

FGV IIU Working Paper

**REPLACING THE DOLLAR IN INTERNATIONAL
PAYMENTS: A PRELIMINARY ASSESSMENT**

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Replacing the Dollar in International Payments: A Preliminary Assessment [∞]

1. Introduction.

Modern trade cannot be dissociated from the monetary vehicle that not only eases the multiple transactions but also makes things effectively come true. Adoption of an international reference currency as such a vehicle is not a simple process and poses questions similar, though not identical, to those that have led to the use of a single, government-controlled currency, by each nation.

In the one country case, power played a role as important as credibility. Since the Middle Ages, ruling elites realised that considerable gains could be extracted if an official currency would be imposed in their domains. The *valor impositus* principle, which stated that the governmental act, made visible by the official stamp in the coins, added value and trust to the currency, was invoked by kings and rulers in general, despite with mixed success, to impose equal values to coins with different (less, usually) quantities of their underlying metal, Mann (1971).

In international transactions, since at least the XIX century, the currency of the hegemon has functioned as a standard, if not a means, to guide and oftentimes perform the great majority of the needed operations. The currency of the British Empire, the pound, fulfilled this role practically unchallenged during the Pax Britannica century, from 1815 to 1914.

After World War II, with the Bretton Woods framework accepted and solidly inserted, the US dollar clearly replaced the British pound. This dollar was however attached to a gold standard,

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keeping, to some extent, the key tradition as well as argument for a powerful, stable, internationally accepted currency: the supposed equivalence between the banknotes in circulation and the state reserves -US ones in the case- of the precious metal.

When in 1971 the US left the gold standard -which Britain had left in 1931-, the US dollar became the international currency *tout court*.

Why did the dollar keep its credibility and efficacy without the gold support is still open to interpretation. Unquestionably, the uncontested power of the US -at the time and for decades-, with armed forces deployed in bases covering nearly every important coin of the non-Soviet world, together with a superior navy patrolling the seven seas, has been a major factor.

The possibility of currency competition, an idea also nurtured within a given country, Tullock (1975), Klein (1976), seemed sometimes to come true. The Japanese yen and, once created in January 1999, the Euro dreamed of if not replacing at least grabbing a reasonable share of world transactions. Despite the outstanding Japanese banking sector, the limited scope and absent international clout of Japan could not help the yen; while the imperfect monetary union implicit in the Euro, a fragile symbolic currency, did the same for the European construct. And both countries were far behind the hegemon in military capabilities.

The fall of the Soviet Union in December 1991, a few years before the creation of the Euro, reinforced the impression that the unbridled US dollar would rule for good.

However, two issues became progressively relevant. The first is the continuous deterioration of the US deficit, that slowly though steadily menaces the credibility of its currency. The second is the increasing world insecurity, constantly rising since the beginning of this century. Insecurity has been unfolding into a series of local conflicts, involving directly or indirectly the US, which fuel more insecurity and expensive pre-emptive measures, many out of partially irrational fear. Concomitant use of financial and economic sanctions, including the freezing of assets of countries in opposing sides, spread doubts among most who counted on the dollar as a reliable reserve currency.

All this has contributed to the idea of a Global South, pooling together the majority of the countries outside the hegemon and its clear proxy, the European Union (EU); an informal alliance though not opposed to the hegemon looking for greater independence from it. The US dollar, despite manifold relevant anchors, lost further credibility, its crucial asset; efforts aiming at its substitution entered the agenda.

This paper is a preliminary examination of the process of replacing the US dollar in a sizeable share of international transactions. Such movement involves a complex array of changes and replacements that may go down to a micro level of decisions, together with bold macroeconomic steps. Section 2 outlines this network of operations and procedures. Section 3 addresses, quantitatively, the prospects of a major first step: the payment for trade flows. Section 4 probes other functions and their possible assessments. Throughout the discussion, there is a concern to identify key feasible policies and ways to measure their results.

Section 5 concludes with a view on the tasks ahead.

2. The currency of the hegemon: how far it goes.

Replacing the US dollar as the money to pay for an import, or the one to receive for one's exports goes beyond the strict limits of the sheer transaction. Ancillary services, as insurance and logistics, require payments that, depending on the provider, are requested in US dollars. Firms and exports producers, especially if of a transnational character, have their accounts in dollars and may vary from reluctant to resistant to accept payments in other currencies; a likely unnecessary nuisance for them.

A single currency eases comparisons among different international suppliers or buyers, particularly as regards the key issue of costs. Domestically, small exporters want to be able to schedule production and revenues according to expected receipts. If these are to be accounted in a not universal, probably more volatile currency, they may shed the corresponding destinations. Broadly, planning is inherent to all decisions involved in the trade realm, and plans need (ideally solid and) well-defined and accepted monetary units.

Considerations may be enlarged, adding several instances - more or less sound, depending on how the alternatives are fashioned- that act as further arguments against a replacement. They may be. Their impact, or resilience, will be attenuated if the alternatives have a business, or profit scale that encourages acceptance. Acceptance can even become tacit if the goods are essential, or supplied in quantities that no other competitor could cover.

The above suggests that replacement is more feasible if: a) a minimal group of *significant traders* is for it; b) within this minimal group, together with other countries close to it, replacement is fully adopted.

Supposing that both conditions apply, the currencies used in the transactions remain an open question.

Will each country pay in its own money and conversions among a group of currencies become common and reliable practice, or will one of the currencies -again by reasons of scale- progressively reveal itself a more convenient means? A debate that brings one back to early discussions, usually in a domestic context, running from the early twentieth century *Freigeld* ideas, Gesell (1958), to developments like Klein (1975), on the multiplicity of currencies.

It is hard to forecast, at this moment, how things will evolve, but inclusion of a key trader like China in the pro-replacement group introduces a bias towards the renminbi (RMB).

A further point is that countries may accept replacement with certain partners, while practicing the US dollar standard with others. Actually, given the combined size of the US and EU markets, this will be the prevailing situation in a first step, for nearly all members of the replacement group. In a second step, some may become more assertive and use other currencies for the majority of their transactions.

Beyond the universe of trade transactions, the currency of the hegemon naturally arises as a favourite choice for a country's international reserves. US Treasury Bonds, though not without problems, still stand as the (financial theory's) world riskless asset, and figure prominently in all national baskets of monetary reserves. The International Financial System (IFS) remains heavily anchored on and co-ordinated by its US complex core, a far from negligible point.

Practical consequences, as control of the international payments and banks transfer systems are strategic and provide added support to the hegemon's currency. The exchange rate market provides daily hefty receipts to all banks and those involved in its operations, which eventually accrue substantial sovereignty rents to the US dollar.

The least-reaction path to start a partial replacement effort seems to be through trade payments. A core starting group can be the BRICS original countries, possible other adherents being those strongly associated to them and the new five members. The core group must have a few goods for which they play a major role in world trade, as well as significant links among them and the Global South in general.

It is important to measure the progress of the replacement. Basic statistics being, for each pro-replacement active country, the amount and share of trade in other currencies and those in US dollars. Their shares in terms of world trade are also relevant. Information on the payment for ancillary services and, in the case of logistics, on the transportation modes used is also relevant, though less easily available.

The same applies to other instances of sovereignty, a bare assessment indicator being the composition of the national reserves. Individual measures, like creation of alternative means of payment, novel credit card banners or international transfers' platforms play an important role and must be individually assessed within the limits of the associated market.

3. Replacement in the trade flows.

The easiest way to start analysing the prospects for replacement lies in the structure of the world trade flows.

Table 1a shows the flows in value among (the five original) BRICS countries, for 2022, and also to and from three other world regions. The two that will stick to the dollar, the US and the European Union (EU), and the Rest of the World (RoW); together with the BRICS, they make for a four-region division of the world. Exports are in the columns, imports run along rows¹. Shares appear in Table 1b, exports' ones in columns, imports' ones in rows; to ease visibility, different colours are used for the two sets.

The message from the Table is nuanced.

As regards BRICS countries, those with a strong link with China seem more comfortable to switch a sizeable part of payments and receipts. Brazil is an emblematic case, 30 percent of its exports go to the BRICS, and 28 percent of its imports come from them. A member like India presents a mixed situation, with a low share of exports (8 percent) but a significant one of imports (24 percent). Taking the BRICS as a whole, 34 percent of their exports go to the EU+US bloc, while 18 percent of their imports come from them; *figures that should be taken as lower bounds for no-replacement flows.*

¹ See the Appendix on Statistics.

TABLE 1: Trade Flows – BRICS countries and a four-region division of the World, 2022.

1a. Exports and Imports intra and extra BRICS (in billion US\$)

	Brazil	India	Russia	China	S. Africa	BRICS	US	EU	RoW
Brazil		9.7	8.6	62.0	0.7	81.0	46.4	44.3	120.3
India	6.3		40.6	118.5	8.2	173.7	45.1	49.7	464.1
Russia	2.0	2.9		76.1	0.3	81.3	1.5	57.7	53.1
China	89.7	15.1	114.2		22.1	241.1	156.4	239.7	1 956.0
S. Africa	1.7	8.3	0.6	24.2		34.7	6.9	27.6	42.1
BRICS	99.8	36.0	164.0	280.8	31.3	611.8	256.3	419.0	2 582.5
US	38.2	80.2	15.1	582.8	12.6	728.8		527.5	2 116.6
EU	52.4	71.1	195.6	657.7	27.6	1 004.4	372.4		1 780.6
RoW	144.2	265.4	197.4	2 072.4	49.6	2 728.9	1 115.2	1 761.8	
Total	334.5	452.7	572.0	3 593.1	121.1	5 073.9	1 743.8	2 708.2	6 532.7

Source: UN Comtrade.

1b. Shares* of Exports and Imports*** between BRICS countries and four world regions**

	Brazil	India	Russia	China	S.Africa	BRICS	US	EU	RoW
Brazil						0.28	0.16	0.15	0.41
India						0.24	0.06	0.07	0.63
Russia						0.42	0.01	0.30	0.27
China						0.09	0.06	0.09	0.75
S.Africa						0.31	0.06	0.25	0.38
BRICS	0.30	0.08	0.29	0.08	0.26	0.12 0.16	0.07	0.11	0.67
US	0.11	0.18	0.03	0.16	0.10	0.14			
EU	0.16	0.16	0.34	0.18	0.23	0.20			
RoW	0.43	0.59	0.35	0.58	0.41	0.54			

* Due to round-off, shares may add up to 0.99 or 1.01; ** in black; *** in green.

An important point is the key role of the RoW. It presents imports and exports shares nearly always above 40 percent, reaching, in the case of Chinese imports, the unavoidable figure of 75 percent. For the replacement movement to gain momentum, it is mandatory to move outside the BRICS-EU-US nexus to this rather diversified group. It includes from brand new BRICS members to the diversity of Asia, even without China and India, plus the whole of Latin America but Brazil, together with a complex zone like the Middle East and a more isolated one as Eurasia, with the old

Silk Road countries. Their inclusion in the replacement candidates needs different strategies and well-designed policies. It deepens the question of multiple alternative currencies: while many may be comfortable using the RMB, others may prefer the rouble, and some even feel at ease with the Brazilian real.

In order to give a basic idea on the dollar dependence by BRICS members, Table 2 displays the combined US-EU imports and exports shares for them. In terms of exports, all are clearly dependent on the standard Western market; in overall terms, India and China -naturally, given their size as trade actors- are less dependent than the other three. Dependence however differs; while for China it is roughly balanced between the two submarkets, for Russia there is much less trade with the US.

TABLE 2: BRICS countries, combined US-EU shares of their imports and exports, 2022.

	Brazil	India	Russia	China	S. Africa	BRICS
Imports	0.31	0.13	0.31	0.15	0.31	0.18
Exports	0.27	0.34	0.37	0.34	0.33	0.34

Source: Table 1b.

Table 3 provides a glimpse on the diversity of the RoW, with select partners in non-African countries (3a) and in Africa (3b). To put the figures in perspective, their exports and imports to the US and the EU are also shown, together with -from the BRICS- the Chinese flows.

Again, a mixed picture appears, with important players like Saudi Arabia, Vietnam or Japan, sided by more modest ones (in comparison), as the African countries. Geopolitics plays an even more important role, as whether or how far Japan and Saudi Arabia, for instance, will engage in the replacement remains an open question nowadays.

All countries in 3a. import more from the BRICS than from the US+EU combined market; the Western market is a key destination for their exports but for the Asian countries, with the exception of Indonesia. As for the sample of five African countries, Angola and Nigeria show promising figures, but only Angola and Mozambique trade more with the BRICS rather than with the US+EU. The EU, in particular, is a key partner for all the five.

TABLE 3: Trade Flows – BRICS members and select countries, 2022.

3a. Exports and Imports, non-African countries (in billion US\$)

	China	Brics	Argentina	Iran*	S. Arabia	Indonesia	Vietnam	Japan	US	EU
China		241.1	7.9	6 355.1	78.0	65.9	72.8	144.5	133.8	239.7
Brics	280.8		26.1	7 162.4	134.2	93.6	86.1	169.7	256.3	419.0
Argentina	12.8	29.7		1.4	1.1	0.4	1.0	0.9	11.0	10.5
Iran	9.4	15.6	0.7			0.2		0.0	0.0	4.3
Saudi Arabia	38.0	51.5	1.2			2.0	0.7	5.1	10.8	32.8
Indonesia	71.3	87.0	2.1	14.6	5.5		4.5	15.1	9.6	9.4
Vietnam	147.0	158.6	3.2		1.9	8.3		19.0	9.5	13.2
Japan	172.9	208.6	0.8	35.2	42.4	24.8	24.2		72.3	73.0
US	582.8	728.8	6.7	11.2	24.1	32.8	135.9	139.8		527.5
EU	658.6	1 004.4	11.2	1 112.0	46.4	24.8	53.8	73.3	372.4	

* Exceptionally, in million US\$.

Source: UN Comtrade.

3b. Exports and Imports, African countries (in million US\$)

	Brics	Angola	Ghana	Mozambique	Nigeria	Senegal	US	EU
Brics		28 033.1	4 515.6	4 147.5	12 079.4	1 095.7	256 288.3	418 969.3
Angola	5 885.1		11.0	3.0	2.9	2.0	596.1	4 492.7
Ghana	9 645.2	24.4		2.6	176.6	34.1	944.1	3 941.3
Mozambique	11 569.9	1.6	0.3		15.1	0.9	160.4	912.0
Nigeria	29 591.5	1.1	49.6	3.6		26.3	3 215.0	19 430.9
Senegal	6 330.3	6.8	69.6	6.4	734.7		330.9	4 512.1
US	728 827.9	1 132.8	2 836.6	124.2	4 408.4	164.9		527 512.6
EU	1 004 366.2	14 235.5	2 434.2	2 990.6	28 577.5	600.3	372 356.5	

Source: UN Comtrade.

4. Other dimensions and agents.

International reserves

The main international currency besides dominating flows is top also as regards stocks. It anchors the basket of financial assets that make up the international reserves of most countries.

Table 4 shows the composition of the reserves' basket for all IMF reporting members, for three points in time, 2002, 2012 and 2022.

TABLE 4: Foreign Exchange Reserves, all IMF members, in three points in time.

	2002	2012	2022
According to the main used currencies, in billion US\$			
Total Foreign Exchange Reserves	2 408.9	10 948.4	11 917.8
Allocated Reserves	1 795.8	6 084.7	11 040.0
Claims in U.S. dollars	1 194.2	3 741.9	6 460.2
Claims in euro	424.7	1 464.7	2 252.1
Claims in Chinese renminbi			287.8
Claims in Japanese yen	88.7	248.8	608.2
Claims in pounds sterling	52.5	246.0	543.1
Claims in other currencies	35.7	383.3	383.6
Unallocated Reserves	613.1	4 863.7	877.8
According to the main used currencies, in percentage			
Allocated Reserves	100	100	100
Claims in U.S. dollars	67	61	59
Claims in euro	24	24	20
Claims in Chinese renminbi	0	0	3
Claims in Japanese yen	5	4	6
Claims in pounds sterling	3	4	5
Claims in other currencies	2	6	7

Source: IMF, International Monetary Fund.

Considering the euro also a core currency -something debatable- their joint share together with the US dollar, in all baskets, fell from 91 to 79 percent, with a greater absolute drop for the latter. The yen and the British pound experienced a slight increase, while 'other (non-defined) currencies' remained stable in the two last points. The novelty is the Chinese renminbi appearing

with a 3 percent figure in 2022. Excluding the four mainstream currencies, in twenty years, *new stock options* moved from 2 to 10 percent of all reserves, a significant start for greater changes.

Unfortunately, the IMF does not publish a disaggregated composition by country. Brazil is the exception for 2022, as shown in Table 5.

TABLE 5: Foreign Exchange Reserves – Currency Composition of Reserves (available disaggregations), for four BRICS members, in billion US\$; two time points.

	2022	2012	2022	2012	2022	2012	2022
	China	Brazil		South Africa		Russia	
Currency composition of reserves (by groups of currencies)	3 306.5	373.1	324.7	50.7	60.6	537.6	582.0
currencies in SDR basket*	2 974.1	333.3	318.9	50.7	57.5	520.9	
Currency Composition of Reserves, Denominated in Chinese Renminbi	NA	NA	16.1	NA		NA	
Currency Composition of Reserves, Denominated in Euros			14.5				
Currency Composition of Reserves, Denominated in Japanese Yen			5.6				
Currency Composition of Reserves, Denominated in UK Pound Sterling			9.7				
Currency Composition of Reserves, Denominated in US Dollars			241.6				
currencies not in SDR basket	332.5	39.8	5.8	0.1	3.1	16.7	

* Special Drawing Rights basket, made up of the five currencies displayed below in the Table.

Source: IMF, International Monetary Fund.

It is worth noticing that, in 2022, China had more than 10 percent of the composition of its currency reserves in moneys outside the SDR basket.

The International Financial System

International payments systems

For payments to take place around the globe they must change hands at a distance, something performed by the world network of banks and associated (electronic) transfer platforms. Both play a crucial role in easing and actually turning functional any given transaction. If one excludes the incipient cryptocurrencies market, standard² bank transfer systems are just a few, inevitably linked

² In terms of widely accepted and used.

to corridors of power, eventually controlled by the hegemon. The better known and widely used is SWIFT -Society for Worldwide Interbank Financial Telecommunication-, an entity under Belgian law linking more than 11.000 financial institutions in over 200 countries³. The interaction between the banks and the system is close and complex, exclusion of one country, bank or person from the SWIFT, for instance, may seriously damage its international financial life, Caytas (2017).

Side systems –many times using offshore financial facilities- and direct, customized bank to bank payments may provide alternatives, whose meaning and efficiency will be highly dependent on the volume of transactions at stake. More details follow below, for two key actors.

Chinese and Russian banks

Two BRICS countries display a relatively inwards banking system, less connected to the IFS: Russia and China. The former has suffered manifold sanctions by the US and the EU, which triggered a series of measures to switch, as smoothly as possible, from mechanisms ultimately controlled by the hegemon, without cutting the country's international connections. A Russian SWIFT has been created, operating also domestically, as well as a national payment system anchored in the Mir card.

China, in its turn, has launched, in 2015, CIPS –Cross-border Interbank Payment System, which in principle allows any established bank in the world to operate RMB transactions with Chinese banks. CIPS has turned 45 trillions of RMB in 2020, and nearly 80 in 2021. Though these figures are still lower than the volume of transactions in RMB taking place through the offshore network, prospects are for an ever-increasing relevance for the system.

Individuals' international payments

Another important dimension is that of international means of payment for the global citizen himself. The (international) credit card, though not the single option, still seems the prevailing one. Reminding that the IFS is a unified nexus, it is no wonder that the credit card business deeply interacts with the previous dimensions and agents and, eventually, remains under the hegemon's umbrella.

Table 6 shows, for the four main credit card banners, the share of purchase transactions. Union Pay, a Chinese banner, enjoys a relevant position, outnumbering MasterCard.

³ For a fairly detailed history of SWIFT, see Scott and Zachariadis (2014).

Table 6: Yearly shares (over 100.0) of purchase transactions for the four main credit card banners.

Year	Visa	MasterCard	Union Pay	American Express
2020	40.2	24.1	32.3	NA
2021	38.9	24.1	34.1	NA
2022	38.7	24.0	34.1	1.6

Source: Statista.

Union Pay's performance is somewhat confirmed in Table 7, where, for the same banners, the yearly number of (purchasing) transactions -credit or debit-, cards in the hands of the public and total value of transactions are showed. This monetary mass though accounted, measured and transiting via the main currency, the US dollar, also takes place in RMB, thanks to the Chinese banner. The figures below must be taken with care, as they also involve domestic transactions.

Table 7: The four main banners: selected yearly indicators.

Year	Visa	MasterCard	Union Pay	American Express
5a. Total number of transactions (credit or debit), in billions				
2020	188	113	151	NA
2021	226	140	198	NA
2022	242	150	213	10

5b. Total number of cards in the hands of the public, in billions				
2020	4.6	3.8	NA	NA
2021	4.7	4.0	NA	NA
2022	4.9	4.2	NA	NA

5c. Total volume of payments, in US dollar trillions				
2020	4.4	2.7	NA	NA
2021	5.2	3.3	NA	NA
2022	5.9	3.7	NA	NA

Source: Statista.

Since 2022, Visa, MasterCard and American Express cards issued abroad do not work in Russia. This is a further step in the direction of a fragmented financial system.

5. Conclusions.

Replacing the dollar in international payments is many times confused, purposively or not, with the debate whether US hegemony is coming to an end. Though possibly related, the two issues can and should be tackled independently.

This text made a preliminary attempt to probe the possibility of partially replacing the dollar in international transactions, notably as regards trade flows.

The evidence gathered suggests that it is not only is feasible as the process has already been gaining momentum. A natural outcome is the creation of an area –actually a group of countries- where use of the US dollar would be significantly reduced. A strong candidate seems to be the BRICS and the set of nations closer to them. This does not imply that members of the area, like Brazil, China or India, would abandon completely the dollar, especially because the combined US-EU market is important for all of them.

Substitution of the dollar leads to the -by which currency?- question. Though transactions may take place in Russian roubles or Brazilian reais, the present dynamics points towards the RMB assuming in a large proportion the function of the US dollar. Elaboration on this point goes beyond the scope of the present exercise.

The observed dynamics is highly affected by geopolitical decisions and the persistent will, by a core of key countries, to push forward the replacement. There is no signal that such a trend will be reverted, but in the present volatile world, surprises may take place, accelerating or hindering the developments. Notwithstanding, it is mandatory to incorporate this dimension both in the planning of future steps and in the measurement of the achieved progress. Moreover, replacement must overflow the trade realm and seriously tackle issues like transfer payments platforms or international plastic money (credit cards).

Measurement should be made in a continuous way, to gauge the progress achieved. In this line, a sharper, more focussed and detailed analysis of the trade flows nexus is a needed further

step. Better statistics must also be obtained on the other possible transactions, to support creative, novel alternative products and systems.

Parallel developments⁴, like the block-chain based currencies may also change trajectories and targets.

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Appendix on Statistics

Trade Data.

When one departs from “standard” Western countries, trade data may become less reliable. Even the source used here, UN Comtrade, maybe the best one available, demands careful attention.

⁴ For a view on their prospects, see chapter six in Roubini (2022).

South Africa, for instance, presents discrepancies in its reported flows with Brazil, China, India and the US, the latter showing incongruences with (again) South Africa, China and India. Discrepancies usually refer to large differences between a FOB-export reported by country A to country B, and the corresponding CIF-imported value reported by country B, differences that may amount to 90 percent of the smaller value.

The Table below gives an idea of the discrepancies in 2022:

Export-Import Discrepancies (values in million US dollars)			
	Export FOB	Import CIF	(CIF-FOB)/FOB %
S.Africa -> Brazil	499	952	91%
S.Africa -> India	5 217	11 166	114%
S.Africa -> China	11 685	32 543	179%
S.Africa -> US	10 590	14 657	38%
US -> India	38 351	51 772	35%
US -> China	133 825	178 957	34%
US -> S.Africa	5 521	8 204	49%

Source: UN Comtrade.

For the tables in the text, a discrepancy was considered when the relative difference (the third column in the above Table) was higher than 25 percent. In this case, the average between the two values was used.

Problems may also be due to missing data. They occur between Russia and the RoW, as well as with Iran, Saudi Arabia, Indonesia, Vietnam, Angola, Ghana, Nigeria and, again, Russia. For some it is due to delays in reporting the 2022 data, as the 2021 information is available.

This implies that, for some countries, the corresponding column values are not their declared exports but the CIF-imports declared by the country-line. This is a general rule, for instance, in all rows related to the European Union.

Other Sources.

IMF data may be improved and combined with individual, country-based sources; an effort that can be demanding.

For other products, like credit cards, the amount of noise in the data is unknown. More work is needed regarding most alternative sources.
