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Research Document on the Barriers to an Extension of the SML and Potential Research and Policy Agenda

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I. Introduction

The Local Currency Payment System, in Portuguese Sistema de Pagamentos em Moeda Local or in Spanish Sistema de Pagos en Moneda Local (SML) was founded in June 2007[1] and started operating between Brazil and Argentina in September 2008. Uruguay joined in October 2014 and Paraguay followed in July 2018. In 2015, the SML agreement between Uruguay and Argentina came to life and in 2017 operations between Uruguay and Paraguay started (Zaya, 2020). The SML is a unique regional payment system that encourages the use of local currencies in regional trade and (some) service operations, thus lowering the region's dependence on the US dollar and supporting a sustainable and productive regional trade integration. It aims to support particularly Small and Medium-Sized Enterprises (SMEs), which have little experience in (regional) trade and struggle to access traditional foreign exchange services.

Despite some initial successes, the adoption of the SML has stalled over recent years. In order to fulfil the SML's potential as a promoter of regional trade and growth, urgent research is needed to investigate the underlying reasons for this stagnation and potential barriers to a further extension and deepening of the system. This report makes the first step in this direction. It presents preliminary research, which identifies some of the political, economic, and technical barriers to a more extended use of the SML. It draws on three main sources of information: first, primary data collection in the form of semi-structured interviews with policy makers (the Brazilian central bank), users (companies and trade associations), and financial intermediaries (banks) of the SML (Orsi, 2019a; Orsi, 2019b). So far we have conducted 29 interviews between August 2017 and August 2019. Interviews lasted between 00:30 and 03:25, were transcribed, and analysed using sophisticated qualitative data analysis. The interviews focus currently on Brazil, but we hope to extend them to the other SML member countries in the future.

Second, presentations and discussions at the first multi-stakeholder policy summit on the SML held at the Pontifical Catholic University of São Paulo (PUC-SP) on the 2nd of March 2020 and organised by the Universities of Liverpool and Leeds. The summit brought together representatives from all three SML stakeholders: users (companies; industry organisations), financial intermediaries (banks), policy makers (central banks; development banks); and focused explicitly on identifying the current barriers, which stall a further extension of the SML.

Third, we used secondary literature, in particular, our previous research for the British Foreign Commonwealth Office, the Brazilian securities and exchange commission (CVM), and the Brazilian central bank (BCB) (Belfrage et al. 2016). This report analyses the potential avenues for internationalising the Brazilian Real and puts forward a strategy of a managed, trade-related currency regionalisation (rather than a market and financially driven full internationalisation). As we discuss there, a further extension of the SML is a crucial step in realising this vision.

[1] MERCOSUL/CMC/DEC. Nº 25/07 TRANSAÇÕES COMERCIAIS EM MOEDAS LOCAIS

Our research so far shows that the main barriers to a further uptake of the SML are: (i) Operational costs and risks, including a still relatively long payment period and high transaction costs/fees; the inability to remove the counterparty/payment risk; a lack of harmonization of SML rules and procedures, and existing limits on the duration, types, and counterparties of operation; (ii) the lack of low cost (local currency) trade credit; (iii) a lack of information and capacity to use the system; and (iv) persistent macroeconomic challenges, including exchange rate instability and the existing trade and cost structure in the region.

Following this introduction, section 2 will give a very brief overview of the functioning, aims and objectives 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 regards to the main barriers to a further extension of the SML, and Section 5 concludes with some policy recommendations and questions for future research.

II. Functioning, Aims and Objectives of the SML

The SML was created with the primary purpose of providing exporters and importers with the use of local currencies through quicker, cheaper and non-bureaucratic operations. It was conceived partly to address the failures of correspondent banking to provide affordable and efficient foreign exchange services to local companies, in particular, Small and Medium-Sized Enterprises (SMEs). The SML allows both parts in a cross-border trade (or service contract in some countries) to operate in their respective local currencies, whilst settlement is done in foreign exchange (usually the US dollar) by the respective central banks. It effectively integrates the national payment systems, e.g. the Sistema Brasileiro de Pagamentos (SBP) with the Argentinian Medio Electrónico de Pagos using multi-local currencies, to circumvent the need for foreign exchange transactions. 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, should be more competitive than the market rate, in particular for SMEs, and independent of the size of the foreign exchange operation.

According to our interviews, the SML was inspired by the payment system observed in the European Union. It also has some similarities to the Directo a México, which is a payment system for remittances from the US to Mexico. The most similar payment system at the time of the creation of SML was the Reciprocal Payment and Credit Agreement (CCR), in Portuguese Convênio de Pagamentos e Créditos Recíprocos. CCR was a multilateral cooperation between central banks from the Latin America Integration Association (ALADI), which operates with the US dollar. Instead, the SML facilitates the use of regional currencies in regional cross-border trade. On the other hand, in contrast to the CCR, in the SML, the responsible central banks only assume a 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).[2]

Although currency internationalisation has not been an explicit priority at the inception of the SML, the use of local currencies in cross-border regional trade **supports their role as regional trade invoice currencies**. One major benefit of this regionalisation is that it substitutes the US dollar as the main trade invoice and (private) trade settlement

[2] Credit risk is limited by the fact that payments are organised 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. 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.

currency in the region.[3] This substitution reduces the exchange rate risk for local agents engaging in cross-border operations (goods and/or services) and, in the case of importers, reduces their need to acquire the US dollar for payment. The provision of a direct local currency exchange rate (rather than triangulating via the US dollar as it is current practice) contributes to promoting regional currencies as units of account and creating an active market for regional to reduce the dollar's role as a vehicle currency.

Table 1 summarises the different international money functions and illustrates the role of the SML in internationalising/regionalising local currencies (monetary functions promoted by the SML are in red). Belfrage et al. 2016 provide a detailed discussion of the costs and benefit of these different international money functions and types of currency internationalisation.

Table 1: International Money Functions, Types of Currency Internationalisation, and the SML

Function of Money	Role of Money	Private	Public
Means of Payment	Avoid the "double coincidence of wants"	(1) Vehicle Currency (2) Trade settlement currency	(1) Intervention Currency
Unit of Account/Means of financial settlement	Denominate contractual obligations and fulfil these obligations	(3) Invoice Currency (denominator of cross-border trade contracts) (4) Funding Currency (denominator of cross-border financial contracts)	(2) Exchange Rate Anchor
Store of Value	Preserves value through time	(5) Short-term investment currency (6) Long-term investment currency	(3) Foreign Exchange Reserves

Source: Authors' elaboration on tables in Cohen and Benney, 2014; Belfrage et al. 2016

The ability to pay quickly and efficiently for regional trade operations in local currencies should also **stimulate regional trade**, a backbone of any regional integration effort.

[3] For example, in Brazil the SML promoted regulatory changes which allow a further internationalisation of the Real. These include allowing exporters to invoice their contracts in BRL and the 'one-way' TIR (International Transfers in Brazilian Real).

Although SML was an initiative of analysts and technicians from the BCB, its implementation had significant support from the former presidents of Brazil and Argentina, Luiz Inácio Lula da Silva and Cristina Fernandéz Kirchner, respectively. Thus, behind all these rationales for the SML creation was a greater political objective of promoting the currencies of Mercosur countries and strengthen regional integration.

On the firm level, the gains of paying for imports and receiving payments for exports in domestic currency are considered to be particularly beneficial to **stimulate financial inclusion, production and cross-border trade of 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, low cost, local currency financing – which 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.

III. Usage and Uptake of the SML

Currently, the SML has legislative authorisation to operate with countries in the Mercosur: Brazil, Argentina, Paraguay and Uruguay. It works differently for each country. For instance, the regulation 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, i.e. remittances. Due to data reasons and the focus of our previous research, the discussion will focus mainly on the bilateral relations of Brazil. As indicated above, future research hopes to widen the focus to the other SML countries and their bilateral relations.

Overall, although the share of Brazilian real denominating trade invoice is rather small, data from the BCB shows that for Brazil most SML operations are denominated in BRL. The main reason for such a predominant role of the BRL is the large share of operations with **Argentina.** As indicated above, 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.

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

Table 2: Brazilian Imports and Exports in the SML with Argentina

	EXPORTS			IMPORTS*			
DATE	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 3 shows the volume and number of SML operations between Brazil and Uruguay. The numbers are far below those with Argentina (around 15% of the volume in 2019), however, in contrast to Argentina, we can observe a steady increase in operations, both with regards to volume and number of operations. With regards to exports and imports as a share of total exports and imports, SML operations reached 1.63% and 2.16% respectively.

Table 3: Brazil's Imports and Exports in the SML with Uruguay

	EXPORTS			IMPORTS*		
DATE	No.	Amount (millions R$)	% Total Exports	No.	Amount (millions R$)	% Total Imports
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.

According to our interviews, three main reasons explain this lower level: first, the trade operations between Brazil and Uruguay are much smaller than the trade between Brazil and Argentina. Second, the operations started more recently. It takes some time until the system is disseminated for agents interested in trade and financial transactions. Third, Uruguay is economically smaller than Argentina and Brazil. Despite these considerations, the amount of exports and imports from Brazil to Uruguay via the SML has increased by 26% and 141%, respectively. A point stressed by many interviewees is that trade with Uruguay is, however, more balanced regarding the volume of imports and exports, whereas Argentina mostly imports from Brazil. Particularly in 2019, when the Brazilian imports from Uruguay have more than doubled, there is nearly an equal amount of imports and exports.

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 Brazilian real in the operations. The data available is presented in Table 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 are as a share of total exports and imports, SML operations reached 1.21% and 1.30% respectively.

Table 4: Brazil's Imports and Exports in the SML with Paraguay

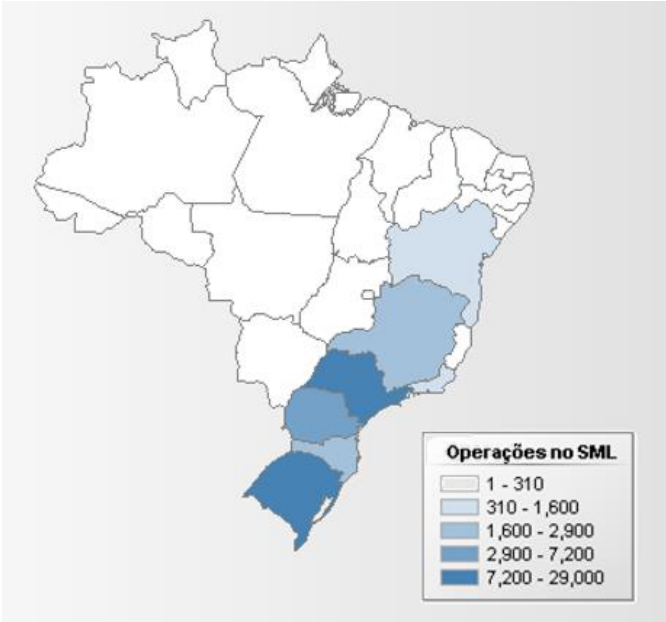
	EXPORTS			IMPORTS*		
DATE	No.	Amount (millions R$)	% Total Exports	No.	Amount (millions R$)	% Total Imports
2018	72	8.02	0.16%	15	2.74	0.14%
2019	841	118.16	1.21%	69	76.80	1.30%

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

Similar to Uruguay, participants do not expect that operations using the BRL will 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 regionalised.

With regards to the third objective of the SML, that is the promotion of regional trade by SMEs, the discussion and data presented at the SML policy summit showed that the SML has been of limited success. For example, de Barra (2020) shows that the share of small and medium-sized enterprises in the SML was only 10% in the case of Brazil-Argentina operations and a bit below 25% in the case of Brazil-Uruguay. With regards to the sectors, data show that SML operations are dominated by the processing industry (in particular in the case of Brazil-Argentina) and in the automobile sector. These insights are also confirmed by regional data. For example, data on the users of SML by location shows that trade is mostly done with the Brazilian states that are geographically closer to Argentina. One reason for this geographic bias is that the Southeast of Brazil, where São Paulo is located, concentrates most of the industries in Brazil, in particular regarding regional automobile value chains, as illustrated in Figure 1.

Figure 1: Operations of SML with Argentina by Geographic Location



Source: Brazilian Central Bank (BCB) in 2018. On the left-hand side: number of total operations of the

In sum, the above data shows that after an initial increase in the uptake of the SML, usage has stagnated recently in particular in the case of operations between Brazil and Argentina, which dominate the system by size. With regards to the type of usage, 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 identifies some of the specific barriers which could weigh on a more extended uptake of the SML, in particular on behalf of smaller companies.

IV. Barriers to an extended usage of the SML

This section discusses some of the barriers to a further deepening and extension of the SML. It is based on our previous research on currency regionalisation (Belfrage et al. 2016), subsequent additional primary data collection through semi-structured interviews with policy makers, users, and financial intermediaries (Orsi, 2019a; Orsi, 2019b), and the insights generated in the first SML multi-stakeholder policy summit which took place in the spring of 2020.

(a) Operational costs, risks, and limits

The SML was designed to provide quicker, cheaper, and less bureaucratic local currency payment in regional trade, addressing some of the shortcomings of (dollar) foreign exchange operations. However, several operational costs, risks, and limits weigh on this vision.

First, in contrast to expectations that SML operations could be conducted like simple domestic bank transfers, **the speed of operations transacted via the SML** still remains relatively low (around 3 days for an operation to be completed). This transfer is slightly longer than operations in the spot market, which takes up to two business days from the trade date. According to our research, this delay is partly caused by regulatory and prudential measures which seek to inhibit illegal cross-border transactions. In the case of Brazil, although the SML does not involve a foreign exchange transaction for the user, SML operations still fall under foreign exchange and anti-money laundering regulations and precautions are applied. The rationale is to avoid adverse selection and channelling illegal transactions via the SML. As a result, financial institutions ask their clients for extensive documentation for each operation, which causes delays in processing transactions. According to a financial intermediary, the lack of an automated system or platform for the SML requires banks to complete manually the documentation, which causes further delays. This, according to the same interviewee, is aggravated by the lack of a more extended and flexible messenger system that allows participants to check, verify, or amend the information. Any transaction which cannot be verified or completed needs to be returned to the sender, which further adds to delays in the system. Finally, the respective central banks need some time to process the operations.

Second, our research found that although banks, in theory, operate primarily as financial intermediaries in the SML and themselves assume little risks, some of them still charge companies, in particular SMEs which have little bargaining power, **considerable transaction fees**. According to some of our interviewees, given the competitive SML exchange rate, the fact that (in the case of Brazil) no "foreign exchange contract" (*contrato de câmbio*) is necessary, transaction fees in the SML could be 50% lower than in normal foreign exchange transactions. These savings for users, however, do not seem to have materialised. Indeed, according to one interviewee in a financial intermediary, the fees charged for SML services can be 3-5 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. Second, 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.

Third, 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 is available on the BCB website, must use a proxy for the SML rate, which is normally the exchange rate of the previous day. Thus, the amount transferred from the agent to the financial institution is probably not accurate. 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. In the event of a strong currency devaluation from one day to another, this could potentially create problems for the client to pay its obligations to the financial institution. To compensate for this potential risk, these financial institutions often collect a deposit from their clients in order to do these adjustments, increasing the cost of operating in the SML.

Fourth, 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*). This risk is particularly high for longer and larger operations and those with a new trading partner, which lacks a track record and a relationship of trust. 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. Exporters could take out an additional credit insurance, but they are expensive and create additional costs for users of the SML. Moreover, interviewees were not sure whether credit insurance agencies would even provide such insurance against local currency SML operations. According to one interviewee, this lack of credit/counterparty insurance 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.

Fourth, 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 benefits 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 Brazilian Central Bank 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 that already know the system.

(b) Lack of low-cost (domestic currency) financing

Another key limiting factor recognised 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 subsidised credit programs or credit denominated in 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 – which requires a foreign exchange contract (*contrato de câmbio*) is currently not available for local currency SML operations. The problems above are compounded for SMEs, who face general difficulties in accessing (trade) financing.

Moreover, 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. As long as trade financing (funding) is denominated in foreign currency, the advantages of using local currencies as trade invoice currencies are limited and/or limited to small operations which do not need financing, because of the mismatch which arises between agents' liabilities (trade credit) and their assets (export revenue). This is particularly problematic for SMEs, who do not have enough internal resources to pre-finance the required investments and are thus particularly dependent on trade financing.

(c) Lack of information

One key limitation to a further expansion of the SML, which we already identified in our previous work (Belfrage et al. 2016), is the lack of information about the SML. Our results suggest that particularly smaller companies are unaware of the possibility of trading with other countries in the Mercosur using local currencies. These companies have less access to information because they generally trade locally and, thus, lack a foreign exchange department that manages international payments. Large companies, in contrast, have such a department with qualified personnel that can identify the financial products available in the market, such as the SML. This also explains the concentration of larger companies operating with SML.

One of the reasons identified for the lack of information about the SML is the reluctance of financial institutions to advertise the system. Operating in the foreign exchange market is more profitable than operating with SML, because financial institutions gain from the exchange rate spread and higher transaction fees. SML is a system that mostly benefits the users, particularly SMEs. Moreover, there is no benefit in training personnel to operate via SML, as those employees who work with international trade are rather skilled to operate in the foreign exchange market, not with payments in local currency. However, our research showed that there is a lack of information about the SML even among financial institutions, particularly in smaller branches, where many SMEs have their bank accounts. In these smaller institutions, the employees are not familiar with payment systems of international trade. For this reason, staff in these institutions do not offer services for operating with SML, which may be the reason for the low participation of smaller companies in this payment system.

(d) Lack of capacity to use and provide the system

In addition to the lack of information about the SML, 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. On the side of the users, SMEs often lack expertise in accessing foreign exchange services. Several policy makers noted that a relatively high share of SML operations are returned and cannot be completed, though they lacked information on why this was the case. Our interview with a financial intermediary indicated that at times they had to return SML operations because, for example, a name was written wrongly. However, the interviewee also noted that the SML system didn't allow them to investigate further what went wrong, which means in such cases they have to return the payment. This raises two issues, further discussed in the policy recommendations. First, the potential lack of capacity on the side of the SML users (and potentially smaller banks) in completing the necessary document. Second, a certain degree of inflexibility of the SML system vis-à-vis the possibility to communicate with participants of the system.

(e) Macroeconomic Challenges

Another key obstacle identified to a further extension of the SML are macroeconomic conditions. 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, Argentineans do not have confidence in the ability of the peso to function as a reserve currency. In contrast with Brazil, where the current regulation does not allow any foreign currency to circulate in the economy, the US dollar generally fulfils the store of value function in Argentina.

Related to this, on the macroeconomic level, the SML does not remove the need to generate foreign currency (the US dollar). Although the amount needed is lowered through the netting of transactions, settlement continues to be done 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 dollar, which limits the space for local currency-denominated exports. Some interviewees argued that to expand SML as well as to internationalise the BRL, Brazil would have to export more technology-intensive products instead of primary products. Interestingly though, data from the Ministry of Development, Industry and Foreign Trade (MDIC) suggest that tobacco and sugar were the leading products on the BRL-invoiced trade in 2011, which accounted together for 33% of the exports denominated in BRL (Reiss, 2015). Moreover, 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 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. As a result, the current users of the SML are mostly those companies that do not have their liabilities denominated in dollars, but in local currency.

V. Policy Recommendations and Future Research Agenda

Based on the above results and our previous research in Belfrage et al. (2016), several measures could extend the reach and breadth of the SML. The discussion is organised in the same order as that of the barriers above and does not imply any priority.

(a) Reduction in Operational Costs, Risks and Limitations

As discussed above, one barrier to extend the SML is the **delay in processing transactions**, partly caused by the need for extensive documentation for anti-money laundering purposes. Whilst we consider those purposes necessary and would not want to recommend watering down these regulations, recent technological advances could be used to achieve some reduction in the bureaucratic burden. For example, one of the participants at the workshop mentioned that as commercial banks are moving towards more technological operations, in the context of Fintechs, and the same development should be expected in the SML. For instance, instead of requesting documents to prove the legality of each transaction, banks could use the 'know-your-client' strategy, where the banks only require documents in those situations when their clients make a transaction outside of their ordinary operations. The application of technological advances could also be considered to automate the processing and messenger system of the SML to reduce the need for manual operations in the system and improve communication.

With regards to the relatively **high transaction fees** charged by banks for SML services, measures to address these could include:

- **Increased transparency** requirements on the banks to publish their SML charges and justifications for the adminstration cost.
- **Increased competition** from other providers of SML services.

  A targeted information and training campaign to smaller, regional banks specialised in SME services (see below) could increase the number of banks providing competitive SML services. This might exert pressures on larger banks to reduce the costs of their SML provision and offer the SML as part of a comprehensive and integrated service to SMEs. Competition could also stem from public banks specialised in SME services and trade financing which could assume an increased mandate to support the SML. The provision of trade finance and SML services targeted at SMEs by one institution could economize on documentation and information flow.
- **Use of Central Bank Digital Currency (CBDC),** in which SML services would be provided by the central banks directly rather than through financial intermediaries.

  Much more research is needed on the benefits, remit, risks, and feasibility of CBDC, but this option could provide a significant reduction in costs for the user community. The service could be limited to SML users and Small and Medium-Sized Enterprises to address a persistent market failure (the provision of affordable finance for SMEs which represent higher credit risk, but are crucial for employment and productivity in the region).

- **Increased knowledge about the benefits and lower cost of the SML in the user community** (see also below) should increase the pressure on banks to provide SML services at a lower cost.

Other operational measures to extend the SML based on our preliminary results could include:

- A **more frequent publication of the SML rate** to reduce the "exchange rate risk" for SML operators and contribute to building a market in local exchange rates.

- **Harmonisation of existing procedures, protocols, and practices** with a long-term goal of moving to a multilateralization of the system (see also below).

- Allowing a **broader range of operations**, including more **long-term operations** (> year), a wider range of cross-border activities, and counterparties.

  With regards to the extension of the time frame, these operations could initially be limited to triple-rated companies, public-private partnerships, and/or state companies to reduce the credit risk. Regional infrastructure projects and/or other operations with some degree of state support and in line with the general objective of strengthening regional integration could be prioritized.

- Increasing the **flexibility of the SML messenger system**, which would improve communication between the three participants of the system (users, financial intermediaries, central banks) to identify, for example, the reasons for the high return rate of applications.

(b) Provision of low-cost (local currency) trade financing and Credit/Counterparty Risk Insurance

Another barrier 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. Again, several policy measures could address this:

- For Brazil specifically (whilst modalities might differ in other countries, the rationale is the same), ACC/ACE financing could be made available to firms exporting via the SML and without a foreign exchange contract. In order to avoid a currency mismatch in the exporter's balance sheet, the value of this financing should be fixed in the local currency.

- More general, in order to develop the SML further, it is crucial to increase the availability of domestic currency financing to local firms. Our research (Belfrage et al., 2016) shows that financing in local currency (denominate liabilities in that currency/make it a funding 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 pressures on interest rates in Brazil, this type of credit might have to be provided by public and/or regional banks in the face of lacking private sector willingness. As indicated above, this might have to be particularly the case for SMEs, which face difficulties to access private funding markets and face higher costs due to power asymmetries. The provision of such credit could be tied to the usage of the SML to ensure a targeted approach.

- 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. The crucial role of SMEs for employment creation and the benefits of fostering regional trade could justify such an assumption of potential credit risk. As indicated above, the integration of SML services, trade finance, and provision of credit/counterparty insurance into one institution targeted specifically at SMEs could create economies of scale with regards to the documentation and background checks needed. This could be particularly attractive to a regional bank operating in several SML countries.

(c) Increase the SML Dissemination and Training Activities about the SML

One key measure would be to further increase the dissemination activities of the SML and provide targeted training for intermediaries and users. This would not only have an immediate effect on increasing the user community but might also have secondary effects through increasing pressures on financial intermediaries to lower transaction costs (see above). We have identified three key target groups for these dissemination and training activities:

- **Small and Medium-Sized Enterprises**

  As discussed above, SME's face particular information and capacity constraints. They also suffer from power asymmetries in funding markets. Both information and training workshops would be crucial. These information and training activities (e.g. half-day webinars, online courses, direct SML contacts etc.) could be organised in conjunction with specific industry bodies, such as SEBRAE[4] in Brazil, and/or other public policy institutions responsible for financial inclusion and SME policies. They should include the specific modalities of using the SML, but also remind users of the benefits, such as the reduction in exchange rate risk, the attractive SML rate, and the lower transaction costs.

[4] Brazilian Micro and Small Business Support Service.

- **Intra-industry trade companies and regional supply chains**

  Although targeted specifically at SMEs, we also see potential in the SML for supporting intra-industry trade and the development of regional supply chains by larger companies. Empirical evidence shows the key role of regional value chains in supporting regional integration and building resilience. The SML could play an important role in this development, for example in the automobile sector which boasts a large share of intra-industry trade.

- **Financial intermediaries**

  Finally, with regards to financial intermediaries, training and dissemination events could be targeted explicitly at small/medium-sized, regional banks whose client base is largely constituted by SMEs. These smaller/regional banks generally have less access to international funding markets and are less competitive in foreign exchange transactions. Moreover, these banks might be more likely to have an SME client base which might make the provision of SML services an attractive niche for them. With regards to those (and indeed larger financial intermediaries), it could be beneficial to present the SML as a comprehensive, targeted package for SME clients, which builds customer relations, rather than a financial product aimed at short-term gains. As mentioned already above, this might be particularly attractive for regional banks, which have clients in several SML countries.

(d) Set up a multilateral network/working group of regional central banks to share best-practice, harmonize procedures, and discuss settlement procedures

At the moment, the SML functions primarily on a bilateral basis. Further multilateralization could create important synergies and network effects, e.g. through the sharing of best practice and harmonization of procedures. In Belfrage et al. (2016), we suggested a network of regional central banks to undertake settlement. To ensure the smooth operation of the system, we suggested that participating central banks could create a shared calendar, harmonized format and technical language with a view to potentially, in the long-term, create a multilateral institution capable of managing the system in "real-time" on the basis of having a shared technical infrastructure, a single platform for settlement (p. 53).

In the medium term, such a multilateral system could also consider introducing carefully, but progressively, settlement in local currency to lower the foreign exchange constraint on the macroeconomic level. As discussed above, although the SML promotes the use of regional currencies in private cross-border trade, it maintains the regions' dependence on foreign currency due to settlement in the US dollar. This constraint is particularly acute for those countries, facing a negative net trade balance. To reduce the macroeconomic implications of intra-regional trade imbalances and economize on scarce foreign exchange reserves, settlement in local currencies could be considered. The development and evolution of the Target 2 system in the Eurozone could be an interesting case study to consider. Many aspects such as the maximum level of trade imbalance permitted, the relevant exchange rate, and the extent to which regional central banks are allowed to accommodate regional trade imbalances, need to be studied. Akin to the position of Germany in the Eurozone, in this context Brazil would have to weigh up the costs and benefits of financing (temporary) balance of payments imbalances in the region to the benefit of its exporters and the broader gains of an increased regional integration.

VI. References

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