4X Global Research

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Non-Japan Asia: NEERs and FX intervention

Non-Japan Asian (NJA) central banks' foreign currency (FX) reserves have gradually increased since end-March 2020, arguably the peak in global risk aversion.

We estimate that the aggregate US Dollar-value of FX reserves in China, India, Indonesia, Korea, Malaysia, Philippines, Singapore, Taiwan and Thailand increased by about $514bn or 10% in the eleven months to end-February 2021 to about $5.66 trillion. This was just $122bn short of all the all-time high recorded in June-2014.

Adjusting for currency-valuation effects – the appreciation of other major reserve currencies versus the US Dollar – we estimate that these NJA central banks' FX reserves increased by about $342bn or 6.4%. As a percentage of GDP, this increase amounted to about 1.5% for NJA, ranging from only 0.3% in China to nearly 28% in Singapore.

While realised investment gains on these central banks' holdings and other official transactions may have inflated this increase in FX reserves, it was at least partly the result of central banks' intervention in the FX market (i.e. buying foreign currency), in our view.

Importantly, NJA central banks rightly attach greater importance to their currencies' more relevant Nominal Effective Exchange Rates (NEERs), when setting their exchange rate and interest rate policies, than to their currency's bilateral exchange rates, in our view.

In the past 11 months NJA central banks have continued to show an ability and willingness to both limit daily FX volatility and influence their NEERs' medium-term directionality.

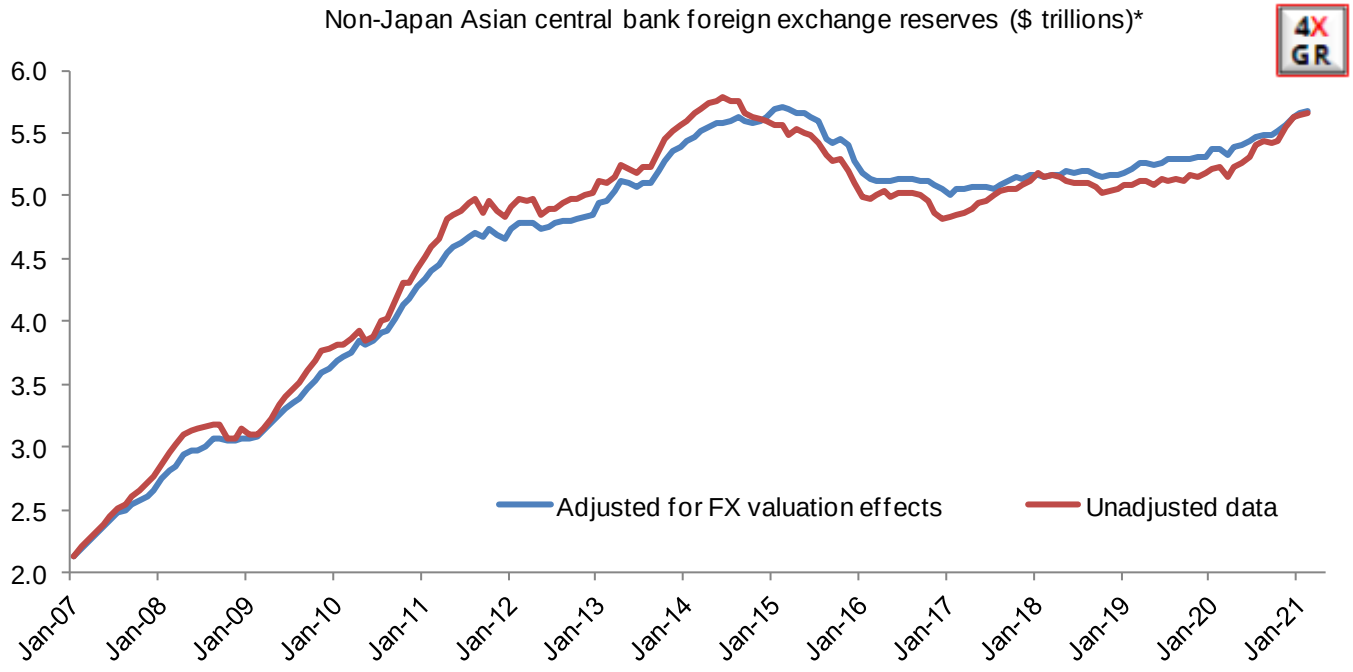
FX reserve accumulation has either capped the pace of appreciation (CNY, IDR, KRW, THB, TWD) or contributed to (albeit modest in most cases) NEER depreciation (INR, MYR, PHP) with NJA central banks seemingly intent on maintaining export competitiveness and limiting imported deflation. The Singapore Dollar NEER was unchanged over this period.

Of course the past and future performance of individual currencies is conditioned by both the magnitude of central bank FX intervention AND current account and capital account flows (and the underlying factors behind these policies and FX flows) – the topic of Part Two of this *FIRMS* report.

Non-Japan Asia central banks' FX reserves have steadily increased since March 2020 dip

Non-Japan Asian (NJA) central banks' foreign currency (FX) reserves have gradually increased since end-March 2020, arguably the peak in global risk aversion (see Figure 1). Foreign currency reserves are by far the largest component of NJA central banks' foreign assets – about 95% in the past 12 months across the NJA central banks and this ratio has been steady over time. Foreign assets also include the IMF reserve position, Special Drawing Rights (SDRs), gold holdings and other reserve assets.

Figure 1: $-value of NJA central banks' FX reserves has risen by over $500bn (10%) since March 2020 dip



Source: 4X Global Research, national central banks, IMF, World Bank

*Note: * Includes China, India, Indonesia, Korea, Malaysia, Philippines, Singapore, Taiwan and Thailand*

We estimate that the aggregate US Dollar-value of FX reserves in China, India, Indonesia, Korea, Malaysia, Philippines, Singapore, Taiwan and Thailand increased by about $514bn or 10% in the eleven months to end-February 2021 to about $5.66 trillion. This is just $122bn short of all the all-time high recorded in June-2014 (see Figures 1 & 2). The increase was equivalent to about 2.3% of GDP, with this ratio ranging from less than 2% in China, Indonesia and Malaysia to over 30% in Singapore.

Figure 2: As a % of GDP increase in FX reserves has ranged from 1% (China) to over 30% (Singapore)

Central bank FX Reserves ($-value)	End-February 2021		Change between end-March 2020 and end-February 2021		
	USD billions	% of GDP	USD billions	%	% of GDP
Asia including China	**5,657**	**25.4**	**514**	**10.0**	**2.3**
Asia excluding China	**2,452**	**32.9**	**369**	**17.7**	**5.0**
China	3,205	21.6	144.4	4.7	1.0
India	543	20.9	100.4	22.7	3.9
Indonesia	131	12.0	17.2	15.2	1.6
Korea	434	27.3	45.1	11.6	2.8
Malaysia	101	29.9	5.3	5.6	1.6
Philippines	80	21.8	9.3	13.2	2.5
Singapore	379	112.4	102.9	37.2	30.5
Taiwan	543	85.5	62.9	13.1	9.9
Thailand	242	47.5	26.1	12.1	5.1

Source: 4X Global Research, national central banks, IMF, World Bank

Central bank FX reserves can rise (or fall) for a number of reasons, including:

(1) Foreign exchange intervention operations involving the purchase (or sale) of foreign currency for the purpose of implementing the exchange rate policy;

(2) Other foreign exchange transactions with the government;

(3) Transfer of assets to the government for longer-term investment;

(4) Realised investment gains (or losses) on the central bank's holdings; and

(5) Currency-valuation effects;

Figure 3: Adjusted for FX-valuation effects NJA central bank FX reserves rose about 6.4% over 11 months

Central bank FX Reserves, FX-valuation adjusted, change between end-March 2020 and end-February 2021

	USD billions	%	% of GDP
Asia including China	**341.6**	**6.4**	**1.5**
Asia excluding China	**300.6**	**13.9**	**4.0**
China	41.2	1.3	0.3
India	86.5	18.8	3.3
Indonesia	13.5	11.4	1.2
Korea	32.1	8.0	2.0
Malaysia	2.1	2.1	0.6
Philippines	7.0	9.5	1.9
Singapore	94.2	32.8	27.9
Taiwan	46.5	9.4	7.3
Thailand	19.1	8.5	3.8

Source: 4X Global Research, national central banks, IMF, investing.com, World Bank

Adjusting for currency-valuation effects we estimate that these NJA central banks' FX reserves increased by about $342bn or 6.4% between end-March 2020 and end-February 2021 (see Figures 1 & 3). As a percentage of GDP, this increase in FX-valuation adjusted FX reserves amounted to about 1.5% for NJA, ranging from only 0.3% in China to nearly 28% in Singapore.

This adjustment incorporates changes in the exchange rates of other major reserve currencies, specially the Euro (20.5% of central banks' allocated reserves at end-Q3 2020 according to IMF COFER data), Japanese Yen (5.5%), Sterling (4.2%), Chinese Renminbi (2.0%), Canadian Dollar (1.9%), Australian Dollar (1.6%) and Swiss Franc (0.2%) versus the US Dollar (60.5%)[1]. This FX-valuation adjusted increase (6.4%) is smaller than the unadjusted figure's (10%) simply because a weighted-basket of the above reserve currencies, which account for about 36% of central banks' FX reserves (based on IMF data), appreciated about 9.7% versus the US Dollar between end-March 2020 and end-February 2021 according to our calculations (see Figure 4 for our methodology).

[1] Other (unspecified) currencies accounted for about 2.6% of allocated central bank FX reserves at end-Q3 2020 according to IMF Currency Composition of Official Foreign Exchange Reserves (COFER) data.

Figure 4: Methodology behind our FX-valuation adjusted calculations of central bank FX reserves

Calculating change in central bank FX reserves adjusting for currency-valuation effects

1. Using IMF and national central bank data we calculate the percentage change in the US Dollar value of Non-Japan Asian central banks' foreign exchange reserves.
2. We calculate the percentage change in the exchange rate of other major reserve currencies, namely the Euro, Japanese Yen, Sterling, Chinese Renminbi, Canadian Dollar, Australian Dollar and Swiss Franc, versus the US Dollar.
3. Using Q3-2020 IMF COFER data for these other reserve currencies' share of total allocated FX reserves, we calculate a weighted index of these currencies versus the US Dollar and then the percentage change in this index (we assume that these other reserve currencies' shares of total allocated reserves are constant).
4. Finally we adjust FX reserves data for this change in the weighted exchange rate index.

Source: 4X Global Research, IMF

FX intervention and the importance of Nominal Effective Exchange Rates

It is conceivable that some of this increase in FX-valuation adjusted FX reserves was due to realised investment gains on these central banks' holdings and transactions between the central banks and their governments. **However, in our view, it was at least partly the result of central banks' intervention in the FX market – i.e. buying foreign currency and selling local currency.**

Central bank FX intervention is of course not unique to Non-Japan Asia, with most central banks engaging in some form of intervention in the FX market even if the nature, size, timing, and purpose of such operations (and level of disclosure) vary greatly. However, as we have argued in previous *FIRMS* reports, NJA central banks have shown over the years an ability and willingness to actively manage their currencies, including via FX intervention (see Emerging Market currencies: Hopes and Realities, 2nd December 2020).

Importantly, NJA central banks attach greater importance to their currencies' Nominal Effective Exchange Rates (NEERs), when setting their exchange rate and interest rate policies, than to their currency's exchange rate against a single currency, in our view. The reason is that the NEER – a trade-weighted average of nominal bilateral rates between a country's currency and the currencies of its main trading

partners[2] – is arguably a far more relevant measure of a country's export competitiveness and a currency's potential impact on imported inflation.

That is not to say that NJA central banks do not take into account their exchange rates against major currencies, such as the US Dollar, Chinese Renminbi, Japanese Yen and Euro. After all:

(i) The bulk of NJA foreign-currency debt is denominated in US Dollars ($1.5trn at end-Q3 2020 according to the BIS);

(ii) China is the largest trading partner for all NJA economies and thus the Renminbi has the largest weight in (non-China) NJA Nominal Effective Exchange Rates according to the BIS, with an average weight of almost 26% (see Figure 5); and

(iii) The United States, Eurozone and Japan are major trading partners for all NJA economies, including China, and thus the US Dollar, Euro and Yen have large weights in all NJA NEERs (see Figure 5);

Figure 5: Central banks' policy focus on NEERs does not negate importance of bilateral exchange rates

Currency weights in Non-Japan Asia Nominal Effective Exchange Rates (%)

	CNY	IDR	INR	KRW	MYR	PHP	SGD	TWD	THB	Average
USD	19.7	9.2	14.0	14.0	13.0	12.1	11.3	13.0	10.7	**13.0**
CNY		23.3	23.1	33.3	23.7	20.9	22.5	34.6	23.6	**25.6**
EUR	18.0	10.7	18.4	12.8	11.4	10.5	11.4	10.2	10.5	**12.7**
JPY	11.9	12.4	4.6	10.9	9.5	15.3	8.0	13.5	15.7	**11.3**
Total	**49.6**	**55.6**	**60.1**	**71.0**	**57.6**	**58.8**	**53.2**	**71.3**	**60.5**	**62.6**

Source: 4X Global Research, BIS

Nevertheless, NJA exchange rates versus the US Dollar, Renminbi, Euro and Yen may tell us more about these four currencies than the NJA currency itself[3] and NEERs ultimately provide individual central banks with a more accurate overall picture of their currency's impact on the domestic economy. It is for this reason that the Monetary Authority of Singapore explicitly targets the Singapore Dollar NEER, keeping it in

[2] For this reason the NEER is also referred to as the Trade Weighted Index (TWI).

[3] For example the Thai Baht may depreciate versus the US Dollar (which has a weight of 11% in the Thai Baht NEER) but if the Baht appreciates (even by a smaller magnitude) against its other constituent currencies, the NEER may appreciate.

an undisclosed band. Moreover, it is not coincidental that in December 2015 the China Foreign Exchange Trade System (CFETS), a sub-institutional organization of the People's Bank of China, introduced a new exchange rate index which values the Renminbi against a basket of 13 trade-weighted currencies (see PBoC likely to keep Renminbi on tight leash, 22nd October 2020, and Far more to Renminbi than USD/CNY cross, 8th December 2020).

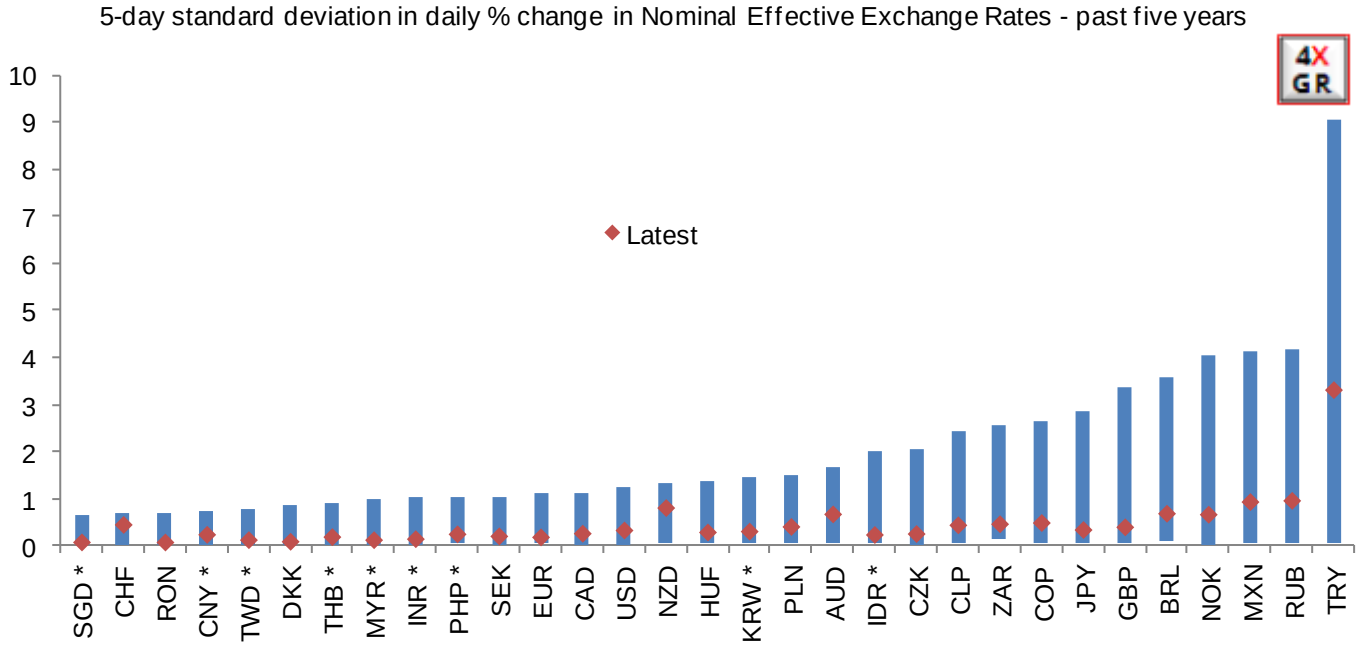
NJA central bank FX intervention's twin objectives: cap volatility and pace of appreciation

We think that NJA central banks' active management of their NEERs has two interlinked objectives, namely to limit volatility and influence their currencies' medium-term directionality.

1. Volatility

NJA central banks seemingly intervene in the FX market to curb daily volatility in their NEERs, with the aim of ensuring the smooth functioning of financial markets and facilitating corporates' FX-related transactions (e.g. FX hedging of future revenue streams). This partly explains, in our view, why daily volatility in Non-Japan Asian NEERs is and has historically been low (see Figure 6).

Figure 6: Daily volatility in NJA NEERs, even high-yielding currencies, has historically been relatively low

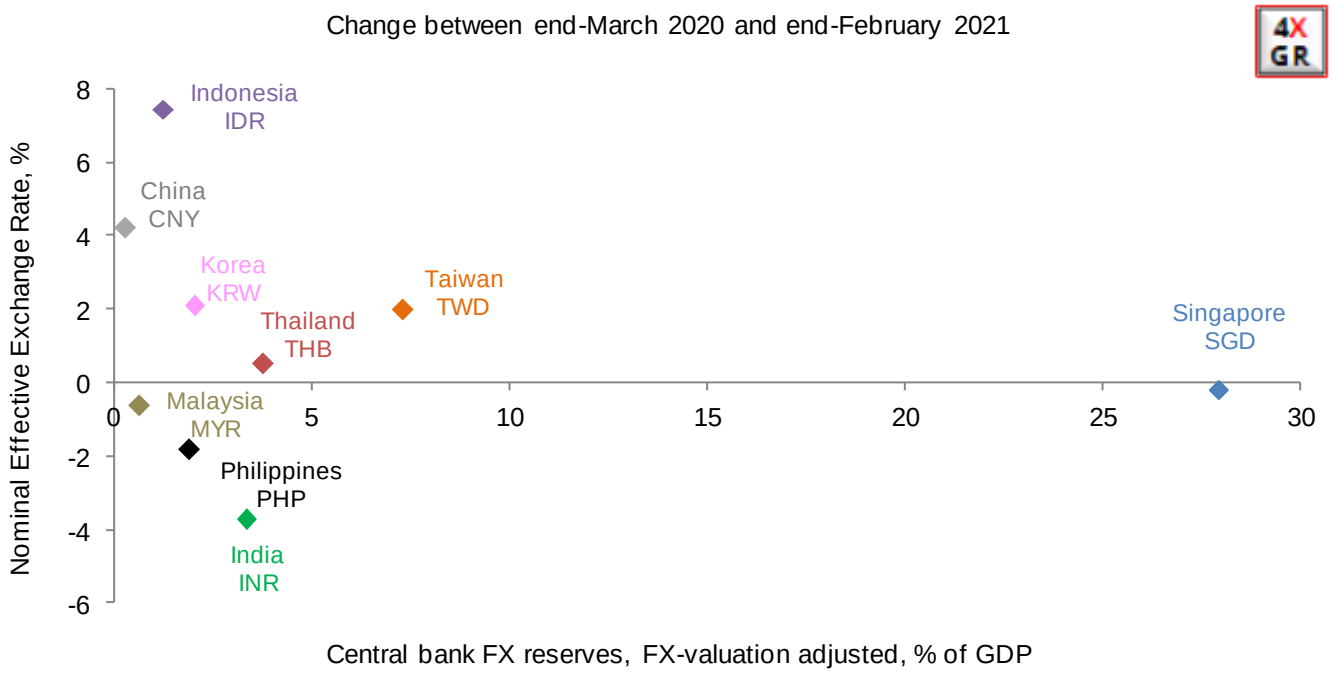


Source: 4X Global Research, Bank of England, BIS, European Central Bank, Federal Reserve, investing.com

*Note: * Denotes Non-Japan Asian currency*

Unsurprisingly daily volatility in the Singapore Dollar NEER has been very low (and the lowest of the 31 major currencies analysed). Moreover, measured by maximum volatility in the past five years, six other NJA currencies, including the high-yielding Indian Rupee, occupy the next nine lowest positions. The Korean Won is mid-table in terms of maximum NEER volatility while in the past five years the high-yielding Indonesian Rupiah has been less volatile, in NEER terms, than other high-yielding emerging market currencies (Turkish Lira, Russian Rouble, Brazilian Real, Colombian Peso and South African Rand) and even a number of developed-market currencies (Norwegian Krone, Sterling and Japanese Yen).

Figure 7: NJA currency performance by-product of FX intervention…and underlying balance of payment flows



Source: 4X Global Research, BIS, national central banks, IMF, investing.com, World Bank

2. Directionality

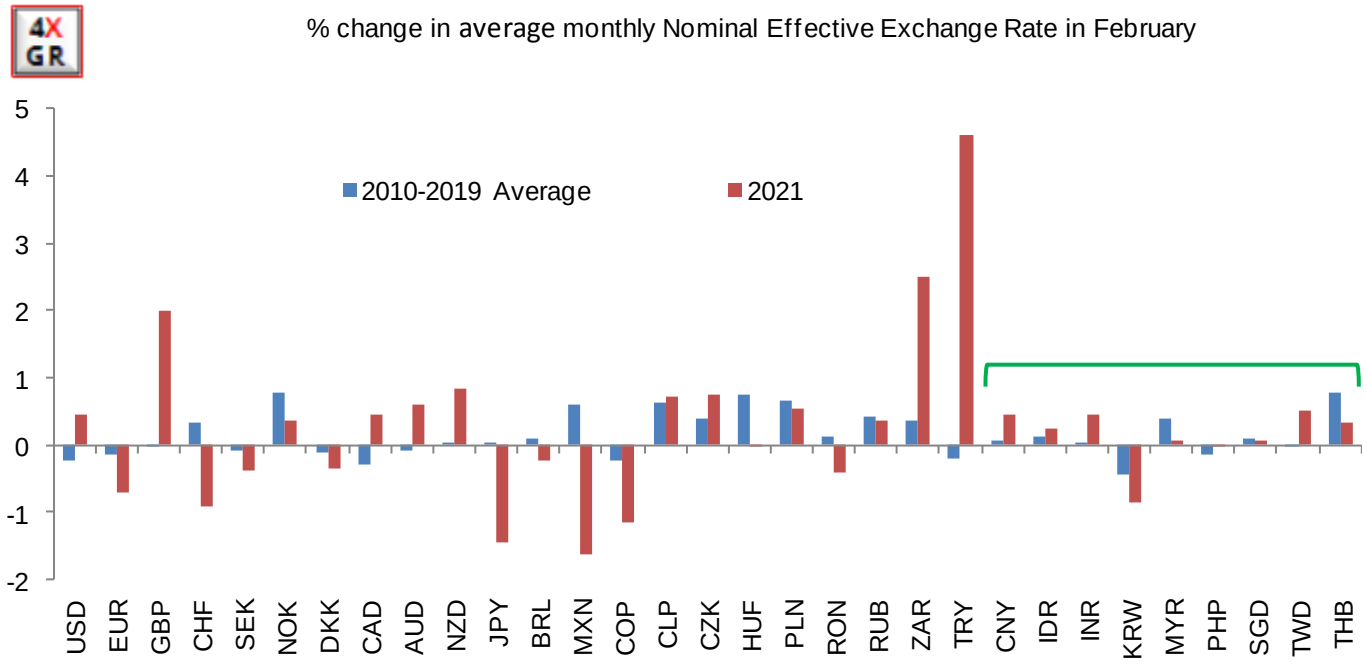
Beyond the short-term goal of keeping a lid on FX volatility, NJA central banks in the 11 months to February 2021 resorted to buying foreign currency (selling local currency), albeit to varying degrees, to guide their currencies over the medium-term, in our view. At the very least FX reserve accumulation has either capped the pace of appreciation or in some cases contributed to (albeit modest in most cases) NEER depreciation in a bid to maintain export competitiveness and limit imported deflation[4]. Specifically, according to our NEER calculations (see Figure 7), between end-March 2020 and end-February 2021:

[4] For example the central bank of Taiwan's Department of Foreign Exchange Director-General Tsai Chiung-min has argued that the rise in the USD-value of FX reserves to a record-high of $543.33bn at end-February was partly due to higher returns from the bank's investments and other reserve currencies' appreciation versus the US Dollar. However,

- The Indian Rupee depreciated about 3.7%;
- The Malaysian Ringgit and Philippines Peso depreciated modestly, by respectively 0.6% and 1.8%;
- The Singapore Dollar was broadly unchanged; and
- Thai Baht, Taiwan Dollar and Korea Won appreciated modestly, by respectively 0.5%, 2.0%, and 2.1%.

Only the Chinese Renminbi and Indonesian Rupiah NEERs appreciated materially, by 4.2% and 7.4%, respectively.

Figure 8: With perhaps exception of Korean Won sell-off, NJA currencies moved little in February 2021…



Source: 4X Global Research, BIS, national central banks, IMF, investing.com, World Bank

The ability and willingness of NJA central banks to guide their NEERs is arguably a key factor behind, bar a few exceptions, historically very modest monthly seasonality in NJA NEERs. The month of January 2021 was no exception (see Currency seasonality's slow comeback?, 2nd February 2021) and, in line with our forecast, neither was February 2021 (see Figure 8) or March 2021 (see Figure 9). Even throughout 2020 NJA NEERs on the whole deviated far less from their modest monthly historical patterns than most other major EM and developed market currencies, which again we ascribe to the more interventionist stance of their central banks (see Monthly currency seasonality: Down and out?, 4th January 2021).

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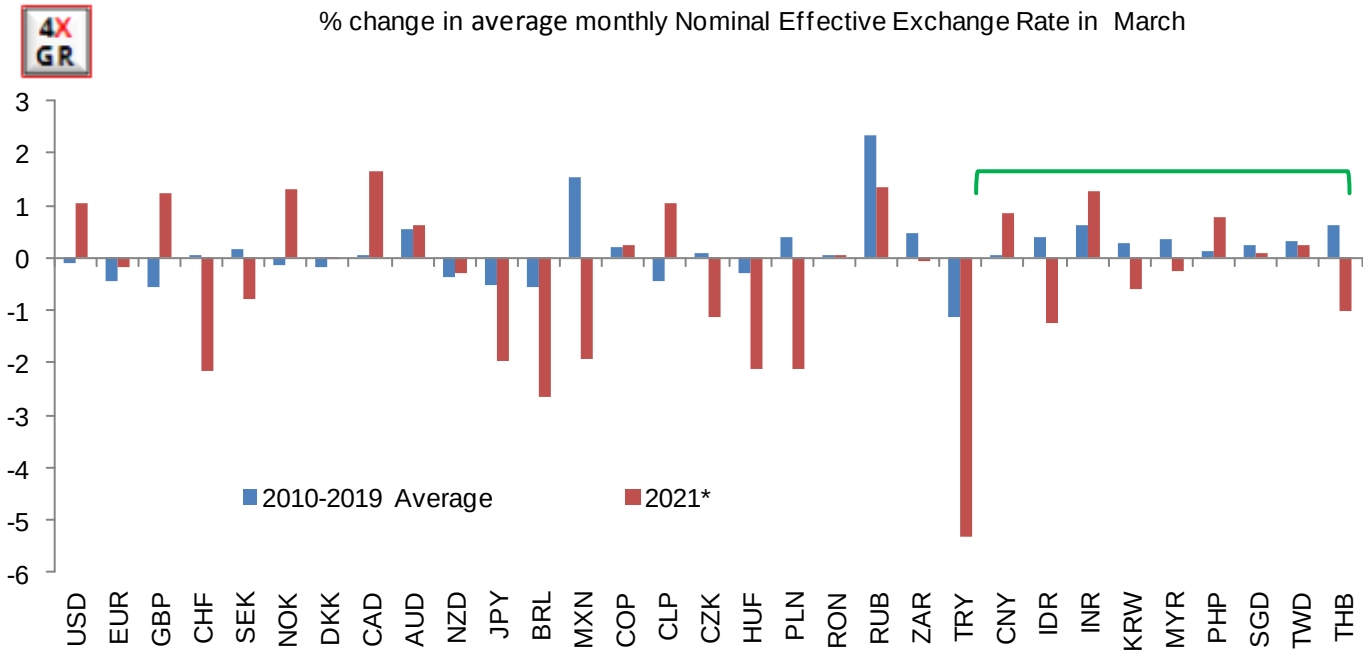
he also publicly acknowledged that the CBC in the past few months had taken measures (including buying US Dollars) to slow the Taiwan Dollar's appreciation.

Figure 9: …and so far in March



Source: 4X Global Research, BIS, national central banks, IMF, investing.com, World Bank

*Note: * Data for 1-26 March 2021*

Of course the extent to which individual currencies depreciated or appreciated over this 11-month period was conditioned by both the magnitude of central banks' FX intervention **AND** the weakness or strength of (net) current account inflows (trade balance, tourism, worker remittances) and capital account inflows (foreign direct investment, equity and bond flows and other speculative flows). For example the Chinese Renminbi NEER appreciated by over 4% because the People's Bank of China only "neutralised" (by buying foreign currency) a very small fraction of large foreign-currency balance of payment inflows into China, according to our estimates.

This matrix of balance of payment flows and central bank FX intervention, and the underlying factors behind these two variables, is a crucial determinant of NJA currencies' past and future performance – and the topic of Part Two of this *FIRMS* report.

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