

Opportunities and Barriers to Regional Payment Systems

The Case of the SML

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1 Introduction

The subordinate position of developing and emerging countries' (DECs) currencies in the international monetary system is an important constraint on autonomous development and structural change. Currently, DEC currencies hardly fulfil any functions of money on the international level (and at times not even the national level).¹ If DEC currencies have been demanded by non-residents or non-nationals, this demand has been largely for purposes which do little to support – or even undermine – development and sustainable structural change. Specifically, as of 2023, hardly any DEC currency – potentially with the exception of the Chinese renminbi – acts as an international unit of account (both for trade and financial transactions), means of payment, and store of wealth. The recent increase in demand for DEC currencies has been largely driven by short-term, speculative carry-trade purposes to take advantage of favourable interest rate differentials and exchange rate dynamics (Orsi, 2019).

This international monetary asymmetry, however, fundamentally shapes and at

times constrains macro-financial dynamics and policy-making in DECs, a phenomenon also known as monetary or international financial subordination (Alami et al., 2023). For example, DEC currencies' limited use as an international trade invoice and settlement currency generates a structural need for foreign exchange to pay for imports. The inability of DEC agents to borrow long term in domestic currency (act as a long-term store of wealth) or use their currencies as international funding currency (means of payments in financial transactions), on the other hand, increases their vulnerability to international monetary and financial conditions. Thus, reducing monetary subordination through supporting a more broad-based and resilient demand for DEC currencies is an important element of a sustainable development strategy.

The existing critical political economy literature on the asymmetric international monetary and financial system (e.g., Prates and Andrade, 2013; Kaltenbrunner, 2015; Bonizzi, 2017; Alami, 2019; Koddenbrock, 2020) has so far largely focused on the broad macroeconomic (e.g., balance of payments)

and financial (e.g., the extent of financial integration) structures that both underpin and would need to change to increase monetary sovereignty in DECs. So far, this literature has paid little attention to the infrastructures, which both underpin and could be used to build monetary sovereignty from the bottom up.

The small literature on local currency payment systems in DECs (e.g., Khiaonarong, 2013; World Bank, 2014; Arner et al., 2022) is largely policy-focused rather than conceptual, emphasizes their ability to stimulate regional trade rather than build monetary autonomy, and highlights their technical and regulatory constraints rather than complementary policy measures and political economy dynamics. It thus presents infrastructures as mere technical devices and depoliticizes the profound politicalness of payment infrastructures. The few exceptions are Trucco (2012), Fritz and Mühlich (2014), and Caldentey, Tomassian, and Melo (2022), who present comparative analyses of different regional payment systems in Latin America as a means to reduce the region's excessive dependence on the US dollar and create some more policy space for autonomous development. Yet, these contributions are largely based on quantitative data which allow limited insights into the specific technical, macroeconomic, and political constraints on using these systems to reclaim monetary sovereignty.

The role of payment infrastructures for both underpinning and building international monetary power has received some recent attention in international political economy and critical infrastructure studies (e.g., Dörny, Robinson, and Derudder, 2018; de Goede, 2020; Westermeier, 2020; Eichengreen, 2022; Nölke, 2022). However, this literature largely focuses on the top of the monetary hierarchy, that is, the dollar (SWIFT: Society for Worldwide Interbank Financial Telecommunication) and its potential contenders (e.g., the Chinese CIPS: Cross-border Interbank Payment System). Those writings which have analysed monetary and financial infrastructures in DECs have largely interpreted them as colonial

devices, which impose systems developed in and for the Global North to subordinate financial spaces (e.g., Davies, 2015; de Goede and Westermeier, 2022). As of yet, little attention has been paid to whether and how local currency payment and settlement mechanisms can be used to build monetary sovereignty in DECs from the bottom up. Put differently, the question arises whether states in DECs can use and indeed build their infrastructural power (both in the more 'macro' sense as in Coombs (this volume), or in the more 'micro' sense laid out in Pinzur (also this volume) to reclaim autonomy over their monetary space in a hierarchic and structured international monetary system.

This chapter attempts to generate some initial answers to these questions using the Local Currency Payment System (in Portuguese *Sistema de Pagamentos em Moeda Local* or in Spanish *Sistema de Pagos en Moneda Local*), the SML, between Argentina, Brazil, Uruguay, and Paraguay as a case study. The SML is a unique regional payment system that encourages the use of local currencies as trade invoice and settlement currencies in regional trade and service operations.² It was initiated by the Brazilian Central Bank (BCB) in June 2007 and started operating between Brazil and Argentina in September 2008. Uruguay joined in October 2014 and Paraguay followed in July 2018 (Zayas, 2020). However, despite some initial successes, the adoption of the SML has stalled over recent years and the use of regional currencies remains limited.

This chapter generates initial insights into why the attempt by regional central banks to foster the use of their currencies by using their 'infrastructural power' has had limited success. Using this infrastructural lens, it identifies some of the political, economic, and technical constraints of a more extended use of the SML. It draws on two main empirical sources. First, primary data in the form of twenty-nine semi-structured interviews with policymakers (the BCB), users (companies and trade associations), and financial intermediaries (banks) of the SML conducted between August 2017 and August 2019 (Orsi, 2019).³

Secondly, presentations and discussions at the first multi-stakeholder policy summit on the SML held at the Pontifical Catholic University of São Paulo on 2 March 2020, organized by the Universities of Leeds and Liverpool. The summit brought together representatives from all three SML stakeholders – users, financial intermediaries, and policymakers – and focused explicitly on identifying the current barriers that stall a broader use of the SML. The empirical analysis focuses on the period between 2008 and 2019, when the COVID shock hit and affected global trade relations worldwide.

On an empirical level, the results provide a detailed discussion of the operational, macroeconomic, and political constraints on establishing DEC regional currency payment systems. These include: on the operational level, issues such as high transaction costs, the inability to remove the counterparty risk, and the lack of affordable trade credit in regional currencies; on the political economy level, the unwillingness of cross-border banks to offer and advertise the system, and finally persistent macroeconomic challenges which undermine the willingness of local agents to receive and hold regional currencies.

On a conceptual level, the detailed insights into the decision-making of SML stakeholders point to three issues. First, the experience of the SML shows that to increase the acceptance of DEC currencies in the context of international financial subordination, the use of infrastructural power by the state (in a wide definition which also includes the central bank) might be a necessary condition to build monetary sovereignty from the bottom up. Indeed, as will be discussed in more detail later in this chapter, the SML has been conceived, implemented, and operated by the regional central banks, given the unwillingness of private financial institutions to provide local currency services (for a discussion of the role of the state in international financial subordination see, e.g., Santos (2023) and Alami et al. (2023)).

Secondly, however, our results also show that given the heightened external vulnerability, macroeconomic instability, and general

economic uncertainty – and the specific class interests attached to those – the use of infrastructural power is also fundamentally more circumscribed in financially subordinate economies than in advanced economies. This also means that in this context, fixing technical and operational issues will be important, yet not sufficient, to create a stable demand for DEC currencies. Instead, addressing the political relations – which an infrastructural lens helps us to unearth on a ‘micro’ level – and the hierarchic macro-financial structures, which underpin the global economy, remain essential to both understanding and potentially mitigating international monetary and financial subordination.

Finally, and related to the above – yet more focused on monetary theory and practical implications – our results also show that whilst important, bottom-up attempts to encourage DEC currency use through payment infrastructures will not be sufficient to establish a more comprehensive and sustainable demand for this currency. Instead, what is needed is a comprehensive and complementary development of all money functions at the same time. Supporting solely the unit of account function in trade transactions, as envisaged by the SML, will not be sufficient. Indeed, recent literature on the dominant currency paradigm in economics has shown that international money functions are complementary and need to be developed in a comprehensive and complementary way (Gopinath and Stein, 2021; Gopinath and Itskhoki, 2022). The conclusion of our research supports this statement. However, in contrast to this literature that – in line with neoclassical economic tradition – highlights a currency’s primary role as a medium of exchange, this chapter adopts a Post-Keynesian/Minskyan perspective and shows the fundamental importance of denominating agents’ liabilities in local currencies, that is, to make DEC currencies a funding currency (Kaltenbrunner, 2015). Indeed, as Minsky argued in 1993: ‘as eventually international indebtedness will be denominated in the currencies of the countries with large offshore assets, they must also accept that their currency will be a reserve currency of

their debtors, for it is convenient to hold liquid assets in the currency in which your debts are denominated' (Minsky, 1993).

Following this introduction, Section 2 will give a very brief overview of the aims, objectives, and workings of the SML. Section 3 presents a snapshot of its recent empirical developments in the four major user countries: Argentina, Brazil, Uruguay, and Paraguay. Section 4 discusses our findings with regard to the main barriers to greater use of the SML, and Section 5 concludes with some conceptual and policy considerations.

2 Aims, Objectives, and Workings of the SML

The SML was created with the primary purpose of providing exporters and importers with the use of local currencies through quicker and cheaper operations than in the foreign exchange market, thus lowering demand for the US dollar and stimulating regional trade. Before the SML, nearly 100% of regional trade was conducted in the US dollar. Although the SML was an initiative of analysts and technicians from the BCB, its creation also served the greater political objective of promoting the currencies of Mercosur countries and strengthening regional integration. It had significant support from the then presidents of Brazil and Argentina, Luiz Inácio Lula da Silva and Cristina Fernández Kirchner.

On the firm level, the SML was conceived to address the failure of cross-border correspondent banking to provide affordable or even any foreign exchange services to local companies, in particular small and medium-sized enterprises (SMEs). SMEs face structural difficulties in accessing normal foreign exchange services and are particularly exposed to detrimental exchange rate movements. The provision of less bureaucratic,⁴ low-cost, local currency financing that mimics domestic payments rather than cross-border foreign exchange services, was thought to be particularly beneficial to these smaller actors. Financial institutions,

on the other hand, were thought to be able to provide such cheaper funding, because they did not have to access dollar-funding markets and/or assume exchange rate risk themselves.

Operationally, the SML allows both parties in a cross-border trade (or service contract in some countries) to pay in their respective local currencies, whilst the ultimate settlement of net operations is done in foreign exchange (usually the US dollar) by the respective central banks.⁵ As discussed in more detail later in this chapter, the currency of denomination of the operation between exporters and importers depends on the specific bilateral agreement between the participant countries. In order to conduct the SML operations, the respective central banks establish a competitive local currency rate of exchange, the SML rate. The conversion rate is calculated using triangulation of the local currencies to the US dollar exchange rate and must be used in all SML operations. In general, this SML rate, which does not include the spread normally charged by private financial institutions, is more competitive than the market rate for SMEs (less so for big firms) and independent of the size of the foreign exchange operation.

Figure 17.1 illustrates the working of the SML with the example of an Argentinean company which uses the SML to pay for an imported product from a company in Brazil. Both of the companies need to have a bank account in a financial institution in Argentina and Brazil that is authorized by their respective central banks to operate with the SML. To pay for the imported product, the company in Argentina will send the equivalent amount in Argentinean pesos to its bank in Argentina. This financial institution sends the money in Argentinean pesos to the central bank in Argentina, which communicates with the central bank in Brazil through the SML system. When the central bank in Brazil receives the payment in its reserves, it sends the equivalent amount in Brazilian real (BRL) to the bank in Brazil, which credits it to the account of the company in Brazil.

It is important to draw attention to two facts. First, at the moment, neither central

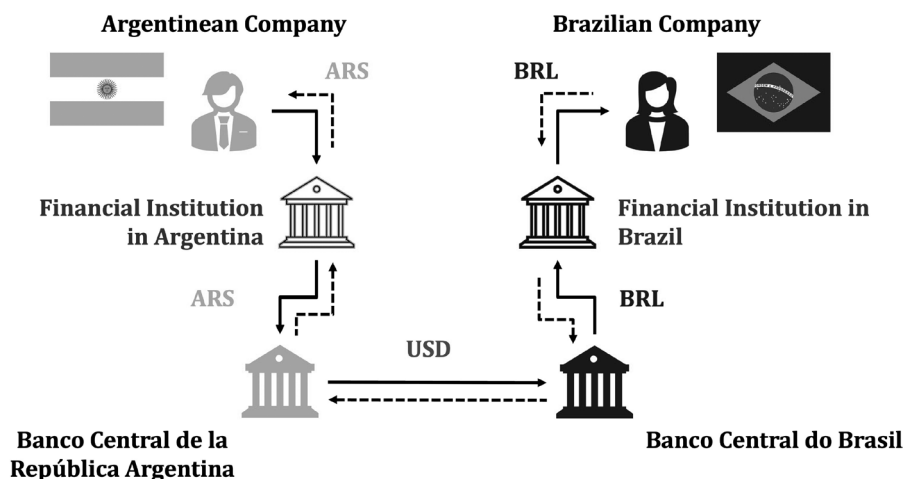


Figure 17.1 The working of the SML.
Source: Authors' elaboration.

bank is willing to hold the currency of the other in their foreign exchange reserves. For this reason, the transaction between the two central banks is settled in a foreign currency, normally the US dollar. As will be discussed later in this chapter, this means that whilst the SML removes the foreign exchange risk for the private actors, on the macroeconomic level it only lowers the need for reserves to the extent that the central banks could net some of the operations.

Finally, it is important to note that in contrast to previous regional payment systems – in particular, the Reciprocal Payment and Credit Agreement (CCR) between central banks from the Latin America Integration Association – in the SML the central banks only assume very limited credit risk. Whereas in the CCR central banks acted as a payment guarantor for the counterparty countries, in the SML the central banks' risk is limited to a 'contingency margin' (which only exists with Argentina and Uruguay). Credit risk is limited by the fact that payments are organized in a sequential order; that is, the respective central banks only transfer money which they have already received. The contingency margin is only given to other central banks when the value of the transfer is below the transfer costs and/or when specific problems arise during the operation through SML.⁶

3 The SML and the (International) Use of DEC Currencies

As discussed in Section 1, local currency regional payment systems as key financial infrastructures could be one way of increasing monetary sovereignty from the 'bottom up' by increasing demand for DEC currencies and thus reducing dependence on the US dollar. Specifically, the use of local currencies in cross-border regional trade as envisaged in the SML supports their role as regional trade invoice and domestic settlement currencies. In this context, two questions arise: (a) whether such systems are successful, that is, whether private agents adopt local currencies to conduct regional trade operations and (b) whether the increased use of local currencies as a means to invoice and settle regional trade also fosters the use of local currencies for other money functions, in particular that of store of wealth and means of settlement also in financial operations.

Table 17.1 summarizes the different international functions of money, drawing on the existing international political economy and Post-Keynesian literature on currency internationalization and currency hierarchy.

The first function of money, to act as a means of payment, refers to the ability of a domestic currency to facilitate international

Table 17.1 International functions of money and the SML

| <i>Function of money</i> | <i>Role of money</i> | <i>Type of currency Internationalization private</i> | <i>Type of currency Internationalization public</i> |
|--|---|--|---|
| Means of payment | Avoid the ‘double coincidence of wants’ | (1) Vehicle currency | (1) Intervention currency |
| Unit of account/ means of financial settlement | Denominate contractual obligations and fulfil these obligations | (2) Trade settlement currency | (2) Exchange rate anchor |
| | | (3) Invoice currency (denominator of cross-border trade contracts) | |
| | | (4) Funding currency (denominator of cross-border financial contracts) | |
| Store of wealth | Preserves value through time | (5) Investment currency | (3) Foreign exchange reserves |
| | | (6) Speculative investment currency | |

Source: Authors’ elaboration of tables in Cohen and Benney (2014).

trade. A currency is an international means of payment when it is employed as a vehicle for foreign exchange operations (vehicle currency) and/or an instrument for trade settlement (trade settlement currency). The second function of international money measures the relative price of assets, goods, and services in the international market – the unit of account function. A currency is internationalized as a unit of account when foreign investors use it to denominate both cross-border trade contracts (invoice currency) and financial contracts (funding currency). Lastly, the third function of money in this framework is the store of wealth function, which indicates the ability of an asset denominated in a certain currency to preserve (investment currency) or even appreciate (speculative investment currency) its value through time. Economic agents store their wealth by investing in assets that not only serve as a store of value themselves but, most importantly, in assets that are denominated in a stable currency, both with regard to domestic inflation and exchange rate volatility (Orsi 2019).

One major benefit of the SML is that it substitutes the US dollar as the main trade invoice and domestic means of payment for regional trade operations. As discussed

earlier, whereas importers can use their local currency to settle the transaction, the ultimate settlement of the operation takes place by the respective central banks in US dollars. Though this maintains the macroeconomic need for foreign exchange (as discussed in more detail later in this chapter), the ability of DEC agents to pay for cross-border regional trade in local currencies reduces their exchange rate risk and, in the case of importers, their need to acquire the US dollar for payment. According to the neoclassical dominant currency paradigm, the increased use of local currencies as a regional trade invoice and settlement should also foster their use for other money functions, such as the unit of account in financial transactions and the store of wealth. For example, the provision of a direct local currency exchange rate (rather than triangulating via the US dollar as is current practice) was envisaged to contribute to promoting regional currencies as units of account and creating an active market for regional currencies to reduce the dollar’s role as a vehicle currency.

Yet, as discussed in more detail in the next section, despite these advantages the uptake of the SML and use of regional currencies in regional trade has remained rather limited.

Even less so we observe the increased use of regional currencies for other money functions. The infrastructural lens adopted in this chapter allows us to identify both the specific technical and operational limits of the SML, and the bigger political economy and macro-structural barriers to increasing monetary sovereignty in financially subordinate economies.

4 Usage and Uptake of the SML

The SML has legislative authorization to operate within countries in the Mercosur: Brazil, Argentina, Paraguay, and Uruguay. It works differently for each country. For instance, the agreement with Argentina states that the trade operation must be denominated in the currency of the exporting country. In Uruguay and Paraguay, the invoice currency can be either the currency of the importer or the exporter. Additionally, whilst the SML with Argentina only allows users to send and receive trade-related transactions (and retirement pensions), with Uruguay and Paraguay users can also send and receive

service payments and unilateral transfers, that is, remittances. Due to data reasons and the dominant position of Brazil in the SML, this section will focus mainly on the bilateral relations of Brazil.

According to data retrieved from the BCB website, nearly 100% of the SML operations consist of exports from Brazil to Argentina, as shown in Table 17.2, and are thus denominated in BRL. As indicated, in the case of Argentina, SML operations are denominated in the currency of the exporter. Brazil generally holds a trade surplus with Argentina, and the figures in the SML are even more asymmetric. Given that most exporters in Argentina have a strong preference for holding US dollars, many companies do not engage in trade using local currencies. Concerning its dynamics, one can observe a steady increase in the value of SML transactions from its inception in 2008 until around 2013, when it started to stagnate. A similar trajectory can be observed in the number of operations, which reached a peak in 2015 and have declined since. As a share of total exports, SML exports from Brazil to Argentina reached a peak of nearly 7% in 2014 and

Table 17.2 Brazilian imports and exports in the SML with Argentina

| Date | Exports | | | Imports* | | | |
|------|---------|--------------------------|--------------------|----------|--------------------------|-------|--------------------|
| | No. | Amount (millions R\$) | % Total exports | No. | Amount (millions R\$) | % BRL | % Total imports |
| 2008 | 31 | 9.88 | 0.11 | 10 | 1.31 | 88.3 | 0.07 |
| 2009 | 1163 | 451.06 | 1.82 | 72 | 4.30 | 99.1 | 0.97 |
| 2010 | 3353 | 1,252.70 | 3.86 | 40 | 9.00 | 99.3 | 2.18 |
| 2011 | 487 | 1,623.20 | 4.27 | 50 | 8.74 | 99.5 | 2.46 |
| 2012 | 7431 | 2,277.90 | 6.48 | 83 | 17.25 | 99.2 | 3.40 |
| 2013 | 9041 | 2,581.45 | 6.08 | 47 | 10.53 | 99.6 | 3.33 |
| 2014 | 9190 | 2,313.26 | 6.91 | 38 | 5.03 | 99.8 | 3.47 |
| 2015 | 10788 | 2,504.49 | 5.88 | 38 | 37.57 | 98.5 | 3.32 |
| 2016 | 8264 | 2,469.91 | 5.30 | 34 | 21.77 | 99.1 | 3.19 |
| 2017 | 7619 | 2,341.90 | 4.16 | 22 | 4.09 | 99.8 | 2.72 |
| 2018 | 7454 | 2,499.33 | 4.64 | 33 | 3.26 | 99.8 | 2.65 |
| 2019 | 6141 | 1,999.49 | 5.18 | 17 | 8.17 | 99.5 | 2.50 |

Source: Brazilian Central Bank – SML; (*) the value of imports is the sum of SML transactions, which is set in Argentinean pesos, converted to BRL using the SML rate.

Table 17.3 Brazil's imports and exports in the SML with Uruguay

| <i>Date</i> | <i>Exports</i> | | | <i>Imports*</i> | | |
|-------------|----------------|----------------------------------|----------------------------|-----------------|----------------------------------|----------------------------|
| | <i>No.</i> | <i>Amount (millions R\$)</i> | <i>% Total exports</i> | <i>No.</i> | <i>Amount (millions R\$)</i> | <i>% Total imports</i> |
| 2015 | 115 | 12.14 | 0.13 | 22 | 15.36 | 0.21 |
| 2016 | 278 | 40.71 | 0.43 | 105 | 31.09 | 0.52 |
| 2017 | 424 | 65.69 | 0.88 | 247 | 34.45 | 0.85 |
| 2018 | 787 | 126.20 | 1.15 | 174 | 60.69 | 1.23 |
| 2019 | 862 | 159.30 | 1.63 | 111 | 146.64 | 2.16 |

Source: Brazilian Central Bank – SML; (*) the value of imports is the sum of SML transactions, which is set in Uruguayan pesos, and it was converted to BRL using the SML rate.

Table 17.4 Brazil's imports and exports in the SML with Paraguay

| <i>Date</i> | <i>Exports</i> | | | <i>Imports*</i> | | |
|-------------|----------------|----------------------------------|----------------------------|-----------------|----------------------------------|----------------------------|
| | <i>No.</i> | <i>Amount (millions R\$)</i> | <i>% Total exports</i> | <i>No.</i> | <i>Amount (millions R\$)</i> | <i>% Total imports</i> |
| 2018 | 72 | 8.02 | 0.16 | 15 | 2.74 | 0.14 |
| 2019 | 841 | 118.16 | 1.21 | 69 | 76.80 | 1.30 |

Source: Brazilian Central Bank – SML; (*) the value of imports is the sum of SML transactions, which is set in guaraní, and was converted to BRL using the SML rate. This is the amount charged by the financial institutions.

have declined to slightly over 5% since. The share of Brazilian imports from Argentina via the SML reached its peak at 3.47% also in 2015 and currently stands at 2.5%.

Table 17.3 shows the volume and number of SML operations between Brazil and Uruguay. The numbers are far below those with Argentina. As a share of total exports and imports, SML operations reached 1.63% and 2.16% respectively. However, in contrast to Argentina, we can observe a steady increase in operations, both with regard to volume and number of operations. Between 2018 and 2019, the amount of exports and imports from Brazil to Uruguay via the SML has increased by 26% and 141%, respectively.

According to our interviews, these lower numbers are due to the smaller economic size of Uruguay and lower trade operations

with Brazil, and the more recent nature of the SML agreement. Interviewees also noted that Brazil's trade with Uruguay is much more balanced than that with Argentina.

Finally, Paraguay was only incorporated in the SML with Brazil in 2018 and, by that time, policymakers from the BCB believed that it was still too early to draw any conclusions regarding the participation of the BRL in the operations. The data available is presented in Table 17.4. The total trade with Paraguay under the SML accounts for 9% of the total trade with Argentina, which is almost the same level as Uruguay. The exports and imports increased by 14% and 27%, respectively, from August 2018 to December 2019. With regards to exports and imports as a share of total exports and imports, SML operations reached 1.21% and 1.30% respectively.

Similar to Uruguay, interviewees did not expect that operations using the BRL would turn out to be as asymmetric as they are with Argentina. Also in line with Uruguay, agents from both countries can freely choose which local currency denominates the contracts, which gives more scope for other currencies in the Mercosur to become more regionalized.

With regards to the objective of the SML to support trade by regional SMEs, the discussion and data presented at the SML policy summit showed that the SML has been of limited success. For example, according to Barra de Castro (2020), the share of SMEs in the SML was only 10% in the case of Brazil–Argentina operations, and a little below 25% in the case of Brazil–Uruguay. Instead, data show that SML operations are dominated by the processing industry (in particular in the case of Brazil–Argentina) and the automobile sector. These insights are also confirmed by regional data. For example, data on the users of SML by location show that trade is mostly done with the Brazilian states that are geographically closer to Argentina. One reason for this geographic bias is that the south-east of Brazil, where São Paulo is located, concentrates most of the industries in Brazil, in particular regarding regional automobile value chains.

In sum, this data showed that after an initial increase in the uptake of the SML, usage had already stagnated before the COVID-19 shock, particularly in the case of operations between Brazil and Argentina, which dominate the system by size. With regards to the type of usage, the evidence seems to point to a relatively high share of large companies rather than SMEs. Although general economic conditions have an important role to play in these dynamics (e.g., the economic downturn in Brazil since 2013), the next section uses its infrastructural lens to identify some of the specific constraints which have weighed on a more extended uptake of the SML. It draws on extensive SML stakeholder interviews conducted between 2017 and 2019, and general insights from the first multi-stakeholder policy summit on the SML held in March 2020.

5 Identifying the Barriers and Constraints of Building Monetary Sovereignty using an Infrastructural Lens

5.1 Operational Costs, Risks, and Limits

The first set of constraints identified in our research pertains to operational costs, risks, and limits. The SML was designed to provide quicker, cheaper, and less paperwork-heavy currency payment in regional trade, addressing some of the shortcomings of (dollar) foreign exchange operations. Linking domestic payment systems, the hope was that SML operations could be conducted like simple bank transfers, removing the need for extensive anti-money-laundering documentation. However, in frustration with these expectations, anti-money-laundering requirements are still present in the SML and the *speed of operations* remains low (around three days); at times even lower than normal spot foreign exchange operations, which take around two days. These additional delays in the SML are caused by the lack of an automated system or platform, which requires banks to complete the documentation manually, and the lack of a more extended and flexible messenger system that allows participants to check, verify, or amend the information.

Secondly, banks still charge companies, in particular SMEs which have little bargaining power, considerable *transaction fees*. Indeed, according to one interviewee in a financial intermediary, the fees charged for SML services can be three to five times higher than normal foreign exchange services. According to the same interviewee, this is related to two interconnected reasons. First, due to the small volume of SML operations, banks cannot take advantage of economies of scale in the processing of the relevant documents. Secondly, because of the lack of an automated payment system, the manual handling needs and costs are higher than in a normal foreign exchange transaction, where artificial intelligence is increasingly applied.

Thirdly, the fact that the SML rate is published only once per day creates some

potential *exchange rate risk* for financial intermediaries and/or end-users (depending on who ends up bearing the risk). Financial institutions that need to operate with the SML before the official exchange rate is available on the BCB website must use a proxy, which is normally the exchange rate of the previous day. Once the SML rate is published, the financial institutions must negotiate the difference with the customer, which can be a source of exchange rate risk, particularly in large transactions. To compensate for this potential risk, these financial institutions often collect a deposit from their clients in order to process these adjustments, increasing the cost of operating in the SML.

Fourthly, one risk mentioned by several interview and policy participants is the potentially *higher credit/counterparty risk* (risk of non-payment of the importer) in the SML. In the Brazilian case, export operations in foreign exchange are subject to a foreign exchange contract (*contrato de câmbio*), which can be used to obtain a letter of credit from a bank (*carta de crédito*). A letter of credit shifts the credit/counterparty risk from the exporter to the bank. Thus, the seller relies on the credit risk of the bank, rather than the buyer, to receive payment. According to our interviews, such a letter of credit is not available in the SML, and is likely one of the reasons why the SML is currently dominated by intra-industry trade operations of large regional firms, which either have long-standing relations or conduct trade within the same firm.

Fifthly, in particular at the SML policy summit, participants noted the additional costs and complications created by the *use of different procedures, forms, and standards*. In addition, all SML operations are currently on a bilateral basis, which creates little benefit in terms of economies of scale and/or network effects.

Finally, several *existing restrictions* limit the usage of the SML by design. For example, a precautionary measure adopted by the BCB to reduce the credit risk in the SML was to limit the time horizons of operations to 365 days. This inhibits large transactions of long-term investments, such as cross-border

investments in infrastructure. Moreover, specific restrictions in member countries limit the type of operations (e.g., unilateral transfers and restrictions to goods trade in the case of Argentina) or counterparties that can be financed through the SML. One interviewee also mentioned the inability to receive early payments, which deters potential users who already know the system.

5.2 Lack of Low-Cost, Domestic Currency Financing

Another key limiting factor recognized by almost all interviewees was the lack of low-cost, local currency credit and export financing. Given the structurally high interest rate in Brazil, export companies have difficulty financing the production of goods or services. This is particularly the case for domestic currency credit, which is often prohibitively expensive. To circumvent this limitation, exporting companies in Brazil normally access subsidized credit programmes or credit denominated in US dollar through instruments such as Advances on Export Exchange Contracts (ACC) or Advance on Export Shipment Documents (ACE). The ACC and ACE offer lower interest rates that are obtained by Brazilian banks in the international market. However, according to our interviews, ACC and ACE financing require a foreign exchange contract (*contrato de câmbio*) that is currently not available for local currency SML operations (see discussion earlier in this chapter).

Even if exporters could obtain foreign currency (US dollar) trade financing, in the case of local currency export receipts this creates a currency mismatch in exporters' balance sheets, which further weighs on the attractiveness of the SML. Indeed, given the resulting currency mismatch, as long as trade financing (funding) is denominated in foreign currency, the advantages of using local currencies as trade invoice currencies are limited. This is particularly problematic for SMEs, which do not have enough internal resources to pre-finance the required investments and are thus particularly dependent on trade financing.

5.3 *Lack of Information and Capacity to Use and Provide the System*

One key limitation to a further expansion of the SML is a lack of information about the SML. Our results suggest that particularly smaller companies, which generally trade locally and thus lack a foreign exchange department, are unaware of the possibility of trading with other countries in the Mercosur using local currencies. One of the reasons identified for the lack of information about the SML is the reluctance of financial institutions to advertise the system. For financial institutions, operating in the foreign exchange market is more profitable than operating with SML, because they can take advantage of the exchange rate spread and higher transaction fees. This is particularly the case for larger (foreign) banks with extensive cross-border operations and favourable access to international funding markets. For smaller, local banks, which cater more frequently to SMLs and are less involved in cross-border operations, staff were frequently unaware of the SML themselves.

In addition to a lack of information, our research and the discussions at the policy summit also raised potential capacity issues in using the system, both on the side of the users and financial intermediaries. Several policymakers noted that a relatively high share of SML operations are returned and cannot be completed, though the SML system did not allow them to investigate further what went wrong. This raises two issues, further discussed in the policy recommendations. First, the lack of capacity on the side of the SML users (and potentially smaller banks) to complete the necessary documentation. Secondly, a certain degree of inflexibility of the SML system vis-à-vis the possibility of communicating with participants of the system.

5.4 *Macroeconomic Challenges*

The final key obstacle to a further extension of the SML confirmed in our research is the macroeconomic conditions in the region. Persistent exchange rate volatility

and external vulnerability have meant that domestic agents do not want to receive and hold local currencies. This reluctance to earn local currency in regional trade has been particularly marked in the case of Argentina. According to our interviews, Argentines do not have confidence in the ability of the peso to function as a store of wealth. In contrast to Brazil, where current financial and foreign exchange regulations do not allow any foreign currency to circulate in the economy, in Argentina this money function is nearly entirely fulfilled by the US dollar.

Related to this, on the macroeconomic level, the SML does not remove the need to generate foreign currency (the US dollar) as the (net) settlement continues to be done in US dollar by the respective central banks. Although the amount needed is lowered through the netting of transactions, settlement continues to be denominated in US dollar, which requires the respective central banks (in particular those with a regional trade deficit) to generate foreign exchange reserves somewhere else. If 'financed' with volatile portfolio flows, this maintains the region's external vulnerability and exchange rate volatility. In other words, on a macroeconomic level, the SML does not use the promotion of regional trade as a channel to lower the region's foreign exchange constraint.

In addition to monetary and financial factors, interviewees identified the current trade structure of the SML countries as another factor in the low uptake of the SML. Commodities still constitute a large share of the exports of Southern Cone economies. Commodities, however, are largely priced globally and in US dollars, which limits the space for local currency-denominated exports. Some interviewees argued that in order to expand the SML, as well as to internationalize the BRL, Brazil would have to export more technology-intensive products instead of primary products. In this vein, it is interesting to note, though, that, as a proportion of total trade, industrial trade is higher in the region, highlighting the potential for local currency trade.

More importantly though, in our mind, is that not only exports but many imports are denominated in the US dollar. This means that companies whose production has a large import content outside the region, have a significant share of their cost structure denominated in foreign currency. Similar to the argument about financing, the denomination of firms' cost (liability) structure (in foreign currency, usually the US dollar) reduces the attractiveness of receiving local currency for their exports given the resulting currency mismatch.

6 Conclusion: Conceptual and Policy Considerations

The discussion in this chapter has shown the opportunities, but also significant constraints, on setting up regional payment systems that foster the use of DEC currencies as cross-border invoices and – at least partial – settlement currencies. On the operational and technical level, our results point to a range of potential measures which need to be considered to enable the success of such endeavours. These include, among others: efficient, flexible, and compatible communication, messenger, and anti-money-laundering systems, which can compete with those used by private banks for foreign exchange services; frequent publication of the exchange rate used in the payment system to reduce the exchange rate risk and contribute to building a market in local exchange rates; and the harmonization of existing procedures, protocols, and practices. Our results also pointed to significant capacity constraints both on the side of the users – in particular smaller ones – and the banks, which could be addressed with targeted training campaigns. From an infrastructural perspective, these results show the importance of focusing on the persistent human relations underpinning seemingly automated systems. Indeed, just because new relations are set up, this does not mean that old relations disappear, potentially slowing down innovations (what Star (1999) calls an installed base).

These technical and operational issues aside, the infrastructural lens adopted in this chapter pointed to three key potential constraints on using infrastructural power to build monetary sovereignty in internationally subordinate spaces. First, our research pointed to important informational and political economy constraints. Indeed, given the potential loss of lucrative foreign exchange services, local banks – which continue to be the intermediary between central banks and the ultimate users of the SML – have little interest in offering the service, or do so at excessive transaction fees. Here, increased transparency requirements on the banks, competition from other payment system providers, and targeted information campaigns might be essential to ensure that the regional payment systems are offered more widely and comprehensively. As discussed further later in this chapter, the substitution of private financial services through state operations – for example, the use of state banks to provide regional currency payment system services, or indeed the use of central bank digital currencies (CBDCs) – might be necessary.

A second key constraint identified in our research is the inability to access low-cost, local currency trade financing and the higher counterparty/credit risk for exporters in the SML. Indeed, financing in local currency, that is, the denomination of agents' liabilities in that currency, is an important precondition to remove currency mismatches in cross-border balance sheets and take advantage of the ability to denominate trade in those local currencies. Given the structural upward pressures on interest rates in many DEC, this type of credit might have to be provided by public and/or regional banks in the face of lacking private sector willingness. Similarly to low-cost and local currency trade financing, credit/counterparty risk insurance could be provided by public institutions if the private sector is not prepared to assume the risk.

Finally, our research pointed to the substantial macroeconomic constraints on setting up regional payment systems, and hence regional DEC cross-border currency use.

Persistent macroeconomic and exchange rate volatility undermines agents' ability and willingness to receive local currency in cross-border trade, as has been observed in Argentina, for example. Thus, macroeconomic management to preserve the value stability of DEC currencies will be an important counterpart to infrastructural innovations, such as a payment system that attempts to enhance the use of DEC currencies.

On a more conceptual level, these three constraints point to two important issues when trying to build monetary sovereignty from the bottom up through the establishment and promotion of regional payment systems. First, they show the complementary role of (international) money functions which feed into, and support each other. Setting up payment systems which enable the use of DEC currencies as invoice currencies and means of payment in cross-border trade will not be successful if not supported by measures which also support these currencies as store of wealth and unit of account in financial transactions. This complementarity of international money functions has been highlighted in mainstream economic research (e.g., Gopinath and Stein, 2021; Gopinath and Itskhoki, 2022). Yet, whereas this mainstream literature emphasizes the crucial role of currencies as a medium of exchange and payment in cross-border trade, our results show that unless DEC agents can also denominate their liabilities in local currencies – that is, unless DEC currencies can also be used as funding currencies (e.g., through the provision of affordable local currency trade credit), DEC agents will have little incentive to accept these currencies as means of payment. These findings are in line with a Minskyan interpretation of international cross-border relations which emphasizes the inter-relation between agents' assets and liabilities and the driving role of liability structures (e.g., De Conti, Biancarelli, and Rossi, 2013; Kaltenbrunner, 2015; Bonizzi, 2017; Murau and Pforr, 2020; Pape, 2020; Bonizzi and Kaltenbrunner, 2021).

Secondly, our results confirm the important role of the state in enabling and supporting the creation of monetary sovereignty

from the bottom up in subordinate financial spaces. Given the structural and systemic subordination of DEC currencies in the international monetary system, market-based mechanisms or the provision of private infrastructures will not be sufficient to enhance the demand for these currencies. Instead, the state needs to play an active role in supporting and enabling all money functions at the same time. This includes the use of infrastructural power, for example, through the set-up and management of payment infrastructures as shown by the experience of the SML in this chapter, but also the complementary macroeconomic management and provision of low-cost credit to support the store of wealth and means of financial settlement (funding currency) role respectively. Even in the case of payment infrastructures, state provision might be essential in the face of a lack of incentive from the private financial sector. This state provision could, for example, come through the use of CBDCs, in which cross-border payment services would be provided by the central banks directly rather than through financial intermediaries. More research is needed in this area, but rather than an option, in subordinate spaces CBDCs might become a structural necessity to build monetary sovereignty from the bottom up.

Notes

1. As discussed in more detail in Section 2, the three main functions of money are to act as means of payment, unit of account, and store of wealth. In most economies, domestic money fulfils these three functions in the national economy. On the international level, that is, in cross-border relations, so far only very few currencies act as general means of payment, unit of account, and store of wealth. Most of these functions are assumed by the US dollar, which is by far the most dominant currency in the international monetary system.
2. As discussed in more detail in the main text, the SML allows private users of the SML (companies, service providers, etc.) to pay for and receive local currencies for their cross-border operations. However, the final (net)

settlement of the operations is done by the respective central banks in the US dollar. In that sense, strictly speaking, the SML does not internationalize regional currencies as a means of payment but allows payment for imports in domestic currency. Final settlement remains in dollars.

3. These semi-structured interviews with policy-makers at the Brazilian Central Bank, as well as other key stakeholders, were mainly part of the research methodology applied in the doctoral thesis developed by Orsi (2019).
4. Due to money-laundering concerns, cross-border operations require banks to complete extensive documentation and monitor the operations. The hope was that the SML would not require these procedures.
5. The SML effectively integrates the national payment systems, e.g., the Sistema Brasileiro de Pagamentos with the Argentinian Medio Electrónico de Pagos using multi-local currencies, to circumvent the need for foreign exchange transactions.
6. For example, central banks use the contingency margin when it is a bank holiday in New York, which prevents central banks from sending payments denominated in US dollars from their respective correspondent bank in the United States.

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