IMPACT ON EM CURRENCIES FROM CORONAVIRUS

Claire Dissaux
Head of Economics & Strategy
cdissaux@millenniumglobal.com

Elisa Baku
Economist
ebaku@millenniumglobal.com

19 February 2020

Important Disclosures

This material is directed exclusively at persons who are professional clients as defined by the rules of the Financial Conduct Authority ("FCA") or are otherwise eligible under these rules. This document is for investment professional use only. Distribution of this document or the information herein to any person other than the person to whom this document is originally delivered and to such person's advisors is unauthorised and any reproduction or publication of this document, in whole or in part, or the disclosure of any of the contents, without the prior consent of Millennium in each such instance is prohibited. It is the responsibility of persons to whom this document is provided to inform themselves of and observe all applicable laws and regulations of any relevant jurisdiction. You should consult your tax, legal, accounting or other advisors about the matters discussed herein.

Millennium Global Investments Limited, an English company, is the investment manager ("Investment Manager") of the Millennium Global Strategies ("Strategies") as set out within this document. The Investment Manager is authorised and regulated by the Financial Conduct Authority and registered as an investment adviser with the Securities and Exchange Commission ("SEC"). Registration with the SEC does not imply a certain level of skill or training. The Investment Manager will invest and actively engage in transactions in instruments with significant risk characteristics. The Investment Manager shall be defined as "Millennium" for purposes of these disclosures.

This document contains the views and opinions of Claire Dissaux and Elisa Baku as of 19 February 2020 and does not necessarily represent the opinions of Millennium or the funds/accounts it manages or of any Portfolio Managers. There can be no assurance that professionals currently employed by Millennium will continue to be employed by Millennium or that the past performance or success of any such professional is indicative of such professional's future performance or success.

The views and opinions in this document are not guaranteed nor intended to be complete, and material aspects of the descriptions contained herein may change at any time. Millennium and its employees have no obligation to provide recipients hereof with updates or changes to the information contained in this document. While every care has been taken in the compilation of this research document and every attempt has been made to present up-to-date and accurate information, we cannot guarantee that inaccuracies will not occur. Neither Millennium, its portfolio managers nor any of its employees will be held responsible for any error or omission and/or any claim, loss, damage or inconvenience caused as a result of reliance on information contained in this document.

The data in this document is provided in good faith, for illustrative, information and educational purposes only; based on information which we believe, but do not guarantee, to be accurate, reliable or complete. The information provided herein does not constitute an offer to buy or a solicitation of an offer to sell and does not constitute an offer or solicitation in any jurisdiction in which such an offer or solicitation is unlawful or to any person to whom it is unlawful. It is not intended as investment (or other) advice nor is it intended as a basis on which to make any investment decision(s).

This information contained in this document is intended for Professional Clients (or Elective Professional Clients only). Millennium Global does not target retail clients as Investments are not suitable for, or made available to retail clients.

Portions of the information contained in this document constitute forward-looking statements. Due to various uncertainties and actual events, the actual performance of the economy may differ materially from those reflected or contemplated in such forward-looking statements. As a result, investors should not rely on forward looking statements in making any investment decisions.

Any models contained in this document have been provided for discussion purposes only. There can be no assurance that any investment opportunities described in such models will become available to any Strategy or to Millennium. Likewise, it should not be assumed that any investments described by these models would be profitable if implemented. It should not be assumed that any trade or illustration contained in this document would be implemented by Millennium or that it would be profitable if implemented.

Any statistics with respect to various indices contained in this document are used for comparative purposes only. The indices are not to be understood to mean that there is any correlation between any Millennium Strategies and any such indices. The examples used in the investment analysis models described herein do not necessarily represent any of the investments that will be made by a Millennium Strategy or by Millennium.

URN: 103424

This document does not constitute a personal recommendation, an offer to buy or a solicitation of an offer to sell; it does not constitute an offer or solicitation in any jurisdiction in which such an offer or solicitation is unlawful, or to any person to whom it is unlawful. This document is neither intended nor guaranteed to be complete and material aspects of the descriptions, views and opinions contained herein may change at any time. WE KINDLY DRAW YOUR ATTENTION TO THE IMPORTANT DISCLOSURES ON PAGE 2.
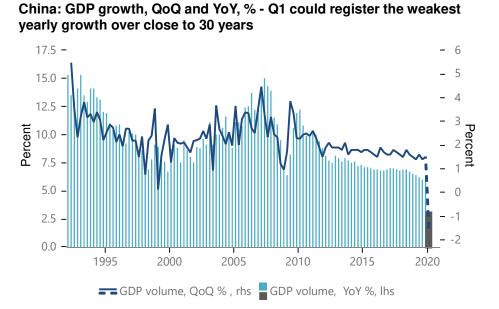
2

- While the spread of the coronavirus has been so far contained, its macroeconomic implications are bound to be global in view of the integration of China in the global economy. This note aims at assessing the **impact on EM currencies** in particular.

- We see four main macro channels of transmission from the epidemic:

  - first, an impact from **slower demand from China**, not only on goods exports but also tourism spending;

  - second, an impact **on global supply chains** in the industry;

  - third, an impact on the **global risk environment**/asset markets;

  - fourth, a contagion **effect on local business and consumer sentiment**.

- As far as the first channel is concerned, while Korea, Singapore, Taiwan in addition to Australia, Japan have high exposure to China in trade for goods, Singapore and Australia also are almost uniquely (bar Hong Kong) sensitive to tourism from China.

- On the second factor, both regional Asia and Central Europe stand out as relying on global supply chains, making their currencies vulnerable to global supply side disruptions

- To gauge the third channel, we look at cross market signals. **Taking into acount global factors** (eg. other asset markets such as credit, equities and commodities) **EM currencies** (EMFX) **look fairly priced** according to our statistical analysis based on Principal Component Analysis and a regression. In turn, we need to focus on domestic catalysts to assess whether there are specific EM buying opportunities, as EMFX has not overshot at this stage.

- Looking at **EM domestic fundamentals**, we focus on the strength of growth dynamics, which will offer a buffer to the fourth channel of transmission through local sentiment, in addition to BoP strength, real interest rate differentials and FX valuation measures. On that basis, MXN, RUB, INR are attractive in our view while KRW has the potential to outperform SGD as the epidemic peaks.

1. Impact from slower Chinese demand with spillovers to the global economy: for how long and how much will be recovered?

High frequency data and big data analysis, including indices of migration, pollution measures, housing transactions, job ads or online shopping, suggest a sharp decline in activity in Q1, with **a contraction in Chinese GDP perhaps between 1% and 2%.** On a yearly basis this would translate into the slowest pace in China's GDP growth over the past 30 years at 2.9% YoY (see chart 1). Given the strong integration of China with regional economies and its participation to global value chains, the impact on global growth is likely to be material too.

Chart 1: A severe shock to Chinese growth expected in Q1

China: GDP growth, QoQ and YoY, % - Q1 could register the weakest yearly growth over close to 30 years
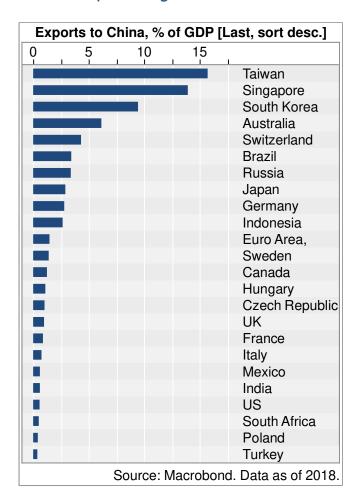

Sources: Macrobond, forecast Q1 = Millennium Global. Data as of January 2020

As long as the peak in the epidemic is unknown (with experts' predictions ranging from end-Feb to some time in Q2) **the shape of the economic recovery will remain uncertain**. If the epidemic is contained by Q1, a V-shaped recovery will likely unfold in China and Asia from end-Q2 onwards (our base case). If it spreads further into Q2, the global growth recovery we were looking for at the start of 2020 will not only be delayed but likely derailed. For China, the spillovers to the labour market would risk making the damage to growth a permanent one. The longer the hit to activity, the higher the risks that companies will have to fire employees. While the Chinese government will ensure that SOEs maintain employment, support for private and

smaller size companies will be more difficult to implement. As a result, in this risk scenario, the recovery in China would be delayed to H2 2020, with a significant hit to full-year 2020. In turn, the spillover to the global economy would be significant, specifically for economies with trade exposure to China, be it in goods or tourism. Chart 2 shows that Singapore, Korea, Taiwan, Australia and Japan would be most hit by a fall in Chinese demand in addition to a number of commodity exporters (Brazil, Russia…). Across other developed market economies, it is worth noting that the direct exposure of Germany with 2.8% of its GDP going to China is much higher than that of the US.
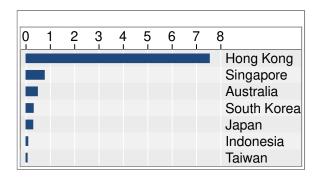
Chart 2: Exports of goods to China, % of GDP

Exports to China, % of GDP [Last, sort desc.]
0   5   10   15
Taiwan
Singapore
South Korea
Australia
Switzerland
Brazil
Russia
Japan
Germany
Indonesia
Euro Area,
Sweden
Canada
Hungary
Czech Republic
UK
France
Italy
Mexico
India
US
South Africa
Poland
Turkey
Source: Macrobond. Data as of 2018.

Depending on the type of demand originating from China, the losses incurred in Q1 in the rest of the world may or may not be recouped in the following quarters: lost discretionary spending for instance may not be compensated for. It is therefore interesting to separate the exposure of economies to trade in goods with China from that their **sensitivity to tourism from China, as services activity and more specifically tourist spending, may not be recovered**. Chart 3 highlights not only the unique sensitivity of Hong Kong where Chinese tourism accounts for more than 7% of GDP but also the vulnerability of Singapore where Chinese tourism contributes to close to 1% of GDP. The exposure of Australia, Japan and Korea to Chinese tourism is also significant. As a result, the spillover from the virus outbreak adds to the view that policy support for Singapore, Korea, Australia and Japan will need to be reinforced on the fiscal front, with cooperation from monetary policy (both Singapore and Korea have fiscal space and already plan budget stimulus of respectively 1% of GDP and close to 2% of GDP in 2020, we estimate that Japanese fiscal stance is roughly neutral).

Chart 3: Share of Chinese tourist spending, % of GDP
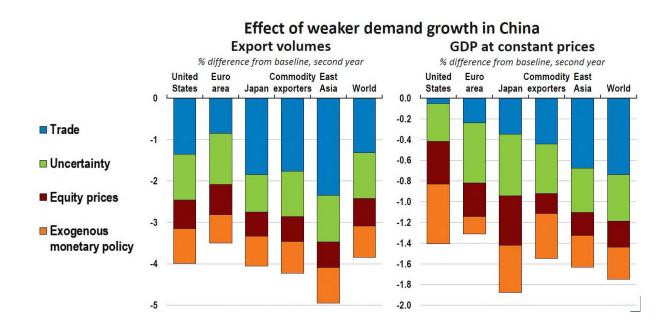

Source: Macrobond. Data as of 2019.

A hard landing in China would impact not only the global economy but also global financial markets in our view, partly because of the large debt burden of Chinese corporates. In addition to the direct impact from trade links, **a material slowdown in China would likely spill over to the rest of the world through other channels, including financial markets, business investment uncertainty and the degree (or lack of) policy response**. From a macro perspective, OECD estimates that the impact from a 2-year decline of 2 ppt per year in domestic demand growth from China for the global economy could amount to as much as 1.8% over 2 years as the lack of ammunition by central banks, the adverse reaction from financial market and heightened uncertainty would add to the negative trade impact (see chart 3 above).

2. Impact on global supply chains from disruption in China's activity

Although there has been a recent tendency to "re-onshore" production over the past few years (helped by technological progress in developed markets, the rising share of services in exports, only to be accelerated by the increased tariffs between China and the US), value-added chains in the industry are global and the participation of China has grown over the past couple of decades. Charts 4, 5 and 6 below illustrate the reliance of a few emerging and developed markets on foreign inputs for their manufacturing exports.
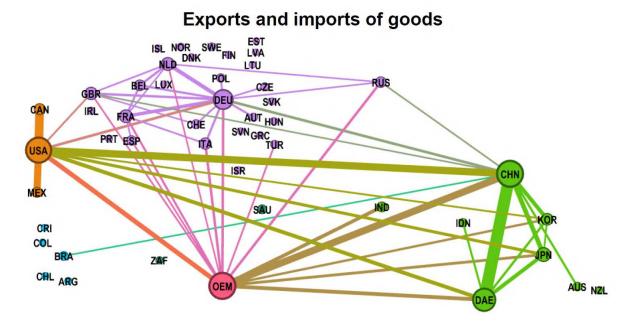
Chart 4: OECD estimates of direct and indirect impacts of a 2 ppt per year in domestic demand growth from China over 2 years

Source: OECD. Data as of June 2019.

Chart 5: A graphic illustration of global value chains

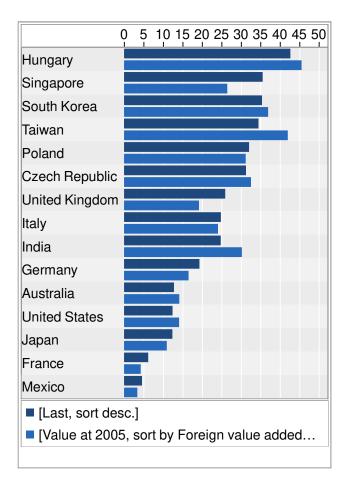### Exports and imports of goods

Note: The size of a bubble represents the share of world trade in value-added terms (exports plus imports of value added) of that country or economic area. The thickness of the lines between two bubbles measures the amount of bilateral value-added trade between two trading partners. There are bilateral trade flows between all economies shown but those below approximately 0.2% of total world trade flows are not shown. Dynamic Asia Economies (DAE) include Chinese Taipei; Hong Kong, China; Indonesia; Malaysia; the Philippines; Singapore; and Thailand. Other emerging markets (OEM) include the remaining 129 countries in the world and account for around 10% of world trade.
Source: Gephi; IMF Direction of Trade Statistics database; OECD Economic Outlook database; and OECD Calculations.

Source: OECD. Data as of November 2018.

Emerging Asia but also Central European economies show a high degree of global integration (see chart 6). In turn, those economies should be **most affected by China-led disruptions to global supply chains.** The exposure of Asia and Central Europe to internationally integrated sectors such as electronics and cars likely account for the relative sensitivity to trade disruptions. Across major economies, European economies (except France) rely relatively more than the US on global supply chains. But even so Germany needs relatively few foreign inputs for its manufactured exports so that the fall in the demand from China (which matters given the significant share of GDP that Germany exports to China) is more concerning than the disruption in global value chains caused by the coronavirus.

Chart 6: Share of foreign value-added in gross manufacturing exports, % of exports
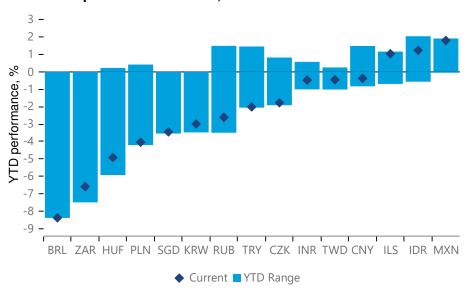

Source: Macrobond. Data as of 2015.

3. Impact on EM currencies from global factors (e.g. cross-asset signals and commodity prices)

The third transmission channel we identified for EM economies goes through global financial markets. The aim is to assess whether there is value in EM currencies (EMFX) after they have been affected by the ripple effects of the coronavirus (see chart 7). As currencies do not move in a vacuum, **we first extract information from cross-asset markets**, including commodities, equity and credit markets.

Chart 7: Spot performance %

YTD EM FX performance vs USD, %

Source: Macrobond. Data as of 19/02/2020

Specifically, we are interested in finding out whether EM currencies (EMFX) are fairly priced to global factors or not. To capture global factors, the set of possible variables is large and the probability for them to be correlated with each other is large. So in order to reduce the dimensionality issue, we proceed by performing a Principal Component Analysis (PCA), which allows us to extract linearly uncorrelated factors. We apply **PCA on a set of global variables, including cross-asset markets** (equities, credit, commodities, please see detail in note below[1]). We call the first axis[2] of our PCA the "global factor".

We can then carry out a regression analysis[3] to identify whether a basket of 22 EM currencies[4] vs. USD (USDEM) **are fairly priced relative to this "global factor"** - see Chart 8 below.

---

[1] S&P 500 Index, CRB Commodity index, Crude Oil Futures, U.S. Corporate Credit, U.S. High Yield Credit Index, Current 10-Year U.S. Treasury Index, MSCI Emerging Markets Index, U.S. Dollar Index (DXY).

[2] Based on the PCA results, this first axis accounts for nearly 79% of the variability in the data, therefore being the factor with the highest explanatory power. The eigenvectors show that our global factor mostly reflects commodity prices, oil prices and MSCI EM.
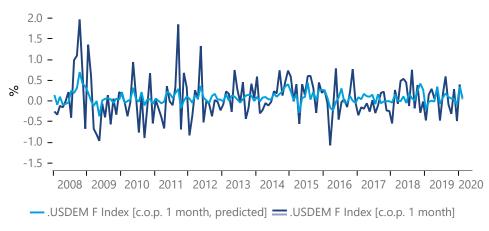
[3] Since the PCA gives us factors that are orthogonal, we proceed to a regression analysis. The variable of interest for us (e.g. dependent variable) is USDEM, an index of 22 EM currencies vs. USD. The main goal is to see how well our global factor explains our dependent variable, e.g. USDEM.

[4] KRW, INR, IDR, TWD, THB, PHP, SGD, MYR, CNY, TRY, ILS, RUB, PLN, HUF, CZK, RON, ZAR, BRL, MXN, CLP, COP, PEN.

Chart 8: EM currencies (USDEM), monthly variation %: actual and estimated based on global factors

PCA and regression analysis suggest that EMFX is fairly priced to global factors

— .USDEM F Index [c.o.p. 1 month, predicted] ▬ .USDEM F Index [c.o.p. 1 month]

Source: Macrobond. Data as of February 2020

It is interesting to see how EM currencies have so far reacted to global growth risks compared to other global slowdown episodes. The reaction seems to be different than the response to other global shocks such as the last Global Financial Crisis (GFC) in 2008. While during the GFC EM currencies seemed to be overpricing global factors, there currently is a good alignment between EM currencies and global factors. In general, it seems that **EM currencies are no longer overreacting to global shocks** as they used to (e.g. GFC, EMU crisis, Fed tightening etc.). In our view, this may reflect the fact that EM economies have more policy space to withstand shocks.

As our PCA and regression analysis suggests that EMFX is fairly priced to global factors, there is currently no compelling case to buy EM currencies as a whole, in our view. This is all the more so as we believe that global markets may be too complacent in pricing the risks of global slowdown. **Taking a positive view on EM currencies probably requires both a peak in the epidemic and domestic EM catalysts**. Therefore we focus in the following section on specific EM fundamentals in addition to global factors.
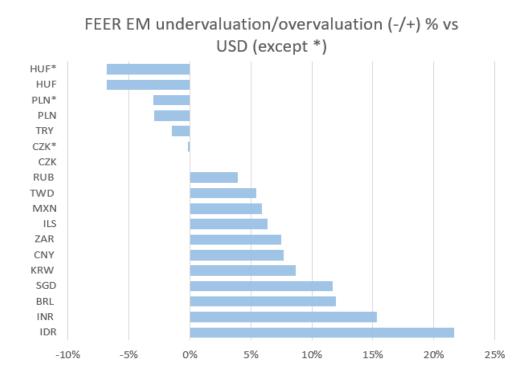
4. Uneven resilience of EMFX based on macro fundamentals and valuation

As seen in chart 6 above, although both Brazil and Russia are big exporters to China, BRL is the second worst performing currency year-to-date (based on spot only) while RUB is a top performer. The market is still discriminating based on domestic fundamentals.

At this stage we believe that differentiating factors for EM include **the resilience of growth, real interest rates, and BoP dynamics combined with valuation metrics.** We find **RUB, MXN and INR attractive, KRW could rebound too while SGD remains vulnerable in our view.** RUB is not significantly expensive on Fundamental Effective Exchange Rate (FEER, see chart 9) and its valuation is neutral on a historical basis in real effective terms (see chart 10). Based on these metrics, MXN remains one of the cheapest EM currencies on a historical basis and shows no significant overvaluation on FEER. Similarly, KRW valuation is neutral on both counts while SGD is expensive. In contrast, INR is expensive, which explains regular RBI intervention but this is overweighed in the near term in our view by BoP resilience and positive cyclical dynamics.

Chart 9: FX valuation based on Fundamental Equilibrium Exchange Rate (FEER)

FEER EM undervaluation/overvaluation (-/+) % vs USD (except *)

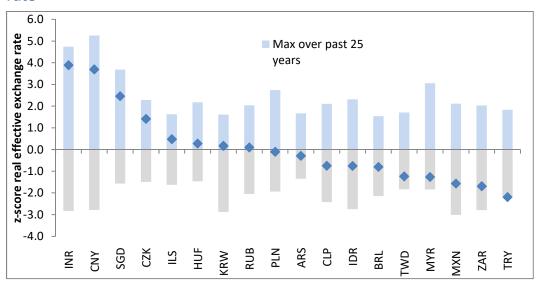| Currency	Value
HUF*	-7%
HUF	-7%
PLN*	-3%
PLN	-3%
TRY	-1%
CZK*	0%
CZK	0%
RUB	4%
TWD	5%
MXN	6%
ILS	6%
ZAR	7%
CNY	8%
KRW	9%
SGD	12%
BRL	12%
INR	15%
IDR	22%

* = vs. EUR. Otherwise vs. USD. Sources: Macrobond, MGI, IMF, GS. Data as of 11 February 2020.

Chart 10: Historical perspective on EMFX – z-score of real effective exchange rate

Source: Bloomberg. Data as of 17 February 2020.

The starting point for growth in EM is all the more important as EM currencies were already discounting the outlook for some growth recovery in 2020 before the spread of the virus (see chart 11). At the very best global recovery is delayed.

We believe that high real rates, strong BoP position and fiscal stimulus underpinning growth recovery will support **RUB**. Heavy market positioning could however slow currency gains and the risk of US sanctions while low in our view at this juncture remains.

MXN benefits from one of the highest support from real rates across EM combined with very well contained twin deficits. Meanwhile a public/private investment plan should help growth to recover this year after a dismal performance in 2019.

INR should retain carry attractive as the RBI is on a prolonged pause in monetary easing due to higher food inflation. In addition, external deficits are under control helped by lower oil prices and signs of bottoming in activity boosting foreign equity inflows.

While both Singapore and Korea are heavily exposed to demand from China and the disruption to supply chains, the speed of the recovery in Korea is likely to be faster than in Singapore in our view. This would reflect the higher sensitivity of Singapore to tourism from China and the better positioning of Korea in the electronics sector, with semiconductors less affected. Reflecting the lasting economic pain hitting Singapore, the MAS is likely to flatten the slope for the SGD basket at its April meeting in our view, which should be consistent with the SGD basket moving further down in the weaker part of the band. In turn, we believe **KRW** is likely to outperform **SGD** as the epidemic peaks.

Chart 11: Pre-virus spread EM currencies were discounting some growth recovery

EM trade weighted currency index (NEER) was pricing a slow EM growth recovery

— NEER EM % YoY, rhs — EM IIF growth tracker , lhs

Sources: Macrobond, IIF. Data as of October 2019