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On the foreign exchange dimension of cross-border payments

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Dear friends and colleagues,

I'm delighted to be back in Cusco and most grateful to the organisers for inviting me again. Last year I focused on the need for advancing payments integration in Latin America with a focus on a regional project to use digital monies in cross-border settlement. It was motivated by a fundamental concern that the reliance of the international monetary system on the dollar becomes increasingly contentious and unduly asymmetric.

Since then, the new U.S. administration has engineered de facto a system reset. Its policy stance seems geared towards undermining the very foundations of the unique international role of the dollar. It seems that the quest for an alternative model is now far more urgent as it has become apparent that relying on a single currency may be just too risky. As there is no other currency that can supplant the dollar, nor would it be desirable, the alternative will likely be a greater currency diversification.

The system's fragilities have been apparent for some time of course. Those respond in particular to the insights advanced during the 1960s by Robert Triffin and the Triffin dilemma amid his insistence that under the gold exchange standard a too expansionary policy can undermine confidence in gold convertibility. In 2009, I wrote an article about a new Triffin dilemma as large foreign exchange reserve holdings could increase uncertainty about their usability in times of distress. [1] Today, conditions seem even more propitious for the Triffin Plan.[2]

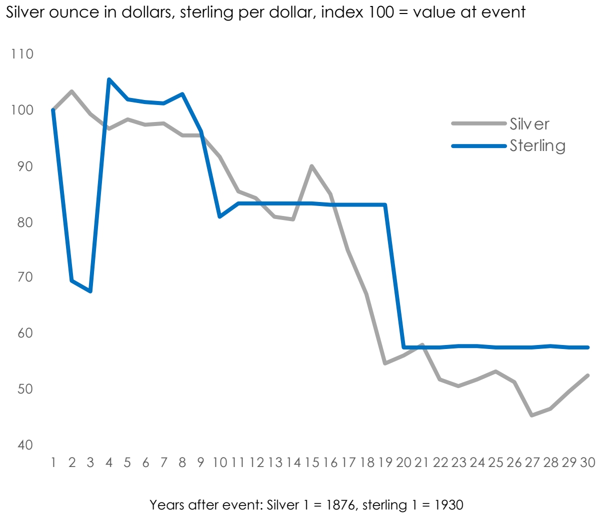
The transition to any new system should naturally be orderly. There have been relatively few departures from a dominant international currency. The move from silver to gold during the last quarter of the 19th century when Germany adopted the gold standard effective in 1876 could count as one. The move from sterling to the dollar starting say with sterling going off gold in 1931 is another. In both instances, the exchange rate realignment was substantial (Figure). This time, efforts should be made for any transition to be smooth.

[1] Mandeng (2009).

[2] The Triffin Plan addressed a lack of international reserves and also aimed for greater diversification in the use of currencies; see e.g. Lutz, F. (1963). *The problem if international liquidity and the multiple-currency standard*, p. 7: "In the Triffin plan the emphasis is clearly not so much on the increase in the borrowing potential of the participating countries as on the creation of more units of international currency […].

Today we are facing outright antagonistic views on the relative dominance of currencies. Recent remarks by U.S. President Donald Trump and key members of the U.S. Congress on preserving the supremacy of the dollar clash with the views expressed e.g. by ECB President Christine Lagarde to advance the international use of the euro amid the "uncertainty about the cornerstone of the system: the dominant role of the U.S. dollar." Governor of the People's Bank of China Pan Gongsheng outlined a new vision about reducing reliance on a single currency towards a multipolar monetary system.[3]

Figure. Change of guard



Source: FRED.

The relative dominance of currencies has also an instrument dimension. The U.S. seems to be pushing private instruments like stablecoins while the E.U. appears to rely more on digital central bank money. Both instruments can serve in new payment use cases but represent different roles between the private and official sectors. The outcome will likely depend on which sector is willing to assume a more pro-active leadership role,

My remarks on the foreign exchange market will be limited to settlement as a strict post-trade application. The formation of exchange rates is considered to be external to settlement and should not immediately be affected by a changed settlement mechanism. However, improved settlement conditions will probably eventually affect exchange rate formation.

I will argue that foreign exchange settlement is the main mechanism that produces persistent reliance on the dollar. If the rest of the world wants to move towards greater diversification of the system, it will need to revisit the micro-foundations of foreign exchange settlement.

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[3] See e.g. Donald Trump (@realDonaldTrump), X, 30 November 2024; Christine Lagarde, Earning influence: lessons from the history of international currencies, speech, Jacques Delors Centre at Hertie School Berlin, Germany, 26 May 2025. Pan Gongsheng, A few observations on global financial governance, Lujiazui Forum, Shanghai, 16 June 2025.

I will also offer an alternative foreign exchange settlement architecture that I believe can remedy many of the persistent deficiencies in the system and give incentives towards a more diversified system.

I presume that currency diversification in cross-border payments is welfare enhancing. I see an emerging periphery around a number of core economies playing an increasing international monetary role.

The foreign exchange market is the largest financial market with a daily average turnover of US$7.5 trillion. It touches on most economic activities directly or indirectly. Given the very high nominal turnover, market participants rely to an important extent on reducing their exposures, in most cases a multiple of banks' capital through the settlement arrangements.

The market is characterised by a high degree of concentration. The dollar represents one leg in 9 out of 10 foreign exchange transactions. Nowhere is the dependence of the dollar greater than in foreign exchange.

I participated in a meeting of the Global Foreign Exchange Committee (GFXC) in Singapore last week. The GFXC issues standards for the foreign exchange market with the participation of the leading central banks. Several market representatives attested that liquidity conditions in the foreign exchange market remain highly favourable despite recent stresses although they admitted that finding the needed liquidity can at times be difficult. But one representative from a central bank from Latin America, remarked that he was surprised about the view about favourable liquidity conditions as his own currency continues to suffer from very limited liquidity. Foreign exchange is dominated by the main currencies, and I believe the view from Latin America is representative for most currencies.

The foreign exchange market is an exchange of two currencies typically in the form of bank balances at a given exchange rate. It is not a single market and there is no single exchange rate per currency pair. There are various instruments being traded with swaps being the largest while the spot market remains by far the most liquid and continues to set the direction of the market.

To settle a foreign exchange transaction, banks normally make transfers in their respective domestic large value payment systems or through correspondent banks. Just to clarify, it means the dollars are always in the U.S. and the euros always in the Euro Area.

The major risk in the foreign exchange market is settlement risk, that is the risk of transferring the sold currency but never receiving the bought currency. This risk can be mitigated by employing settlement on the basis of a payment versus payment (PvP) transaction, that is, a payment is made only if the other payment is made.

In today's foreign exchange market, the proportion of foreign exchange transactions settled with risk mitigation is about half but declining of which PvP represents a large share. Settlement risk in the foreign exchange market remains high and is increasing.[4]

[4] See e.g. Glowka and Nilsson (2022).

The foreign exchange life cycle distinguishes trade execution where traders agree to exchange given quantities of monies at an agreed exchange rate, clearing where settlement instructions are being verified, netting where positions of one bank are being offset against another and settlement with the funding and the actual exchange of monies.

CLS Bank is one of the largest settlement platforms. It orchestrates settlement for the main currencies. The CLS settlement day starts at the end of the trading day and offers on the basis of the trades conducted the previous day a schedule of funding requirements post-multilateral netting each bank needs to comply with. Those pay-in and pay-out schedules typically reduce to a small fraction the needed amount of funding, normally only 3-4 percent of nominal exposures. The actual funding is settled on a PvP basis eliminating settlement risk.

CLS only covers 18 currencies. For foreign exchange settled outside CLS, the scope for netting is significantly reduced if not absent. PvP is also normally not available.

The importance of netting as a risk mitigating measure and to reduce actual funding requirements incentivises a high degree of concentration. The lower the number of counterparties and currencies, the greater the scope for netting. Netting thus reinforces market concentration.

Netting imposes important systemic risk. The motivation in domestic payments for moving away from netting and deferred settlement towards real-time gross settlement (RTGS) for large value payments was due in large part to the feared systemic risk inherent in netting.[5]

Correspondent banks remain the main vehicle for settlement of foreign exchange outside CLS, In cross-border payments, of which foreign exchange settlement is its largest component, correspondents accept nominal claims on one another along the payment chain. There is typically no fund transfer in cross-border payments and all claims are transmitted through so-called nostro-vostro account or book-entry relationships.

Correspondent banks have been declining for some time.[6] While domestic payments are characterised typically by extensive payment relations, there are few and declining so-called active corridors between countries as conduit for settling cross-border claims.

Foreign exchange implies large risk exposures for banks given the large nominal exposures. Banks need to set regulatory capital and maintain large liquidity buffers to entertain those exposures. Capital and liquidity need to be funded. Exposures emerged from the moment when a trade can no longer be unilaterally cancelled through the actual receipt of funds. It is a matter of duration to settle foreign exchange and it varies from typically T+2, settlement within 2 days after trading, to significantly longer times. Settlement is complicated as settlement takes place across different time-zones and opening hours of payment systems restrict fund transfers.

The reliance on netting to mitigate risks means the more netting, the lower exposures to counterparties and the less capital, liquidity and funding is required for settlement. At the

[5] See e.g. Bindseil and Pantelopoulos (2022).
[6] See e.g. Rice, von Peter, and Boar (2020).

same time, it provides adverse incentives for greater diversification. If diversification means more risk, then it will unlikely succeed perpetuating the current exchange market structure. A new settlement architecture therefore needs to be found.

One new foreign exchange settlement architecture has been adopted by the central bank digital currency (CBDC) project mBridge with the participation of the central banks of China, Hong Kong SAR, Thailand and the UAE and the BIS Innovation Hub. mBridge has adopted the architecture earlier pioneered by CBDC project Jura by the central banks of France and Switzerland and the BIS Innovation Hub. mBridge proposes outright gross settlement in CBDC among platform participant banks.

CBDC is central bank money in a digital token format that is issued on a blockchain or other distributed ledger technology (DLT) platforms. It is fully fungible with banknotes and reserves and enables the central bank to make available central bank money in blockchain-enabled ecosystems. Blockchain offers many out-of-the-box features highly supportive of payments and in particular foreign exchange settlement. Where public blockchains are used, they offer a readily available infrastructure to host settlement.

The mBridge architecture rests on an instant PvP exchange of CBDC. It thereby creates an entirely riskless environment for foreign exchange settlement by eliminating most if not all exposure amid the combination of CBDC and instant PvP (atomic) settlement.

The approach should produce important regulatory capital and liquidity savings for banks and thereby reduce transactions cost for conducting foreign exchange. It also implies that fewer network effects are needed to produce efficient settlement reducing the barriers of entry for smaller currencies. It does not need to rely on netting and promises to produce highly efficient settlement provisions without the large volumes and high concentration required today.

The foreign exchange market aims towards shorter settlement cycles and PvP while relying on netting. But there is a trilemma between instant settlement, netting and PvP where instant settlement means settlement very shortly after trade execution. One can have two like netting and PvP or instant settlement and PvP but not all three. If the focus is on PvP and short settlement cycles, which it should be to derisk foreign exchange, a new architecture is needed.

To conclude, I have argued that to advance international currency diversification, settlement conditions in the foreign exchange market will have to change to offer adequate incentives to move away from the existing currency equilibrium. Digital monies hold the promise of offering key advantages highly conducive for new efficient settlement conditions and advance PvP settlement out-of-the-box.

Central banks should have an active interest in promoting new foreign exchange market settlement architecture if they see a public policy interest in derisking foreign exchange and seek a more diversified foreign exchange market. CBDC can play a key role, but other digital monies are also likely to become prominent including stablecoins, tokenised deposits and tokenised money market fund shares.

Stablecoins benefit from light transferability amid recent regulatory initiatives that make them highly effective in particular in cross-border payments. At the same time, it gives them an undue advantage over other monies and enhance the risk of large compliance gaps. There is an important trade-off between compliance and transferability that will need to guide stablecoin adoption.

The question is how to get to a new target architecture. While a large-scale agreement would be desirable in theory it may just be too difficult to attain in practice. I think smaller agreements like mBridge and possibly others are the better approach.

Thank you for your attention.

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