Hochschule für
Wirtschaft und Recht Berlin
Berlin School of Economics and Law

Institute for International Political Economy Berlin

Original Sin and South-South Cooperation: Insights for the Mercosur from the Experience of the Asian Bond Market Initiative

Author: Candelaria Fernández Tucci

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Candelaria Fernández Tucci

Abstract

The financial crises of the late 1990s in Asian and South American countries have once again highlighted the negative implications of development strategies characterized by high levels of foreign currency external indebtedness. In light of these events, South-South cooperation is conceived as an alternative to unilateral strategies to mitigate the consequences of 'original sin' and reduce macroeconomic vulnerability and financial instability. Following the financial crises of the late 1990s, member states of the Association of Southeast Asian Nations plus China, Japan and the Republic of Korea (ASEAN+3) strengthened monetary cooperation while their South American peers, under Mercosur, maintained unilateral strategies. This paper analyzes the Asian Bond Market Initiative of the ASEAN+3 countries to draw insights for monetary cooperation in the Mercosur. The results suggest that the development of a regional local currency (LCY) bond market has a significant potential to reduce countries' exposure to currency and maturity mismatch. However, the persistence of the original sin phenomenon and the emergence of other sources of instability - such as an increase in the proportion of foreign holdings of LCY bonds - impose significant challenges for policymakers. Consequently, other policy instruments, including capital controls and international reserves accumulation, should complement the development of a regional LCY bond market. Given both the recurrent beggar-thy-neighbor policies and the high levels of intra-regional exchange rate volatility in the Mercosur, this paper argues that there is no alternative to exchange rate coordination in the bloc.

Keywords: Original sin; financial instability, south-south cooperation, Mercosur, Asian Bond Market Initiative; LCY bond markets

JEL Classification Code: G1, G15, F3, F4

Contact: candelaria.ft@gmail.com

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1. Introduction

Developmental strategies of southern economies are hampered by their "asymmetrical integration" in the international monetary system and their inability to support an "income-generating process" financed by credit in local currency (Metzger, 1999, p. 92; De Paula et al. 2017, p. 5). The concept of original sin relates to the incapacity of developing countries to borrow abroad in domestic currency or at long maturities and fix rates in the domestic market (Eichengreen et al., 2005b). Its consequences, namely currency and maturity mismatches and the limited capacity of central banks to act as lenders of last resort, have left developing countries in a vulnerable position against external shocks, with high capital flows and exchange rate volatility, and more susceptible to financial crises (Camara-Neto & Vernengo, 2009; Panizza, 2006; De Paula et al., 2017). Heterodox scholars have shed light on the potential of South-South Cooperation (SSC) to reduce external vulnerability and financial instability in developing countries (Fritz & Mühlich, 2015; Fritz & Metzger, 2006; Ocampo, 2006; Camara-Neto & Vernengo, 2009). For these authors, SSC offers significant opportunities to improve member countries' capacity to react to external shocks, by mitigating the consequences of original sin and fostering trade and financial links within the region. Its advantages in reducing macroeconomic volatility and vulnerability are enormous when compared to unilateral strategies.

Against this backdrop, different types of south-south monetary arrangements have been implemented in the global south. Nevertheless, further research on these initiatives, in particular empirical research on their results, benefits and constraints, is required not only for theoretical but also for political debate. This study aims to contribute to this effort by analyzing the experience of the Asian Bond Market Initiative (ABMI), a south-south monetary cooperation in the form of a regional financial market among ASEAN+3 countries[1], created after the financial crisis of the late 1990s. By doing so, this article will draw insights for regional monetary cooperation in the Mercosur, a customs union created by Brazil, Argentina, Uruguay and Paraguay in 1991. In this sense, this working paper responds to the following research question: *what lessons can be drawn for regional monetary coordination in the Mercosur from the experience of the AMBI?*

[1] ASEAN+3 countries comprise Singapore, Philippines, Malaysia, Indonesia, Thailand, Vietnam, Laos, Brunei, Cambodia, China, Japan and South Korea.

The motivation for this study and the selection of case studies follows different reasons. In the first place, after decades of pursuing unilateral strategies to cope with original sin, some countries of the Mercosur have recently reaffirmed their interest in moving toward closer monetary cooperation. To boost bilateral trade and reduce their demand for the US dollar, the largest countries of the bloc, Argentina and Brazil, have announced that they intend to strengthen the use of the Local Currency Payment System (SML) within the bloc and to create a common currency for the two countries, with the possibility of including other economies of the region (Fritz, 2023). This renewed interest in monetary cooperation has revived the debate about the benefits and challenges that these types of arrangements would have for member countries. Theoretical and political debate on this topic is crucial considering that South American economies are not only highly affected by original sin but also have a long history of currency and banking crises that are related to this phenomenon. In that respect, the last of the major crises in the region took place in the late 1990s, and many authors claim that the pursuit of a developmental strategy characterized by current account deficits and high levels of external indebtedness in foreign currency was the main factor behind them (Metzger, 2001; Yilmaz, 2014; Damill et al., 2005; Cline & Vernengo, 2016). Moreover, after years of implementing unilateral strategies, Mercosur countries continue to face financial vulnerabilities, which have not only contributed to macroeconomic instability but also disrupted regional integration (Mühlich, 2014).

In the second place, after the financial crisis of the late nineties, ASEAN+3 economies have incurred a wide range of different south-south monetary arrangements to cope with original sin and reduce financial vulnerability. Even though other types of regional monetary arrangements among ASEAN+3 economies could also provide important insights for the Mercosur - such as the Chiang Mai Initiative Multilateralization - the ABMI, which has been in existence for almost two decades, is an advanced and well-documented initiative that allows for a comprehensive assessment of its results, achievements and challenges. Moreover, its objectives to reduce both financial instability and currency and maturity mismatch through the development of domestic and regional bond markets are particularly significant for Mercosur.

To approach the research question, the methodology used is a literature review and empirical data analysis. Literature research is used not only to theoretically present the phenomenon of original sin and the main policy options to cope with it but also to shed light on the policies implemented under the ABMI and the Mercosur and their outcomes. Empirical data is used to measure to what extent Mercosur and ASEAN+3 economies are marked by original

sin and how this phenomenon has evolved from the years prior to the financial crisis of the late 1990s to the present. For this, the index of foreign original sin developed by Eichengreen et al. (2005b) will be applied to the period 1996-2022. Due to the scarce data needed to build a domestic original sin (DSIN) index in both regions, the DSIN of Reynaud & Mehl (2005) will be used for the available period 1994-2004 and corporate bond average maturity will be used to measure to what extent the private sector has had access to long-term financing during the period 2000-2021, for which data is available. Moreover, empirical data will be used to evaluate the outcomes of both the unilateral strategy followed by Mercosur, particularly the prevalence of external vulnerability in the region and the level of development of member countries' domestic financial markets, and the achievements of the ABMI by looking at the growth and depth of ASEAN+3 LCY government and corporate bond markets, the maturity profile of bonds and the issuance of intra-regional bonds. It is important to clarify that, due to the lack of data on many indicators for Paraguay, the empirical analysis of the Mercosur is particularly focused on Argentina, Brazil and Uruguay.

The remainder of this working paper is organized as follows: Section 2 assesses the phenomenon of original sin from a theoretical and empirical perspective. Section 3 deals with the political options to cope with original sin and presents the two case studies: the ABMI and the unilateral strategies followed by the Mercosur. Section 4 concludes by summarizing the insights for regional monetary cooperation in the Mercosur based on the ABMI.

2. The Phenomenon of Original Sin in Developing Countries

Developing countries suffer from what Eichengreen & Hausmann (1999) call "original sin" and define it as "a situation in which the domestic currency is not used to borrow abroad or to borrow long-term, even domestically" (Eichengreen & Hausmann, 1999, p. 331). The international dimension of the phenomenon, called "foreign original sin", refers to the impossibility to borrow in domestic currency in international financial markets, while "domestic original sin" describes the incapacity to borrow long-term and at a fixed rate in domestic currency in the domestic market. Apart from the issuers of the 5 major currencies – the US dollar, the euro, the yen, the pound and the Swiss franc – in which international portfolios tend to be concentrated, all economies suffer from foreign original sin. However, developing countries are persistently the most affected (Eichengreen et al., 2005a).

Regarding the causes of original sin, Eichengreen et al. 's (2005b; 2023) empirical findings suggest that international investors decide to compose their world portfolios primarily with the currencies of a few large economies, which are more attractive because they offer greater opportunities for diversification than those of small countries. Consequently, the size of a country is a critical determinant of original sin. This finding is confirmed by Gegenfurtner (2021), whose empirical results reveal that the negative relationship between GDP size and original sin is bidirectional, i.e., the size of an economy is a determinant of original sin and, at the same time, original sin is an obstacle to the catching-up process of developing countries. The author refers to the literature on currency hierarchy to explain his findings. According to this literature, the international monetary system encompasses a hierarchy of currencies that places at the top of the pyramid the currency with the highest liquidity premium, today represented by the US dollar, and at the bottom of the pyramid, the currencies with a low liquidity premium, represented by developing countries, which accounts for both pessimistic expectations of their stability and their ability to fulfill all national functions of money (Herr, 1988; De Paula et al., 2017). This theory thus claims that, contrary to what conventional economic literature states, institutional development, public indebtedness and central bank independence are not responsible for original sin but rather investors' liquidity preference (De Paula et al., 2017). An important implication from the literature on currency hierarchy is that the lower the quality and state of confidence in the currencies of developing countries in comparison to those of the North, the higher the interest rates that southern economies need to set to compensate (Herr, 1988). Thus, everything else equal, differences in liquidity premium hinders investment dynamics and reinforces developmental gaps (Metzger, 1999).

The consequences of foreign original sin in these economies, namely currency and maturity mismatch, constrained monetary policy and restricted lender of last resort functions, have tremendous implications for economic and financial stability (Fritz & Metzger, 2006). The currency mismatch in southern countries' national balance sheets makes them significantly vulnerable to depreciations of the exchange rate, which raise the value of the real debt stock and thus jeopardizes the ability to service the debt. As many authors argue (Cline & Vernengo, 2016; Kaminsky & Reinhart, 1999), currency crises can be triggered by external factors, such as an increase in the foreign interest rate or a negative shock in the terms of trade, that increase the burden of the debt denominated in foreign currency. In a fixed exchange rate regime, persistent current account deficits and a higher debt burden raise both perceptions of incapacity to service the debt and depreciation expectations, thereby triggering capital flight, reducing

international reserves and forcing the central bank to float the currency. Eventually, since exchange rate volatility in developing countries is strongly linked to international capital movements and investors' confidence, depreciation follows, and the country is likely to fall into a currency crisis.

Moreover, the decline in the national liquidity premium – as a result of depreciation expectations and capital outflows – forces monetary authorities to strongly increase the short-term interest rate in an attempt to avoid capital flow reversals and fluctuations in the exchange rate (Cline & Vernengo, 2016; De Paula et al., 2017). Consequently, the value of domestic short-term liabilities in local currency increases. If the economy also suffers from domestic original sin, the situation gets even worse due to maturity mismatch. Furthermore, in highly dollarized economies, currency mismatch extends to the banking sector (Yılmaz, 2014). The higher the liabilities in foreign currency in the banking system, the larger their exposure to negative balance sheet effects and liquidity shocks that can end up in a banking crisis. Kaminsky & Reinhart (1999) point out that the collapse of a currency crisis intensifies a banking crisis via the increase in the interest rate required to avoid capital flight and the eventual depreciation of the currency, leading to a "vicious spiral". Thus, banking crises can precede currency crises, but they can also follow them. In addition, central banks' lender of last resort function to prevent solvency crises in the face of liquidity constraints is strongly reduced in countries with original sin since they can only issue domestic currency and not the currency in which the debt is denominated (Fritz & Metzger, 2006). Finally, original sin limits developing countries' capacity to undertake counter-cyclical policies and to implement adequate monetary policies for a sustainable domestic income generation process. In the long run, high levels of uncertainty hinder investment and economic growth (Fritz & Metzger, 2006).

2.1 Measuring Original Sin in Mercosur and ASEAN+3 Economies

Foreign original sin in Mercosur and ASEAN+3 economies is measured using the indexes OSIN1 and OSIN3 of Eichengreen et al. (2005b). The first indicator (*OSIN1*) measures the share of total securities issued in the international market by residents of country *i* in domestic currency. In this sense,

$$OSIN1_i = 1 - \frac{Securities\ issued\ by\ country\ i\ in\ currency\ i}{Securities\ issued\ by\ country\ i}$$

Unlike OSIN1, OSIN3 considers in the numerator not only international debt securities issued by residents but also by non-residents of country *i*. Since a country cannot hedge more

debt securities than it issues, the index is capped at zero to eliminate negative values that may arise when the international securities issued by country i are less than those issued in currency *i* (Eichengreen et al., 2005b). Therefore,

$$OSIN3_i = max\left\{1 - \frac{Securities\ in\ currency\ i}{Securities\ issued\ by\ country\ i}; 0\right\}$$

Both indicators, OSIN1 and OSIN3, can take values between 0 and 1. Those equal to zero mean the absence of foreign original sin while values equal to 1 refer to economies that are completely unable to borrow abroad in their own currency. It is important to consider that both indexes have a problem with coverage since they do not account for debt instruments other than securities (Eichengreen et al., 2005b). In order to calculate OSIN1 and OSIN3, data from BIS was used for the period 1996-2022. Since BIS data is provided on a quarterly basis, the fourth quarter of the year was used as the annual value. The results are presented in Table 1.

Table 1: Index OSIN1 and OSIN3 for the period 1996-2022

	OSIN1			OSIN3		
Country	**1996-2004**	**2005-2012**	**2013-2022**	**1996-2004**	**2005-2012**	**2013-2022**
Argentina	0,98	0,99	1,00	0,98	0,99	0,99
Brazil	1,00	0,92	0,96	1,00	0,75	0,79
Uruguay	0,98	0,79	0,77			
Japan	0,59	0,42	0,82	0,00	0,00	0,08
China	1,00	0,79	0,78	0,99	0,49	0,27
South Korea	1,00	1,00	1,00	1,00	0,97	0,99
Indonesia	0,99	1,00	1,00	0,96	0,82	0,87
Malaysia	1,00	1,00	1,00	1,00	0,86	0,94
Philippines	1,00	0,98	0,95	0,99	0,97	0,93
Thailand	0,92	0,86	0,91	0,91	0,63	0,68
Singapore	0,96	0,86	0,90	0,76	0,51	0,72
Vietnam	1,00	0,95	0,98			

Source: own calculations, own depiction based on BIS (2023)
Note: Data for Paraguay, Brunei, Laos and Cambodia was not available

As depicted in Table 1, countries of the Mercosur have been persistently marked by high levels of foreign original sin, measured as both OSIN1 and OSIN3. The extreme case is represented by Argentina, which shows values of OSIN1 and OSIN3 close to one in all the periods under analysis. The economies of the ASEAN+3 are also highly affected by foreign original sin, especially when measuring original sin with OSIN1. The improvements of foreign original sin in many of the countries under analysis are observed by the index OSIN3 during

the timeframe 2005-2012, which indicates that they were mainly driven by non-residents' issuances. As Eichengreen et al. (2023) and Gegenfurtner (2021) suggest, the increasing local currency issuances by foreign investors in emerging and developing countries were partially a consequence of the expansionary monetary policy of advanced economies after the global financial crisis, that encouraged investors to denominate their portfolios in other currencies that offer more attractive yields. However, this progress was reversed during the period 2013-2022 in many developing countries – see for instance Brazil, Indonesia, Malaysia, Thailand and Singapore. Considering the evolution of OSIN1, Uruguay is an interesting case because its progress on foreign original sin did not reverse in the last years. Eichengreen et al. (2023) claim that the fall in OSIN1 in Uruguay reflects a change in the composition of government and corporate debt toward a higher share of indexed and short-term bonds in domestic currency.

Data to quantify domestic original sin in a manner that allows for comparison among different economies is scarce. Therefore, this study uses two different indicators: Reynaud & Mehl (2005)'s domestic original sin index for the period 1994-2004 and data on corporate bond average maturity for the period 2000-2021. To assess domestic original sin, Reynaud & Mehl (2005) measure the share of long term fixed rate domestic debt in local currency to total domestic debt:

$$DSIN_i = 1 - \frac{Long\ term\ domestic\ debt\ in\ local\ currency\ with\ \ fixed\ interest\ rate\ i}{Total\ domestic\ debt\ i}$$

Values of DSIN equal to 0 mean the absence of domestic original sin, while those close or equal to 1 refer to high levels of domestic original sin, meaning that domestic debt maturity is mainly either short-term, indexed, or in foreign currency. As depicted in Table 2, countries of the Mercosur have persistently suffered from high levels of domestic original sin, in which most of the domestic debt was either short-term, in foreign currency, or indexed to inflation or the interest rate. According to data from Borensztein et al. (2008), only 13% of central government debt in Brazil in 2005 was at long maturity. The authors demonstrate that there was a great presence of domestic debt in foreign currency in Argentina and Uruguay: 71% of domestic central government debt in Uruguay and 26% in Argentina in 2005. For both countries, the rest of the domestic debt was mostly indexed to prices. Even though Brazil presented a more favorable debt structure, more than half of government debt was indexed to the overnight interest rate, with 16% short term and 13% indexed to prices. Data of Eichengreen et al. (2023) shows that a significant share of central government debt in the domestic market continues to be denominated in foreign currency, particularly in Argentina and Uruguay. In

2021, the share of foreign currency debt for central government securities held by residents was almost 60%, 35% and 15% in Uruguay, Argentina and Brazil, respectively (Eichengreen et al., 2023). Moreover, the private sector faces worse conditions to get domestic debt than the central government. Borensztein et al. (2008)'s data shows that Argentina and Uruguay's corporate domestic bonded debt was entirely in foreign currency in 2005. In Brazil, 84% was indexed to the overnight interest rate and 12% was indexed to prices.

On the contrary, ASEAN+3 economies were much less affected by domestic original sin. As depicted in Table 2, Indonesia and Philippines presented the highest values of DSIN, though they remained much lower in comparison to the economies of Mercosur. However, Eichengreen et al. (2023)' data show that from 2005 to 2021 the share of foreign currency debt for central government securities held by residents has increased to almost 40% and 30% in Indonesia and Malaysia, respectively.

Table 2: Domestic Original Sin Index

Year	Argentina	Brazil	Uruguay	Indonesia	South Korea	Malaysia	Philippines	Singapore	Thailand
1994	0,72				0,00	0,12		0,31	0,00
1995	0,78				0,00	0,13		0,31	0,00
1996	0,76				0,00	0,11		0,29	0,00
1997	0,79				0,00	0,10		0,32	0,00
1998	0,80				0,00	0,08		0,39	0,00
1999	0,86	1,00	1,00	0,80	0,00	0,08	0,64	0,34	0,04
2000	0,93	1,00	1,00	0,55	0,00	0,09	0,58	0,31	0,09
2001	0,97	1,00	1,00	0,56	0,00	0,07	0,52	0,27	0,13
2002	0,99	1,00	1,00	0,61	0,00	0,08	0,48	0,29	0,11
2003		0,98	1,00	0,59	0,00	0,08	0,55	0,27	0,10
2004		0,98	1,00	0,55	0,00	0,07	0,53	0,28	0,11

Source: own depiction based on Reynaud & Mehl (2005).

In addition, Table 3 depicts the average maturity of corporate bonds for selected countries. As can be seen, many countries have managed to lengthen their corporate bond maturities in recent years, notably Indonesia, Japan, Malaysia, Thailand and Brazil. On the contrary, in countries such as Argentina, South Korea and Vietnam, the maturity of corporate bonds has not only remained short-term but also procyclical, meaning that the private sector faces worse conditions to get funding in times of crisis. For instance, as depicted in Table 3, corporate bond average maturity in these economies declined during the global financial crisis in 2008 and the COVID pandemic in 2020.

Table 3: Corporate bond average maturity, 2000-2021, in years

Year	Argentina	Brazil	Uruguay	China	Indonesia	Japan	South Korea	Malaysia	Philippines	Thailand	Vietnam	Singapore
2000	5,6	3,5	…	4,0	5,2	7,0	2,7	8,6	9,0	4,0	…	6,9
2001	3,1	7,2	…	10,9	4,6	7,4	3,0	9,7	..	4,7	…	6,4
2002	8,4	8,5	…	11,8	5,3	7,3	2,9	10,6	6,9	5,2	…	5,1
2003	4,7	6,9	…	13,1	5,9	7,9	3,7	7,9	9,6	5,7	…	7,4
2004	6,0	8,3	…	10,1	5,5	7,5	4,3	8,0	6,1	6,3	…	6,1
2005	5,7	9,4	…	6,6	5,3	8,0	4,2	7,2	6,2	8,8	…	6,7
2006	4,5	9,3	…	9,8	6,1	8,8	4,5	5,6	8,4	4,9	6,8	6,4
2007	5,3	8,9	…	9,8	8,2	7,7	4,4	8,8	5,1	6,5	8,3	5,7
2008	2,9	10,5	…	6,1	4,8	7,3	3,4	6,7	4,8	5,8	6,1	3,2
2009	6,0	10,8	…	5,5	7,3	7,3	3,7	10,5	5,2	6,7	5,0	6,4
2010	9,2	8,4	…	5,7	6,6	7,0	4,0	6,2	7,7	7,9	4,2	6,4
2011	6,8	8,1	8,0	5,3	10,8	6,8	4,4	7,4	6,6	8,2	5,0	5,6
2012	3,7	8,1	…	5,4	13,2	6,0	5,7	9,2	6,6	8,5	…	7,1
2013	4,6	7,5	6,1	4,7	8,3	6,9	5,9	7,6	9,4	6,6	4,5	5,2
2014	7,0	7,4	8,1	3,8	8,8	7,9	5,6	7,8	8,6	5,1	10,0	5,3
2015	8,2	10,0	17,6	3,5	6,6	8,8	5,7	8,9	8,1	4,9	…	6,6
2016	5,2	6,2	…	29,9	33,5	10,5	4,6	7,8	…	6,9	5,3	6,5
2017	8,4	7,1	10,0	…	19,3	47,5	4,9	72,7	7,5	83,2	…	…
2018	5,4	6,2	…	…	18,4	8,9	7,3	47,2	…	37,8	…	83,6
2019	8,6	9,1	…	…	10,5	11,0	5,0	60,8	…	45,5	8,9	…
2020	4,7	12,4	5,4	…	10,9	12,1	5,1	92,7	…	27,4	5,1	…
2021	7,8	62,1	…	69,5	8,1	21,3	4,7	62,4	…	19,6	5,0	…

Source: own depiction based on World Bank (2023a)

As was shown throughout this section, ASEAN+3 and Mercosur economies have suffered from high levels of original sin. The last of the major crises in these regions related to this phenomenon took place in the late 1990s and affected particularly Thailand, Singapore, the Philippines, South Korea, Indonesia, Malaysia, Argentina, Brazil and Uruguay. While in countries of Mercosur, foreign indebtedness was accumulated mainly by the public sector, the crisis in East Asia was mostly driven by an extreme short-term international borrowing (in foreign currency) by commercial banks and non-bank corporations (Metzger, 1999; Yilmaz, 2014). Countries of both regions were in an international net debtor position that, combined with overvaluation of the exchange rate and current account deficits, contributed to a higher currency mismatch, followed by depreciation expectations and higher interest rates in an attempt to prevent capital outflows (Metzger, 2001; Cline & Vernengo, 2016). This led to cumulative effects that not only affected output but also exacerbated domestic debt, especially in Mercosur economies that suffered from domestic original sin (Yilmaz, 2014; Damill et al., 2005). When access to foreign funds stopped and international reserves fell to such an extent that it was impossible to support the currency, capital outflows accelerated, attacking the domestic currencies of these economies and triggering a currency and banking crisis (Metzger, 2001).

In the aftermath of the crisis of the late 1990s, the persistence of high levels of original sin in the economies under analysis suggests that they remain extremely vulnerable to external shocks, capital flow reversals and exchange rate fluctuations. In this context, pursuing a process

of external indebtedness makes them highly susceptible to financial crises – as occurred in Argentina in 2019 (Borensztein et al. 2020). In light of these vulnerabilities, the next sections present different political options that developing countries have to cope with original sin and the strategies followed by the Mercosur and the ASEAN+3 economies after the crisis of the late 1990s.

3. Political Options to Mitigate Original Sin

There are two primary political options that developing countries have to mitigate the consequences of original sin and to enhance shock-buffering capacity: unilateral strategies and regional monetary cooperation. Despite the greater stability gains that a North-South monetary arrangement offers in comparison to South-South Cooperation (SSC), this policy option is not available for the majority of developing countries, and therefore this study focuses only on SSC (Fritz & Metzger, 2006).

To unilaterally cope with original sin, developing economies face different policy instruments: 1) accumulation of international reserves, which serves as an insurance mechanism from external shocks by enlarging central banks' intervention capacity to provide foreign liquidity against sudden capital outflows and portfolio shifts (Yılmaz, 2014); 2) implementation of capital controls to discourage financial short-term capital inflows; and 3) reduction of international borrowing while increasing the dependence on the domestic financial system to get finance by developing a sophisticated domestic financial market, thereby reducing the exposure to negative balance sheet effects (Mühlich, 2014). Despite the benefits of these three strategies in terms of shock-buffering capacity and reducing external vulnerabilities by preventing capital flow reversals and exchange rate fluctuations, they present several limitations and costs, in particular when compared to south-south arrangements. First, the accumulation of international reserves implies costs for the economy because the central bank borrows these reserves at an interest rate higher than the one it could receive in the international financial market (UNCTAD, 1999). Second, economic size matters for the development of a domestic financial system. In particular, small countries face many obstacles to the development of bond markets, since it requires economies of scale to spread bond issuance fixed costs (Borensztein et al., 2008). As Mühlich (2014, p.58) indicates:

"Domestic debt markets require a minimum scale to operate efficiently and attract investors. The larger the market, the fewer price effects are associated with a single operation, and the

less influential is the behavior of each market participant. Furthermore, market size increases efficiency, as bond markets in particular incur significant scale effects with regard to clearance and settlement procedures, payment system, data and information processing, and, in particular, firm-level information and firms' market listings. Finally, a liquid secondary market is unlikely to develop with a small primary market".

Third, many scholars claim that one of the major costs of unilateral strategies is related to competitive devaluations and beggar-thy-neighbor policies that not only disrupt a regional integration process but also contribute to contagion effects (Fritz & Metzger, 2006; Camara-Neto & Vernengo, 2009; Heribert, 2000). These types of policies are common in economies that are unilaterally exposed to external shocks and, in particular, among those that are export competitors or that, due to original sin, aim to gain foreign exchange to be able to repay their debt. In the face of capital flow volatility, these countries tend to increase the interest rate to gain foreign exchange by attracting capital inflows and foreign direct investments. When these policies become unsustainable, competitive devaluations proceed as a way to obtain current account surpluses. However, there are two key drawbacks to this type of strategy. First, it only works if the competitors do not also decide to devalue to avoid a reduction in their market share; otherwise, it can end up in a depreciation-spiral among countries of the same region (Metzger, 1999). Second, in a currency crisis, devaluations can cause contagion effects in the rest of the countries if they trigger devaluation expectations and capital outflows in the rest of the member countries. Furthermore, "restrictive domestic policies following currency devaluation produce restrictive effects on regional partners through direct trade and financial links in the region: falling demand and changes in the direction of financial flows due to higher yields in the adjusting economy create a deflationary effect on other countries within the region." (Fritz & Mühlich, 2015, p. 137/138).

On the other hand, heterodox scholars have shed light on the great opportunities that South-South Cooperation (SSC) arrangements offer to reduce economic instability and financial vulnerability in countries affected by original sin (Fritz & Mühlich, 2015; Fritz & Metzger, 2006; Ocampo, 2006; Camara-Neto & Vernengo, 2009). Following Fritz & Mühlich (2015), there are four types of regional monetary cooperation: regional payment systems,

regional liquidity sharing mechanisms, regional exchange rate arrangements and regional financial market initiatives[2].

Regional payment systems consist of international mechanisms that reduce transaction costs and foreign currency flows (Fritz, Biancarelli & Mühlich, 2012). Their main objectives are to increase intra-regional trade, facilitate cross-border trade payments in domestic currency and provide liquidity to deficit central banks (UNCTAD, 2007; Fritz & Mühlich, 2015). According to Fritz et al. (2012, p.6), the reduction of transaction costs and foreign currency flows can be achieved through the "establishment of a clearing mechanism among the central banks of the participating countries, where trade-related payments are registered" and who agree to "temporarily extend credit to each other by settling the accumulated net differences periodically". The longer the clearing period, the stronger the reduction in transaction costs and the volume of liquidity provided to member countries (Fritz & Mühlich, 2015).

Regional liquidity-sharing mechanisms aim to increase the ability of the central bank to intervene in the face of capital flow reversals and to defend the currency from speculative attacks (Heribert, 2000). They can take the form of either regional swap arrangements or the constitution of international reserve pools (Fritz & Mühlich, 2015, p. 135). In comparison to a unilateral strategy of holding international reserves, "in a reserve pool, member countries may access liquidity with higher leverage" (Fritz & Mühlich, 2015, p. 135). The smaller the country, the larger the benefits of joining a reserve fund in comparison to its contribution. However, to function as insurance mechanisms against negative shocks, the emergency liquidity withdrawals by member countries cannot happen simultaneously. Otherwise, "a symmetrical reaction of the regional economies implies that a regional reserve fund effectively is little more than the sum of national reserves and intervention capacities" (Fritz & Metzger, 2006, p. 21).

Regional exchange rate cooperation can take different forms, such as exchange rate consultations among regional partners, intra-regionally fixed exchange rates and intra-regional exchange rate bands (Heribert, 2000). Even though it entails high levels of macroeconomic coordination among central banks and policymakers, this type of arrangement has significant potential gains not only in terms of macroeconomic stability but also in trade integration among member countries through the stabilization of intra-regional exchange rates (UNCTAD, 2007; Ocampo, 2006, Fritz & Mühlich, 2015). In this sense, stabilizing intra-regional exchange rates

[2] Different classifications of regional monetary and financial cooperation can be found in Ocampo (2006) and UNCTAD (2007)

prevents competitive devaluations and “beggar-thy-neighbours” policies by “enhancing the prevention of regional contagion and internalizing the external effects of domestic macroeconomic policies on regional partners” (Fritz & Mühlich, 2015, p. 134).

Finally, the development of a regional financial market has many potential benefits: it assists small countries to overcome obstacles related to the size of their economies for the development of a domestic financial market; provides better financing opportunities in terms of maturity, liquidity and diversification, thereby reducing currency and maturity mismatch; and encourages the use of regional currencies not only among member countries but also with extra-regional economies (Ocampo, 2006; Fritz & Mühlich, 2015). One way to develop a regional financial market is through the creation of a regional market for local currency (LCY) bonds with the support of multilateral financial institutions. These institutions might play an important role to support the demand and supply of LCY bond issuance since they have a higher capacity to diversify risk and higher credit ratings than national institutions, since investors can then separate credit risk from currency risk (Ocampo, 2006; Fritz & Mühlich, 2015; UNCTAD, 2007).

3.1 Unilateral Strategy Under the Mercosur

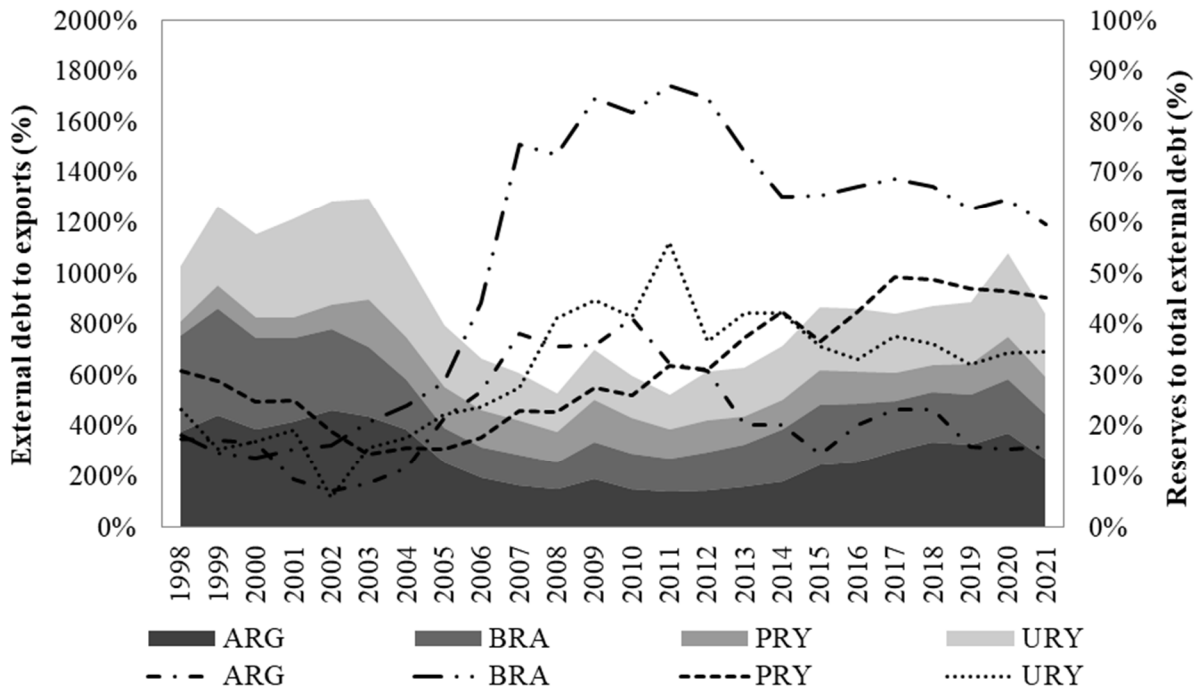
The Mercosur was established in 1991 by Argentina, Brazil, Paraguay and Uruguay with the purpose of supporting the economic development and international market integration of member countries through the establishment of a customs union. Since the early days of Mercosur, more ambitious goals such as macroeconomic policy coordination, regional monetary cooperation and even a common regional currency were debated (Cardim de Carvalho, 2006). Recently, these ideas have gained momentum in the bloc with the announcement of Argentina and Brazil’s intention to strengthen the use of the Local Currency Payment System (SML) and to analyze the feasibility of creating a common regional currency in the long run (Fritz, 2023).

Since its foundation, Mercosur has functioned as a ‘partial’ customs union, in which intraregional tariffs have been partially eliminated due to recurrent protection measures by Argentina and Brazil. With a minimal institutional setting and a lack of a supranational decision-making body, policies in the bloc are discussed and decided directly by member countries’ governors (Machinea & Rozenwurcel, 2005). Apart from a Regional Structural Adjustment Fund and a small-scale local currency payment system, member countries have

followed unilateral strategies to cope with original sin and its consequences (Mühlich, 2014; UNCTAD, 2007).

During the 2000s, Mercosur economies unilaterally held increasing international reserves as a safeguard for capital flow reversals and external shocks, which was also fueled by the rise of the commodity prices of member countries' exports. As depicted in Figure 1, total foreign exchange reserves to external debt increased during the 2000s in all member countries of the bloc. According to Ocampo (2011), this allowed the economies to avoid a high exchange rate volatility during the capital flow reversal that followed the financial crisis of 2008. However, since 2012, the ratio shows a downward trend, particularly in Argentina and Brazil.

Figure 1: External debt stock to exports and total reserves to external debt, 1998-2021, in percent. Mercosur economies

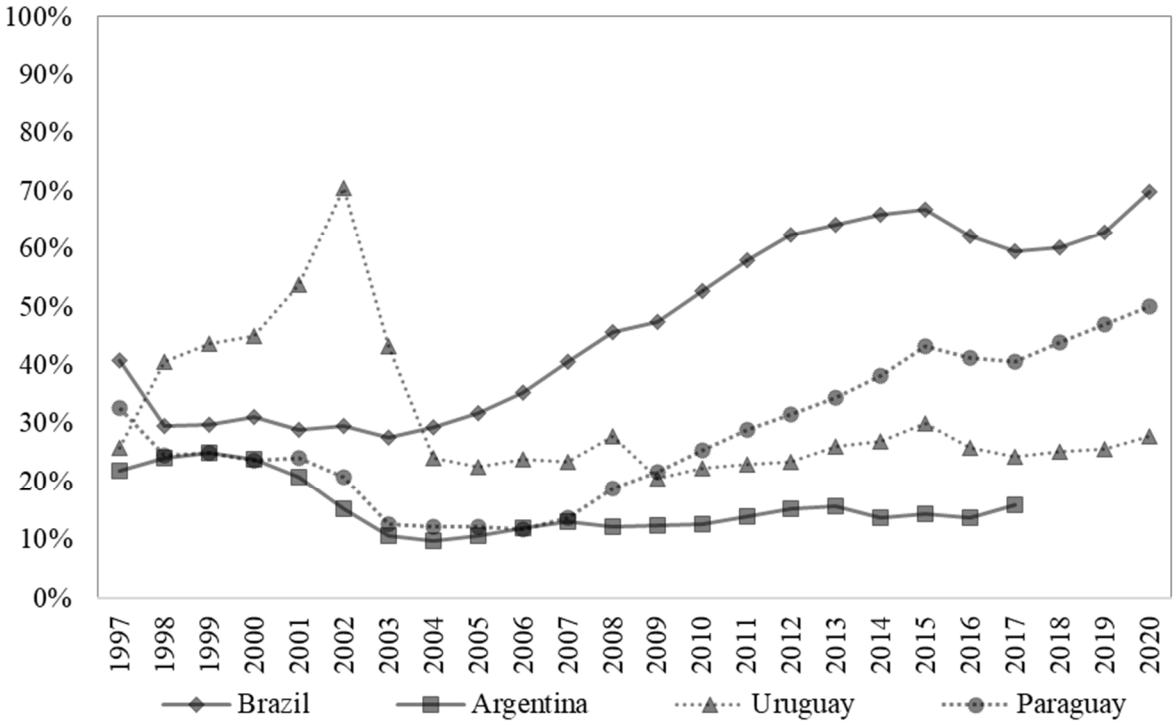


Source: own depiction based on World Bank (2023b)

Moreover, Mercosur countries have increased their reliance on domestic debt securities following the crisis of the late 1990s, whose ratio to GDP has constantly increased (World Bank, 2023a). However, the level of development of domestic financial markets in the region is still low, particularly when compared to other developing countries (Mühlich, 2014; Camara-Neto & Vernengo, 2009; Borenztein et al., 2008). In this sense, Figure 2 depicts the financial market size of Brazil, Argentina, Uruguay and Paraguay, measured as domestic private credit

to GDP. As depicted, only in Brazil and Paraguay have financial markets grown in the 2000s. In Uruguay and Argentina, the ratio of private credit to GDP has remained at constant levels since 2004.

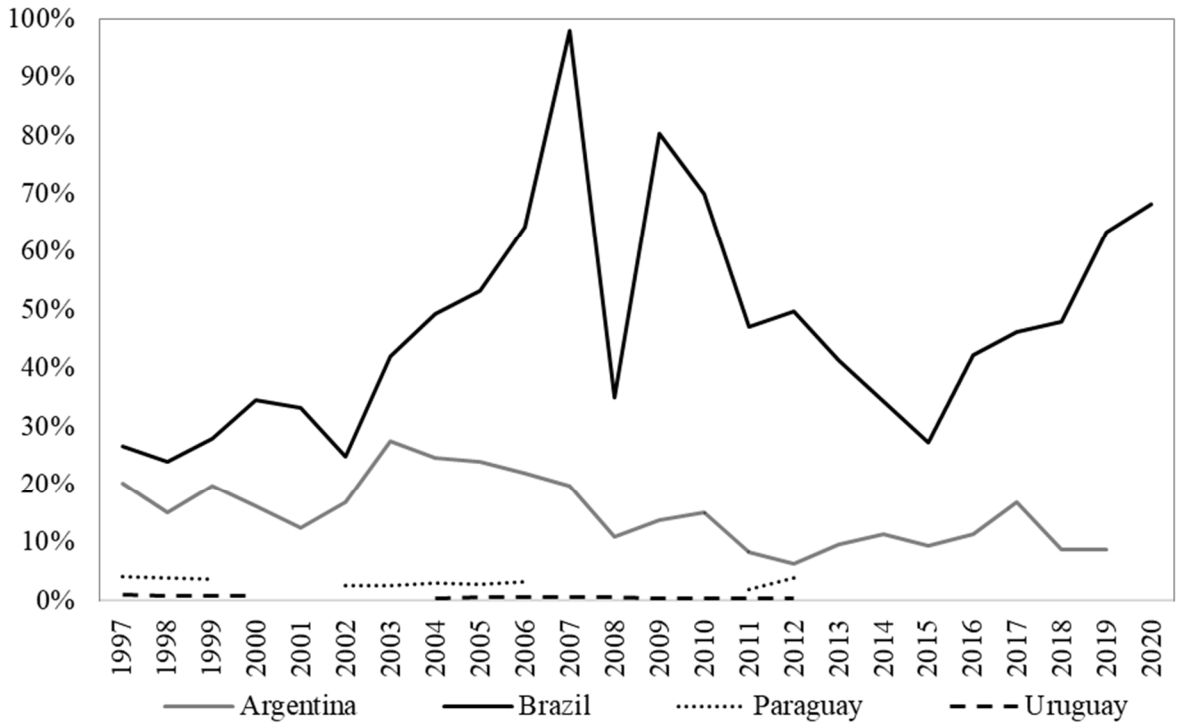
Figure 2: Domestic private credit to GDP (%)



Source: own depiction based on World Bank (2023a).
Note: data for Argentina was only available until 2017.

Furthermore, both stock and bond markets are relatively underdeveloped and small in Mercosur economies in comparison to other emerging countries, leading to a domestic financial system highly reliant on the banking system, especially in Argentina, Uruguay and Paraguay (Mühlich, 2014). As depicted in Figure 3, which illustrates market stock capitalization to GDP, the stock market in Argentina is very small, while in Paraguay and Uruguay it is almost nonexistent. Brazil not only presents the highest stock market capitalization to GDP ratio, but it also stands out for having the highest levels of liquidity in stock markets, measured as the stock market turnover ratio (World Bank, 2023a).

Figure 3: Stock Market Capitalization in % of GDP



Source: own depiction based on World Bank (2023a)
Note: data for Paraguay and Uruguay was not available for the whole period of time.

Like stock markets, Mercosur bond markets lag behind other emerging economies in terms of size, liquidity and duration of issuance (Mühlich, 2014; Borentzein et al., 2008). As Mühlich (2014) shows, public bond market capitalization to GDP in Brazil and Argentina was 40% and 13% in 2011, respectively, while it exceeded 50% in Malaysia and Singapore in the same year. Furthermore, private bonds continue to have a limited share in the region: private bond market capitalization in 2011 was 23% and 2% in Brazil and Argentina, respectively, while it reached 60% in both Malaysia and South Korea in the same year (Mühlich, 2014). Moreover, as depicted in Table 4, the ratio of the corporate bond market to GDP continues to be very small in the region.

Table 4: Corporate Bond Issuance Volume to GDP, in percent, 2000-2021

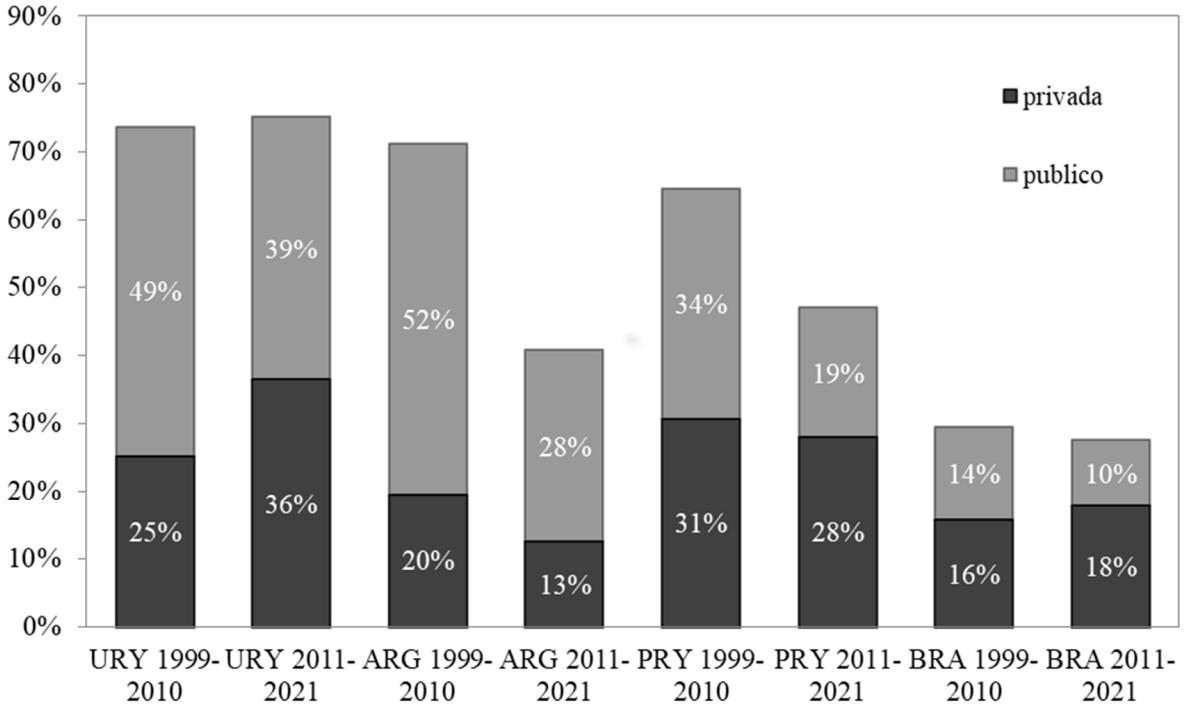
Year	Argentina	Brazil	Uruguay	Paraguay
2000	0,3%	0,3%	..	..
2001	0,1%	0,6%	..	..
2002	0,2%	0,5%	..	..
2003	0,1%	1,6%	..	..
2004	0,2%	0,9%	..	..
2005	0,4%	1,6%	..	..
2006	0,6%	2,7%	..	..
2007	0,8%	1,5%	..	..
2008	0,4%	1,1%	..	..
2009	0,4%	1,3%	..	..
2010	0,5%	1,3%	..	..
2011	0,3%	1,5%	0,4%	..
2012	0,4%	2,3%	..	0,9%
2013	0,7%	1,7%	0,2%	..
2014	0,4%	1,7%	0,7%	..
2015	0,4%	1,1%	0,4%	..
2016	1,0%	1,6%	..	..
2017	1,1%	2,5%	0,4%	..
2018	0,4%	2,3%	..	..
2019	0,3%	2,5%	..	0,8%
2020	0,4%	1,9%	1,2%	0,8%
2021	0,3%	2,4%	..	0,8%

Source: own depiction based on World Bank (2023a)
Note: data for Paraguay and Uruguay was not available for the whole period

Many authors argue that the development of domestic financial markets in Mercosur economies has been obstructed not only by macroeconomic instability and intra-regional exchange rate volatility within the region but also due to the lack of economic size, particularly in Uruguay and Paraguay (Mühlich, 2014; Borensztein et al., 2008). Borensztein et al. (2008) argue that small member economies of the Mercosur lack the necessary scale to support high issuance's fixed costs and to improve the liquidity of secondary markets, both necessary conditions for the development of domestic bond markets. Despite these difficulties, Mercosur has not embarked on regional financial cooperation in order to address the economic size obstacle of member countries. In fact, there are still many intraregional capital restrictions across the countries, particularly in Argentina and Brazil, and high asymmetries with respect to standardization and regulations, reflecting the low level of integration in the region (Mühlich, 2014).

Moreover, these economies still depend on the international financial market for credit and, due to the prevalence of original sin among them, they continue to be highly exposed and vulnerable to external shocks. As shown in Figure 4, even though total external debt to Gross National Income (GNI) was reduced in most Mercosur countries during the period 2011-2021, in comparison to the timeframe from 1999 to 2010, most of the reduction was achieved by the public sector (World Bank, 2023a). Private external debt to GNI has even increased during the period 2011-2021 in Uruguay and Brazil. As Bortz (2018) claims, this is a significant issue in Mercosur countries in which a great part of their private external debt corresponds to sectors with declining profits and those which do not generate net foreign exchange.

Figure 4: Private and Public debt to Gross National Income, average 1999-2010 and 2011-2021, in percent. Mercosur economies



Source: own depiction based on World Bank (2023a) and BCU (2023)

Argentina is a particular case due to the process of external indebtedness that began in 2016 and culminated in a currency crisis in 2019 (Borensztein et al. 2020). As shown in Figure 1, external debt in Argentina represented 340% of total exports in 2019, while its international reserves to external debt were only 16%, similar to the value prior to the crisis of 2001. Overall, external debt stock to exports has increased in member countries since 2012, particularly during the COVID-19 pandemic, while international foreign reserves have declined.

Lastly, competitive devaluations and beggar-thy neighbor episodes are recurrent among member countries. This has led many scholars to claim that regional cooperation in the Mercosur has been reduced rather than intensified since the financial crisis in the late nineties (Fritz & Mühlich, 2015; Machinea & Rozenwircel, 2005; Cardim de Carvalho, 2006). One of the most notable examples was the unilateral devaluation of the Brazilian real between 1999 and 2001. Since Argentina remained in the convertibility plan with a currency board, the Brazilian devaluation exacerbated exchange rate divergences among the countries and provoked protectionist measures in Argentina, Paraguay and Uruguay - which experienced comparative disadvantages in trade competitiveness (Fritz & Metzger, 2006). A similar situation was also evident during the financial crisis of 2008, particularly between Argentina and Brazil, which used different exchange rate policy strategies and thus experienced different speeds of exchange rate depreciation. Competitive devaluations and then protectionist measures to increase trade competitiveness were implemented in an attempt to compete for export earnings (Mühlich, 2014). In this regard, Machinea & Rozenwurcel (2005) state:

> " Whenever sharp macroeconomic fluctuations in either of the two larger members of the bloc have significantly altered intra-regional trade flows in ways that have adversely affected their neighbors, sectoral pressures and the public's reaction have inevitably given rise to policy responses oriented towards counteracting those effects. These policy measures have generally been aimed at restraining imports from the country which, either because of the presence of recessionary conditions or because of a devaluation of its currency, was in a better competitive position in the regional market. Neither Argentina nor Brazil departed from this pattern" (Machinea & Rozenwurcel, 2005, p. 23).

Therefore, one of the major drawbacks of the Mercosur is the absence of exchange rate coordination among member countries, which becomes particularly important due to the high variability of member countries' nominal and real exchange rates and the high levels of correlation of business cycles within the region (Mühlich, 2014). In this sense, business cycles generated domestically either in Argentina or Brazil, as well as external shocks affecting these economies, have strong negative repercussions in terms of growth in the smallest countries of the region, Uruguay and Paraguay, whose trade volumes with the Mercosur represent a large share of their total trade and whose most significant trading partners are Brazil and Argentina (IADB, 2020).

3.2. The Asian Bond Market Initiative

After the financial crisis of the late 1990s, ASEAN+3 economies have strengthened regional monetary cooperation in order to reduce macroeconomic vulnerability and financial instability (ADB, 2017). Cooperation among ASEAN+3 countries encompasses, among others, the Economic Review and Policy Dialogue (ERPD), the Chiang Mai Initiative (CMI), a regional liquidity mechanism that evolved from a bilateral currency swap arrangement to a reserve pool in 2009, known as the "Chiang Mai Initiative Multilateralization" (CMIM), the ASEAN+3 Macroeconomic Research Office, as a surveillance unit of the CMIM, and the Asian Bond Market Initiative (ABMI). Moreover, even though there is not a formal arrangement of exchange rate coordination within ASEAN+3 economies, Fritz & Mühlich (2015, p. 137) argue that member countries follow an "informal extra-regional dollar orientation". This study focuses on the ABMI, a regional financial market for LCY bonds that was established in 2003 with the motivation of contributing to financial stability by developing more liquid primary and secondary bond markets and promoting the reinvestment of ASEAN+3 economies' external surpluses within member countries (ADB, 2017). The ADB (2018) points out three main objectives of ABMI: the development of domestic and regional bond markets by strengthening LCY bonds; the prevention of currency and maturity mismatch; and the promotion of regional financial harmonization and standardization.

Finance Ministers and Central Bank Governors represent the most powerful decision-making body in the ABMI. They meet in road maps each 3-4 years to outline recommendations on policy actions and to review the progress made and the challenges ahead to meet ABMI's goals. ABMI's structure also includes a Steering Group, composed of policymakers from member countries who participate in semiannual Task Force Meetings, where the main barriers to the development of a regional LCY bond market are identified and policy recommendations are outlined. In addition to the Task Forces (TFs), the ABMI encompasses a Technical Assistance Coordination Team (TACT), which, under the finance of the Asian Development Bank (ADB), aims to assist less developed member countries to enhance and develop domestic bond markets through technical assistance projects and training workshops. The main activities and policy instruments that have been implemented under the four TFs are described below.

Task Force 1: Promoting the Issuance of LCY Bonds

To improve the quality of bond issuers in the region, whose low standards were seen as an obstacle to LCY bond issuance, a Credit Guaranteed Investment Facility (CGIF) was created

in 2010 (ADB, 2013). As a trust fund of the ADB, CGIF has been granted high ratings both internationally and locally, which allows it to provide guarantees for domestic creditworthy firms' bonds, and thus enable the private sector to issue LCY bonds and access long-term finance (CGIF, 2021). Moreover, CGIF has provided credit enhancement for LCY bonds in sectors that it considers 'strategic' or necessary based on finance and infrastructure gaps in the region (CGIF, 2021). In 2020, CGIF, together with the ADB, signed a risk participation agreement in which they share the default risk to further finance green bonds and promote renewable energy investment. Since its first guarantee in 2012, CGIF has provided 40 guarantees to 30 companies from all ASEAN+3 countries with the exception of Brunei (CGIF, 2021). Another policy instrument aimed at strengthening the supply of LCY bonds was the development of infrastructure-financing schemes. In this regard, a pilot project between Thailand and Lao PDR was launched in 2013, in which Thailand allowed the government of the Lao PDR to finance domestic infrastructure projects by issuing sovereign bonds in the LCY bond market of Thailand (ADB, 2017).

Task Force 2: Facilitating Demand for LCY Bonds

Due to the narrow investor base in many member countries, concentrated in a few large companies with similar investment strategies, the second TF aims to facilitate the demand for LCY bonds by extending and diversifying the investor base (ADB, 2017). To do so, ASEAN+3 and the ADB created the website "Asian Bonds Online" (ABO), which disseminates data on LCY bond markets to stakeholders and users, such as bond yields, bond pricing, maturity, among others. It also provides the "Bond Market Guides", which contain information on each member country's bond market – including data on trading infrastructure, taxes and regulatory frameworks – and the quarterly publication "Asian Bond Monitor" which reviews and analyzes the evolution of ASEAN +3 LCY bond markets. In addition to the ABO, since 2005, member countries and key actors of the private sector have participated in the annual Asian Bond Market Summit, and they have commissioned studies, carried out by the ADB, to provide member countries with a set of recommendations on how to support the development of sophisticated domestic financial markets (ADB, 2017).

Task Force 3: Improving the Regulatory Framework

To diminish regulatory and settlement barriers across ASEAN+3 countries, which were increasing not only investment and transaction costs but also foreign exchange settlement risks, the ASEAN+3 Bond Market Forum (ABMF) was created in 2010. The ABMF works "as a

common platform to foster standardization of market practices and harmonization of regulations relating to cross-border bond transactions in the region" (ADB, 2017, p. 8). One of the most important achievements of the ABMF, was the creation of the ASEAN+3 Multi-Currency Bond Issuance Framework (AMBIF), which "was proposed as a regionally standardized bond issuance framework" (ADB, 2015, p. xii) that seeks to facilitate and promote both bond and note issuance in the region and investment in local currency bonds, in order to serve ABMI's objective of reinvesting Asian external surpluses within the region. Under the AMBIF, the Single Submission Form was created to allow bond issuers and sellers to use the same application document in member countries, and "Implementation Guidelines" are provided to market participants in order to inform them on issuance mechanisms, regulatory processes and requirements in different markets across member countries (ADB, 2015).

Task Force 4: Improving the Related Infrastructure for Bond Markets

To enable policymakers to deliberate on how to improve securities settlement infrastructure in the region and connect financial market infrastructure, the Cross-Border Settlement Infrastructure Forum (CSIF) was created in 2013. Currently, member countries are working on setting central securities depositories–real-time gross settlement (CSD–RTGS) linkages among the region to "enable the settlement of local bonds via delivery-versus-payment (DVP) with central-bank money to ensure the safety of settlement as well as compliance with international standards and cost-efficiency" (ADB, 2019b, p. 1). Though its implementation is an ongoing process, a pilot project on cross-border DVP linkages has been implemented between the Bank of Japan and the Hong Kong Monetary Authority (ADB, 2019a). Moreover, the ABMI created the "Association of Credit Rating Agencies in Asia" (ACRAA) in 2001 in order to promote the inclusion of "best practices and common standards to improve members' rating quality and the comparability of ratings throughout the region" (ADB, 2017, p.9), and the "Asian Prime Collateral Forum" (APCF) in 2017, whose main goal is to investigate potential uses of "regional government bonds as collateral for cross-border transactions" (ADB, 2019a, p.136) to facilitate access to stable funding and finance in local currency in the region.

A summary of the main policies and instruments implemented under the Four Task Forces and the Technical Assistance Coordinating Team is depicted in Table 5.

Table 5: Asian Bond Market Initiative: main policies and objectives under its Task Forces and the TACT

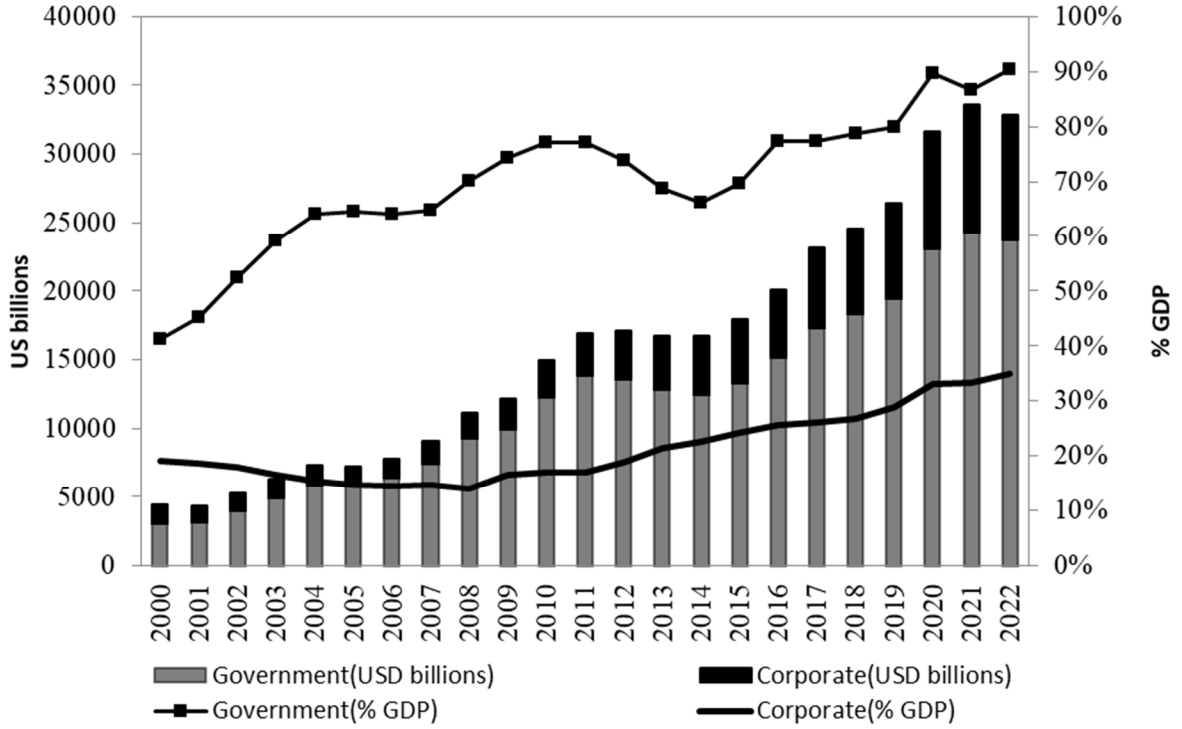
Asian Bond Market Initiative's Task Forces				
TF 1: Supply of LCB	TF 2: Demand of LCB	TF 3: Regulatory Framework	TF 4: Market Infrastructure	TACT
Objectives: - Promote the issuance of LCY Bonds - Develop quality issuers in the region -Promote bonds for green infrastructure projects **Instruments:** -Establishment of the CGIF in 2010 and expanding its capital from 700 millions to 1.2 billions. -Development of infrastructure-financial schemes - Signment of a RPA between CGIF and the ADB	**Objectives:** - Facilitate the demand for LCY Bonds - Expand and diversify the investor base -Promote the development of primary and secondary bond markets **Instruments**: -Creation of the website "Asian Bonds Online" - Provision of "Bond Market Guides" and the Asian Bond Monitor" -Asian Bond Market Summit since 2005	**Objectives**: - Promote market practices standarization and regulation harmonization in the region -Adress regulatory and settlement barriers -Facilitate and promote cross-border financial transactions **Instruments**: -Establishment of the ABMF in 2010 -Establishment of the AMBIF under the SF1 -Creation of the SSF and Implementation Guidelines under the AMBIF	**Objectives**: -Enhance market infrastructure: securities settlement, market liquidity and domestic credit rating agencies -Facilitate cross-border transactions and the establishment of a Regional Settlement Intermediary **Instruments**: -Establishment of the ACRAA in 2001 -Creation of the CSIF in 2013 -Working on CSD-RTGS linkages (pilot project between Japan and Hong Kong) -Creation of the APCF in 2017	**Objectives**: -Assist less developed economies to enhance and develop domestic bond market -Assess intra-regional disparities in bond market development **Instruments:** -Technical Assistant projects and training workshops for bond market and secondary market development, enhancement of regulatory frameworks, among others.

Source: own depiction based on ADB (2017, 2018, 2019) & CGIF (2021)

As depicted in Figure 5, both the size and depth of ASEAN+3 LCY bond markets have significantly expanded since the establishment of the ABMI. Measured as a percentage of the GDP, the ASEAN+3 LCY government and corporate bond markets jumped from representing almost 60% and 20% of GDP in 2000 to 90% and 35% in 2022, respectively. There was also a strong increase of LCY bond issuance in US dollars, especially in the government bond market, whose dominance over the corporate bond market is persistent.

Moreover, as illustrated in Table 6, which shows the LCY government and corporate bond markets as a share of GDP, all countries have significantly increased the depth of government bond markets over time. A great example is Vietnam, whose LCY government bond market jumped from 0.25% of GDP in 2000 to 18% of GDP in 2022. LCY Corporate bond markets have also increased, albeit to a lesser extent than government bond markets, and bank lending continues to dominate corporate lending (Park, 2016). Furthermore, a closer look at the depth of LCY bond markets suggests that high disparities remain within the region, particularly when looking at the development of the corporate bond market in Indonesia, Vietnam and the Philippines.

Figure 5: ASEAN+3 Local Currency Bond Market, in US billions and in percent of GDP, 2000-2022



Source: own depiction based on Asian Bonds Online (2023)
Note: countries included are China, Indonesia, Japan, South Korea, Malaysia, Philippines, Singapore, Thailand, and Vietnam.

Table 6: LCY Government and Corporate Bond Issuances in percent of GDP, year 2000, 2010 and 2022

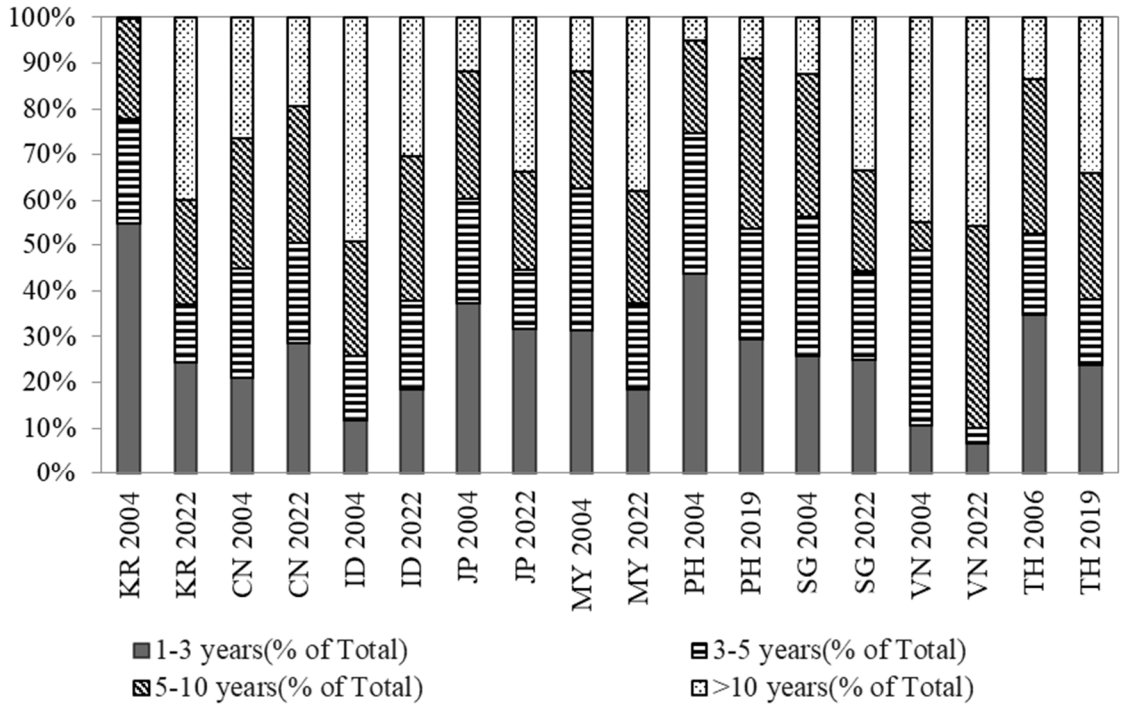
	2000		2010		2022	
Country	Government	Corporate	Government	Corporate	Government	Corporate
Japan	56%	23%	154%	18%	220%	17%
China PCR	16%	0%	29%	10%	69%	36%
South Korea	9%	33%	28%	52%	58%	86%
Indonesia	31%	1%	13%	2%	27%	2%
Malaysia	36%	35%	42%	38%	70%	54%
Philippines	28%	0%	30%	4%	41%	7%
Thailand	22%	4%	29%	12%	48%	25%
Singapore	26%	21%	40%	26%	36%	28%
Vietnam	0%	0%	11%	4%	18%	8%

Source: own depiction based on Asian Bonds Online (2023).
Note: data was not available for Brunei, Myanmar, Laos and Cambodia

Regarding the maturity of LCY bonds, Figure 6, which depicts the structure of LCY government securities in 2004 and 2022, shows that the share of long-term government securities (more than 10 years) has increased while the share of LCY government bonds with a maturity between 1-3 years has declined in most of the countries analyzed. Nevertheless, short-term government securities (between 1-3 years and 3-5 years) have remained important in all

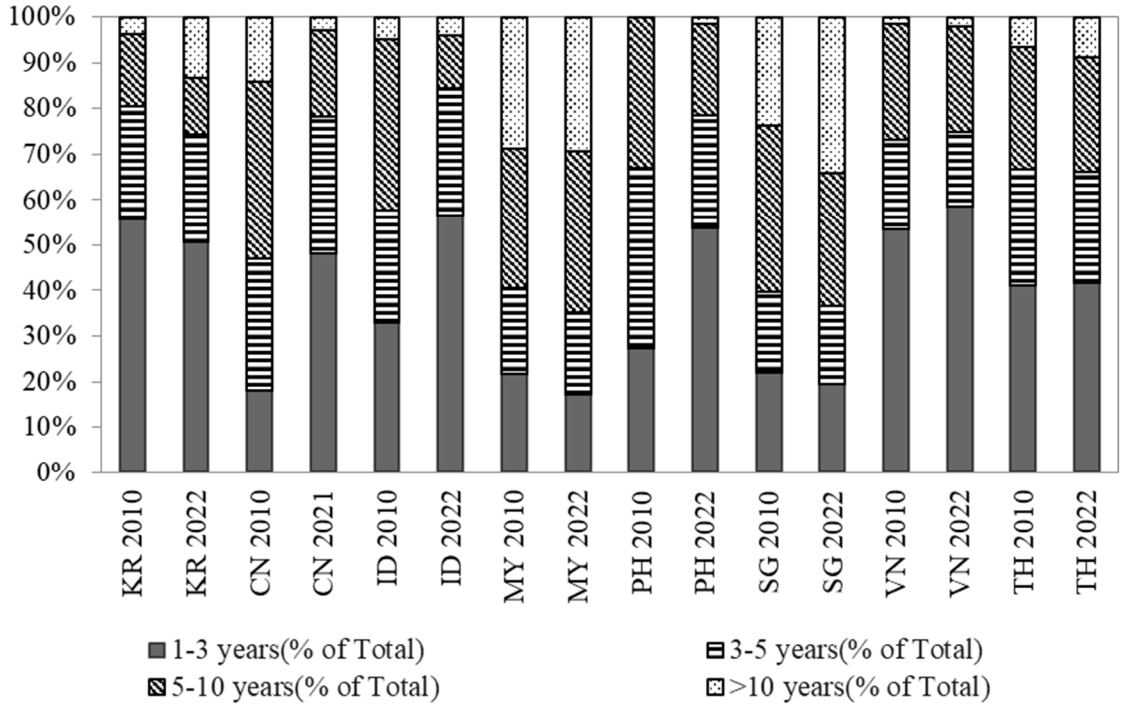
ASEAN+3 countries, particularly in the Philippines (54%) and China (50%). For corporate LCY bonds, Figure 7 reveals that LCY corporate securities remain concentrated in short-term maturities in many countries, especially in Indonesia, Philippines, China, Vietnam and South Korea, whose share of corporate securities with a maturity between 1-3 and 3-5 years accounts for more than seventy percent of total corporate securities. The countries with the better performance in this regard are Malaysia and Singapore, whose shares of medium- to long-term securities in total corporate securities are 65% and 63%, respectively.

Figure 6: LCY Government Securities Maturity Profile, in percent of total, year 2004 and 2022



Source: own depiction based on Asian Bonds Online (2023).
Note: data was not available for Cambodia, Brunei, Laos and Myanmar. The latest data available for Thailand and Philippines was for the year 2019 and the earliest data for Thailand was for the year 2006. KR=South Korea; CN=China; ID=Indonesia; JP=Japan; MY=Malaysia; PH=Philippines; SG=Singapore; VN=Vietnam; TH=Thailand.

Figure 7: LCY Corporate Securities Maturity Profile, in percent of total, year 2010 and 2022



Source: own depiction based on Asian Bonds Online (2023).
Note: data was not available for Cambodia, Brunei, Laos and Myanmar. CN=China; ID=Indonesia; MY=Malaysia; PH=Philippines; SG=Singapore; VN=Vietnam; TH=Thailand.

Many authors claim (Park, 2016; Shimizu, 2018; ADB, 2019a) that the development of LCY bond markets in the region has contributed to strengthening buffering capacity against shocks in times of capital flow reversal. As revealed in Figure 5, this was the case during the financial crisis of 2008, when both corporate and government LCY bond issuance increased. In this regard, ADB (2019a) argues that strengthening the ASEAN+3 LCY bond market has been essential in the recovery from the financial crisis of 2008 by enabling member countries to finance fiscal expansions during the crisis without threatening financial stability. Shimizu (2018, p. 966) states that "even if the effect of expansion of bond markets to decrease capital inflows is small, the role of spare tires that was played during the crisis period in 2008 shows that bond markets have dampened the effect of capital outflows. Therefore, in any event, bond markets were effective to depress the impact of the crisis". This emphasizes the importance of having a regional LCY bond market to reduce countries' exposure to currency and maturity mismatch and financial vulnerability by enabling the public and private sectors to rely on stable sources of funding in the face of capital flow reversals and pressures on the domestic currency. As depicted in Figure 5, during the COVID-19 pandemic, government and corporate LCY bonds have also increased as a share of GDP – from 80% and 29% in 2019 to 90% and 35% in

2022, respectively. On the contrary, when capital flow reversal increased during the taper tantrum of 2013 and after the US presidential elections in 2016, LCY bonds have not played the same role and government LCY bonds have even decreased as a share of GDP (Figure 5).

Furthermore, the ABMI has contributed not only to increase market liquidity, particularly in the government bond market, and to expand the diversity of the investor base but also to attract foreign investors in ASEAN+3 economies' LCY government bonds, whose shares on the market have increased since 2011, particularly in Malaysia, Indonesia, South Korea and Thailand (Asian Bonds Online, 2023; Park, 2016). Even though the increasing share of foreign holdings in LCY government bonds improves liquidity in the secondary markets, it imposes significant risks of capital outflows and exchange rate volatility. As Lim Mah-Hui & Lim (2012, p.36) claim:

"While bond markets represent an alternative financing method that can mobilize large amounts of funds directly from the financial markets, they are prone to price volatility and can generate foreign exchange and macro-economic instability particularly if a significant percentage of investments are foreign owned and the host economies are small"

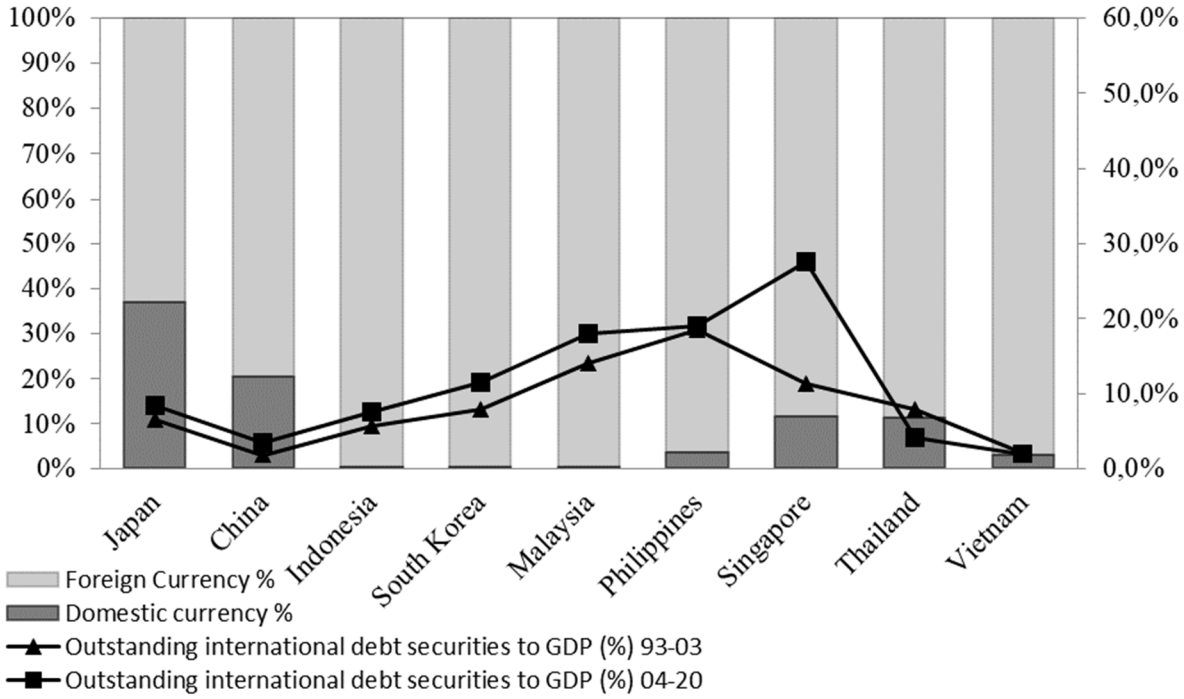
In this regard, ADB (2017) reveals that foreign holdings of government LCY bonds in Thailand, South Korea, Malaysia and Indonesia flew from these countries in the last months of 2016, in the face of expectations of a higher interest rate in the US. The same pattern happened during the taper tantrum of 2013 (ADB, 2017). As the ADB (2017) shows, what followed in both cases was an increase in the 10-Year Government Bond Yields and a depreciation of the exchange rate of ASEAN+3 economies.

Moreover, according to the Asian Bond Monitor of November 2020, cross-border bonds were only issued in four Asian currencies: Chinese Renminbi (63%), Singapore dollar (22%), Hong Kong dollar (13%) and Bath (2%), and their origin corresponded to six countries: Hong Kong (39%), South Korea (26%), China (21%), Malaysia (11%), Lao PDR (2%) and Singapore (1%). Consequently, further policies need to be implemented to lessen cross-border financial transaction regulations to encourage LCY intra-regional bond issuance. However, this strategy presents two important challenges: first, as stated above, increasing foreign holdings of LCY bonds could lead to higher capital flow reversals, in this case, from a member country of the ASEAN+3 to another; and second, lesser cross-border financial transactions should particularly target LCY bonds in order to avoid currency mismatch. In this regard, as shown above, more than half of cross-border bonds in the region were issued in Chinese Renminbi and only 21%

of them were issued by this country, meaning that other ASEAN+3 countries are issuing bonds in China's currency, thus having a currency mismatch.

Finally, as evidenced in the previous section, none of the countries that were hit by the Asian financial crisis in the late 1990s have had improvements in terms of foreign original sin. As depicted in Figure 8, not only do these economies continue to be unable to issue debt securities in local currency in the international market, but also the share of outstanding international debt securities to GDP has increased in the last years, particularly in Malaysia, Singapore, the Philippines, South Korea and Indonesia, which leaves these economies with higher financial and macroeconomic vulnerabilities.

Figure 8: Currency composition of international debt securities, average 2004-2022, in percent. Outstanding international debt securities to GDP, in percent, average 1993-2003 and 2004-2020. ASEAN+3 economies.



Source: own depiction based on BIS (2023) and World Bank (2023a)
Note: data for Brunei, Laos, Myanmar and Cambodia was not available

4. Conclusions: Lessons for the Mercosur from the ABMI

From the previous sections, it was clear that Mercosur economies are not only marked by high levels of original sin but also lack a regional strategy to cope with this phenomenon and its consequences. The pursuit of unilateral strategies has left them vulnerable to external shocks, with a relatively poor domestic financial system and high intraregional exchange rate volatilities that threaten the stability of their economies. On the contrary, ASEAN+3 economies have strengthened regional monetary cooperation in the last decades to enhance macroeconomic and financial stability. Based on the ABMI experience analyzed, different insights for regional monetary cooperation in the Mercosur can be drawn.

First, regional LCY bond market initiatives, through the development of government and corporate LCY bonds, offer significant potential to reduce countries' exposure to currency mismatch and financial vulnerability by enabling the public and private sectors to rely on stable sources of funding in the face of capital flow reversals and pressures on the domestic currency. This occurred during the financial crisis of 2008, when ASEAN+3 LCY bond issuance became more important as a source of finance for both the government and the corporate sector. Considering the fragile financial markets in Mercosur countries – particularly its reliance on the banking system, its low levels of domestic private credit to GDP, and its relative underdeveloped bond markets, which are characterized by procyclical and short-term bond maturities, a low or null share of long-term fixed rate bonds and market size obstacles – a regional financial market initiative would be a significant strategy to enhance the bond market and to provide the public and private sectors with local-currency denominated financial instruments that offer better financing opportunities. Since Mercosur economies continue to face high levels of original sin and are still highly vulnerable to external shocks, this type of south-south arrangement is essential to promote an income-generation process without threatening financial stability.

Second, regional multilateral financial institutions play a key role in the development of regional financial markets. The ADB has been essential not only in creating a supply and demand for ASEAN+3 LCY bonds – by being the trustee of the CGIF and providing information on regional bond markets through the Asian Bond Market Online – but also in facilitating discussion and the decision-making process among member countries, which it achieved through various studies on regional challenges and obstacles to the development of LCY bond markets. Moreover, the ADB has played a significant role in the development of

bond markets in less-developed ASEAN economies through the provision of workshops and capacity-building activities via the TACT. Therefore, from the experience of the ABMI, relying on a regional multilateral financial institution would be essential for the Mercosur to develop a regional financial market. The Inter-American Development Bank (IADB), a North-South initiative granted a high international credit rating (AAA) and better risk assessments than Mercosur economies, could take the role of the ADB in the Mercosur. Moreover, in the last decades, the IADB has gone beyond its traditional functions - namely the provision of credit and technical cooperation in Latin America- by implementing new instruments to facilitate access to finance for member countries, including guarantee funds, credit insurance and even the issuance of bonds denominated in Latin American currencies (Ocampo & Titelman, 2009).

Third, a supranational institution with binding mandates would be more appropriate in the Mercosur than soft structures. ABMI's soft decision-making process has not obstructed the development of a regional financial market because member countries share a regional interest in reducing economic and financial instability as a region as a whole, reflected in the different types of regional monetary cooperation that ASEAN+3 economies have created since the financial crisis of the late 1990s (Mühlich, 2014). In the Mercosur, on the contrary, despite the recurrent discourses in favor of strengthening cooperation and integration, the strategies adopted since the establishment of the bloc have shown the opposite: competitive devaluations, beggar-thy-neighbors episodes and recurrent exceptions in the customs union, particularly taken by the largest countries of the bloc. In this context, binding structures, such as the creation of a supranational institution that sets binding mandates and directions, could be more appropriate in the Mercosur to avoid political conflicts and unilateral strategies interfering in the process of regional monetary cooperation.

Fourth, no changes in the foreign original sin index should be expected from the development of a regional financial market. As evidenced by ASEAN+3 economies, there were no significant changes in either the OSIN1 or OSIN3 index after the establishment of the ABMI, particularly in Indonesia, South Korea, Malaysia, the Philippines, Singapore and Thailand, which were the countries most affected by the financial crisis of the late nineties. This is particularly relevant considering that the share of outstanding international debt securities to GDP has increased in these countries in the last decades, making them more vulnerable to exchange rate variations. The same applies to the Mercosur, where private external debt as a share of GNI has remained at high levels or even increased in some countries in the last decades. In this context, as a complement to the development of a LCY bond market, other policy

instruments, including capital controls and international reserves accumulation, should be further implemented in order to reduce vulnerability against capital outflows and exchange rate movements.

Moreover, the lack of relation between the development of a LCY bond market and original sin confirms that, contrary to conventional economic theory, the phenomenon of original sin is not related to the level of development of domestic financial markets – see, for instance, countries with sophisticated bond markets and high levels of original sin, such as South Korea, Singapore and Malaysia. Gegenfurtner (2021) and Eichengreen et al. (2005b; 2023)'s empirical findings on the importance of the size of a country for its currency to be part of international investors' portfolios raise the question of whether further steps on monetary cooperation could increase liquidity premiums of southern economies and reduce original sin. In this regard, Gegenfurtner (2021)'s empirics are highly relevant since they suggest that a currency union has significant potential to assist member countries in finding redemption from original sin and that the size of the currency union is essential for its success. Eichengreen et al. (2023) claim that international initiatives play a key role in tackling currency risk and expanding access to external funding in domestic currency in low-income countries that are not able to place debt securities denominated in local currency with international investors. For instance, the authors propose that multilateral financial institutions develop indexed bonds denominated in an emerging market currency index and use the earnings to provide them with indexed loans denominated in local currency.

Fifth, developing a regional financial market initiative presents important challenges to policymakers that need to be carefully addressed to avoid financial instability. First, as was evidenced in ASEAN+3 economies, the attraction of foreign holders of LCY bonds imposes high risks on capital flow reversals and macroeconomic volatility, as they are more likely to sell off their LCY bonds during times of crisis. In this case, encouraging local investors and incorporating capital restrictions to prevent capital flow reversals are still essential to reduce external vulnerability. Second, tackling asymmetries in terms of regulations and standardization within the region is necessary to enable member countries to issue LCY bonds in the regional market. Since regulations and settlement issues are not harmonized across member countries of the Mercosur, an initiative to create a regional financial market in the bloc should include a set of policies to tackle these obstacles. However, to avoid currency mismatches in member countries, a regional financial market initiative should carefully incorporate measures to encourage LCY intra-regional bond issuance rather than cross-border bond issuance

denominated in the currency of another country of the bloc, as happened among ASEAN+3 economies, where intra-regional bonds have been particularly dominated by the Chinese Renminbi. In this regard, as the Asian Bond Monitor of November 2020 reveals, neither South Korea nor Malaysia's cross-border bond issuance has been in domestic currency.

Sixth, considering that the intra-regional exchange rate is highly volatile in the Mercosur and that the correlation of business cycles is very high, in particular between the cycles of the smallest countries of the bloc and those of the region, this paper claims that there is no alternative to regional exchange rate coordination. In this sense, any attempt to establish a type of regional monetary cooperation, including the development of a regional financial market, should at the same time consider a type of exchange rate coordination among member countries in order to prevent competitive devaluations and beggar-thy neighbor policies that not only have contributed to macroeconomic and financial instability within the bloc – as occurred in the late 1990s and after the financial crisis in 2008 – but they have also disrupted regional cooperation and integration in the Mercosur, leading to what Mühlich (2014, p.200) calls a process of "de-mercosurization" in the last decades.

Finally, further research is needed to enhance political discussion on original sin and regional monetary cooperation in the Mercosur. First, further empirical analysis is essential to describe the problem of domestic original sin in developing countries. As evidenced in this paper, data in this regard is scarce, but highly important in light of the high level of dollarization and indexation of domestic bonds in Mercosur. Second, this paper does not include in its analysis other forms of regional monetary cooperation among ASEAN+3 economies, such as the CMIM, that might also provide significant insights for monetary cooperation in the Mercosur. Finally, an update of qualitative and empirical analysis of other south-south arrangements that go beyond monetary cooperation and include the establishment of a currency union, such as the Common Monetary Area (CMA) in Southern African countries (e.g. Metzger, 2006), would be essential to evaluate to what extent south-south monetary integration has the potential not only to contribute to macroeconomic stabilization but also to help member countries to climb up the currency hierarchy and reduce original sin.

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