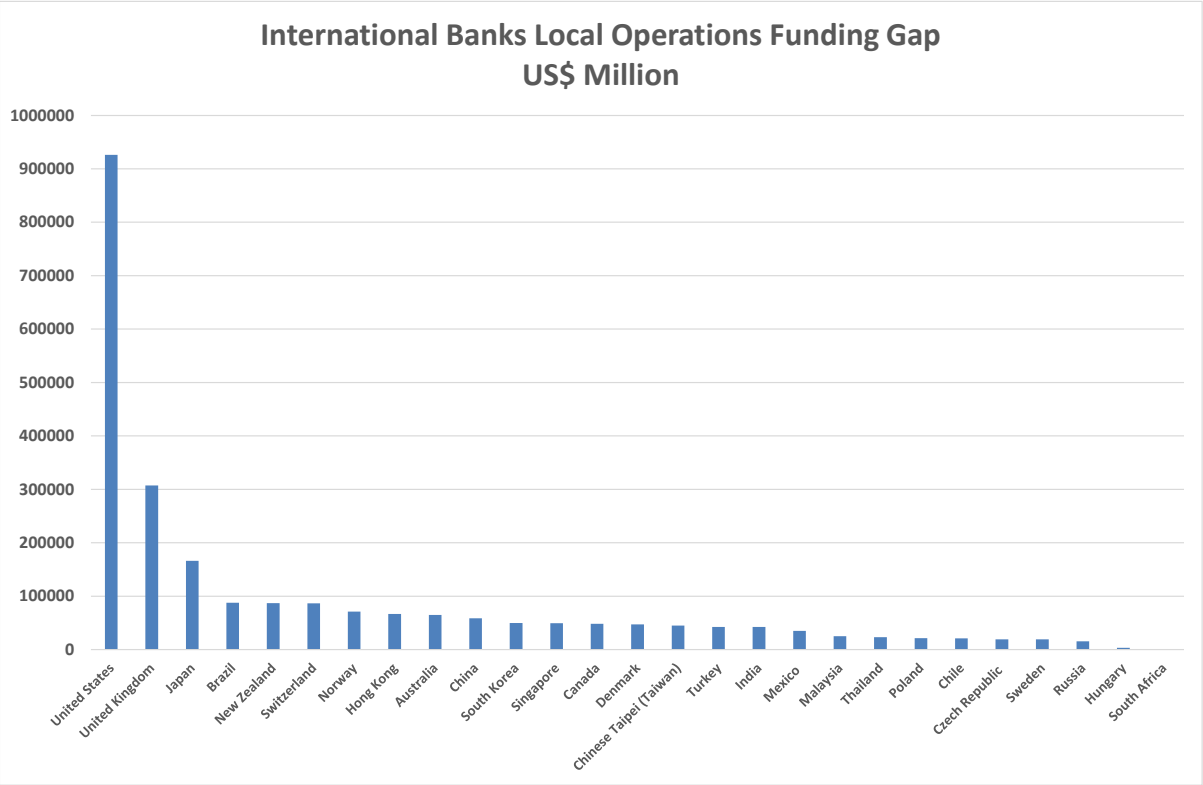
The data by Bénétrix, Lane et al. (2015) have two shortcomings for the analysis of currency internationalization. First, they also include foreign exchange reserves and foreign direct investment. As to the latter, foreign direct investment, strictly speaking, is not part of currency internationalization due to its more long-term nature. As to the former, section 1 set out the crucial importance of differentiating between the behavior of official and private economic actors. Even if the net asset

[27] [27] No data is reported for the Eurozone as the FXAGG index is non-additive.

position of developing countries has become positive due to the vast accumulation of foreign exchange reserves, this may prove inadequate protection from financial market turmoil. Second, the data only account for cross-border flows. The investing or funding in alternative currencies, either onshore or entirely on offshore markets, are not reflected in these data which focus on countries as units of analysis.

Data which shed light on private sector balance sheets are still very limited. One approximation is the difference between foreign banks' local currency assets and local currency liabilities, published by the Bank for International Settlements. This indicator shows to what extent foreign investors used the domestic currency to fund their local, domestic currency positions. Thus, this indicator picks up potential onshore currency mismatches.[28]

Figure 8: Unit of Account – Funding Currency: International Banks' Funding Gap, June 2013



Source: BIS - International Banking Statistics[29]

[28] Another potential indicator would be the issuance of EM currency denominated debt by non-EM nationals. To date, comparative data on this indicator is not publicly available.

[29] The funding Gap is calculated as the difference between international banks' local claims and local liabilities. BIS has recently stopped to publish this series. Given our reliance on historical data points,

Figure 8 confirms again the relative size of the financial sector in the US, the UK and, to a smaller extent, Japan relative to other countries. A substantial share of local claims in these countries has been funded by offshore operations, potentially in a foreign currency. This importance notwithstanding, Figure 8 also shows that Brazil faces the fourth largest funding gap in absolute values (the values are again lower if expressed relative to total exposure and in GDP terms). In June 2013, local currency positions by international banks exceeded their local funding (e.g. through deposits) by more than US$ 80bn. In other words, approximately US$80bn was sourced abroad by international banks to fund their Brazilian Real positions.

In sum, this section showed the rising but variegated internationalization trajectories of different EM currencies. Whereas the Brazilian Real has experienced a financialized investment currency internationalization (together with currencies like the South African and the Turkish Lira), Asian currencies, most prominently the RMB, have so far been more characterized by trade-related vehicle currency internationalization. No EM currency assumes, as of yet, the role of a significant funding currency both in domestic financial markets and globally. The next section econometrically tests the implications of these different internationalization paths.

1.5.2. Econometric analysis

Two empirical exercises are presented below that assess the implications of the currency internationalization models discussed in the previous sections. First, the relationship between the different types of currency internationalization and (i) the volatility of the exchange rate and (ii) the reaction of the exchange rate to the 2013 US tapering announcements are analyzed for all countries for which data are available using scatter plots and cross-country regressions.[30] The volatility measure aims at capturing the general implications for the exchange rate and financial stability, while the reaction to US tapering analyzes currencies' sensitivity to international market conditions. Second, a time series analysis of the Brazilian economy considers the volatility of the exchange rate, the interest rate and equity prices. The implications for the Brazilian interest rate, and therefore monetary policy, are also investigated. Particular focus is put on the varying impact of

---

June 2013 has been chosen for comparative reasons with the FX Trading data. The Eurozone is missing as data is not summative.

[30] We eliminated the Israeli Shekel which showed an extraordinarily high volatility for this year and made visual inspection of results difficult. Given that the currencies are expressed with respect to the US$ this currency also had to be excluded.

different types of investment currency internationalization (e.g. long-term vs. short-term actors and bond vs. equity instruments) on the outcome variables.

Cross Country Analysis

This section investigates the exchange rate's volatility and sensitivity to tapering announcements for different types of currency internationalization using cross-country regressions. All indicators have been discussed in the prevision section and are calculated for the second quarter of 2013 to allow comparison with the data from the BIS Triannual Foreign exchange market survey. Table 4 summarizes all the indicators considered.

Table 4: Indicators of Currency Internationalization

Variable	**Abbreviation**
Dependent Variables:	
Exchange Rate Volatility	VOL
Sensitivity to Tapering Announcements	VolTap
Explanatory Variables:	
Trade related CI	
Total FX Turnover/Trade in Goods and Services	Turnover
Share of Non-financial customers	NFC
Investment CI	
Share of Hedge Funds	HF
Share of Institutional Investors	II
Portfolio Debt Liabilities	PDL
Portfolio Equity Liabilities	PEL
Cross-Border Bank Lending	BLA
International Debt Securities denominated in Domestic Currency	LCD
Funding CI	
Net short-term International Investment Position % Gross International Investment Position	IIPG
Aggregate Foreign Currency Exposure	FXAGG
Bank Lending Funding Gap	FG

Exchange rate volatility is approximated with the annual standard deviation, calculated from daily exchange rate data. All exchange rates are nominal and expressed relative to the US$. Sensitivity to US tapering announcements is measured by the exchange rate appreciation/depreciation between 22 May and

the end of August.[31] The discussion only shows the most salient results. All others are available upon request.

Appendix 1 shows the scatter plots for potentially significant relations illustrating both currency denominations and Elliptical Confidence Intervals. Appendix 2 presents the same only for the low volatility currencies. One can observe a potentially positive relationship between exchange rate volatility and the total FX turnover/trade in goods and services, the share of hedge funds in total turnover, and the bank lending gap variable. That is the more a currency is traded beyond the need for underlying trade relations, the higher the share of hedge funds in that trade, and the less a currency has been used to fund international banks' local domestic currency lending, the more volatile they are.[32] The picture is less clear cut for the exposure of IIs and NFCs. Although still positive (and steeper) for some currencies, the same level of II exposure is related to similar levels of VOL for many other. The relationship between the share of NFCs and exchange rate volatility seems to be negative..[33]

The second outcome variable investigated is the sensitivity of the exchange rate to US tapering announcements between 22nd of May and the end of August, 2013 (VolTap). Interestingly, on average, currencies of developed countries seemed to appreciate while those of emerging countries depreciated during this period. The strongest depreciations were observed in the Brazilian Real (-13%) and the Indian Rupee (-12%). This reaction is in line with the varying exchange rate patterns observed in investment and funding currencies during increased international risk aversion (and tightening funding conditions). Moreover, the absolute exchange rate changes seem to have been bigger in the investment currencies than in the funding currencies.

The scatter plots seem to show a distinct U-shaped pattern for the relative share of NFCs. The higher the share of NFCs in total FX turnover, the lower is the exchange rate adjustment during US tapering announcements. Conversely, the U-shaped relationship is inversed for the share of hedge funds in total turnover: the higher

[31] We follow the recent empirical literature on the impact of US tapering (Eichengreen and Gupta 2013, Prachi, Moriyama et al. 2014). On 22 May the release of FOMC minutes, together with Chairman Bernanke's speech, triggered a global reassessment of future US monetary policy.

[32] Obviously, some of the currencies investigated here have been heavily managed over the period or even been characterised by an exchange rate peg. To fully investigate the impact of currency internationalization for these currencies one might also have to investigate the behaviour of FX reserves which goes beyond the remit of this study.

[33] Interestingly, the only exception to this is the Brazilian Real, which, despite a relatively high share of NFC participation, is characterized by high volatility. .

the share of hedge funds, the higher the exchange rate adjustment. The relationship is again less clear cut with the share of institutional investors. With regards to currencies' international funding role, Appendix 1 shows that countries' net short-term international investment position and aggregate FX exposure seem to show a positive relationship with VolTap. This implies that the more positive the short-term international investment position and aggregate currency exposure, the smaller is the depreciation and the higher is the likelihood of experiencing an appreciation. No clear relationship could be observed with the bank lending funding gap data.

Models 1 and 2 show the results using OLS cross-country regressions. All estimations are estimated with heteroscedasticity adjusted standard errors and standard errors that adjust for the small sample size. These adjustments notwithstanding, results have to be interpreted with much care given the low number of observations. Few observations also mean that not all regressors could be included in the estimation at once. Several different configurations were estimated. Emphasis was placed on those models with the highest number of observations.

Model 1: Exchange Rate Volatility

```
Linear regression                               Number of obs =      22
                                                F(  4,    17) =   31.87
                                                Prob > F      =  0.0000
                                                R-squared     =  0.4741
                                                Root MSE      =  .01268
```

vol	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
nfc	-.0512623	.0563744	-0.91	0.376	-.1702018	.0676773
hf	.1846907	.0474049	3.90	0.001	.0846751	.2847063
ii	-.1224581	.1498016	-0.82	0.425	-.4385119	.1935957
fg	1.21e-07	2.03e-08	5.93	0.000	7.78e-08	1.64e-07
_cons	.0037735	.0161122	0.23	0.818	-.0302203	.0377672

Model 1, the final model for exchange rate volatility, shows that the share of hedge funds and the funding gap were the two indicators that were significant, consistently across all configurations. The coefficients are in line with the theories discussed in this first part of the report. This implies that the higher the share of short-term investors in total FX turnover, the higher (on average) is the volatility of the exchange rate. The effect of the funding gap is also positive, although with quite a small coefficient. Here, the bigger the difference between local lending and locally sourced funding in a currency (that is the less it is used as a local funding currency), the higher is the exchange rate volatility. Although not significant, the other coefficients also have the expected signs: higher shares of NFCs and IIs respectively correspond to lower the exchange rate volatility.

Model 2 shows the cross-country model for the exchange rates during US Tapering Announcements.

Model 2: Exchange Rate Adjustment During US Tapering Announcements

```
. regress voltap nfc hf ii lcd, vce(robust)

Linear regression                               Number of obs =      20
                                                F(  4,    15) =   14.97
                                                Prob > F      =  0.0000
                                                R-squared     =  0.6295
                                                Root MSE      =  .03742

------------------------------------------------------------------------------
             |               Robust
     voltap |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
        nfc |  -.5035256    .336971    -1.49   0.156    -1.221762     .214711
         hf |  -.8647246   .1989617    -4.35   0.001    -1.288801   -.4406478
         ii |   .6981751   .3412965     2.05   0.059    -.0292812    1.425631
        lcd |   .1303116   .0562884     2.32   0.035     .0103358    .2502874
      _cons |      .0149   .0419469     0.36   0.727    -.0745078    .1043078
------------------------------------------------------------------------------
```

Once again, the share of hedge funds had a consistently significant effect on the exchange rate adjustment. This time, however, the coefficient is negative. That is, the higher the share of hedge funds is, the higher is the depreciation in the case of announced future changes of US monetary policy (or the lower the appreciation).[34] In line with Model 1, the coefficient on II is positive, however, insignificant. Surprisingly, the coefficient on the NFC share is negative, a result which could be driven by Brazil and India. One variable which was significant across most estimations is the share of domestic currency debt of total international debt. The coefficient here is positive. This seems to indicate that the ability to denominate debt in domestic currency, is perceived as being able to insulate countries from some of the worst impact of international market conditions.

Time Series Model for the Brazilian Economy

This analysis placed emphasis on the effect of different types of financial investors and asset classes on domestic asset price dynamics.[35] The outcome variables investigated were the volatilities of the domestic exchange rate, interest rate and equity prices. Moreover, we investigated the impact on the level of the interest rate

[34] The scatter plots showed distinct U-shaped relationships for the share of HFs. Given the higher share of emerging markets in the sample, the cross-country regressions picked up the relation for these countries.

[35] This slightly different focus was partly due to data restrictions. The futures market data were only available from January 2008 which made an inclusion of quarterly variables (such as all the funding gap indicators) impossible.

to extend our insights of the potential implications of currency internationalization for monetary policy.

The baseline model estimated was:

$$X_t = \beta_0 + +\beta_1 BFM_t + \beta_2 IIFM_t + \beta_3 FIFM_t + \beta_4 FDebt_t + \beta_5 VC_t + \varepsilon_t$$

Where

- $X_t = Vector\ of\ Outcome\ Variables$
- $BFM_t = Banks Positions\ in\ Futures\ Market\ Instruments$
- $IIFM_t =$
  $Domestic\ Institutional\ Investors Positions\ in\ Futures\ Market\ Instruments$
- $FIFM_t =$
  $Foreign\ Institutional\ Investors Position\ in\ Futures\ Market\ Instruments$[36]
- $FDebt_t = Share\ of\ Foreign\ Investors\ in\ domestic\ government\ debt$
- $VC_t =$
  $Indicator\ of\ Vehicle\ Currency\ Status: Banks s \frac{Commercial}{Financail} FX\ Operations$

The volatilities of the exchange rate, the interest rate and equity price were approximated with the monthly standard deviation (calculated from daily values). The exchange rate used was again the nominal exchange rate to the US$. The interest rate variable was the 720 day pre-DI swap. Equity prices were approximated with the Bovespa Stock Index. The Futures Market Instruments included the US Dollar Futures, the DI Futures (the local interbank rate), the DDI Futures (the US$ denominated local interbank rate) and the local stock exchange index (the Ibovespa). We consider both different actors' average relative share in Future Market Instruments (calculated as the average of their short and long positions) (_AV) and their net positions (the difference between their short and long positions) (_NET). All data are from the BM&FBovespa. The data on the share of foreign investors in domestic government debt are drawn from the Brazilian Central Bank Open Market Debt Release. The Brazilian Real's status as a vehicle currency for trade was approximated with the share of banks' trade related FX operations relative to their financial operations. The data are from the Brazilian Central Bank time series.

[36] Domestic and foreign institutional investors' shares in Futures Market Instruments represent different types of investment currencies. The operations of domestic banks are more difficult to classify. On the one hand, domestic banks facilitate financial transactions by other actors (including those in the non-financial sector), thus acting as facilitators of the currency's use as vehicle currency. On the other hand, banks take financial positions themselves in which case they would use the currency as investment currency.

The estimation period is from January 2008 to October 2015.[37] All data are monthly. All variables are included as contemporaneous effects and with a first lag. In addition, where necessary, we include an autoregressive term to deal with serial correlation. The estimation method applied is time series econometrics. All series are tested for their order of integration. If necessary, cointegrating relations are estimated.[38] Otherwise, integrated variables are first differenced to create a balanced estimation model. All models are estimated with standard errors robust to heteroscedasticity and, if necessary, serial correlation (White and Newey West Standard Errors). In addition, ARCH models are estimated to control for volatility clustering where necessary. Finally, for stationary models with significant parameters, VAR estimations, their Impulse Response Functions and Granger Causality tests are performed. Again, extensive model configurations have been estimated to allow for sufficient degrees of freedom. Only models with robustly significant parameters are presented. Results for other models are available upon request.

Our first noteworthy result is a relationship between the exchange rate volatility and different actors' relative exposure to the US Dollar Futures Market.

Model 3: Exchange Rate Volatility and the US Dollar Futures Market

Dependent Variable: XRV
Method: Least Squares
Date: 11/17/15 Time: 21:20
Sample (adjusted): 2008M03 2015M08
Included observations: 90 after adjustments
White heteroskedasticity-consistent standard errors & covariance

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.061120	0.044475	-1.374243	0.1733
CFFX	0.009649	0.006147	1.569791	0.1205
CFFX(-1)	-0.005991	0.006013	-0.996337	0.3222
D(FINBF)	-3.17E-08	5.99E-08	-0.530048	0.5976
D(FINBF(-1))	-5.93E-08	5.08E-08	-1.166885	0.2468
DOLBAV	-0.000837	0.000441	-1.897262	0.0615
DOLIIAV	-0.000788	0.000451	-1.746713	0.0846
DOLFIAV	-0.000903	0.000511	-1.766855	0.0812
DOLBAV(-1)	**0.001491**	**0.000559**	**2.666354**	**0.0093**
DOLIIAV(-1)	**0.001271**	**0.000572**	**2.223953**	**0.0290**
DOLFIAV(-1)	**0.001804**	**0.000743**	**2.428888**	**0.0174**
XRV(-1)	**0.412097**	**0.099108**	**4.158076**	**0.0001**

[37] This estimation period is due to the availability of the BM&F Bovespa data.

[38] Most variables were found to be stationary. As a result, cointegration analysis could not be performed. The few variables which were non-stationary, e.g the share of foreigners in domestic currency bonds, were first differenced to create a stationary series.

R-squared	0.356589	Mean dependent var	0.007521
Adjusted R-squared	0.265852	S.D. dependent var	0.004919
S.E. of regression	0.004215	Akaike info criterion	-7.976875
Sum squared resid	0.001386	Schwarz criterion	-7.643567
Log likelihood	370.9594	Hannan-Quinn criter.	-7.842466
F-statistic	3.929899	Durbin-Watson stat	2.092042
Prob(F-statistic)	0.000152		

Notes: Values in bold are significant at the 5% level or above; CFFX stands for the ratio of commercial/financial FX transactions; FINBF is the share of foreign investors in domestic bonds; B stands for banks; II for domestic institutional investors and FI are foreign institutional investors; AV is the average share

Model 3 shows that the average past exposure of the three actors to the US Dollar Futures is positively related to exchange rate volatility. The coefficient is highest for the average share of foreign investors followed by that of banks and domestic institutional investors. The contemporaneous relations are positive but only significant at the 10% level. Neither the relation between commercial and financial FX transactions nor the foreign share in domestic currency bonds is significant.

The impulse response functions of VARs give insights into the feedback dynamics and adjustment paths of a one-unit increase in the current value of one of the VAR values. Appendix 4 shows that that the lagged average share of foreign investors and banks remains significant (and positive) in the VAR estimation (However, the impact of domestic institutional investors ceases to be significant and positive). Moreover, most variables are characterized by some autoregressive behavior. The generalized impulse response functions confirm the autoregressive effects and impact of foreign investors' positions in US Dollar Futures on exchange rate volatility. Shocks to the share of foreign investors have a (borderline) significant positive effect on the exchange rate volatility at higher lags. Shocks to no other variable significantly affect exchange rate volatility.

The second model with significant parameters was that for the volatility of the interest rate and financial investors' average relative share in US Dollar futures.

Model 4: Interest Rate Volatility and US Dollar Futures

Dependent Variable: IRV
Method: Least Squares
Date: 11/13/15 Time: 22:20
Sample (adjusted): 2008M03 2015M08
Included observations: 90 after adjustments
White heteroskedasticity-consistent standard errors & covariance

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.987710	0.883401	-2.250065	0.0273
CFFX	-0.296417	0.213948	-1.385460	0.1699
CFFX(-1)	0.026409	0.144301	0.183014	0.8553

D(FINBF)	-3.10E-06	3.18E-06	-0.974723	0.3327
D(FINBF(-1))	-3.07E-06	1.77E-06	-1.736386	0.0864
DOLBAV	0.006784	0.016034	0.423091	0.6734
DOLIIAV	0.009454	0.016213	0.583103	0.5615
DOLFIAV	0.000974	0.019680	0.049486	0.9607
DOLBAV(-1)	0.018072	0.011931	1.514677	0.1339
DOLIIAV(-1)	0.012303	0.012096	1.017149	0.3122
DOLFIAV(-1)	**0.026024**	**0.013519**	**1.924991**	**0.0579**
IRV(-1)	0.105389	0.060360	1.746007	0.0847

R-squared	0.252753	Mean dependent var	0.186796
Adjusted R-squared	0.147372	S.D. dependent var	0.133471
S.E. of regression	0.123244	Akaike info criterion	-1.225734
Sum squared resid	1.184750	Schwarz criterion	-0.892426
Log likelihood	67.15804	Hannan-Quinn criter.	-1.091325
F-statistic	2.398464	Durbin-Watson stat	2.115929
Prob(F-statistic)	0.012784		

Notes: Values in bold are significant at the 5% level or above; Abbreviations as above

Again, the lagged average share of foreign investors in US Dollar Futures has a significant positive impact on the volatility of domestic asset prices, this time of the interest rate. The coefficient is slightly less significant but bigger than in the case of exchange rate volatility. No other variable is significant, although the lagged share of foreign investors in domestic currency bonds has a negative impact on exchange rate volatility significant at the 10% confidence level.

Appendix 4 shows again the VAR estimation and impulse response functions. In the VAR, the impact of foreign investors' average share in US Dollar Futures on interest rate volatility remains significant. The autoregressive terms are less significant than in the case of the exchange rate volatility. Moreover, there seems to be some substitution effect between domestic institutional and foreign investors' share in the US Dollar Futures market.

The final model with significant parameters was one for the level of the interest rate and financial investors' average share in the DDI Futures.

Model 5: Interest Rate Level and Investors' Share in DDI Futures

Dependent Variable: D(IR)
Method: Least Squares
Date: 11/17/15 Time: 21:57
Sample (adjusted): 2008M03 2015M08
Included observations: 90 after adjustments
White heteroskedasticity-consistent standard errors & covariance

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-15.79346	17.84858	-0.884858	0.3790
CFFX	-0.603784	0.851447	-0.709127	0.4804
CFFX(-1)	0.349961	0.584731	0.598500	0.5512
D(FINBF)	4.50E-06	7.86E-06	0.573004	0.5683

D(FINBF(-1))	-5.73E-06	7.68E-06	-0.746591	0.4576
DDIBAV	-0.448575	0.231859	-1.934690	0.0567
DDIBAV(-1)	**0.616098**	**0.308978**	**1.993989**	**0.0496**
DDIIIAV	-0.431915	0.239758	-1.801462	0.0755
DDIIIAV(-1)	**0.598327**	**0.316442**	**1.890793**	**0.0624**
DDIFIBAV	-0.416595	0.230814	-1.804893	0.0750
DDIFIBAV(-1)	**0.554147**	**0.301241**	**1.839546**	**0.0696**
D(IR(-1))	**0.296586**	**0.137031**	**2.164371**	**0.0335**

R-squared	0.258770	Mean dependent var	0.013733
Adjusted R-squared	0.154237	S.D. dependent var	0.500691
S.E. of regression	0.460462	Akaike info criterion	1.410395
Sum squared resid	16.53801	Schwarz criterion	1.743703
Log likelihood	-51.46778	Hannan-Quinn criter.	1.544805
F-statistic	2.475498	Durbin-Watson stat	1.971888
Prob(F-statistic)	0.010245		

Notes: Values in bold are significant at the 6% level or above; The level of the interest rate had a unit root and was first differenced; Abbreviations as above

The results show that an increasing exposure of financial investors to the DDI Futures has a positive effect on the level of the interest rate. The effect is most significant, both economically and statistically, in the case of banks. No other variables are significant.

The VAR and the Impulse Response Functions, however, show very little significant effect on the level of the interest rate. Also, no Granger Causality effects could be observed. Like previous models, there seems to be some interaction between the different actors themselves. The impact is negative in the sense that an increasing share in one investors' exposure needs to be accompanied by a declining share by another. In contrast to previous models, however, interactions between foreign and domestic institutional investors are also observed.

1.6. Policy Recommendations

The previous sections highlighted an opportunity to develop a strategy of implementing a productivist- and trade-related, currency internationalization with a regional focus. This strategy would entail the building up of the role of the Real as a regional currency (within the Mercosur and in South America more widely). In the medium term, given the appropriate economic development, this requires the facilitation of trade-related vehicle currency internationalization capable of supporting a productivist- and trade-related accumulation regime focused on industrial production and exports.

Nevertheless, full external convertibility for the Brazilian Real is not a meaningful end point of any process of currency internationalization. Brazil's status in the world economic order restricts its policy options in comparison with China or the US, for example, both of which enjoy trade-related or/and investment-related dominance in the world economy. Additionally, the Real is in a lower position in the global currency hierarchy than the Renminbi and the US Dollar, and would thus likely have little to gain from full currency internationalization. The Brazilian Real is a *de facto* (and *de jure*) non-convertible currency. At the present stage of economic development, by making the Real a fully convertible currency, Brazil would likely become more susceptible to major external financial shocks and volatility.

Instead, a selective strategy of currency internationalization is here proposed. Such a strategy would involve the facilitation of the establishment of the Brazilian Real as a regional trade-related vehicle currency and potentially, in the medium- or long-term, as a funding currency. This could facilitate regional economic growth and integration as well as political cooperation at the regional level. Regional integration could mitigate potentially destabilizing effects originating from international financial markets, as not all financial transactions are seen to benefit a more virtuous currency internationalization process. In this context, any regional financial integration would need to be carefully regulated, and regional supervisory coordination would be essential.

The following policy proposals are aimed at supporting this broader overarching recommendation. Increasing the regional use of a currency is a complex task which involves a variety of actors and requires political support. This is crucial, since the implementation of many of the policy recommendations below are beyond the remit of the specific stakeholders directly involved in this project. Therefore the following seven recommendations are directed to a broad range of institutions and relevant political agents without explicitly naming them.

I. Develop and extend regional payment, clearing, and settlement mechanisms

The Brazilian Real's role as invoice and vehicle currency for trade remains limited regionally. On the one hand, this is related to the sustained volatility of macroeconomic variables, including the exchange rate. On the other hand, market infrastructure for payment, clearing and settlement in regional currencies remains underdeveloped. The development of effective structures would be essential for deepened regional integration and using the currency at the regional level.

In particular, this part of the report suggests the development and expansion of the existing SML system. By expanding SML to include a greater number of economies in the region, selected on technical and economic stability grounds, this could serve as a powerful supportive mechanism for the integration of regional trade and production. Although more cost-efficient for clients, banks are not currently advertising SML because they profit from routing the transactions through international financial centers. Measures could be implemented to require banks to advertise these services to their clients. Using the SML would not only strengthen regional trade and the use of regional currency, but also lower the transaction costs for local companies as this is more efficient. In the medium term, banks could be required to use SML for their clients. At the same time, there should be a continuous information campaign aimed at ensuring that non-financial corporations know about the benefits of SML.

To support SML initially and encourage its use by regional companies, a network of regional central banks could undertake settlement. This would not only reduce the settlement risk for companies, and hence support regional trade, but also facilitate macro-prudential regulation through increased cross-regional transparency. To ensure the smooth operation of the system, participating central banks should create a shared calendar, harmonized format and technical language with a view to potentially, in the long-term, create a multilateral institution capable of managing the system in 'real-time' on the basis of having a shared technical infrastructure, a single platform for settlement.

II. Commission a Study to Analyze the Risks and Opportunities of a more elaborate system of bilateral swap agreements

The international financial crisis has shown the substantial disruptions that can result from financial shocks to the provision of trade-related finance and, consequently, the conduct of trade. The provision of emergency liquidity in regional currencies would thus be essential to support regional trade flows and the

denomination of these flows in regional currencies. A system of bilateral swap agreements (BSAs) could provide such emergency liquidity to a trade-related Local Payment System denominated in regional currency (see recommendation 1). The proposed study should analyze the risks and opportunities arising from such a system. It should encompass countries which have solid macroeconomic fundamentals to avoid unnecessary risk and negative regional spillover effects. To reduce the region's reliance on the US Dollar as main invoice and settlement currency, one could also consider bilateral swap agreements with other major trading partners, such as the European Union and China. In the medium term, one could envisage the design of a coordination framework to multilateralize BSAs in a regional network with a similar institutional design as the Chiang Mai initiative along with appropriate conditionality rules. In the long-term, a common regional monetary entity could facilitate further economic and political co-operation between selected states of the region under strict conditionality to avoid unmanageable risks. This is important for deepening the trade-related regionalization of the Real and may provide a basis for developing the Real as a regional funding currency in the long run.

III. Enhance collaboration, macroeconomic and regulatory coordination, and harmonization between central banks and regulatory agencies

In the medium term, successful currency regionalization would require a certain degree of macroeconomic coordination and harmonization. The synchronization of business cycles and key macroeconomic variables would be essential to support regional trade and the use of regional currencies. It would also be important that Central Banks involved in trade financing in local currencies engage in mutual monitoring to detect the emergence of regional financial risks or unsustainable imbalances. Information exchange and regional transparency would be essential. Recent literature has highlighted the importance of systemic risk, spillovers and interconnectivity. Further research into the transmission of regional shocks, both in trade and financial markets, would be beneficial to inform policy makers about the potential risks of further regional integration and currency regionalization. In this sense, it is also vital that all participating countries adhere to international standards of safeguarding financial instability, such as the Basel framework. In line with our recommendation, we would further consider it beneficial if all countries had a set of countercyclical macro-prudential regulations to lower the risk of negative financial spillovers across the region. Reciprocal agreements between states in the region could be maintained and, where useful created, to enable the denomination of exports in local currencies. This could help to increase the political viability of trade-related Real internationalization.

IV. Commission a study of the costs and benefits of introducing regional currency derivatives to hedge regional exchange rate risk

The possibility to effectively hedge the exchange rate risk in regional currency would be an important precondition to enhance regional trade and support a productivist- and trade-related currency internationalization process with a regional focus. At the moment, all regional currency hedges have to be performed through US Dollar instruments, which further strengthens the role of the US Dollar in the region and increases the cost of regional currency hedges. The introduction of regional currency derivatives (e.g. a Colombian Peso/Brazilian Real Futures) could reduce these problems. The introduction of new financial instruments could create new financial risks through, for example speculative foreign exchange bets. A careful study of the costs and benefits of such new financial instruments would hence be warranted. The BM&F Bovespa currently offers Chilean Peso/BRL and Mexican Peso/BRL futures. These two existing instruments could be valuable case studies.

V. Special credit lines mediated through specifically assigned dealer banks could enhance offshore settlement in Real

Access to Brazilian Real offshore could be enhanced through selected channels to facilitate the conduct of international trade and support the internationalization of the Real as trade related vehicle currency. Offshore access to the Brazilian Real could be improved for foreign importers willing to settle in Real through special credit lines mediated through specifically assigned dealer banks. There are lessons to be learnt from the infrastructure afforded by the Chinese state to provide greater access offshore to the Renminbi by the proliferation of branches of the China Construction Bank in selected jurisdictions. Brazil could in this vein enable the settling of trade transactions offshore by authorizing a bank to provide Real in selected financial centers. Providing such access regionally would support regional integration.

VI. Maintain countercyclical macro-prudential measures as part of the macroeconomic toolkit

The experience of the recent international financial crisis and subsequent waves of international capital flows have shown the importance of countercyclical macro prudential measures to avoid domestic asset booms, financial instability and negative effects on domestic asset prices (including the exchange rate). In this vein,

the empirical results presented above have shown the potentially destabilizing impact of short-term financial investors on the exchange rate and interest rates. We would thus consider the continued use of counter-cyclical macroprudential measures as standard part of the macroeconomic toolkit. This would not only reduce financial instability but also support a more virtuous currency internationalization process through enhancing trade, reducing exchange rate volatility and stabilizing long-term expectations essential for the investment process. Experience has shown that in Brazil measures in the derivatives market have been particularly effective. Our results have shown that large net open foreign currency positions (funding gaps) as a result of foreign currency borrowing can create exchange rate volatility and financial instability. We would hence consider the continued management of foreign currency borrowing as an important element of macro-prudential regulation. This is particularly the case for short-term funding sourced on the international wholesale market. In times of very strong capital inflow, one could consider extending the existing regulation on short-term foreign currency borrowing also to maturities longer than 180 days.

VII. Support the establishment of the Brazilian Real as (regional) funding currency in the long term

As our empirical findings illustrate, large open currency positions by foreign investors can cause large and sudden exchange rate movements regardless of domestic economic conditions. Supporting the use of the domestic currency as funding currency for operations in the domestic market would thus be an important element of reducing the potential instability caused by financial integration and currency internationalization. In the medium- to long-term, the establishment of the Brazilian Real as a regional funding currency could strengthen the Real's standing in the international monetary system as it grants greater value and exchange rate stability more conducive to domestic economic development. Although we are aware that the transition to a funding currency is extremely difficult in a situation of high real interest rates and exchange rate volatility, following the measures proposed in this first part of the report could set some initial steps in this trajectory.

With regards to establishing the Brazilian Real as regional funding currency in the long term, extending the provision of local currency trade financing could reduce transaction costs for regional importers willing to settle in Real. On the one hand, this would support the role of the Real as regional invoice currency and support regional trade. If supplemented by an effective regional entity, in addition to potential emergency funding in moments of liquidity freezes (see suggestion ii), this would also reduce the risk for regional importers and, consequently, Brazilian

exporters. Needless to say, trade-related credit provision must be accompanied by a regional regulatory and supervisory infrastructure which ensures that credit is only provided to healthy companies (see suggestion iii). On the other hand, this operation would establish the Real as regional funding currency, which could increase its role in the international monetary system.

In a similar vein, the use of the Brazilian Real as regional funding currency could be enhanced through loans, for example provided by the BNDES, to regionally active companies engaging in operations beneficial to the Brazilian economy (e.g. active in the creation and management of regional supply chains). Again, this provision of loans would obviously have to be accompanied by a stringent regional system of supervision and regulation. Finally, although arguably even more difficult in the current conjuncture but worth keeping in consideration in times of a renewed capital surge, domestic currency funding could be encouraged by the implementation of a local funding ratio for banks.

1.7. Final Remarks

Part I has argued that to fully assess the implications of currency internationalization, a differentiated analysis of different *types* of currency internationalization is needed. Rather than deciding *whether* currency internationalization is desired or not, the decision is *which type* of currency internationalization is appropriate. This decision will depend on the respective risks and opportunities of different types of currency internationalization, and a country's specific accumulation regime. To this end, the first part of the report extended existing analyzes of currency internationalization by two dimensions: first, it argued that currencies' international ability to denominate debt contracts, which is to operate as international funding currency, will fundamentally shape the implications of its internationalization process. This is particularly significant in contrast to pure investment currencies. Second, it called for a more differentiated analysis of currencies' investment currency status. In particular, it showed that a differentiated analysis of the varying implications of different actors and instruments is required. First part of the report then presented a detailed empirical picture of the current state of currencies' internationalization process along the dimensions set out above. Finally, it presented econometric results for the implications of different types of currency internationalization for the volatility of domestic asset prices (the exchange rate, interest rate and equity prices), the sensitivity of the exchange rate to international market conditions, and the level of the interest rate. A cross-country analysis and a time series model for the Brazilian economy were conducted.

The econometric analysis showed the risks of financially oriented currency internationalization, in particular if a currency assumes a strong investment currency status. Our results indicated that the higher the participation of financial operators in domestic currency use, the higher the volatility of the exchange rate and interest rate and the higher the sensitivity to international market conditions (approximated with the exchange rate adjustment to recent US tapering announcements). In addition, although less robust in our estimations, the participation of financial investors in FX instruments exerted upward pressures on the level of the interest rate in Brazil. The econometric results also showed that the risks of a financially dominated, investment currency internationalization are particularly high in the presence of a high share of short-term investors such as hedge funds. In this vein, it is also important to note that results by the Bank for International Settlements indicated that the recent lowering in transaction costs in EM currencies disproportionally attracted this type of investor class. The results were slightly less clearcut with regards to the participation of long-term institutional investors. Although not robust across estimations, their participation in FX turnover seemed to have a lowering impact on exchange rate volatility. In

this vein, it is also important to note that the substitution of foreign currency denominated international debt for domestic currency one, seemed to reduce countries' sensitivity to international market conditions (or even cause an appreciation).

Second, the econometric results confirmed the risk of allowing large open net positions by foreign investors who use the domestic currency as investment currency. The cross-country estimations showed that the larger the gap between local domestic currency investments and the funding sourced in the local currency by internationally operating banks, the higher was the exchange rate volatility. In other words, to mitigate the potential risks of a financially oriented currency internationalization it would be essential to ensure that the domestic currency is also used as "international" funding currency. In a first step, foreign investors should use the domestic currency to fund their operations in the Brazilian economy. In a second step, the Brazilian Real could be used by foreign investors to fund their operations in other jurisdictions (as it is the case for the widely established funding currencies such as the US$ and the Japanese Yen).

Third, as opposed to the destabilizing impact of short-term financial investors, our results showed that the operations by non-financial customers were accompanied by lower levels of exchange rate volatility and sensitivity to international market conditions. This seems to indicate that the potential risks of currency internationalization would be lower in the case of a trade-related vehicle currency internationalization. At the same time, our results also confirmed the extremely low importance of the Brazilian Real as invoice currency for international trade. This limited role as international invoice currency, in turn, undermines its importance as trade related vehicle currency. On the other hand, the continuing dominance of the US$ as the denominator of international trade relations sustains Brazil's dependence on the American currency. Increased denomination of Brazil's trade relations in Brazilian Real, or at least a diversification away from the US Dollar, might be an important step for establishing the Brazilian Real as stable international (vehicle) currency.

Fourth, we showed that some of the risks of currency internationalization might be lower in the case of a regionally based "internationalization" rather than a global one. For example, the contagion from monetary conditions in developed countries – entirely independent of conditions in Brazil itself - might be lower in the case of a regional currency internationalization process. At the same time, regional currency internationalization might aid the Brazilian Real to establish itself as global currency. In line with what has been said above, the Brazilian Real could, for example, become a regional funding currency, which would grant him higher value stability during moments of increased risk aversion. At the same time, the denomination of regional trade in Brazilian Real could enable the Real to become a

regional vehicle currency. Once these functions have been attained on the regional level, further global internationalization might bear less risk for the Brazilian currency and consequently its economy.

Finally, we highlighted the intimate link between different types of currency internationalization and monetary policy. On the one hand, our results showed that a financially oriented currency internationalization increases exchange rate and interest rate volatility and might even exert upward pressures on the interest rate level. This can create serious complications for monetary policy. For example, a high pass through from the exchange rate to inflation, could result in substantial volatility of the inflation rate and consequently the interest rate and other economic indicators. At the same time, the loss of control over domestic credit conditions might alter the effects of the pass through. For example, strong capital inflows might lead to exchange rate appreciation (which reduces inflationary pressures), but also expanding credit supply which adds demand pressure onto domestic prices. More generally, the first part of the report showed that a financially oriented currency internationalization might reduce the domain and scope of domestic money policy, in particular in the case of large offshore operations. These risks are lower in the case of a trade-related currency internationalization. Moreover, the use of the domestic currency as international invoice currency ought to reduce the pass through from the exchange rate to inflation.

On the other hand, the monetary policy environment itself conditions the type of internationalization a currency assumes. High interest rates, which attract yield seeking and often short-term funds, are often associated with a highly skewed investment currency status. Lower interest rates, in turn, would allow currencies to become international funding currencies. In a similar vein, as first part of the report discussed, the peculiar exchange rate patterns of investment currencies in a floating exchange rate regime (long and sustained appreciations interrupted by sudden depreciations) might further attract speculative funds and complicate monetary management. This might also be the case with highly predictable and transparent FX interventions which allow foreign investors to build FX positions. These results point to the potential need of extending the objectives and instruments of monetary policy.

Part II: Financial integration

Ernani Torres

Luiz Macahyba

Norberto Montani Martins

Rio de Janeiro

June, 2016

2. The case for Financial Integration

Part II of the present report analyses the financial integration process in Latin America, considering its hurdles and possibilities for the Brazilian economy and for the other countries in the region. Apart from the first two subsections, the second part of this report has three more sections. Section 2.1 and 2.2. have two main objectives: first, to present a brief analysis on different aspects of financial integration (hurdles, risks and possibilities) in conceptual terms; second, to provide an analysis of the prospects of financial integration in Latin America.

In addition, and as a corollary of the analysis developed herein, Section 2.3. presents a set policy recommendations aiming to enhance regional financial integration between Brazil and other Latin American countries. Finally, section 2.4. presents final remarks.

The research surrounding the policy proposals mentioned in this report benefited from meetings and interviews conducted with local and international authorities, market participants and financial service providers in London, Santiago, Mexico City, Brasilia, São Paulo and Rio de Janeiro.

Note that the ideas and suggestions presented in this report are the sole responsibility of the authors and do not reflect the views of any of the entities that supported this research project.

Glossary and Abbreviations

Most of the abbreviations and definitions presented below were taken from 'A glossary of terms used in payments and settlement systems', BIS/IOSCO – Committee of Payment and Settlement System – CPSS (2003) and also from 'Principles for Financial Market Infrastructures', BIS/IOSCO - Committee of Payment and Settlement System – CPSS (2012).

AML/CFT - anti-money laundering, combating the finance of terrorism policies

Beneficial Ownership: the entitlement to receive some or all of the benefits of ownership of a security or other financial instrument (e.g. income, voting rights, power to transfer).

Book entry system: an accounting system that permits the transfer of claims (e.g. electronic transfer of securities) without the physical movement of paper documents or certificates.

CCP - Central Counterparty: an entity that is the buyer to every seller and seller to every buyer of a specified set of contracts, eg those executed on a particular exchange or exchanges. CCPs become counterparty to trades with market participants through novation. They have the potential to reduce settlement risks through the multilateral netting of trades and by requiring the participants to provide collaterals to cover current and potential future exposures. CCPs can also mutualize certain risks through devices such as defaults funds.

CCP's risk reduction mechanisms can also reduce systemic risk in the markets it serves depending on the effectiveness of the CCP's risk controls and the adequacy of its financial resources. They may be privately or publicly owned and operate on an at-cost or for-profit basis. A CCP may serve one or more markets where trades are conducted on an exchange, over-the-counter, or both and, potentially, operate across multiple jurisdictions.

CSD – Central Securities Depository: a facility (or an institution) for holding securities, which enables securities transactions to be processed by book entry. Physical securities may be immobilised by the depository or securities may be dematerialised (i.e. so that they exist only as electronic records). A CSD provides security accounts, central safekeeping services, which may include the administration of corporate actions and redemptions. It plays an important role on ensuring that securities are not accidentally or fraudulently created or destroyed.

Clearing or clearance: the process of transmitting, reconciling and, in some cases, confirming payment orders or security transfer instructions prior to settlement, possibly including the netting of instructions and the establishment of final positions for settlement. Sometimes the term is used (imprecisely) to include settlement.

CPMI: Committee on Payments and Market Infrastructures (the former Committee on Payment and Settlement Systems – CPSS).

Custodian: an entity, often a bank, that safekeeps and administers securities for its customers and that may provide various other services, including clearance and settlement, cash management, foreign exchange and securities lending.

DvP - Delivery versus Payment

Model 1: the transfer instructions for both securities and funds are settled on a trade by trade basis, with final transfer of the securities from the seller to the buyer occurring at the same time as final transfer of the funds from the buyer to the seller;

Model 2: securities transfer instructions are settled on a gross basis, with final transfer of securities from the seller to the buyer occurring throughout the processing cycle, but funds transfer instructions are settled on a net basis, with final transfer of funds from the buyer to the seller (payment) occurring at the end of the processing cycle;

Model 3: transfer instructions for both securities and funds are settled on a net basis, with final transfers of both securities and funds occurring at the end of the processing cycle.

FCA – Financial Conduct Authority

FMI - Financial Market Infrastructures: a multilateral system among participating institutions, including the operator of the system, used for the purposes of clearing settling or recording payments, securities, derivatives or other financial transactions.

IMF: International Monetary Fund

Interoperability: a situation in which payment instruments belonging to a given scheme may be used in other countries and in systems installed by other schemes. Interoperability requires technical compatibility between systems, but can only

take effect where commercial agreements have been concluded between the schemes concerned.

Novation: satisfaction and discharge of existing contractual obligations by means of their replacement by new obligations (whose effect, for example, is to replace gross with net payment obligations). The parties to the new obligations may be the same as those to the existing obligations or, in the context of some clearing house arrangements, there may additionally be substitution of parties.

Omnibus account: a single account for the commingled funds or positions of multiple parties. A clearing member will often maintain an omnibus account at the clearing house for all of the clearing member's clients. In this case, the clearing member is responsible for maintaining account records for individual clients.

Payment system: a payment system consists of a set of instruments, banking procedures and, typically, interbank funds transfer systems that ensure the circulation of money.

Real-time gross settlement: the continuous (real-time) settlement of funds or securities transfers individually on an order-by-order basis (without netting).

SSS - Securities Settlement System: the full set of institutional arrangements for confirmation, clearance and settlement of securities trades and safekeeping of securities. A SSS enables securities to be transferred and settled by book entry according to a set of predetermined multilateral rules. These systems allow transfer of securities either free of payment or against payments.

Settlement: the completion of a transaction, wherein the seller transfers securities or financial instruments to the buyer and the buyer transfers money to the seller. A settlement may be final or provisional.

(SGT-4): Mercosur Working Subgroup No. 4 - Financial Affairs

STP - Straight Through Processing: the capture of trade details directly from the front-end of trading systems and complete automated processing of confirmations and settlement instructions without the need for rekeying or reformatting data.

2.1. Regional Financial Integration in Latin America: hurdles and possibilities

2.1.1. Financial integration: What is it? What are the benefits?

The concept of 'financial integration' is used in different ways in academic literature, to refer to different processes or trajectories of financial systems. Some authors understand financial integration as the general interconnection between financial markets from different jurisdictions, usually referring to a more specific feature of this relation: the foreign capital flows and foreign investment in local financial assets (Lane and Milesi-Ferretti, 2003; Kose et al., 2009).

Other scholars look at the same process though directly associating financial integration with financial liberalisation/financial openness – this strand is linked to the International Monetary Fund (IMF)'s research (Abiad and Mody, 2005; Chinn and Ito, 2008; Quinn et al., 2011). Finally, a third group of authors refers to financial integration as a movement of national markets towards a single market, as in the case of European Union (Baele et al., 2004; Belfrage, 2013).

Integration towards a single market describes a regional, instead of international, process of financial integration, but the financial interconnectivity or financial liberalization approaches also can be used to describe integration at the regional level. For the purposes of this report, regional financial integration refers to a more specific process, through which financial markets of two or more countries become more connected to each other than to the main international financial centres.

Some authors argue that regional financial integration would be the best strategy to preserve the benefits promoted by financial globalization in terms of growth and stability (Kose et al., 2003: 2). It would also help fostering the micro benefits of economies of scale, competition and cost in the local financial markets.
According to Rios (2015: 1), among the main benefits of financial integration, three should be highlighted:

i. from a macroeconomic perspective; improved capacity for managing external shocks;
ii. from the perspective of firms and households; larger supply of funds and financial instruments; and
iii. from a wealth management perspective; greater diversification of assets and service providers.

Those three potential benefits might not be evenly distributed among the countries involved in the integration process. The gains will depend on the size and on the

level of financial development of each country compared to the future regional market. From a Brazilian perspective, due to the liquidity and the competitiveness of the local financial industry, as data in the following sections will show, the country has potential advantages in a possible regional financial market.

However, financial integration should not be viewed as a risk-free strategy. If not managed well, it may trigger more frequent and more damaging financial crises. Systemic risk and other risks related to clearing and settlement processes in financial markets may arise, with potential spill-overs for the real economy. Moreover, a general increase in capital flows and in frequency and volume of transactions with foreign counterparties might led to an increase in the probability of activities related to money laundering and terrorism financing, if the proper measures to prevent or mitigate those problems are not in place. We will elaborate on these risks in Section 3.3.4.

The enlargement of cross-border business or in the participation of foreign financial institutions may require a minimum institutional development in terms of regulation, supervision and market infrastructure. Therefore, it is less dependent on political and strategic decision of governments. However, as markets will remain divorced from each other, a number of costs, both transaction and operational, might result from these kinds of integration. If the business benefits compensate those costs, integration may move further; otherwise there will be no economic incentive for that to happen.

When the single market alternative is the path chosen, such transactional and operational costs tend to disappear as a result of market consolidation. Borders lose meaning and markets become one. Nevertheless, this option depends not only on economic decisions but, most of all, on political will. This will require more time, work and, probably, investment. In some cases, these costs could be prohibitive. Therefore, the strategic decision on the type of regional financial integration to follow will necessarily have to weight costs and benefits related to each path.

This above cost-benefit analysis is a simplification of reality. Financial integration depends on a number of quantitative and qualitative variables that transcend economic analysis. Nevertheless, this rationale is embedded in decision takers' minds, especially private stakeholders, which tend to give to business variables a heavier weight.

From this differentiation, one can state that regional financial integration is largely contingent on the interest of local governments, as well as on the costs and benefits envisaged by the public and private sectors, particularly the financial

institutions and service providers that operate in each country. In this sense, despite the similarities and lessons which can be drawn upon them, each experience of regional financial integration is unique.

2.1.2. A Historical Overview of Latin America's Financial Integration

Regional integration is still in its early days in Latin America, particularly if compared to Europe. However, the foreign demand for regional assets – particularly for equity and public debt – is already relatively large in countries such as Mexico, Colombia, Peru, Chile and Brazil. Latin American institutional investors and wealthy households are among the largest foreign investors in the region. However, differently from their European counterparts, the majority of such investors manage their regional assets portfolios through international hubs (New York, London, Luxembourg) rather than through regional financial centres. The integration of Latin American countries to the global financial system begun in the 1980s, but it was delayed for some years as a consequence of the long duration of the external debt crisis. When this obstacle was removed in the early 1990s, they introduced many reforms to take part of the new international financial system, following, however, a centre-periphery perspective[39].

Each country managed to link its domestic financial system to the main global hubs, as New York, London etc. The reforms of the regulatory framework in foreign exchange, taxation and financial markets were different in each country, making it a very heterogeneous process within the region. The main objective was to attract foreign investments. It also opened the way for large Latin American corporations to the international financial markets. At that time, the connection to other financial markets of the region was not regarded as strategically relevant, once they were all small, illiquid and volatile.

Differently from the European experience, Latin America's financial integration was less ambitious and more spasmodic. Some economic treaties, which are still in place, were signed to cover trade preferences (ALADI) [40] and currency

[39] The centre–periphery model, according to the Economic Commission for Latin America and the Caribbean (CEPAL) is a spatial metaphor that describes the structural dependence relationship between the advanced countries (centre) and the less developed economies (periphery).

[40] The Latin American Integration Association (ALADI) was established in 1980 with the main objective of promoting the creation of an area of economic preferences, aiming to develop a Latin American common market, through three trade mechanisms: a) a system of regional tariff preferences; b) regional scope agreements (common to all member states); and c) partial scope agreements, with the participation of two or more countries of the area.

convertibility between some of the Central Banks of the region (Convênio de Créditos Recíprocos - CCR)[41]. However, until today, those instruments have a very limited effect on (trade and) financial integration within the region. Government-sponsored initiatives face significant challenges in promoting this objective.

In recent years, differently from the past, local private financial institutions have supported an agenda aiming to build a regional financial market in Latin America. Two main projects implemented in this regard were Brazil Investments & Business - BRAiN (Box 1), an initiative from private organizations in Brazil, and Latin American Integrated Market - MILA (Box 2), an initiative from the stock exchanges of Mexico, Colombia, Peru and Chile, in coordination with national governments and regulators.

Box 1: BRAiN– Brazil Investments & Business

Founded in March 2010, BRAiN has the mission to articulate and catalyze the consolidation of Brazil as an international business and investments hub, with a regional focus in Latin America, but with global connections and projection.

Conceived by three domestic key-entities of the financial and capital markets– ANBIMA (Brazilian Association of Financial and Capital Market Entities), BM&FBOVESPA (Securities, Commodities and Futures Exchange) and FEBRABAN (Brazilian Federation of Banks) – BRAiN is an association representing several sectors of society and has the sponsorship and participation of various private institutions.

In this sense, one of the organization's goals is consolidating the Brazilian position as one of the international sectors for investments and business for Latin America basically by:

• Expanding the Brazilian banking sector throughout the region.

• Attracting the management of Latin American assets to Brazil, which is in part performed in North America and Europe.

• Support the international expansion of Latin American multinational companies.

More detail see: http://www.brainbrasil.org.br//index/lan/us.

BOX 2: MILA – Latin American Integrated Market

MILA - the Latin American Integrated Market is the result of an agreement signed by the Santiago Stock Exchange, the Colombia Stock Exchange and the Lima Stock Exchange,

[41] Reciprocal Credit and Payments Agreement (CCR) was signed on August 25, 1982, under ALADI. The CCR was designed to facilitate regional trade by reducing international transfers in the foreign currency shortage scenario that marked the 1980s. For more details see: http://www.bcb.gov.br/rex/ccr/resumo_ccr.asp.

along with Deceval, DCV and Cavali - the Central Securities Depositaries -, who in 2009 started the process of setting up a regional market to trade equities from the three countries. It began operating on May 30th, 2011. In December 2014, the entry of Mexico to MILA was made official, with the inclusion of Mexican Stock Exchange and Indeval.

MILA is a cross border initiative to integrate equities markets, without any sort of merger or global corporate integration, using only technological tools. One of the most important characteristics of MILA is the fact that markets keep their independence and their regulatory autonomy. Likewise, all MILA transactions are performed in the respective local currency without the need to leave the country, and with book-entry through the local broker.

The Chilean, Colombian and Peruvian brokers may negotiate instruments listed on foreign exchanges directly through HT Telepregón markets as well as any other instrument listed locally. For Mexican brokers there is a special trading venue called Sentra, through which they could buy or sell any equity listed in other three markets.

Orders to buy or sell instruments listed on a stock market of the Integrated Market will be paid directly to the market where these instruments are listed in the local currency of the country where it is listed.

All equities registered on the exchanges of Chile, Colombia, Mexico and Peru shall follow the existing regulations for the negotiation of foreign securities listed on the local market.

They shall be negotiated by a local broker that ought to have a contract with a foreign broker who will be its counterparty. Therefore, each operation is settled bilaterally without the interference of a CCP - Central Counterparty.

Each exchange must manage its own market. As the negotiations of the instruments are local, the exchange must ensure that all participants are in compliance with its own trading rules. The local intermediary where the securities are listed and traded is responsible for foreign exchange, market and settlement obligations.

In fact, integration in MILA is mainly a 'software screen' that allows a broker in one country to buy equities in an exchange of one of the other countries of Mercado without real integration of their infrastructure.

Meanwhile, supervision of issuers will be provided by the authority of the country in which the respective issuer and / or value is registered and / or listed.

Private stakeholders sponsored these initiatives due to two reasons. The first one was the rapid growth of the five countries' stock exchanges throughout the 2000s, which followed a strong inflow of foreign investments in the region. As a result, the price of stocks and other local assets, the income of local financial service providers and the value of the local financial institutions increased very fast. The second reason was a wave of mergers and acquisitions of stock exchanges around the world. This stimulated the appetite of local players. Regional expansion was regarded as a "natural" frontier of expansion.

BRAiN's aim was the extension of the financial services provided from São Paulo to the rest of the continent, making the city an international financial centre. Nowadays, it focuses on specific subjects aiming to increase the competitiveness and the attractiveness of the country. BRAiN´s agenda is very connected to the World Bank's annual publication 'Doing Business in Brazil'.

MILA's objective, in turn, was to strengthen the market power of the Pacific Alliance's local stock exchanges while there were initiatives to promote mergers and acquisitions. It moved forward significantly. Colombia, Chile and Peru achieved the operational connection of their stock exchanges in 2012, followed by Mexico in 2014. Since then, it is possible for any investor of those nations to buy shares from any of the other countries through a specific electronic platform.

In other words, MILA allowed these four countries to achieve operational connection of their stock exchanges. Through MILA´s platform it is possible for any investor of those nations to buy shares from any of the other countries through a sole specific electronic platform, although this integration is limited, as explained in Box 2.

In this sense, trading volumes are still insignificant and the initiative faces many difficulties and barriers, in particular the complexity of post-trading integration in cross-border transactions (as explained in the section 3.3.3).

2.2. Setting the scene for moving on Latin America's financial integration

Pragmatically, a process of regional financial integration between Brazil and other Latin American countries would require a number of preconditions in terms of macroeconomic policies, liberalization of capital accounts, financial markets regulatory structure and financial market development.

In these circumstances, there were four common tendencies observed in Latin America from the 1990s on. First, the liberalization of capital accounts, that resulted in a rapid growth of financial and capital markets since then, though not without a number of crises. Second, and given the crisis of the end-1990s associated with liberalization, the deliberate efforts which were put together to achieve macroeconomic stabilization, which involves the combination of inflation target systems, floating rate regimes and restricted fiscal policies. Third, local financial regulations converged to international standards (Basel accords, IOSCO's principles and recommendations, etc.). Fourth, financial inclusion policies were broadly adopted in the region (World Bank, 2012: 2-4).

These four tendencies are found especially in countries which had, as Brazil, successfully linked their economies to the global financial markets, such as Mexico, Chile, Peru and Colombia, which compound the Pacific Alliance (PA). During the bonanza of the commodity cycle of the 2000s (2003-2007), PA countries and Brazil reached impressive levels of macroeconomic performance compared to the average of the advanced countries (IMF, 2015).

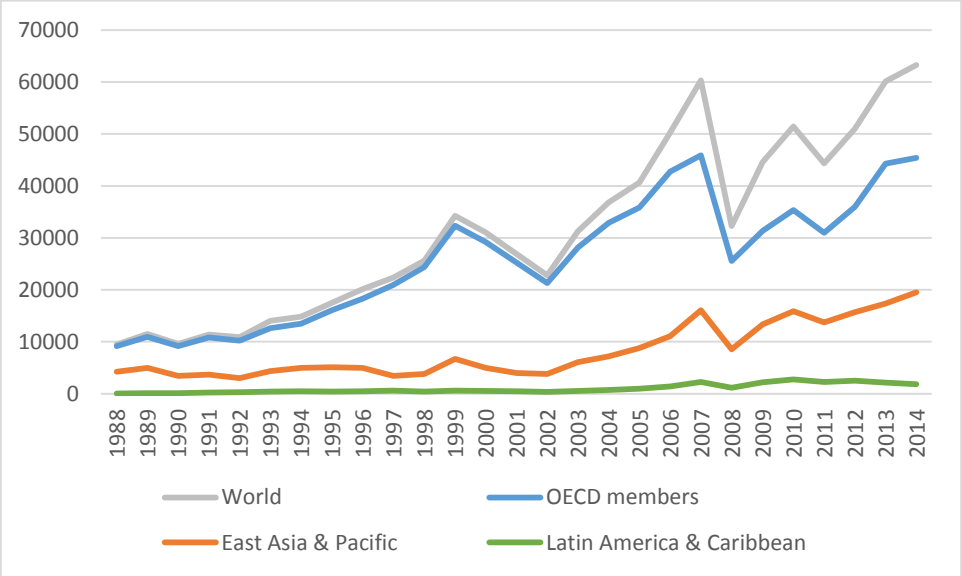
Nevertheless, many asymmetries still hold when one analyses the development of capital markets, regulation and infrastructure in the region. The following pages will depict each one of these three topics, setting the scene for the discussion on how financial integration could move forward in Latin America.

2.2.1. Evolution of financial markets in Latin America

Traditionally, Latin American financial systems have been characterised by the dominance of banks, instead of capital markets. Latin American financial and capital markets have played a limited role in providing finance and funding for economic development (Jiménez and Manuelito, 2011; Vera and Titelman, 2013). With some few exceptions, those markets are usually categorised as 'underdeveloped', i.e. limited in size and deepness, number of market participants and financial instruments' complexity.

Within capital markets, equity securities were the segment that received more resources and presented the highest levels of development. Chart 1 shows that Latin America equity markets are very underdeveloped in comparison to the rest of the world. But while the region as a whole is not relevant at the international level, Brazil had the 10th greatest stock market capitalization in the world ranking, as of 2012, overcoming the size of its Latin American neighbours: Mexico held the 23th position, and Chile the 30th[42].

Chart 1: Stock Market Capitalisation (USD Trillion)

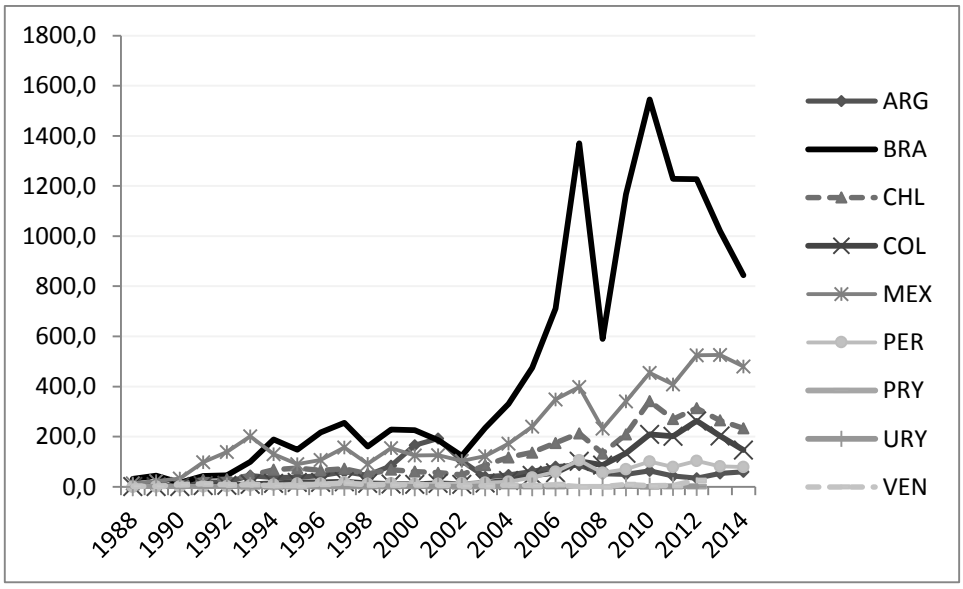


Source: World Bank, World Development Indicators.

This heterogeneity indicates an important imbalance between Brazil and other LA countries that should be taken into account when analysing a possible regional market integration process. Historically, this difference was not so prominent, as we can observe in Chart 2. However, since the adoption of a liberalised regime that attracted foreign investors to Brazil and due to the better macroeconomic performance of the 2000s, Brazilian market capitalization scaled up seven times between 2003 and 2007.

Chart 2: Stock Market Capitalisation (USD Trillion)

[42] Figures for 2014 shows Brazil in the 16th position, Mexico in the 21th place and Chile in the 28th, showing that this gap has closed among the top-3. Nevertheless, the difference between these countries and the others in the region remains significant.

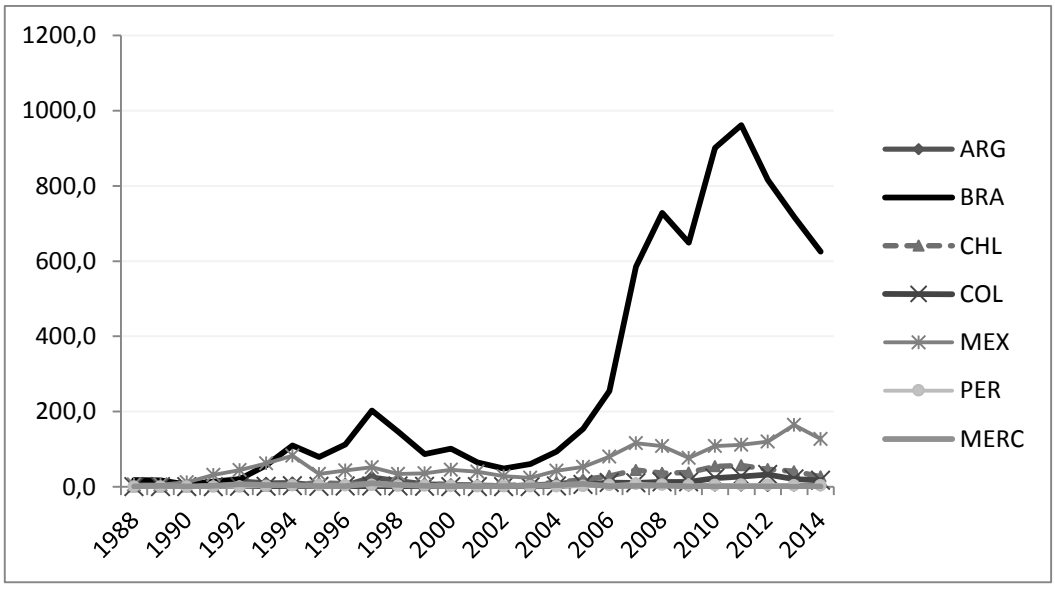


Source: World Bank, World Development Indicators..

The imbalance between the Brazilian stock market capitalization and other markets in the region contributed to the initiative of creating MILA. Formally, the equity market within MILA countries competes equally with the Brazilian market, in terms of size, as showed by the comparison of each market: while Brazilian stock market capitalization accounted for US$ 844 billion in the end-2014, MILA's aggregate capitalization was US$ 939 billion, exceeding the Brazilian market.

However, the analysis of the potential competition between MILA and Brazil must consider other indicators. First, the average size of a listed company in Brazil is much larger than in MILA: about US$ 2.5 billion in the former, about US$ 1.5 billion in the latter. Second, equity issuances in Brazil were much larger than in its PA neighbours in the past years: US$ 153 billion in Brazil against US$ 86 billion in MILA. Third, Brazil concentrates more than 80% of liquidity of Latin American equities, as Chart 3 confirms. For instance, in 2014 the total trade in Brazilian stocks, US$ 834 billion, is more than four times the total trade in Chile, Colombia, Mexico and Peru, combined, US$ 196 billion.

Chart 3: Stocks Traded (USD Billion)

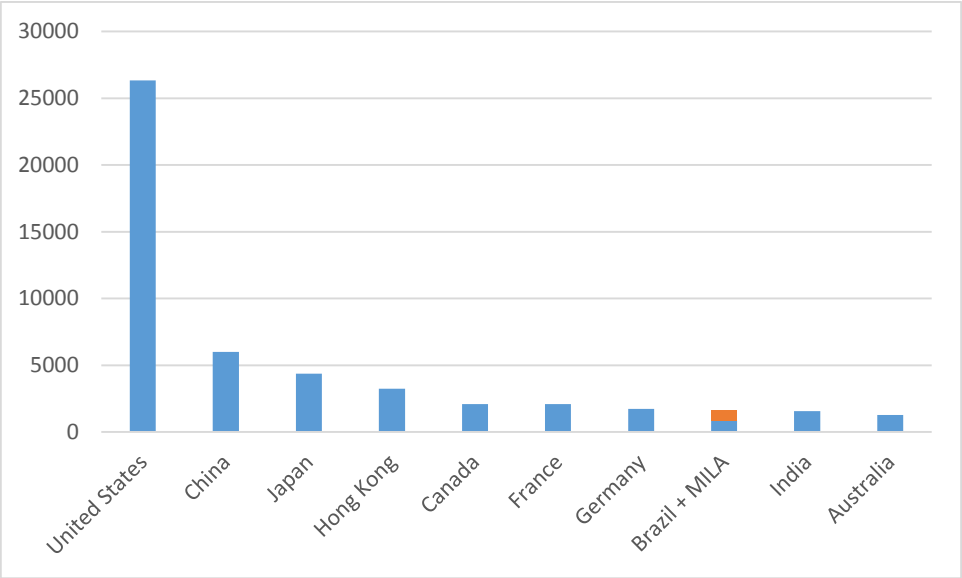


Source: World Bank, World Development Indicators. MERC: Mercosul ex-Brazil (includes Argentina, Paraguay and Uruguay).

The main conclusion resulting from this analysis is that, from a Latin American perspective, there is no real integration of stock markets without Brazil. From a Brazilian perspective, an integration process with Latin American neighbours without involving MILA countries would be meaningless. In this sense, competition or integration between Brazil and MILA should be the driving forces in the development of equity markets in the region. In the case of integration, the size of this segment could double in terms of market capitalization, representing a relevant market in a global perspective (Chart 4).

However, this possibility may lead to the establishment of an unbalanced relationship. MILA's companies will have direct benefits from the liquidity of Brazilian markets, being able to access higher volumes of capital through equity issuances. However, the benefits from the viewpoint of Brazilian companies will depend on the conditions of access to new funding pools of local investors, which depends on the attraction of not only new regional investors but from investors located in other parts of the globe.

Chart 4: Stock Market Capitalization in 2014 (USD Trillion)



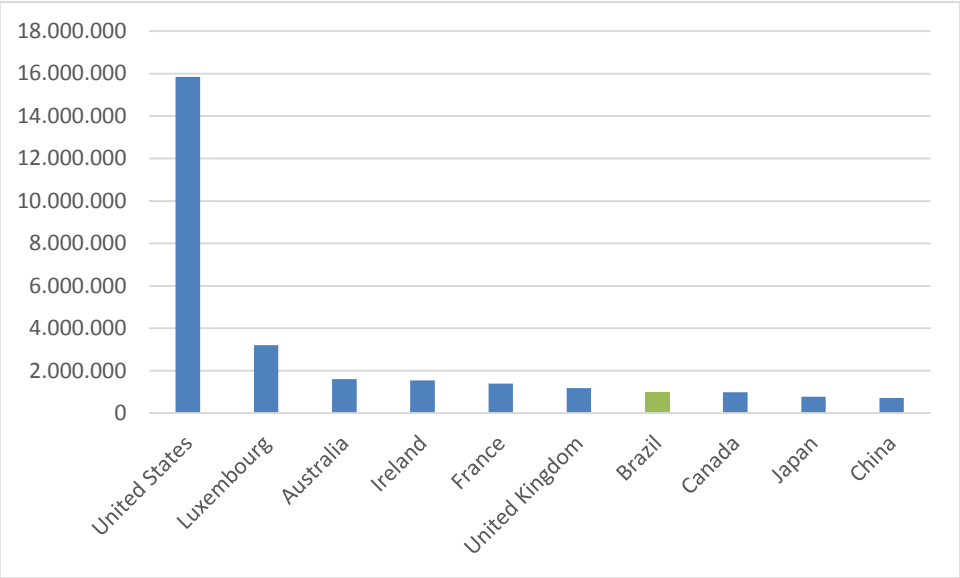
Source: World Bank, World Development Indicators. Data for United Kingdom not available.

On the other hand, in the context of corporate bond markets, there is a significant discrepancy between Latin America and the rest of the world. According to the Financial Development and Structure Dataset, Brazil has the largest domestic market in Latin America. In 2014, Brazilian debt securities outstanding in the domestic market reached USD 151 billion, while the sum of the rest of Latin American countries reached about a half of this value (USD 78 billion).

Nevertheless, one should take into account that this market presents very idiosyncratic characteristics in Latin American countries. In this context, the, integration of corporate debt markets might be considered highly unlikely, except for a small number of companies that have productive operations in more than one country in the region.

Regarding mutual funds, the total net assets of mutual funds in the region is very small, USD 1.2 trillion in 2014, representing only 3.8% of the total net assets in the world, which totalled USD 31.4 trillion in 2014. Brazil is again a relevant industry from an international perspective, while the remaining Latin American countries have no international prominence. By the end of 2014, as Chart 5 shows, the Brazilian industry was the world's seventh largest in terms of net assets.

Chart 5: Total Net Assets of Mutual Funds by Country – 2014 (USD Million)

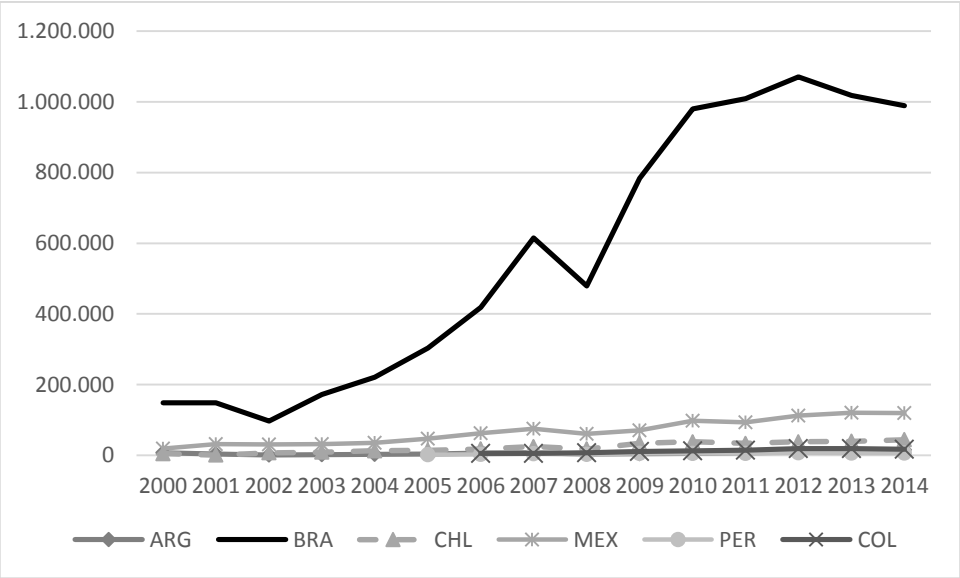


Source: ICI.

When analysing the integration of investment funds in the region, it is important again to consider the imbalances potentially brought by the discrepancy between Brazil and other Latin American economies (Chart 6). Similarly to stock markets, the difference between the Brazilian funds industry and that of its neighbours grew stronger throughout the 2000s, when assets under management or net assets scaled up more than six times in a five year period (2003-7).

At first glance, one can expect the same dilemma of equity market heterogeneity or imbalance should apply to the case of investment funds. Indeed, if investment fund managers from Brazil want to offer Brazilian investment funds in other countries in Latin America, they will find a very limited market in terms of size. But if a small part of other Latin America markets are accessed by Brazilian funds, the expansion of boundaries to other countries could be successful and compensate the negative performance of the Brazilian industry in the recent years. In such a case, there would be benefits for fund managers and Brazilian investors in those funds.

Chart 6: Net Assets Mutual Funds by Country (USD Million)



Source: ICI for Argentina, Brazil, Chile and Mexico, Asbanc for Peru, and Superintendencia Financiera de Colombia for Colombia (end of year foreign exchange rate, provided by Banco de la Republica).

The challenges that would be faced by Brazilian asset managers in offering Brazilian funds abroad in Latin America are related to complying with different regulatory requirements in each country, what could potentially generate important transaction costs. Those costs include registration and authorisation of managers and funds, fees paid to local regulators, and any ordinary costs associated with running an investment fund. Distribution could also generate costs, depending on the scheme set by each manager or institution. There are also compliance costs, such as preparing periodic reports, and costs of developing the rightful expertise on each country's investment fund market (preference of investors, marketing etc.).

The investment funds issues on financial regulation shed light on a very relevant aspect concerning financial integration: regulatory harmonization. How are the different countries in the region in terms of regulation? What is the state of the art in regulatory harmonization? These questions will be addressed in the next section.

2.2.2 Regulatory asymmetries

One of the most difficult dimensions of any capital market integration process is how to harmonize the regulatory framework concerning the primary and secondary markets of different financial assets. Each country has its own

institutional framework and regulations, which are important determinants for a foreign investor, such as taxation, foreign exchange regime etc.

The identification of those differences is not an easy task. It requires a lot of specialized work, particularly on legal aspects, in different ambiences at the same time. It also delivers a very perishable result, as these rules often change.

Due to limited availability of public data, the current section is largely based on Ríos (2015)[43], while tax and foreign exchange regulations are not addressed by this report. Nevertheless, the MILA experience shows that it is possible to start an integration process without major changes on these two areas if the countries involved are already connected to the global markets. Nonetheless, it is much more difficult to start any form on integration without prior adjustments in regulatory frameworks.

The main conclusions of Ríos (2015) can be divided in five topics. The first addresses requirements for registration of public offerings of securities in foreign jurisdictions. Brazil and MILA countries already allow this kind of operations and have specific rules for that matter. Most of the countries allow this kind of issuance through depositary receipts, which is normally regulated by both regulators (from the issuer's country and from the country where offer takes place).

Another way of regulating this issue is through exceptions made by national regulators to foreign issuers in order to publicly offer its securities in their country, usually through some kind of exemption regarding the offering registration. In this sense, Chile has the most attractive regime, from a market perspective. If the regulator of the investor home country is formally 'recognized' by its Chilean counterpart, the foreign issuer has few obligations in terms of providing additional information to the Chilean securities commission.

This is a unilateral decision, as there are no requirements of reciprocity from the foreign country. The prospectus of the offer does not have to be translated into Spanish, if it had originally been approved in English in its home country. If the original public offer documents are not available in Spanish or in English, the issuance can only be traded by qualified investors.

In the case of Mexico, the main difference is that the mutual recognition arrangement among the Securities Commissions must be reciprocal. In other

[43] [43] This report that was kindly made available by BRAiN.

words, where mutual recognition agreements are in place, Mexican companies must benefit from the same facilities when listing assets in foreign markets.

The second issue highlighted by Rios (2015) is requirements to trade a foreign security in a local stock exchange. In Brazil, Chile and Mexico there are no legal impediments for that. In Peru and Colombia, however, only the foreign assets registered in MILA are allowed. In all jurisdictions, only qualified investors can trade foreign securities.

The third topic is restrictions for investing in foreign securities. In all jurisdictions, there are limitations for investing overseas. In Chile, Colombia and Mexico, pension funds are only allowed to buy foreign financial assets that achieve a minimum classification of risk, according to international rating agencies. In Chile, pension funds are only allowed to buy shares of funds registered in countries that are highly rated by the international rating agencies. (Superintendencia de Pensiones, 2012). This means that they are not allowed to buy directly from other Latin American country. However, in fact, they can do it by means of funds registered in well rated countries, such as Luxembourg in Europe.

The fourth element brought by Rios (2015) is requirements for investment funds, an area in which Brazil differs from PA countries. While in the later fund managers have to contribute directly a minimum amount of the fund's capital, there is no such obligation in the Brazilian system. In the case of Chile, however, this asymmetry would not represent a barrier for the unilateral registration of Brazilian funds.

Finally, the last topic is shareholder protection. All jurisdictions have similar rules regarding investor protection, including: the obligation to make tender offers in case of transfer of control of the company, the right to redemption in case of certain corporate events, the disclosed of related transactions undertaken by related parties, among others (Rios, 2015).

As it was showed on the last paragraphs, the harmonization of regulatory frameworks among Latin America´s countries would require a major effort of government authorities. On the other hand, in the short term, the reduction of the asymmetries would not necessarily lead to greater financial integration of these countries as it depends on the solution of others important barriers.

So, on the final section of this report we will suggest that concerning capital market integration the best strategy in the short term for the Latin American regulatory authorities is try to develop a joint and focused agenda, mainly with the objective of improving the use of mutual recognition agreements among their countries.

2.2.3. Financial Market Infrastructures

Trades in securities require the involvement of institutions, intermediaries and other actors that provide the proper infrastructure and services to the creation, trade, clearing and settlement of financial transactions. Nevertheless, risks are inherent to the settlement process and to the functioning of financial market infrastructures (FMIs). Indeed, a smooth functioning of FMIs is a pre-condition for systemic stability in financial and capital markets: 'if not properly managed, they can pose significant risks to the financial system and be a potential source of contagion' (BIS-IOSCO, 2012: 5).

In an environment of regional financial integration, systemic stability is a concern: contagion becomes a regional problem and the linkages among FMIs from different countries work as a pipe that can spread systemic problems from one country to another. The proper management of FMIs, especially, of clearing and settlement services, is rather critical in this case. This is particularly important because in cross-border securities transactions, the number of actors involved is even greater, implying a higher degree of complexity to the whole process of trading.

For instance, when a cross-border transaction takes place, the systems from different intermediaries, custodians and clearinghouses need to communicate to each other, otherwise there is a risk that the clearing and settlement chain is not completed. Adding complexity to this process, the settlement of those trades usually demands foreign exchange transactions involving two or more currencies.

The European experience shows that the complexity and risks of cross-border clearing and settlement in a very fragmented and heterogeneous environment pose actual barriers to financial integration. A group of experts, the so-called Giovannini Group, was formed to analyse post-trade clearing and settlement problems and it has listed 15 barriers to efficient cross-border clearing and settlement in Europe. The following legal and operational barriers appointed by the Group are noteworthy:

- Differences in national rules relating to corporate actions, beneficial ownership and custody;
- Differences in national regulations regarding the creation and dematerialisation of securities;
- Differences in information technology and interfaces, including communication standards (single standards, ISO 15022, ISO 20022 etc.);
- Differences in operating hours/settlement deadlines;

- Differences in settlement cycles;
- Absence of intra-day settlement finality;
- Different currencies.

When looking to Latin America, very similar issues arise. FMIs in the region share some common features, such as that depositary and settlement services are typically integrated in a single institution and there is a widespread dematerialization of securities. However, asymmetries are huge, as illustrated by Table 1. Settlement cycles vary, as well as settlement models (e.g. stock trades are generally settled in T+3, but Chile settles those trades in T+2). Standardised message formats, such as ISO 15022, are not adopted by all CSDs in Latin America and account structures varies and several CSDs and SSSs remain operating with omnibus accounts.

This is a very sensitive point because the identification of beneficial owners is central in anti-money laundering regulatory efforts. Money laundering risks increase proportionally with the lack of identification of beneficial owners. Finally, there is no common currency in use in such countries.

Those asymmetries show that the current development of cross-border settlement in Latin America is a barrier to financial integration. Nevertheless, the incentives to provide solutions for those issues only come when the enlargement of cross-border business justify the efforts that should be done by FMIs, market participants and regulatory authorities. As regional financial integration in the region remains incipient, the available solutions are usually provided by private players, but in costly and less secure ways.

Table 1: Central Securities Depositories and Settlement Systems in Latin America

		Account Structure	SSS	Settlement Cycle	Settl. Model	Dematerialization	ISO 15022
Brazil	BM&FBovespa	Beneficial Owner (BO)	Yes	T+0, T+1 and T+3	Models 1, 2 and 3	100%	Yes
	Cetip	Beneficial Owner (BO)	Yes	T+0	Model 2	88.2%	Yes
Chile	Depósito Central de Valores (DCV)	Omnibus and BO	Yes	T+0, T+1 and T+2	Models 1, 2 and 3	n.a.	No
Colombia	Depósito Centralizado de Valores de Colombia (Deceval)	Omnibus and BO	Yes	T+3	Models 1, 2 and 3	88.6%	No
Mexico	Insitución para el Depósito de Valores (Indeval)	Omnibus and BO	Yes	T+3	Models 1, 2 and 3	n.a.	No

Peru	Cavali	Beneficial Owner (BO)	Yes	T+2 and T+3	Models 1 and 2	Equity: 49.4% Bonds: 100%	No
Mercosul (ex-Brazil)							
Argentina	Caja de Valores*	Beneficial Owner (BO)	No	n.a.	n.a.	99.7%	No
	Mercado de Valores de Buenos Aires (Merval)	Beneficial Owner (BO)	Yes	T+0 and T+3	Model 3	n.a.	Yes
Paraguay	Bolsa de Valores y Productos de Assunción (BVPASA)	Omnibus	Yes	T+2	Model 3	n.a.	Yes
Uruguay	Bolsa de Valores de Montevideo (BVM)	Beneficial Owner (BO)	Yes	T+1 and T+3	Model 2	90%	Yes
	Banco Central del Uruguay (BCU)	Beneficial Owner (BO)	Yes	T+0, T+1 and T+3	Models 1 and 2	n.a.	No

Source: ACSDA (2014). *Caja de Valores is not a SSS.

One can refer to this situation as a kind of conundrum. Efficient cross-border clearing and settlement depends on the removal of many barriers created by fragmentation and regulatory heterogeneity. However, the elimination of those barriers is only justifiable if many inefficient cross-border transactions take place, otherwise there are no incentives to change the conditions for the operation of FMIs. In other words, these barriers impose critical limits to financial integration, but financial integration is the only pressure that could create the conditions to remove those barriers.

MILA's settlement model provided a very simple (and risky) solution to infrastructure issues. Transactions registered at MILA´s platform are settled bilaterally between a local and a foreign broker, following the procedures adopted in the jurisdiction where the security is listed. There is no pre-trade or post-trade integration in this environment and the most important principles and international standards that ensure soundness and security to financial transactions settlement systems, (such as delivery-versus-payment, novation, finality, interoperability and beneficial owner identification) are not present in MILA.

The ideal solution would be the development of a multinational clearing and settlement architecture, probably through a process of consolidation of market infrastructures of the region. However, given the conundrum described above, a reasonable prospect of post-trade integration is only justifiable if the number and volumes of transactions compensate the (economic and regulatory) costs of integration. At this point, Latin America financial integration has not reached this status.

Therefore, the solutions for cross-border settlement issues will be in the hands of financial institutions, global custodians or intermediaries that operate in different Latin American countries, accessing each local market infrastructure. They will keep providing alternative, though costly, solutions to clear and settle operations involving Latin American financial products.

2.2.4. Money Laundering and Financing of Terrorism

One particular issue that is related both to regulation and to risks in financial integration is the potential exploitation of financial systems in Latin America for criminal purposes. An analysis of literature on financial integrations shows that this vast literature does not develop any kind of relationship among these issues and money laundering and financing of terrorism in a theoretical perspective. While financial integration and liberalization are usually treated as complementary topics, the implications of liberalized financial systems for the movement of illicit capital are not specified.

The historical experiences of United States, United Kingdom and European Union show that financial integration poses several risks in terms of money laundering and terrorism financing (ML/FT). Flows of direct and portfolio investments, in addition to a general increase in frequency and volume of transactions with foreign counterparties give room for ML/FT activities in the absence of proper measures of prevention or mitigation.

The build-up of anti-money laundering, combating the finance of terrorism (AML/CFT) regulation in these cases is a direct response of challenges posed by financial integration. For instance, the use of correspondent banking as a gateway for money laundering in the US gave origin to an agenda in order to prevent the misuse of the relationships between US and foreign correspondent banks for ML/TF purposes.

Capital markets are also a focus of ML/FT activities, as investing in securities in a third-country market can be an effective form to layer dirty money, separating it from its original criminal source. Once criminals place the dirty money into the financial system, securities transactions can help in disguising the origin of this money amid the fast and complex environment of securities markets. Complexity can be used as an excuse to conceal the actual intent of transactions, while the usual volatility of these markets contributes to explain apparently odd gains or losses delivered by some transactions.

In this context, an increase in financial integration in Latin America can bring more ML/FT risks, which need to be addressed by competent authorities. The asymmetry existent in some financial market infrastructure standards, such as the prevalence of omnibus accounts instead of the beneficial owner account structure in some countries, as the next section shows, might create additional challenges in terms of AML/CFT provisions in the region.

2.3. Policy recommendations

Considering the previous analysis, the current Section draws some recommendations that would foster the process of financial integration in the region, keeping an eye on risks and asymmetries that should be addressed by Brazilian authorities. These recommendations benefited from interviews with regulators and public and private financial institutions in São Paulo, Brasilia and Rio de Janeiro, as well as in London, Chile and Mexico.

I. **Mutual Recognition Mechanism:** *Establish Mutual Recognition Mechanisms between the Brazilian Securities and Exchange Commission (CVM) and its Latin American counterparts, particularly in Chile and Mexico.*

Comments: Mutual or unilateral recognition seems to be the easier way to move forward with the integration among Brazil and other MILA countries in equity markets. For the Brazilian market this could be a quick win strategy to amplify financing options for domestic firms and vice-versa. The best way to implement this would be the signing of bilateral agreements among Brazilian financial regulators, especially the Brazilian Securities and Exchange Commission and their Latin American counterparts, which would recognize the procedures already adopted in other jurisdictions for the registration of issuers and public offers, thus eliminating costs for securities trading in both countries.

In general, this proposal aims that Latin American companies and investment funds, registered at their national securities commissions, are allowed to public offer their securities across the region, without the need to engage in a full registration process in all jurisdictions. Usually these agreements predict a "fast-track" registration with the foreign authorities and, perhaps, additional obligations with the foreign regulator (such as the translation of the public offer documents into English or Spanish). After this simplified process, they would be able to access all types of investors or only the qualified ones, depending on the terms of the agreement between the regulatory bodies.

Note that the Chilean legislation allows the adoption of an unilateral recognition mechanism, which means that Brazilian companies and investment funds would be able to distribute their securities in Chile without the need for CVM to admit Chilean issuers to offer securities in Brazil. On the other hand, the Mexican legal framework is based on reciprocity.

II. **MILA Forums:** *Participate in MILA´s regulatory and operational forums to cooperate with its members on topics related to the harmonization of the regulatory framework, and evaluate a potential adhesion to this regional integration initiative.*

Comments: Joining MILA is not a Brazilian goal at present. However a further step in this direction might be part of a broader political strategy to deepen the relationship with its members. Reaching a multilateral agreement with four different regulators and governments could be a hard task, as the European experience illustrates. However, becoming an observer on the different multilateral forums of MILA that already exist, as other countries already are, could be a very positive start.

As mentioned before, in 2015 the regulators of the four countries organized two general meetings. The agenda of these "pasantías" were focused on: a) analyzing the sanction framework in each country, responsibilities, roles and channels for cross-border investigations; b) advancing in the recognition of foreign issuers; c) developing a standardized prospectus with common elements to be used in the four jurisdictions.

III. **Currency system:** *Extend Brazilian Central Bank's Local Currency Systems - SML mechanism to all MILA countries, including financial transactions considered 'regionally integrated'.*

Comments: The complexity of post-trading integration in cross-border transactions imposes a strong barrier for the full integration of different financial systems. Therefore, the strong asymmetries among the characteristics of Brazilian Payment Systems and the other Latin American Financial Market Infrastructures are a concrete obstacle for fostering regional financial integration.

As financial transactions are settled in different currencies, the creation of mechanisms that helps in foreign exchange transactions linked with the financial ones can help in reducing settlement risks. Brazil and Argentina already have an experience with a local payment system that facilitates exchange between Brazilian Real and Argentinian Peso, the so-called Local Currency Payment System (SML). Nevertheless, to day, this arrangement focus only on commercial deals, allowing importers and exporters from Brazil and Argentina to make payments and receive them in their local currencies (BCB also signed an agreement with Uruguay and recently Paraguay).

Using SML-arrangements with other countries and by permitting his use to settle foreign exchange operations related to financial transactions would help to foster financial market integration (and the use of the Real as a regional currency). As an example of these possibilities, suppose the Brazilian and the Chilean´s Securities Commissions agreed on signing a Mutual Recognition Agreement opening room for cross-listing of stocks. In these circumstances, a Brazilian firm could make a public offer of its equities simultaneously in the Brazilian and Chilean market, and this operation could be settled through SML. This would facilitate and reduce costs and risks for the settlement of cross borders operations among Latin American countries (for example, the convertibility risk).

Expanding the use SML may be a first step on the direction of enhancing trade and financial relationship in the continent, as the development of a private integrated solution – that can compete with the existing arrangements – is not envisaged in the near future.

IV. Working Group: *Create a working group with regulators, market participants and BMF&FBovespa with the objective of analyzing the possibility and benefits of expanding the numbers of hours of foreign exchange market´s operation.*

Comments: This was intensively discussed with a group of British foreign exchange players, all of them specialized on Real non-deliverable forward contracts. Therefore, the first step of this working group should be evaluated the costs and the benefits of implementing this initiative from the perspective of the local market participants.

Although there are some risks that can arise from the implementation of this idea – as, for instance, the increase of operations from high frequency trading platforms – the Brazilian currency would reach higher volumes of negotiation if it becomes a tradable currency for longer time periods.

V. LADRs framework: *Establish a framework for issuing Latin America Depository Receipts (LADRs).*

Comments: The LADR is a depositary receipt that could be easily registered and traded among all jurisdictions which has previously harmonized their regulation for registering and trading this new product. It could be an important initiative to provide international and local investors with a Latin American financial product locally originated. Nevertheless, it demands regulatory harmonization between

various countries, which is not an easy goal to achieve. We consider it a second best strategy, as there are no quick wins in this case.

It would become important if a successful process of integration with MILA countries generates demand for trading a genuine and specific Latin American financial product. Otherwise, if bilateral mutual recognition arrangements move fast, it would lose its purpose as regional corporations would be able issue and register their securities in any market across the region directly, on a fast track process.

The common decision of standardization from the regulatory bodies of Brazil, Mexico and Chile would facilitate the existence of a LADR. Note that a LADR wouldn't necessarily demand the standardization of all regulations among these regulators, but only the standardization of the regulation for this specific financial product.

VI. "Passporting": *Create a Latin American Passport for Funds, similar to what exists in Europe.*

Comments: In the European Union, the development of the Undertakings for Collective Investment in Transferable Securities (UCITS) allowed fund managers to sell their products in the European Union without specific authorizations from each member-state.

Just as an example, in England when an European collective investment company already registered and authorized in its jurisdiction decides to sell quotes in London, the Securities Exchange Commissions of the country where the asset manager is located has to send a standardized form to the Financial Conduct Authority (FCA) that has five days to ask for further information. After finishing this period, If FCA does not ask any other information, the company is automatically authorized to distribute its shares in the UK.

As there are major asymmetries in local regulations in Latin America, the development of a single regulatory framework for the fund industry should not be considered an easy task. The structure of this industry within the region is very heterogeneous in terms of master-feeder or class models, classification and pricing procedures, among other features.

In this context, the lack of minimum capital requirement for fund managers is one of the most important asymmetries between the Brazilian regulatory framework

when compared to other countries in Latin America. Therefore, harmonization would require a lot of time and political effort.

However, as highlighted in the previous recommendation, if bilateral mutual recognition arrangements move fast, the funds passport would lose its purpose and become obsolete as a financial product.

VII. AML/CFT: *Continue and keep enhancing the development and implementation of a risk-based approach for AML/CFT for non-resident customer due diligence in capital markets.*

Comments: Regional integration might imply the adoption of lower regulatory standards by market participants, increasing ML/FT risks in the country. Therefore, Brazilian authorities should give attention to customer due diligence in capital markets transactions. The requirements that foreign investors need to comply to operate in Brazilian capital markets should be considered with this perspective in mind.

One particular instrument provided by CVM Instruction no. 505, the institute of 'simplified registration' of non-resident investors, permits a simplified process of customer due diligence by Brazilian intermediaries. It can be reassessed as the regional financial integrations moves on, shaped by a risk-based approach.

This is because classified statistics from CVM show that the major part of non-resident investors operating in capital markets use the simplified registration provision, which relies on customer due diligence made by non-resident financial institutions and intermediaries. As the standards of other Latin American countries might not be as high as the ones that prevail in Brazil, this could be a potential area of vulnerability if the financial integration process moves on.

We thus propose the Brazilian Securities and Exchange Commission to consider a refinement in the framework of non-resident customer due diligence. We suggest that the development of a risk-based approach in line with FATF's standards regarding customer due diligence of non-residents should continue and be enhanced. Though supervision already applies such an approach, different risk-based requirements are not written in rules.

In the case of 'simplified registration', we suggest that this possibility should not be available for every non-resident investor and the ongoing customer due diligence might have different standards according to the risks involved. For instance, CVM could require more detailed and more frequent periodic reports for riskier

customers, such as the ones organized as trusts or companies with shares in bearer form (in these forms of organization it is hard to identify the beneficial owner).

This proposal aims to mitigate ML/FT risks associated with Latin American regional financial integration and to align this specific regulatory command with FATF's risk-based approach. Moreover, the benefits of such provision will not be limited to interregional capital movements; rather it could improve AML/CFT controls on non-resident investors outside Latin America that operate in Brazil.

2.4. Final Remarks

As we already stated, a process of regional financial integration between Brazil and other Latin American countries would require a number of preconditions in terms of macroeconomic policies, liberalization of capital accounts, financial markets regulatory structure and financial market development. These characteristics are more prone to be found in countries which have, as Brazil, successfully linked their economies to the global financial markets, such as Mexico, Chile, Peru and Colombia. By having promoted reforms to liberalize and strengthen domestic financial markets and witnessed an intense market development, such countries have the greatest potential for a successful financial integration process involving Brazil.

Regional financial integration in Latin America should also prioritize equity over debt markets. Many local equity markets are already well developed, homogeneous and internationalized, while corporate debt markets remain relatively small, shallow and short-term oriented. Corporations in the region usually finance themselves through bank loans. Moreover, foreigners do not use local currencies for funding their international operations. In other words, no currency in the region can be considered an international funding currency. In this context, it would be very difficult to move forward with the integration of debt markets.

In order to compete with the international financial hubs, a Latin American integrated market would have to create competitive advantages to attract all kinds of foreign investors, not only the regional ones. This means to be price competitive and, at the same time, to provide high quality and reliable services that could as well increase the global size, the deepness, the liquidity and the complexity of the regional markets. The goal should be to bring to the regional capital market more foreign and local investors than those that already invest in the region. This, however, would require a lot of time, money, work and creativity.

A competitive financial integration process would necessarily require full engagement of local governments. The potential gains for the public sector could be large, in terms of taxes, high value added employment, local income, technical development etc.
In terms of trajectory, financial integration in Latin America should not follow the European unification process, as the political and economic environments of its countries, when compared to its European counterparts, are very different.

It is important that cross-border financial transactions migrate to the new regional infrastructure if it becomes a better solution. This would require the asymmetries on regulation, tax and foreign exchange rules to be reduced, in a way that creates incentives for locals and foreigners to trade through the regional capital market. Also, the new regional infrastructure needs to be considered operationally and politically reliable, what can be achieved without compromising the political autonomy of the different nations.

As mentioned, available liquidity and high level of competitiveness of the Brazilian financial industry provides the country considerable benefits if it decides to participate in a broad regional financial market.

This process will need to consider key local private players strategic plans, such as BM&FBovespa - the Brazilian Stock Exchange - and local banks. Nonetheless, in the medium term, there are some institutional and regulatory initiatives that can stimulate the integration process among the capital markets. In this context, the Brazilian Securities and Exchange Commission (CVM) has a leading position, especially by increasing the cooperation with other Latin America securities commissions.

Reaching a multilateral agreement with several different regulators and governments could be a hard task, as the European experience illustrates. However, it is quite evident that any financial integration strategy should consider, from the start, the existence of the Andean initiative.

Although joining MILA might not be the Brazilian immediate target, becoming an observer on the multilateral forums of MILA, as other countries already are, could be a very positive start.

In 2015, the regulators of the four countries organized two general meetings and the agenda of these “pasantías” were focused on: a) analyzing the sanction framework in each country, responsibilities, roles and channels for cross-border investigations; b) advancing in the recognition of foreign issuers; c) developing a standardized prospectus with common elements to be used in the four jurisdictions.

An alternative path could be a bilateral approach with MILA partners that are open to the access of foreign securities in their local markets, such as Mexico and Chile. Those countries’ securities regulators are open for mutual recognition arrangements with the Brazilian Securities and Exchange Commission. Moreover, the connection to the Chilean and Mexican markets automatically provides access

to MILA for the Brazilian companies. In this sense, this could be a quick win that paves the way to more complex forms of integration.

A complementary alternative could be the development of a Latin American Depositary Receipt (LADR). It would become important if a successful process of integration with MILA countries generates demand from investors for a genuine and specific Latin American financial product, such as LADR. On the other hand, if bilateral mutual recognition arrangements move fast, LADR would become a useless financial product as the regional corporations would be able to issue and register their securities in any Latin American market directly. This also applies for the suggestion of creating a “Latin American Passport for Funds".

Bilateral initiatives with Mercosur countries aiming to enhance financial integration in the region are also welcome. In this context, it is worth mentioning the work of the SGT-4 Working Group on a set of relevant issues as the convergence of the Anti-Money Laundering and Combating the Financing of Terrorism (AML/CFT) regulatory and supervision frameworks and also on the adoption of some essential prerequisites to carry out the integration of the stock markets as, for instance, the development of a Prospectus of the Integrated Market which will comply with the strictest regulations and requirements in force among the countries in the integrated area.

The agenda of SGT 4 also includes a set of coordinate to ensure that internationally agreed standards for regulation and supervision in the financial services sector are implemented and applied in its territory.

Another potential advantage that can be used, in the future, to foster the financial relationship among Mercosur countries is the fact that Brazil has Local Currency Agreements with Argentina, Uruguay and Paraguay that can be improved to include the settlement of financial transactions.

Although there has been some progress in the harmonization of the regulatory framework between the Mercosur countries, our vision is that a strategy to broaden the financial integration process in Latin America nowadays should focus the Pacific Alliance countries, because of the bigger size of their markets and the relatively smaller asymmetries between those countries and Brazil.

Finally, financial integration should not be regarded as a strategy that can solve the economic structural problems of Latin America, nor its financial vulnerabilities, as

suggested in some recent works[44]. It also cannot be regarded as a tool to respond to the negative impacts of the international economy. It is, foremost, a possible path for the financial internationalization of a number of economies in the region. It also may become a positive political agenda to create closer ties among neighbour countries that, until recently, have historically been very apart from each other.

[44] The IMF recently published a long study analyzing the process of financial integration in Latin America. Basically it brings an overview of this process, indicating the most important obstacles to be overcome. It also suggests that financial integration could mitigate some structural problems of the region. For more details, please see https://www.imf.org/external/np/pp/eng/2016/030416.pdf

References

Part I

Akyüz, Y. (2014). "Internationalization of Finance and Changing Vulnerabilities in Developing and Emerging Countries." Unctad Discussion Papers 217.

Allen, F. (2011). Cross-border banking in Europe: implications for financial stability and macroeconomic policies, CEPR.

Andrade, R. P. and Prates, D. M. (2013): Exchange Rate Dynamics in a Peripheral Monetary Economy: A Keynesian Perspective. In: Journal of Post Keynesian Economics, vol. 35, 399-416.

Arestis, P. and Glickman, M. (2002): Financial crisis in Southeast Asia: dispelling illusion the Minskyan way. In: Cambridge Journal of Economics, 26, 237-261.

Avdjiev, S., R. McCauley and H. S. Shin (2015). "Breaking Free of the Triple Coincidence in International Finance." Economic Policy 62nd Panel Meeting, Hosted by the Banque Centrale du Luxembourg(Luxembourg, 16-17 October 2015).

Ban, C. and Blyth, M. (2013). " The BRICs and the Washington Consensus: An introduction". Review of International Political Economy 20(2), 241-255.

Bank of England (2015). Interview conducted on 29th September 2015, London.

Baumann, B. A. and Gallagher, K. P. (2013): Post-Crisis Capital Account Regulation in South Korea and South Africa. In: Political Economy Research Institute, Working Paper Series, No. 320, April 2013.

Becker, J. 2002. *Akkumulation, Regulation, Territorium. Zur kritischen Rekonstruktion der französischen Regulationstheorie*. Marburg: Metropolis.

Becker, J. (2006): Metamorphosen der Regionalen Integration. Journal für Entwicklungspolitik (JEP) XXII (2), 11-44.

Becker, J., Jäger, J., Leubolt, B. and Weissenbacher, R. (2010): Peripheral Financialization and Vulnerability to Crisis: A Regulationist Perspective. *Competition & Change*, 14, 225-247.

Belfrage, C. (2008): Towards ´Universal Financialization' in Sweden?. *Contemporary Politics*, 14, 77-296.

Belfrage, C. (2013) “Challenges for strengthening Mercosul financial integration – lessons from the European Experience”, Report written under the Project Trade Liberalisation and Economic

Development in Mercosul – PPY BRA 1018, an Agreement between the Brazilian Central Bank and the British Embassy in Brazil, published as Official Mercosul Documentation in Annex VI of XXXIV SGT-4 Minutes.

Belfrage, C. (2015) “The Unintended Consequences of Financialisation: Social Democracy Hamstrung? Pensions Dilemma”, Economic and Industrial Democracy, published on onlinefirst: doi:10.1177/0143831X15586070

Belfrage, C., Grumuller, J. Jäger and Kaltenbrunner, A. (2016). "Currency Internationalisation:

Combining Critical Political Economy and Post-Keynesian Insights", presented at the 7th Annual conference in Political Economy, Lisbon, 7th of September.Belfrage, C. and Kallifatides, M. (2016). “The Impossibility of Depoliticized Macroprudential Regulation: the Swedish Case”, presented at the 2016 colloquium for the European Group of Organization Studies.

Belfrage, C. and Kallifatides, M. (2016). “Financialization and the Crisis-tendencies in the New Swedish Model”, presented at the seminar series of the Center for Governance and Management Studies, Stockholm School of Economics, 23rd of March.

Belfrage, C., E. Bergman and D. M. Berry (2015). "A critique of neo-mercantilist analyses of Icelandic political economy and crisis." Capital&Class 39(3): 515-536

Bénétrix, A. S., P. R. Lane and J. C. Shambaugh (2015). "International currency exposures, valuation effects and the global financial crisis." Journal of International Economics 96, Supplement 1: S98-S109.

BIS (Bank for International Settlements) (2009). "Capital Flows and Emerging Markets." Committee on the Global Financial System (CGFS) Paper 33.

BIS (Bank for International Settlements) (2013). "Market Volatility and Foreign Exchange Intervention in EMEs: What has changed? ." BIS Paper 73.

BIS (Bank for International Settlements) (2013). "Triennial Central Bank Survey of Foreign Exchange and Derivatives Market Activity ".

Borio, C. E. and P. Disyatat (2011). "Global imbalances and the financial crisis: Link or no link?" BIS Working Paper 346.

Bowles, P. and B. Wang (2013). "Renminbi Internationalization: A Journey to Where?" Development and Change 44(6): 1363-1385.

Brunnermeier, M. K., S. Nagel and L. H. Pedersen (2008). "Carry Trade and Currency Crashes." NBER Macroeconomics Annual 23: 313-347.

Bruno, V. and H. S. Shin (2015). "Global dollar credit and carry trades: a firm-level analysis." BIS Working Paper 51.

Cafruny, A., and Ryner, M. (2007): *Europe at Bay: In the Shadow of US Hegemony*. Boulder: Lynne Rienner.

Calvo, G., A. Izquierdo and L. F. Mejía (2004). "On the Empirics of Sudden Stops: The Relevance of Balance Sheet Effects." NBER Working Paper 10520.

Calvo, G. and C. M. Reinhart (2000). "Fear of Floating." NBER Working Paper 7993.

Chang, H.-J. (2003): Kicking away the ladder. Development strategy in historical perspective. London: Anthem Press.

Chinn, M.; Frankel, J. (2005): Will the Euro eventually surpass the Dollar as leading international reserve currency? In: NBER Working Paper 11510, http: and and www.nber.org and papers and w11510.pdf

Cohen, B. J. (1971). The Future of the Sterling as an International Currency. London, Macmillan.

Cohen, B. J. and T. Benney (2014). "What does the International Currency System really look like? ." Review of International Political Economy 21 (5): 1017-1041.

Dannreuther, C. and Petit, P. (2006): Post-Fordism, Beyond National Models: The Main Challenges for Regulation Theory. In: Competition & Change 10 (2), 100-112.

De Conti, B. and Biancarelli, A. and Rossi, P. (2013): Currency hierarchy, liquidity preference and exchange rates: a Keynesian and minskyan approach. In: Paper presented at the Congrès de l'Association Française d'Économie Politique Université Montesquieu Bordeaux IV, France, 3-5 July 2013.

Eichengreen, B. and P. Gupta (2013). "Tapering Talk: The Impact of Expectations of reduced Federal Reserve Security Purchases on Emerging Markets." VOX, Online Source: Available at: http://www.voxeu.org/article/fed-tapering-and-emerging-markets.

Eichengreen, B., R. Hausmann and U. Panizza (2003). "Currency Mismatches, Debt Intolerance and Original Sin: Why They are not the Same and Why it Matters." NBER Working Paper 10036.

Eichengreen, B., R. Hausmann and U. Panizza (2003). The Mystery of Original Sin. Debt Denomination and Financial Instability in Emerging Market Economies. B. Eichengreen and R. Hausmann. Chicago, University of Chicago Press.

Epstein, G. A. (2005): Introduction: Financialization and the World Economy. In: Epstein, G. A. (ed.): Financialization and the World Economy. Cheltenham, Northampton: Edward Elgar, 3-16.

Fritz, B., Prates, D. and de Paula, L. F. (2014): Keynes at the Periphery: Currency hierarchy and challanges for economic policy in emerging economies. In: desiguALdades.net Working Paper Series (forthcoming).

Gao, H. and Yu, Yongding (2011): Internationalization of the renminbi. In: BIS Papers, 61, 105-124.

Gopinath, G., O. Itskhoki and R. Rigobon (2010). "Currency choice and exchange rate pass-through." American economic review 100(1): 304-336.

Gowan, Peter T. (1999): The Global Gamble. Washington´s Faustian Bid for World Dominance. London: Verso.

Guttmann, R. (2008): A Primer on Finance-Led Capitalism and Its Crisis. In: Revue de la régulation: Capitalisme, Institutions, Pouvoirs, 3 and 4, 1-20.

Guttmann, R. (2012): Finance Regulation: Why and How? In: Institut Veblen pour les réformes économiques, http: and and www.veblen-institute.org and IMG and pdf and reregulationguttmann.pdf

Habermaier, K., Kokenyne, A. and Baba, C. (2011): The Effectiveness of Capital Controls and Prudential Policies in Managing Large Inflows. In: IMF Staff Discussion Note, SDN and 11 and 14, August 2011.

Hassan, S. (2015). "Speculative Capital Flows, Exchange Rate Volatility and Monetary Policy: South African Experience". Contemporary Issues in Development Economics, 136.

Harvey, J. (1991): A Post Keynesian View of Exchange Rate Determination. In: Journal of Post-Keynesian Economics, vol. 14, no. 1, 61-70.

Harvey, J. (2001): Exchange Rate Theory and "the Fundamentals". In: Journal of Post Keynesian Economics, vol. 24, no. 1, 3-15.

Harvey, J. (2009): Currencies, Capital Flows and Crises: A Post Keynesian Analysis of Exchange Rate Determination. London, Routledge.

He, D., P. Luk and W. Zhang (2015). "The Internationalisation of the Renminbi as an Investing and a Funding Currency: Analytics and Prospects." Hong Kong Institute for Monetary Research Working Paper 1(2015).

He, D. and R. McCauley (2010). "Offshore Markets for the Domestic Currency: Monetary and Financial Stability Issues." BIS Working Paper 320.

Jessop, B. (1990): Regulation Theories in Retrospect and Prospect. *Economy and Society* 19 (2), 153-216

Jessop, B. and Sum, N.-L. (2006). Beyond the Regulation Approach: Putting Capitalist Economies in their Place. Cheltenham.

Kaltenbrunner, Annina (2011): Currency Internationalization and Exchange Rate Dynamics in Emerging Markets: A Post Keynesian Analysis of Brazil. PHD Dissertation, University of London.

Kaltenbrunner, A. (2015). "Financial Integration and Exchange Rate Determination: a Brazilian Case Study." International Review of Applied Economics 29(2): 129-149.

Kaltenbrunner, A. and J. P. Painceira (2012). "The Impossible Trinity on Steroids: Inflation Targeting and Exchange Rate Management in Emering Markets." AUGUR Working Paper Februrary 2012.

Kaltenbrunner, A. and J. P. Painceira (2015). "Developing Countries' changing Nature of Financial Integration and New Forms of External Vulnerability: the Brazilian experience." Cambridge Journal of Economics 39(5): 1281-1306.

Kenen, P. B. (1983): The Role of the Dollar as an International Currency. Group of Thirty Occasional Paper 13, New York, Group of Thirty.

Kenen, P. B. (2009). "Currency Internationalization: An Overview." Paper presented at the Bank of Korea and BIS Seminar on Currency Internationalization: Lessons from the Global Financial Crisis and Prospects for the Future in Asia and the Pacific, March 19-20, 2009, Seoul, Korea.

Kenen, Peter (2011): Currency internationalization: an overview. In: BIS Papers, 61, 9-18.

Kohler, M. (2010). "Exchange Rates during Financial Crises." BIS quarterly Review March 2010.

Lagendijk, A. (2007): The Accident of the Region: A Strategic Relational Perspective on the Construction of the Region's Significance. In: Regional Studies 41 (9), 1193-1207.

Lane, P. and G. M. Milesi-Ferreti (1999). "The external Wealth of Nations: Measures of Foreign Assets and Liabilities for Industrial and Developing Countries." IMF Working Paper 99(15).

Lane, P. and G. M. Milesi-Ferreti (2005). "Financial Globalization and Exchange Rates." IMF Working Paper 05/3.

Lane, P. and G. M. Milesi-Ferreti (2006a). "Exchange Rates and External Adjustment: Does Financial Globalization Matter?" IIIS Discussion Paper 129.

Lane, P. R. (2013). "International Capital Flows and Domestic Financial Conditions: Lessons for Emerging Asia." Institute for International Integration Studies 438(December 2013).

Lane, P. R. and P. McQuade (2014). "Domestic Credit Growth and International Capital Flows." The Scandinavian Journal of Economics 116(1): 218-252.

Lane, P. R. and G. M. Milesi-Ferretti (2002). "External Wealth, the Trade Balance, and the Real Exchange Rate." European Economic Review 46(6): 1049-1071.

Lane, P. R. and J. C. Shambaugh (2010). "Financial Exchange Rates and International Currency Exposures." The American Economic Review 100(1): 518-540.

Levy-Yeyati, E. and F. Sturzenegger (2007). "Fear of Appreciation." World Bank Policy Research Working Paper 4387.

Ma, G. and A. Villar (2014). "Internationalisation of Emerging Market Currencies." BIS Paper(78d).

McCauley, R. (2006). "Internationalising a Currency: the Case of the Australian Dollar." BIS Quarterly Review December 2006.

McCauley, R. and P. McGuire (2009). "Dollar Appreciation in 2008: Save Haven, Dollar Shortage and Overhedging." BIS Quarterly Review December 2006.

McCauley, R. and J. Zukunft (2008). "Asian Banks and the International Interbank Market." BIS Quarterly Review June 2008.

McKinnon, R. and G. Schnabl (2004). "The East Asian Dollar Standard, Fear of Floating and Original Sin." Review of Development Economics 8(3): 331-360.

Milberg, W. (2008): Shifting Sources and Uses of Profits: Sustaining Us Financialization with Global Value Chains. In: *Economy and Society*, 37, 420-451.

Obstfeld, M. (2012). "Financial Flows, Financial Crises, and Global Imbalances." Journal of International Money and Finance 31(3): 469-480.

Painceira, J. P. (2012). "Financialisation, Reserve Accumulation, and Central Banking in Emerging Economies: Banks in Brazil and Korea." Research on Money and Finance Discussion Papers 38(Online Source): Available at: http://www.researchonmoneyandfinance.org/index.php/publication/discussion-papers.

Prachi, M., K. Moriyama, P. N'Diaye and L. Nguyen (2014). "Impact of Fed Tapering Announcements on Emerging Markets " IMF Working Paper 109.

Radelet, S., J. D. Sachs, R. N. Cooper and B. Bosworth (1998). "The East Asian Financial Crisis: Diagnosis, Remedies and Prospects." Brookings Papers on Economic Activity 1998(1): 1-90.

Rey, H. (2015). "Dilemma not Trilemma: The Global Financial Cycle and Monetary Policy Independence." NBER Working Paper 21162(May 2015).

Rhee, C. and L. Sumulong (2013). "A practical Approach to international Monetary System Reform: Building Settlement Infrastructure for regional Currencies." Asian Development Bank Economics Working Paper Series(4).

Rime, D. and A. Schrimpf (2013). "The anatomy of the global FX market through the lens of the 2013 Triennial Survey." BIS Quarterly Review December 2013.

Schmalz, S. (2013): Neue Vögel im Käfig? Chinas steiniger Weg zu einem neuen Akkumulationsregime. In: Atzmüller, R., Becker, J. Brand, U., Oberndorfer, L., Redak, V. and Sablowski, T. (2013): Fit für die Krise? Perspektiven der Regulationstheorie. Münster: Westfälisches Dampfboot, 239-352.

Schmalz, S. and Ebenau, M. (2011): Auf dem Sprung – Brasilien, Indien und China. Berlin: Dietz Verlag.

Schulmeister, S. (1988): Currency speculation and dollar fluctuations. In: Banca Nazionale Del Lavoro, Quarterly Review, 167, 343-366.

Stiglitz, J. E. (2002): Globalization and its discontents. New York: W.W. Norton & Company.

Sui, Lu, and Lijuan Sun. "Spillover effects between exchange rates and stock prices: Evidence from BRICS around the recent global financial crisis." *Research in International Business and Finance* 36 (2016): 459-471.

Stockhammer, E. (2013): Rising Inequality as a cause of the present crisis. In: Cambridge Journal of Economics, http: and and cje.oxfordjournals.org and content and early and 2013 and 11 and 25 and cje.bet052.abstract [DOI: 10.1093 and cje and bet052].

van den Heever, J. (2013): Challenges of the International Monetary System and Response Options: A South African Perspective. In: The BRICS and Asia, Currency Internationalization and International Monetary Reform Paper Series, No. 7, by ADB, HKIMR and CIGI.

Wolfson, M. (2002): Minsky's Theory of Financial Crisis in the Global Context. In: Journal of Economic Issues, XXXVI (2), 393-400.

Xu, Q. and He, F. (2015): The influence of RMB internationalization on the Chinese economy. Theory and policy. In: CIGI Papers, No. 58, February 2015.

Zhang, L. and Tao, K. (2014): The Benefits and Costs of Renminbi Internationalization. In: ADBI Working Paper Series, No. 481.

Part II

Aglietta, M., Khanniche, S. and Rigot, S. (2010) Les Hedges Funds: Entrepreneurs ou Requins de la Finance?. Perrin: Paris

Andina (2012). Brazil in talks with Peru, Colombia to enter MILA. Url. http://www.andina.com.pe/ingles/noticia-brazil-in-talks-with-peru-colombia-to-enter-mila-408249.aspx

Belfrage, C. (2013). Challenges for strengthening Mercosul financial integration – lessons from the European experience. Banco Central do Brasil.

Canuto, O. (2015). De-Risking Is De-linking Small States from Global Finance. The World Post.

Url. http://www.huffingtonpost.com/otaviano-canuto/de-risking-is-de-linking_b_8357342.html

Financial Times (2014). Pacific Alliance impels Mexico south. April 1st.

Helleiner, E. (1994). States and the Reemergence of Global Finance: From Bretton Woods to Global Finance, Cornell University Press

Hermann, J.; Montani Martins, N. (2012). "The Brazilian Stock Market: Risk Analysis of the 2004-11's Upsurge". Análise Econômica no. 58: 87-120. UFRGS: Porto Alegre.

Jímenez, L. F.; Manuelito, S. (2011). "Latin America: financial systems and financing of investment. Diagnostics and proposals". CEPAL Review no. 103. CEPAL, UN: Santiago, Chile.

Kose, M., Prasad, E. and Terrones, M. (2003) Financial Integration and Macroeconomic Volatility. IMF Staff Papers Vol.50, Special Issue. International Monetary Fund

Lane and Milesi-Ferretti, (2003). "International Financial Integration". IMF Staff Papers. Vol 50, Url: https://www.imf.org/External/Pubs/FT/staffp/2002/00-00/pdf/lane.pdf

McKinnon, R. (1993). The Rules of the Game: International Money in Historical Perspective. Journal of Economic Literature, Vol. 31, No. 1. (Mar., 1993), pp. 1-44. Stable. Url. http://links.jstor.org/sici?sici=0022-0515%28199303%2931%3A1%3C1%3ATROTGI%3E2.0.CO%3B2-K

Murphy, H. (2011) Brazil, Mexico Want to Join MILA, Colombia's Santos Says. BloomberBusiness. August 12. Url. http://www.bloomberg.com/news/articles/2011-08-12/brazil-mexico-want-to-join-mila-colombia-s-santos-says

Prebisch, R. (1981). "The Latin America periphery in the global system of capitalism". CEPAL Review no. 13. CEPAL, UN: Santiago, Chile.

Ríos, Guillermo Larraín (2015). Integración Financiera en América Latina: Realidades, Desafíos y Propuestas Estratégicas. Brain , Mimeo.

Superintendencia de Pensiones de Chile (2012). Régimen de Inversión de los Fondos de Pensiones Url. https://www.spensiones.cl/portal/regulacion/582/articles-8473_recurso_1.pdf.

Torres Filho, E.; Macahyba, L. (2015). "Long Term Corporate Financing in Brazil: Is Brazil Becoming 'Normal'?". MINDS Discussion Papers no. 02. Multidisciplinary Institute for Development and Strategies (MINDS): Rio de Janeiro.

Torres, E. (2014). A Crise do Sistema Financeiro Globalizado Contemporâneo. Revista de Economia Política, vol. 34, nº 3 (136), pp. 433-450. Url. www.scielo.br/pdf/rep/v34n3/v34n3a05.pdf

Vera, C.; Titelman, D. (2013). "El sistema financiero en América Latina y el Caribe: Una caracterización". Serie Financiamiento para el Desarrollo no. 248. CEPAL, UN: Santiago, Chile.

World Bank (2012). Financial Development in Latin America and the Caribbean: The Road Ahead. The World Bank: Washington DC.