Will the secular decline in exchange rate and inflation survive covid-19?

comment by
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This paper by Ethan Ilzetzki, Carmen Reinhart, and Kenneth Rogoff (IRR) analyses the drivers and latent risks associated with the recent trends in exchange rate volatility among major currencies. The paper is developed along three main lines. First, using data since the end of Bretton Woods, IRR document a slow but persistent decline in average volatility among the core G3 currencies – the US dollar, the euro, and the yen. The decline is shown to have accelerated after the first half of 2014, when European interest rates moved into negative territory, and persisted throughout the first half of 2020, notwithstanding the global health crisis. Second, IRR argue that the fundamental driver of this increased exchange rate stability at the core is to be found in the "paralysis" of monetary policy. The convergence of inflation rates, and of short and long rates in particular, is singled out as the driving force behind this downward trend. Other explanations – including the rising status of the dollar as a global reserve currency, global risk cycles, and the global nature of recent real shocks – are briefly examined but ultimately dismissed. Third, the paper weighs in some of the risks around this Extended Bretton Woods II regime. On the one end, the supply nature of the Covid shock and some of the unprecedented liquidity injections implemented in response to it may put advanced economies on a trajectory of rising inflation. On the other, large and increasing levels of private and public debt, manageable in a low interest rate environment, may generate vulnerabilities and potentially lead to a loss of confidence if monetary policy divergence arises due to inflation risk. Realisation of such risks could lead to a Triffin event (along the lines of Farhi and Maggiori, 2018; Gourinchas, Rey and Sauzet, 2019) and have dramatic consequences for the stability of the international monetary system as we know it.

This is a very important paper, and addresses one of the main outstanding challenges in international macroeconomics and finance, with fundamental policy implications.

I will organise my comments around two main points. First, I will propose a complementary view of the drivers of FX volatility among major currencies. My conclusions will be that it would be unwise to discount global risk cycles altogether, and that monetary policy broadly intended may have in fact played an active role as a global stabiliser over the recent months. Second, I will zoom in on the latest data and note that – differently from previous recession episodes – following the Covid shock the dollar is depreciating, while other currencies are in high demand. We may already be experiencing a loss of confidence to some degree. And despite relatively benign inflation projections and guidance that monetary policy will likely remain accommodative for years to come.

I. FX Volatility Dynamics at the Core

I will start with looking at the time evolution of FX volatility among major currency pairs over the last two decades. In order to bring forward the dynamics relative to longer term averages as used in the paper, for my analysis I will use the estimates provided by the NY

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Stern Volatility Lab (https://vlab.stern.nyu.edu/).[1] Figure 1 plots in red the estimated annualised volatility of the bilateral exchange rates for the euro (left panel) and the yen (right panel) against the dollar.[2] In both subplots, the blue line is the Deutsche Bank's Currency Volatility Index (CVIX). The CVIX index is a synthetic measure of the historical volatility of the major G7 currencies. Similar to the VIX, it can be used to assess stress levels in currency markets. Data are daily and cover the period 01/01/2000-18/09/2020.

There are a number of elements that are worth noting. First, across currency pairs, the years immediately following the turn of the century are indeed characterised by a certain degree of stability. This pattern, however, was dramatically interrupted with the global financial crisis. And again in 2015. This period corresponding roughly to the end of the Federal Reserve's QE, and to expectations of a policy rate lift-off in the US. While short-lived, the Covid-induced volatility spike that occurred in the earlier months of 2020 also stands out as a significant and quite dramatic shift in volatility dynamics. Second, and importantly, the volatility dynamics seem to share a large common component. Abstracting from country-specific idiosyncrasies, the CVIX index tracks the lower frequency movements remarkably well irrespective of the specific pair. Hence, while the existence of a clear downward trajectory over this sample is somewhat unclear, the notion that common causes may be responsible for the bulk of the movements in the volatility of the G3 currencies seems to find significant traction.

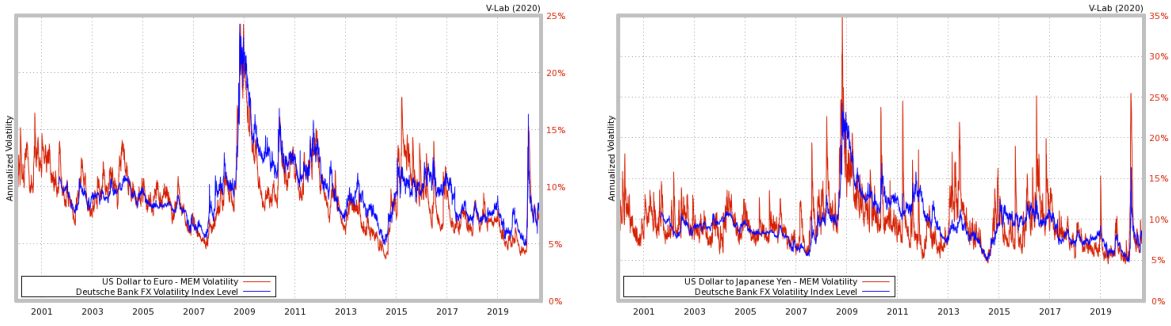

FIGURE 1. ESTIMATED VOLATILITY OF BILATERAL EXCHANGE RATES AGAINST THE US DOLLAR.

Note: Left panel: volatility of EUR-USD bilateral exchange rate (red), Deutsche Bank's Currency Volatility Index (CVIX, blue). Right panel: volatility of JPY-USD bilateral exchange rate (red), Deutsche Bank's CVIX Index (blue).
Source: NYU Stern Volatility Lab.

Figure 2 adds to the comparison the VIX index. Nominally a measure of the implied volatility of S&P 500 options, the index is customarily used as a barometer for market uncertainty and overall risk levels in financial markets by practitioners and academics alike. Despite the different scales and the noise embedded in daily data, the similarity of the time profiles is immediately apparent.

This correlation should not be surprising. As also IRR note,"the literature of the past decade, particularly following the influential work of Gabaix and Maggiori (2015), has argued that risk factors and financial frictions likely play a dominant role; Itskhoki and Mukhin (2017, 2019) argue that there is no other plausible way to explain the major puzzles in international macroeconomics" (p. 4). Kalemli-Özcan (2019) shows how risk factors are particularly important for EMEs. This exercise is purely illustrative, and can hardly provide a formal quantitative ac-

[1] By construction, applying a moving average filter increases the persistence of the original data, the more so the higher the MA order. This can have the effect of introducing trends in place of one-off peaks of different intensity, and renders the interpretation of the timing of events more challenging. See Annex A.

[2] For the purpose of this discussion, the specific model used to estimate the volatility of FX currency pairs is inconsequential.

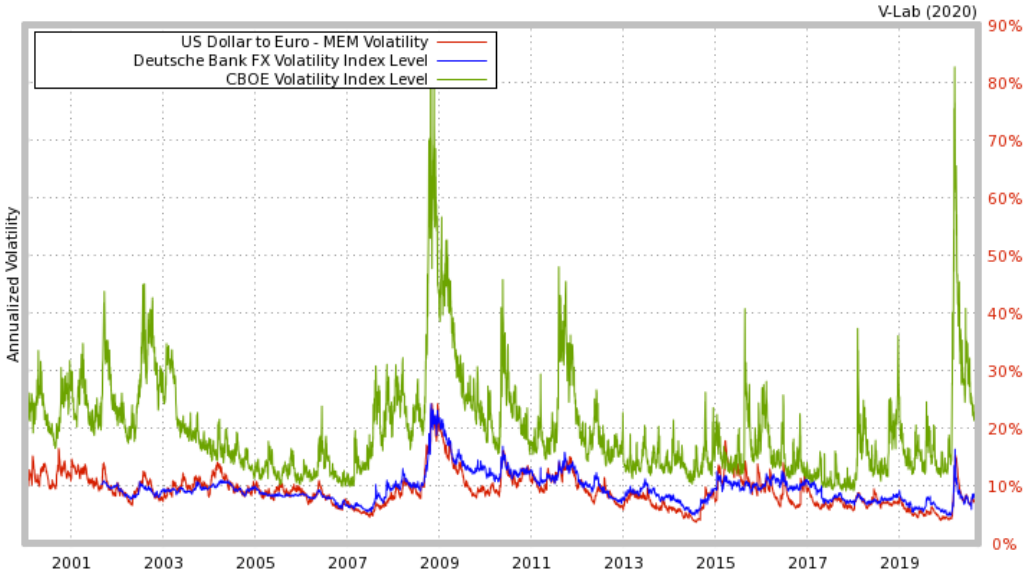

FIGURE 2. FX VOLATILITY AND GLOBAL RISK MEASURES.

Note: Estimated volatility for the bilateral EUR-USD exchange rate (red), Deutsche Bank's Currency VIX Index (blue), CBOE VIX Index (green).
Source: NYU Stern Volatility Lab.

count. But it does indicate that dismissing the role played by risk cycles may potentially omit an important part of the story.

Of course, this should not be interpreted as indicating that macroeconomic fundamentals do not matter, or indeed that monetary policy is altogether irrelevant. On the contrary, I would argue that the fact that following the Covid-shock currency volatility did not reach the levels seen during the global financial crisis, and that the recent Covid-associated volatility episode (albeit not completely reabsorbed) was overall short-lived, may in large part be attributed to the prompt, large, and synchronised intervention of the major central banks.

In March 2020, Covid-related news triggered what has been dubbed a "dash for cash" (Hauser, 2020). Financial markets, and particularly bond markets, showed sign of worrying dysfunction as market participants were forced to unwind some of their existing positions, and sell US Treasuries to generate cash. The disorderly conditions under which bond markets were operating quickly spread to all other corners of the global financial system, quickly raising alert levels worldwide. As the threats to the global economy – and to financial stability (exacerbated by the markets' dysfunctions) – grew, the major central banks intervened with vigorous response packages. The Federal Reserve, the ECB and the BoE launched bond purchase programmes in the order of 10-15% of national GDP.[3] Also, large programmes specifically directed at reducing stress levels in corporate financing were implemented. There is evidence that these interventions were successful in restoring confidence in bond markets and addressing the demand for liquidity.[4] More important from the perspective of this comment was, however, the activation of central bank swap lines, in order to address the large and rising demand for US dollars that international banks were increasingly unable to meet.

[3]Bond purchase programmes amounted to 14.9% of GDP in the US ($3.2tn), 11.9% of GDP in the Eurozone (€1.35tn), and 13.6% of GDP in the UK (£300bn).

[4]Gilchrist, Wei, Yue and Zakrajšek (2020) show that the Secondary Market Corporate Credit Facility (SMCCF) was effective in stabilising the corporate bond market following the Covid-19 shock. Altavilla, Barbiero, Boucinha and Burlon (2020) show how ECB policies implemented in response to the Covid crisis were crucial in guaranteeing continued bank lending and favouring the supply of credit.

Swap lines were introduced after the global financial crisis to facilitate offshore US dollar funding in times of markets disruption.[5] Since their reintroduction in March 2020, dollar swap lines have been heavily used (Figure 3, left panel).

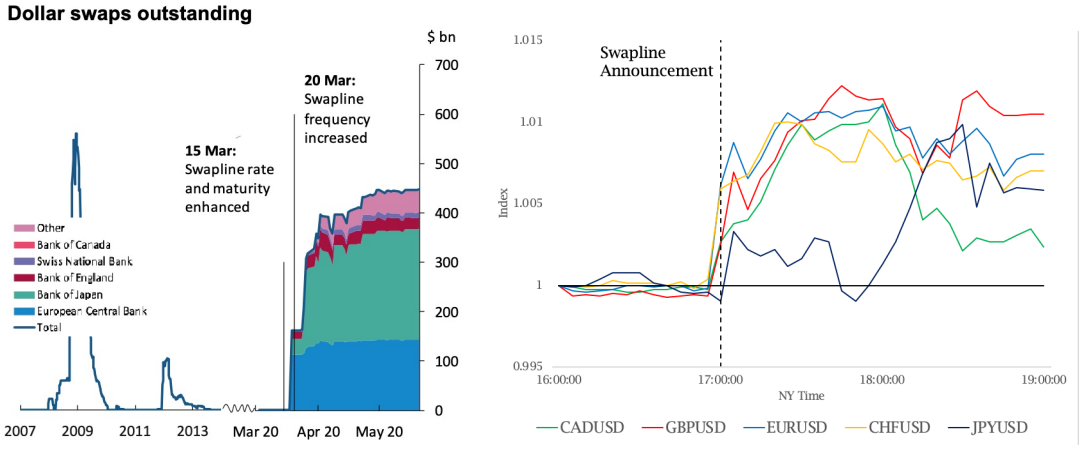

Figure 3. Central Bank Swap Lines and FX Market Reactions.

Note: Left panel: Dollar swaps outstanding. Right panel: High-frequency reactions of bilateral exchange rates against the US dollar at announcement.
Source: Left panel: Hauser (2020). Right panel: Eguren-Martin (2020).

The swap lines are an effective tool for monetary policy (Bahaj and Reis, 2018). While not designed with the explicit aim of intervening in currency markets, it can be argued that by facilitating the circulation of US dollars at times when their demand cannot be met due to other types of frictions, swap lines can have second-order effects on exchange rates too. While only illustrative, the right panel of Figure 3 shows that bilateral FX rates against the dollar reacted significantly to their reintroduction. At least visually, movements in major bilateral exchange rates are compatible with the announcement date. Eguren-Martin (2020) shows that if large enough, central bank swap lines are effective in attenuating the adverse effects of dollar shortage shocks, also by acting on the exchange rate channel that functions as an amplifier of such shocks. More research on the effects of swap lines on exchange rates is certainly needed. But the evidence discussed so far is at least indicative that this time around central banks were alert and reacted in a vigorous way that helped compressing the heightened volatility in financial markets. At least to some extent, monetary policy is likely to have accounted also for the quick reversals in FX volatility.

II. How is This Time Different?

Since the onset of the pandemic, commentators and scholars have debated around the nature of the Covid shock. While a textbook supply shock at its origin, its large second-round demand effects have become increasingly more apparent. Guerrieri, Lorenzoni, Straub and Werning (2020) rationalise these effects by introducing Keynesian supply shocks: supply shocks that can trigger demand shortages that lead to contractions in output and employment larger than the supply shock itself. They argue that the Covid shock may be a negative Keynesian supply shock.

The data are consistent with this interpretation. Against the backdrop of sharp increases in unemployment figures, inflation in the US has so far remained relatively subdued. And

[5]The standing swap lines allow five major central banks (The Bank of England, Bank of Japan, ECB, Swiss National Bank and Bank of Canada) to lend dollars to their local banks, confident in the knowledge that they can back those loans with dollars secured from the Federal Reserve, short-circuiting any market dysfunction.

the propagation of the Covid shock does not appear to differ in material ways from previous recessions, which Del Negro, Lenza, Primiceri and Tambalotti (2020a) argue have been largely the result of negative demand shocks (Del Negro, Lenza, Primiceri and Tambalotti, 2020b, Figure 4).

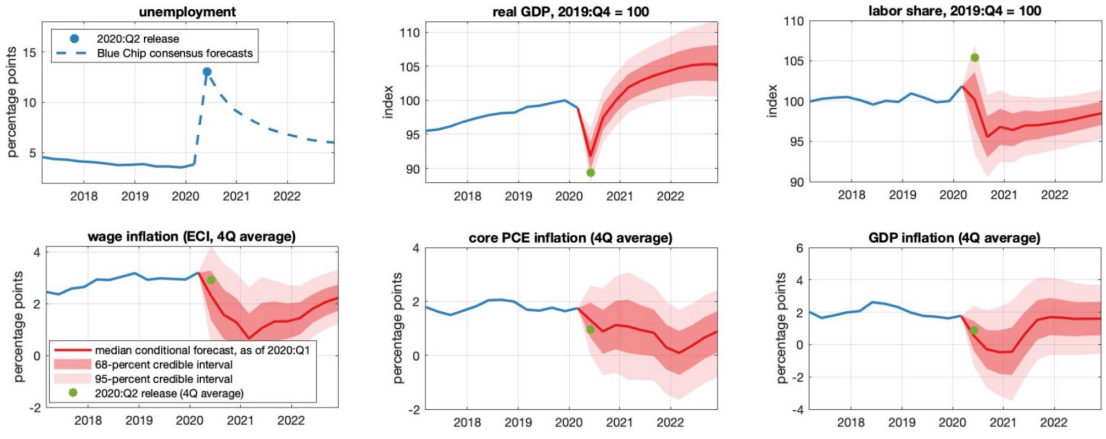

Figure 4. Responses of US macro aggregates to Covid shock.

Note: Response of GDP, unit labor costs and wage, core PCE and GDP deflator inflation, conditional on unemployment following the path in the first subplot, which represents the median Blue-Chip projection. US data.
Source: Del Negro, Lenza, Primiceri and Tambalotti (2020b).

Consistently, professional forecasters attach higher probability to low inflation states for 2021 (Figure 5, left panel), and over the long term (Figure 5, right panel). Taken together, Figures 4 and 5 suggest that inflation risk does not seem to be an immediate cause of concern.

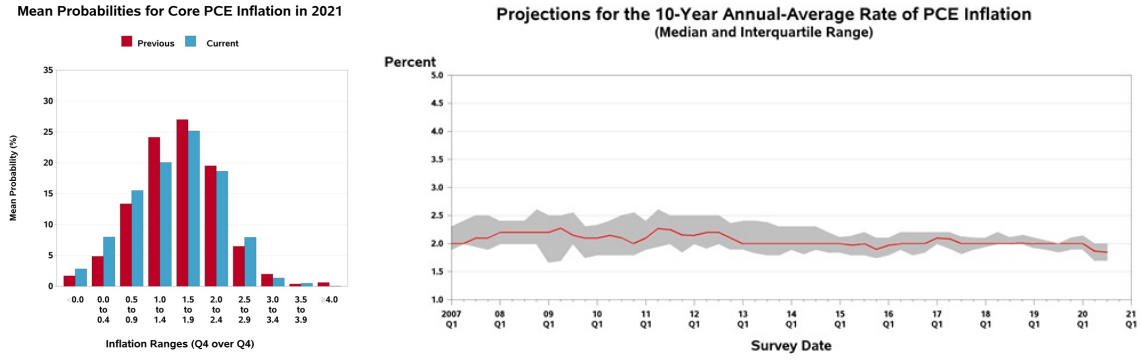

Figure 5. SPF Inflation Projections.

Note: Left panel: Mean probabilities for US Core PCE Inflation in 2021. Current SPF vintage (Aug 2020, blue) vs previous quarter vintage (red). Right panel: Projection for the 10-year annual-average rate of US PCE inflation.
Source: Third Quarter 2020 Survey of Professional Forecasters.

At his Jackson Hole appearance last August, chairman Powell announced the implementation of a revised operating framework for the Federal Reserve. Under the new mandate, the FOMC will "seek to achieve inflation that averages 2 percent over time" (Powell, 2020). As a consequence, were they to materialise, inflation overshoots would arguably be less likely to induce expectations of immediate monetary policy tightening. In the most recent FOMC min-

utes at the time of writing, the guidance was reinforced by projecting no interest rate increases until at least the end of 2023. From this standpoint, it is unlikely that in the immediate future material divergence in the monetary policy stance of the major central banks would arise due to Covid-induced inflation risk. And that exchange rate pressures may ensue for this reason.

The current health crisis, however, differs from other major recession episodes, including the global financial crisis, in at least one important way: the continued depreciation of the US dollar against other major currencies. The US dollar is the safe currency par excellence. It is the primary reserve currency, and the currency of choice for invoicing and international financial transactions (see e.g. Rey, 2013; Gopinath, 2016; Ilzetzki, Reinhart and Rogoff, 2017, 2019, 2020b; Maggiori, Neiman and Schreger, 2020). One feature this status comes with, is the fact that the dollar typically appreciates during recessions. Instead, after the initial rally in March, the dollar depreciated considerably (Figure 6).

Figure 6. US Dollar Exchange Rate Index.

Source: Refinitiv.

The depreciation is notable in the bilateral exchange against the euro (Figure 7, left panel). The euro is the second largest currency in global exchanges, therefore its appreciation is perhaps not entirely surprising. But the dollar depreciated also against the British pound (Figure 7, right panel). It is unlikely that international markets are not keeping track of the developments around negotiations with the EU, and that the arguably higher risks of a no-deal Brexit have not been priced in. Therefore, the dollar is losing ground relative to the pound despite these significant UK-specific risks. This suggests that the motives behind this broad-based dollar depreciation may be US-specific.

The US typically behaves as a world banker (Gourinchas and Rey, 2007b). Issuing the international currency confers to the hegemon excess returns on its net foreign asset position in normal times ("exorbitant privilege", Gourinchas and Rey, 2007a). During global crises, however, it has

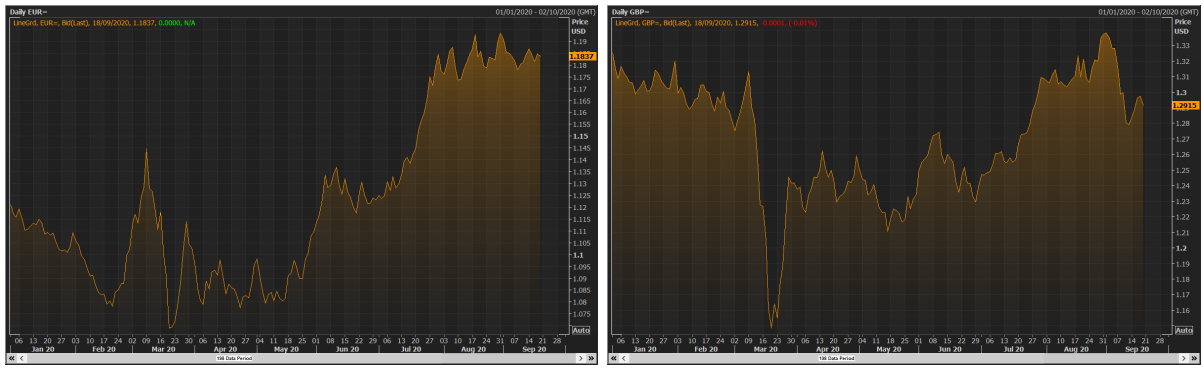

FIGURE 7. BILATERAL EXCHANGE RATES AGAINST USD.

Note: Left panel: Bilateral EUR-USD exchange rate. Right panel: Bilateral GBP-USD exchange rate.
Source: Refinitiv.

typically been the case that this was associated with net wealth transfers to the rest of world, due to the joint action of dollar appreciations and stock market devaluations ("exorbitant duty", Gourinchas, Rey and Govillot, 2017). In the current conjuncture, and despite the global recession, stock markets are trading at record highs, while the dollar is depreciating. As noted in Gourinchas, Rey and Sauzet (2019), one of the key underpinnings of the international monetary and financial system is that the hegemon provides safe assets to the rest of the world. But safety is a relative concept, and ultimately rests on confidence. It is entirely possible that the recent swings in FX markets may be the result of temporary speculative positioning motivated by a search for yield. However, the dollar depreciation may also signal a shift in investors' appetite away from US assets. As the world battles its way out of the global pandemic, the US faces the extra burden of maintaining its status as the provider of a stable and safe global currency in times of crisis. The combination of high levels of debt (public and external) and weak fundamentals resulting from the Covid-induced disruption may prove unsustainable. Political and global geo-political factors could become first order. Risks to the stability of the international monetary system may be closer than they appear even in times of extremely low interest rates and subdued inflation for years to come.

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A Note on Aggregation

Figure A1 compares raw volatility data with the series obtained applying an MA filter over 4 years. In the left panel, the blue line is the level of the bilateral monthly USD-EUR exchange rate. The grey line is the absolute value of month-on-month changes, while the green line is the 4-year moving average as computed in the paper. For comparison, the orange line depicts a measure of realised volatility obtained by summing up daily squared returns. The green and orange lines differ in important ways. It is worthwhile to note that the two periods of high volatility (around the global financial crisis and in 2015, when expectations about the monetary policy of the Fed and ECB started to diverge) become significantly less prominent in the filtered series (green). Moreover, the 4-year MA signals a potential shift in the trend in 2013, which is when the observations relative to the financial crisis drop out of the calculation. Hence, this shift in trend is entirely mechanical. Similar considerations extend to other volatility indices. The right panel of the figure reports the monthly VIX index (blue) and its 4-year MA (orange). The green line is the same in the two panels. Looking at the orange line would lead one to conclude that stock market volatility was trending upward between 2008 and 2012.

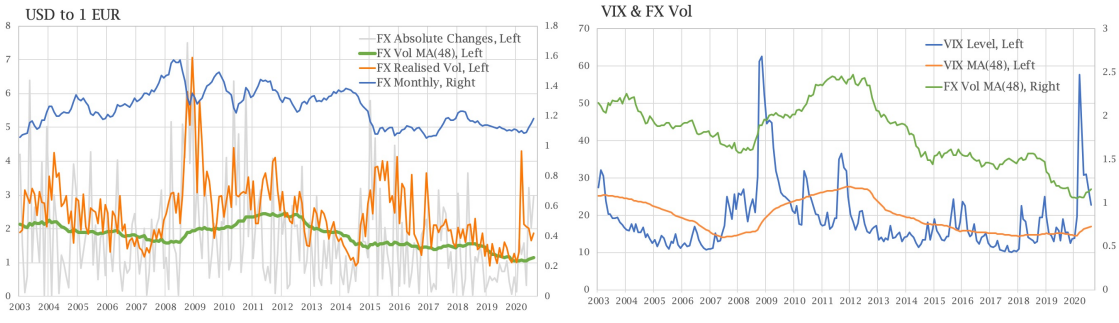

Figure A1. Moving Average Aggregation of Volatility Indices.

Note: Left panel: bilateral EUR-USD exchange rate (blue), absolute value of month-on-month changes (grey), 4-year MA for EUR-USD bilateral FX (green), realised EUR-USD volatility (orange). Right panel: monthly VIX index (blue), 4-year MA for the VIX index (orange), 4-year MA for EUR-USD bilateral FX (green).
Source: St Louis Fed FRED Database and authors calculations.