Macro | FX Research and Strategy

Global

FX Insight

Of Vaccination, Reflation and FX Fair Values…

Positive SGD; MYR and IDR May Catch Up

In 2021, we look for healing and growth normalcy. But the growth trajectory is likely to be uneven and guided by how well covid pandemic can be contained amid deployment of vaccine and we believe this can affect the trajectories of FX. Section 1 of the report looks at the Covid inoculation timeline, vaccine coverage to identify potential FX outperformers, laggards. Section 2 looks at the various yield curve regimes and its impact on FX, with a particular focus on bear steepeners (a proxy for reflation). Section 3 concludes with our FX fair value estimates.

On vaccine roll-out, DM nations may achieve herd immunity earlier, but willingness to be vaccinated and administration delays could be key hurdles. At some stage we expect EM world including Southeast Asian countries to play catchup on inoculation schedule and their risk assets including FX to benefit then. In the interim, Singapore, Taiwan, Australia and NZ with relatively low covid spread and high vaccine per capita should be better positioned to ride the growth recovery (as at 22 Jan 2020 and ceteris paribus). Vaccine rollout globally (in hope of containing covid pandemic) and fresh stimulus spending (blue wave in US) spur reflation dynamics. We note that past episodes of bear steepening in US yields (proxy for reflation) have benefited DM commodity currencies including AUD, NZD, CAD and to some extent GBP, while higher yielders IDR and INR tend to underperform somewhat.

An update of our Maybank-BEER model reveals some useful, albeit somewhat expected findings. Notably, USD is still overvalued, although the extent of overvaluation is more modest now. Among ASEAN FX, SGD looks to be roughly fairly valued—our model suggests slight overvaluation, Z-score suggests some undervaluation. Commodity-linked MYR and IDR looks cheap in REER terms, especially MYR. While THB and PHP looks overvalued in comparison, the extent of estimated overvaluation are yet to be "excessive" by historical standards.

Taking into consideration the inoculation timeline and challenges, the reflation thematic and in light of FX valuation (via our BEER model), we have **a preference for SGD long over THB and PHP** while maintaining a **neutral view on MYR and IDR** for now (within the AXJ space). The latter currencies could be primed for catch-up appreciation when the respective economies show material progress in containing COVID-19 pandemic as our BEER model suggests significant undervaluation.

Analysts

Saktiandi Supaat
(65) 6320 1379
saktiandi@maybank.com.sg

Christopher Wong
(65) 6320 1347
wongkl@maybank.com.sg

Fiona Lim
(65) 6320 1374
fionalim@maybank.com.sg

Tan Yanxi
(65) 6320 1378
tanyx@maybank.com.sg

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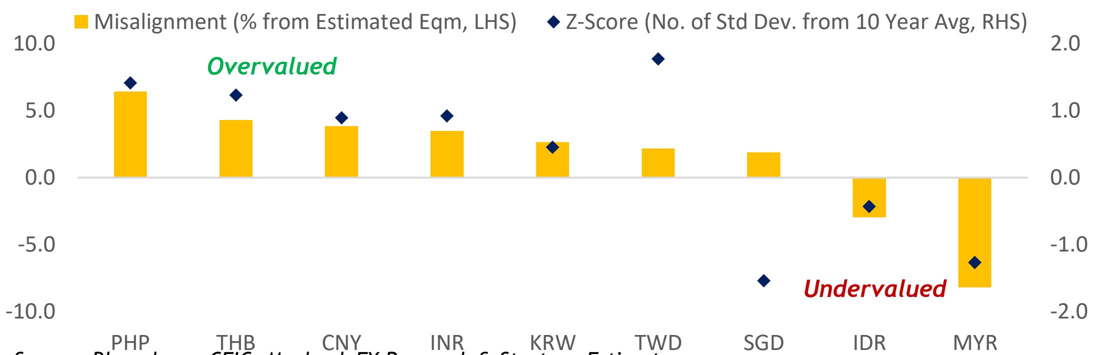
FX Misalignments—Maybank-BEER, Z-Score (Vs. 10-Year Avg)



Source: Bloomberg, CEIC, Maybank FX Research & Strategy Estimates
Note: Maybank-BEER is a dynamic OLS panel model; data from Q1 2006 to Q4 2020.

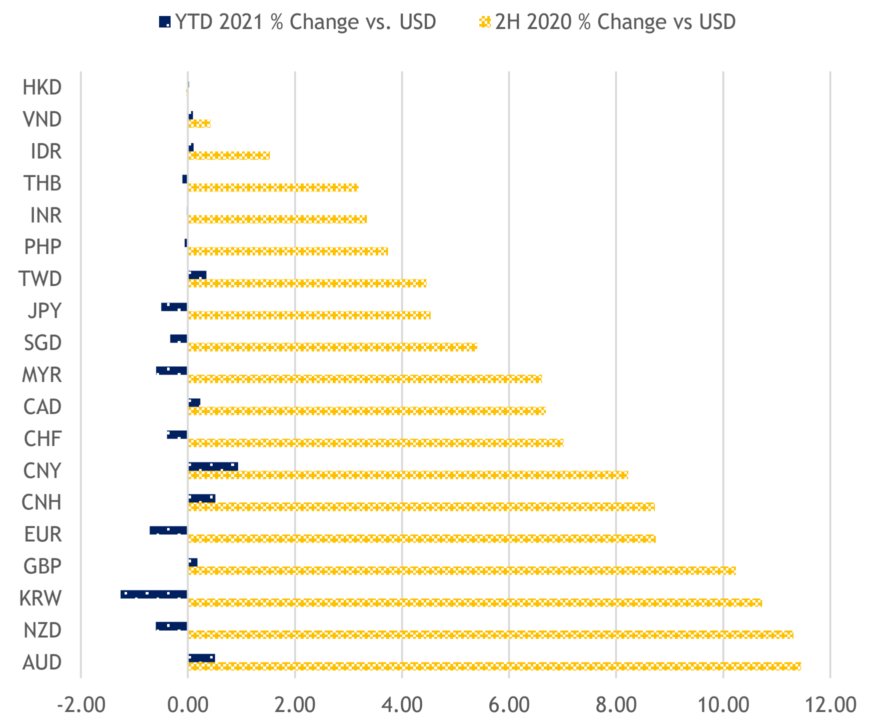
On Vaccines, Reflation and FX Fair Values

"Pfizer-BioNTech Covid vaccine ..A great day for science and humanity… I think we can see light at the end of the tunnel… the most significant medical advancement in the last 100 years"

Dr. Albert Bourla,
Pfizer Chairman and CEO
9 Nov 2020

Risk assets extended its bullish run into 2021, so far. S&P 500, KOSPI, MSCI World index all made historic highs. Asian FX (Bloomberg JPMorgan Asia dollar index) hovered near more than 2½ year high, though we noted some modest retracement. UST yields were broadly firmer, with yield curve bear steepened (far end rose faster than front end yields).

Figure 1: Healthy Retracement in non-USD FX YTS, after Large Gains in 2H 2020



Note: YTD as of 20 Jan 2021

Source: Bloomberg, Maybank FX Research & Strategy

The upbeat mood can be attributed to positive progress with vaccine development (spurring hopes of growth recovery) and prospects of reflationary expectations (especially after Democrats took control of senate, fueling more stimulus spending).

Looking ahead, we look for healing and growth normalcy. But the growth trajectory is likely to be uneven and guided by how well the covid pandemic can be contained amid deployment of vaccine and we believe this can affect the trajectories of FX. Section 1 of the report looks at the covid inoculation timeline, vaccine coverage to identify potential FX outperformers, laggards. Section 2 looks at the various yield curve regimes and its impact on FX, with a particular focus on bear steepeners (a proxy for reflation). Section 3 concludes with our fair value estimates.

(1) Vaccinating the Recovery

Vaccine R&D development process was encouraging. Efficacy came in at ~95% for PfizerBioNTech's BNT162b2 as well as Moderna's mRNA-1273 though efficacy for other vaccines such as Oxford-Astrazeneca, Sinopharm, and Sinovac may not be as high at 70%, 79% and 50%, respectively (phase-3 clinical trials). Multiple sources of successful and safe vaccines using a mix of different technology can help to ease concerns over production and distribution.

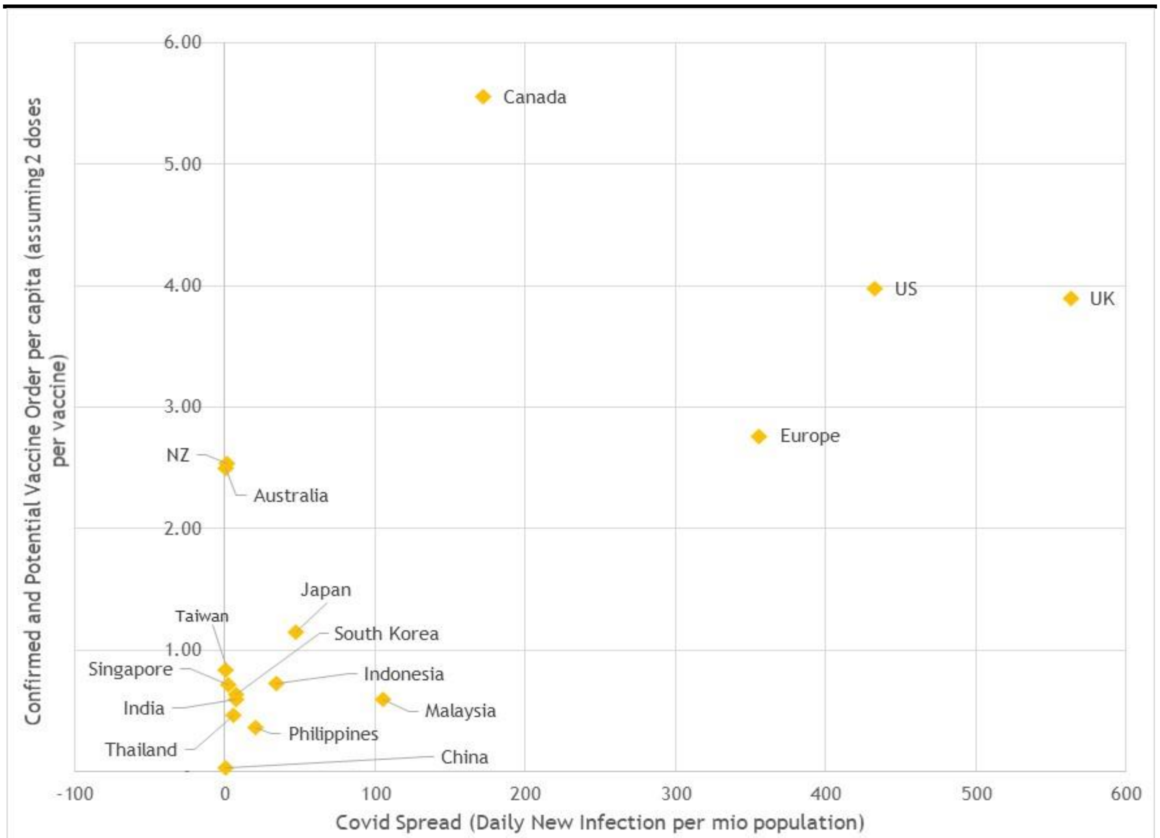
A smooth and safe vaccine rollout can be a game changer as the consequential containment of covid-19 pandemic suggests that travel restrictions, social distancing measures can be lifted. The global economy could be closer to a more sustainable growth recovery amid unprecedented fiscal and monetary support.

However, the reality so far is mixed. We consider 3 aspects: vaccines secured for population vs. vaccine roll-out vs. people willingness to receive vaccine (otherwise known as vaccine hesitancy).

Uneven Vaccine Coverage

Not all countries have secured sufficient doses. According to data compiled by Duke Global Health Innovation Centre, high income countries hold a confirmed 4.2bn doses, led by Canada, UK, US and EU with possible vaccine coverage of between 300% and 600% while the upper middle and lower middle income countries have only secured 1.7bn doses.

Figure 2: Vaccine Positive Impact Felt More in DM World



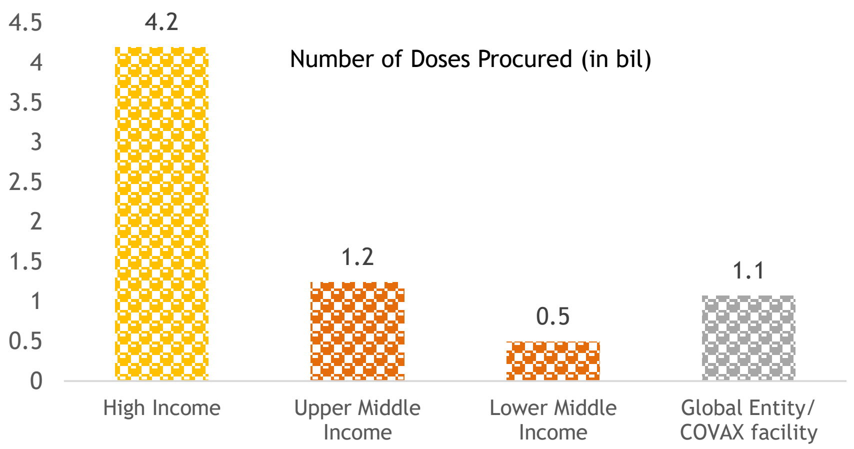
Note: Covid spread defined as daily new infection as of 18 Jan 2021 per 1mio respective population; vaccine per capita based on 2 doses/pax. Assumption was made for Singapore's vaccine order per capita based on 14 Dec MOH press release which indicated that provision was made for all Singaporeans and long-term residents in Singapore to be able to get vaccinated by end-2021, if there are no unforeseen disruptions to vaccine shipment. No. of Singapore Citizens and PRs = 4.04mio while total population was at 5.6mio. China's confirmed vaccine order relates to its purchase of Pfizer-BioNTech vaccine and does not include orders from local manufacturers, which is expected to be about 1.4bn doses of annual domestic production capacity. Adding this to foreign purchase should cover 77% of China population in 2021 (Bloomberg). Government targets to vaccine 50mio people by Feb-2021. Data for vaccine order is not static and will change when country adds orders.

Source: Various news outlet including Bloomberg, Jakarta Post, Duke Global Health Innovation Centre, Launch & Scale Speedometer Duke University, Maybank FX Research & Strategy Calculations

To some extent, the vaccine good-news supports sentiment despite widespread infection in Developed Markets (DM) economies, such as in Canada, UK and US. Vaccine per capita for DM economies is well above 1, with Canada securing more than 5 vaccines per head. The abundance of vaccine supply (confirmed and potential) in DM world should continue to support DM growth recovery hopes, asset prices in the interim but people willingness to be vaccinated and administration delays will be key hurdles.

For Asia-Pac, Singapore, Taiwan, Australia and NZ with low covid spread and high vaccine per capita should be better positioned to ride the growth recovery. We expect their respective asset prices including FX to benefit as well.

Figure 3: Skewed Vaccine Distribution in Favor of High-Income Countries

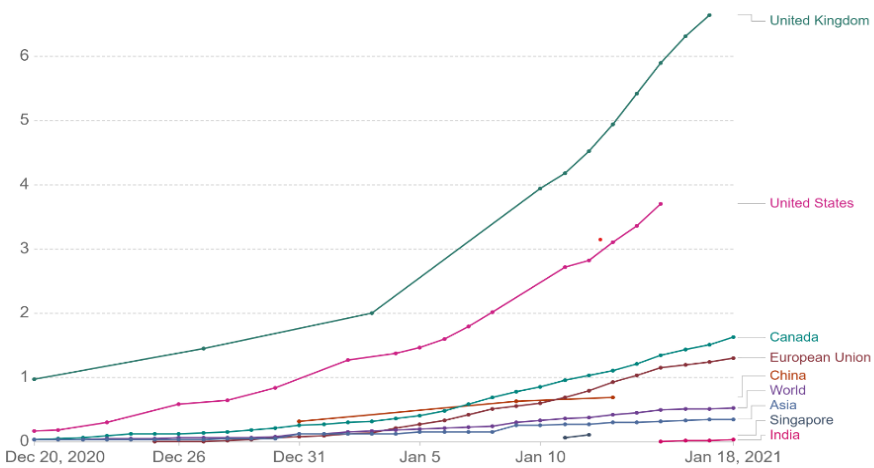


Source: Duke Global Health Innovation Center

(2) Vaccine Roll-Out - Uneven and Multi-Paced

Global vaccine roll-out has been uneven. More than 44mio doses have been administered in 51 countries (as of 18 Jan 2021). Of the countries we tracked, the UK and US are in the lead with 6.9 and 3.7 doses administered (per 100 people), respectively while Asia is low on the ranks with only 0.35 doses administered per 100 people. In particular, the roll out in Southeast Asia has been slow for a start relative to Developed World countries.

Figure 4: Cumulative Covid-19 Vaccine doses administered per 100 People

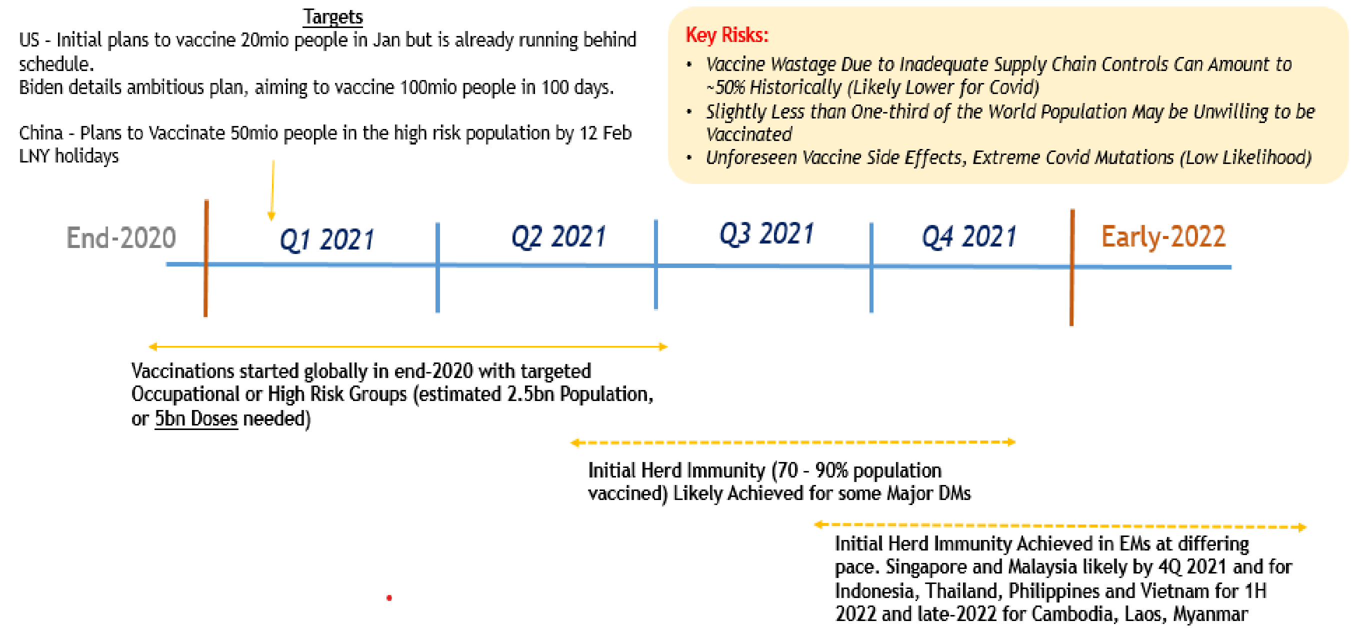


Note: Counted as a single dose and may not equal the number of people vaccinated as most vaccines including Pfizer-BioNTech requires 2 doses

Source: Our World in Data, Maybank FX Research & Strategy

We look at the potential timeline and targets below (note that this can change over time when new contracts, schedules are arranged). Inoculation objectives met ahead of timeline should be positive for sentiment and investor confidence. 12 Feb will be a watch point for China. Risk proxy assets, including AXJ FX could receive a boost if inoculation progress is in line with schedule. Elsewhere US President Biden's ambitious plan to inoculate 100 mio people in 100 days will be another critical watch point.

Figure 5: Timeline - Key highlights and Check Points



Note: Most vaccines require 2 doses per pax.
Source: Various news media; BMJ 2020; 371:m4704, MIT Technology Review, Bloomberg Covid Vaccine Tracker, "Global, regional and national estimates of target population sizes for covid-19 vaccination: descriptive study", Maybank FX Research & Strategy

Based on preliminary information at this stage, Singapore and Malaysia could see a higher percentage of its population inoculated vs. other Southeast Asian nations such as Philippines. For now, based on data gathered from known sources, the bulk of the vaccine will only arrive by end-2021 or early 2022. Economy reopening, growth impulse could come later for most Southeast Asian nations. We do not rule out some of these AXJ FX lagging DM FX as DM economies are likely to achieve herd immunity first, with their economic recovery underway. Laggard AXJ FX could eventually play catch up towards the turn of 2021.

Table 1: Vaccine Tracker Timeline - Key Southeast Asia Nations

	1Q 2021	2Q 2021	2H 2021
Singapore *Each vaccination centre able to handle up to 4,000 vaccinations/day (currently 4 centres)*	Started inoculating healthcare workers on 30 Dec 2020, with Pfizer-BioNTech Over 6,200 people received their first doses (13 Jan) 37,000 frontline aviation, maritime workers to receive vaccine in 2 months Elderly seniors above 70 years old to receive inoculation from Feb onwards	Inoculation likely underway for mass public Arcturus may ship ARCT-021 vaccine early-2021. Vaccine could be effective as a single dose	Should have secured enough vaccine supplies by 3Q 2021
Indonesia *Target to vaccinate 16mio people/month and 70% of population by Mar 2022. Health expert said 3.5y would be a more realistic target for completing inoculation program*	3mio doses of Sinovac vaccine shipment received in Dec-2020 Will ship raw materials for 45mio doses to be manufactured locally. Target to produce 24mio doses/month President Jokowi received first jab of China-made CoronaVac vaccine (13 Jan) To prioritise 1.3mio healthcare workers and 17.4mio public workers in 34 provinces Also seeks to vaccinate 181.5mio people between the ages of 18 and 59 years old	Astrazenaca vaccines will be delivered in stages from as early as Apr through 1Q 2022 (order of 50mio vaccines committed)	
Malaysia *Have committed enough vaccines through Pfizer, AstraZeneca and WHO's COVAX facility for ~60% of population*	Secured 12.8mio doses from Pfizer-BioNTech, with 1mio doses to be delivered in 1Q - enough to vaccinate 500k people (front liners including health care, police and army officials prioritised) Inoculation to begin in early-Mar Secured another 12.2mio doses	1.7mio doses to be delivered Inoculation for senior citizens and people with chronic illnesses likely to have started	5.8mio to be delivered for 3Q Inoculation for mass public likely to have started by 3Q Another 4.3mio doses to be delivered by 4Q
Thailand *Targets to inoculate 50% of population this year*	To receive first vaccines from China's Sinovac Biotech (200k doses) by Feb	800k doses of Sinovac vaccine will be delivered by Mar	1 mio doses of Sinovac vaccine will be delivered by Apr First batch of AstraZeneca vaccine (26mio doses will be produced locally by May; firm able to produce 200mio doses/ year). Thailand will supply vaccines at "reasonable prices" to Myanmar, Laos, Cambodia and Vietnam when production begins
Philippines *Targets to have at least 50mio doses to inoculate 25% of population*	Plans to buy 25mio doses from China's Sinovac for delivery by Mar and to secure between 4 and 25mio doses of vaccines from Moderna and Arcturus Therapeutics Inoculation could start with Russian's Sputnik vaccine in Feb when emergency approval is granted	First shipment of 2.6mio doses of AstraZeneca vaccine likely to be delivered by May	30mio doses of Novavax vaccines to arrive by Jul

Note: Updated as of 18 Jan 2021. List is not static and is likely to change when new information comes.

Source: Various media including Nikkei Asia, ChannelNewsAsia, TheEdge, Bloomberg, Reuters, etc.

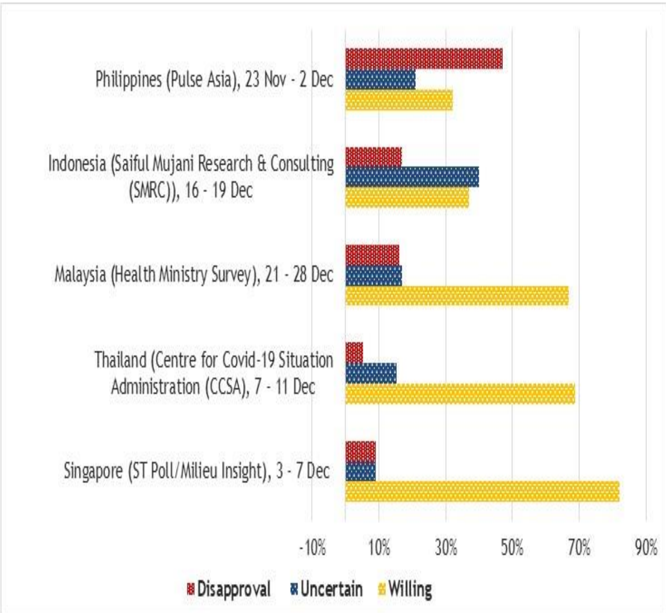
(3) Vaccine Hesitancy is Lower for Asia vs. DM Peers

Vaccine supply needs to be considered against vaccine hesitancy as a country's vaccination progress to reach herd immunity and prevent community spread could be impeded by several factors including vaccine availability for distribution, pandemic situation, vaccine hesitancy.

While contracted vaccine supply is more prevalent in DMs now, the willingness to be vaccinated is more robust in Asia, as shown in various survey results. According to an Ipsos survey conducted between 17 and 20 December, China tops the list with 80% agreeing they would get a vaccine if available. Other DM nations such as France is less willing to accept vaccine, at 40%.

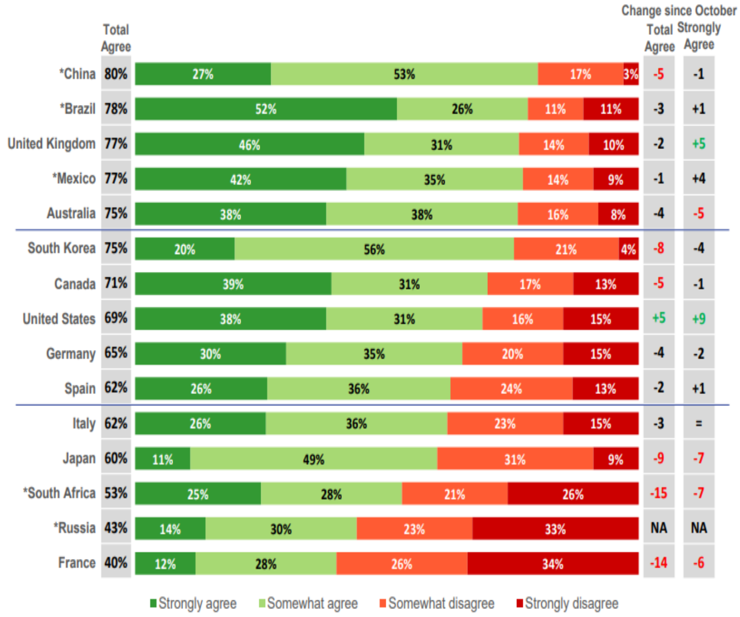
Looking at local surveys for Southeast Asian nations, Singapore, Thailand and Malaysia, more than 65% of the respondents said they will accept covid-19 vaccines. Philippines on the other hand, seem reluctant amongst Southeast Asian nations. We note that the independent survey conducted in Philippines was at a much earlier period of 23 Nov – 2 Dec as compared to other nations where polling were conducted later in mid/end-Dec 2020. Hence direct comparison of survey results may have its drawback.

Figure 6: Local Survey Findings on Covid-19 Vaccine Acceptance



Sources: Various local media, Maybank FX Research & Strategy

Figure 7: Ipsos Survey—If Vaccine were Available, I would Get It



	Total Agree	Strongly agree	Somewhat agree	Somewhat disagree	Strongly disagree	Change since October: Total Agree	Change since October: Strongly Agree
*China	80%	27%	53%	17%	3%	-5	-1
*Brazil	78%	52%	26%	11%	11%	-3	+1
United Kingdom	77%	46%	31%	14%	10%	-2	+5
*Mexico	77%	42%	35%	14%	9%	-1	+4
Australia	75%	38%	38%	16%	8%	-4	-5
South Korea	75%	20%	56%	21%	4%	-8	-4
Canada	71%	39%	31%	17%	13%	-5	-1
United States	69%	38%	31%	16%	15%	+5	+9
Germany	65%	30%	35%	20%	15%	-4	-2
Spain	62%	26%	36%	24%	13%	-2	+1
Italy	62%	26%	36%	23%	15%	-3	=
Japan	60%	11%	49%	31%	9%	-9	-7
*South Africa	53%	25%	28%	21%	26%	-15	-7
*Russia	43%	14%	30%	23%	33%	NA	NA
France	40%	12%	28%	26%	34%	-14	-6

Sources: Ipsos, Maybank FX Research & Strategy

Willingness to be vaccinated globally is uneven, with Asia somewhat more willing to receive vaccine at this stage than DM nations. Ramp up in vaccine manufacturing capacity, improvement in supply chain channels and a higher willingness to receive vaccines could further help Southeast Asia nations contain covid spread and achieve herd immunity. This could help to accelerate the reopening of economies - a positive for growth rebound trajectory, EM asset prices and FX.

A smooth and safe vaccine rollout can be a game changer. However, the reality so far is mixed and uneven, considering 3 aspects: (1) vaccines secured for population vs. (2) vaccine roll-out vs. (3) vaccine hesitancy. Most DMs have high vaccine coverage and have started inoculation. This suggests DM nations may achieve herd immunity earlier. But willingness to be vaccinated and administration delays will be key hurdles. Singapore, Taiwan, Australia and NZ with relatively low covid spread and high vaccine per capita should be better positioned to ride the growth recovery. We expect their respective asset prices including FX to benefit as well. On net, vaccine is a positive but there is a risk that markets may have overpriced excessive optimism at this point. Failure to meet inoculation schedule/timeline could undermine sentiment. At some stage we expect EM world including Southeast Asia countries to play catchup to DM on inoculation progress and EM risk assets including FX to benefit then.

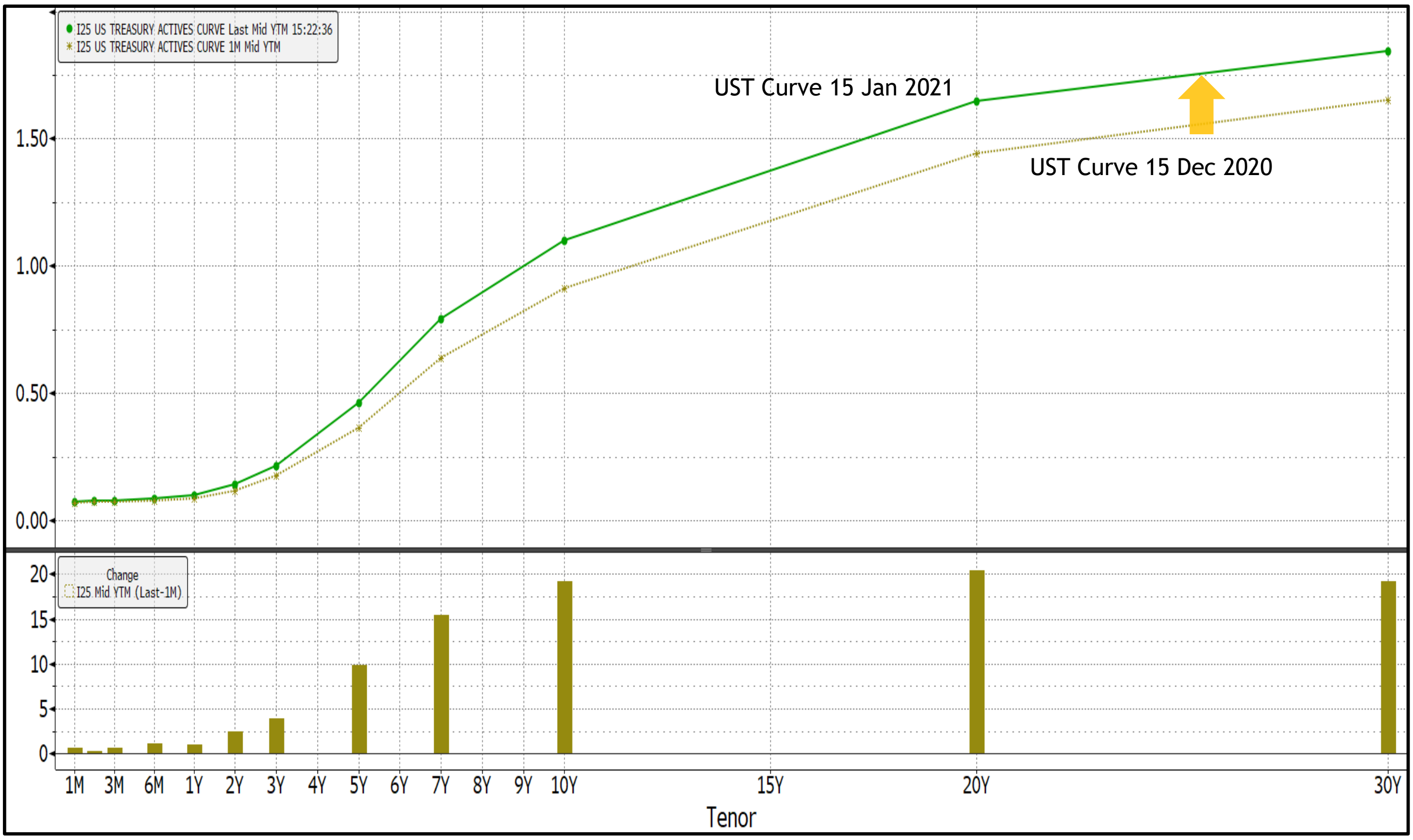
Hope and Reflation

The arrival of vaccines along with the prospect of more relief aid as the Democrats took over Congress and the Presidency spurred a rise in US rates at the start of the year. More importantly, the US sovereign curve had steepened at an accelerating pace. The bear steepening of the curve is a reflection of the reflationary narrative gaining traction. We delve into the impact of this phenomenon along with an analysis of the yield curve and how they had affected currencies in recent history.

The yield curve has been known as a business cycle indicator and the term spread is known to forecast economic activity. Shape of the yield curve is typically affected by yield movements and the differential pace of these movements between the short-term and long-term yield. For analytical purpose, we sort the term structure into these four curve changes and look at how currencies behave in each of these regimes.

1. **Bear steepening** - interest rates rising, yield curve steepens as long term interest rates rise faster than short-term interest rates (reflationary)
2. **Bull steepening** – interest rates falling, yield curve steepens as short-term interest rates fall faster than long-term interest rates
3. **Bear flattening** – Interest rates rising, yield curve flattens as short-term interest rates rise faster than long-term interest rates
4. **Bull flattening** – interest rates falling, yield curve flattens as long-term interest rates fall faster than short-term interest rates.

Figure 8: The Bear Steepening of the US Active Treasury Curve



Note: Yield curve prices are as of 15 Jan 2021.
Source: Bloomberg, Maybank FX Research & Strategy

Our current environment can be described as a bear steepening environment. In the past 1 month (as of 15 Jan 2021), yields on the far end of the US Treasury curve had risen substantially (>20bps) while the front end remains anchored by expectations of the Fed to keep rates low for longer (especially in light of Fed's Average Inflation Targeting regime). In this section, we looked at how currencies behaved in the four regimes since Jan 2000 and we pay particular attention on the bear steepening environment that is characteristic of reflation, as aggressive fiscal stimulus, accommodative monetary policies as well as hope offered by the roll-out of vaccine spur a potentially dramatic rise in activity and global demand.

Table 2: Average Performance of Currency Pairings During The Four Regimes

	Bear Steepen	Bull Steepen	Bear Flatten	Bull Flatten
DXY	-0.04	-0.93	0.27	0.09
AUDJPY	1.11	-1.55	0.83	-0.45
JPYUSD	-0.75	1.66	-0.96	0.71
EURUSD	0.15	1.12	-0.13	-0.06
GBPUSD	0.49	0.57	-0.19	-0.55
AUDUSD	0.29	0.05	-0.15	0.21
NZDUSD	0.42	0.00	-0.40	0.46
CADUSD	0.59	-0.16	-0.04	-0.13
CNYUSD	0.19	0.25	-0.16	0.13
KRWUSD	-0.06	0.58	-0.10	0.10
TWDUSD	0.12	0.43	-0.14	-0.02
SGDUSD	0.06	0.44	-0.16	0.19
MYRUSD	0.13	0.05	-0.25	0.01
IDRUSD	-0.32	0.35	-0.60	-0.02
THBUSD	0.17	0.29	0.06	0.11
PHPUSD	0.02	0.01	-0.18	-0.04
INRUSD	-0.29	0.05	-0.26	-0.09

Note: All yield curve regimes are defined by changes in the 2y10y spread and the above data (2000-2020) are average monthly changes for each currency. For example, the DXY index declines by an average of -0.93% in months when the US Sovereign curve bull steepened. Bull steepening is defined by a fall in interest rates and a rise in the 2y10y yield spread.

Source: Maybank FX Research & Strategy, Bloomberg

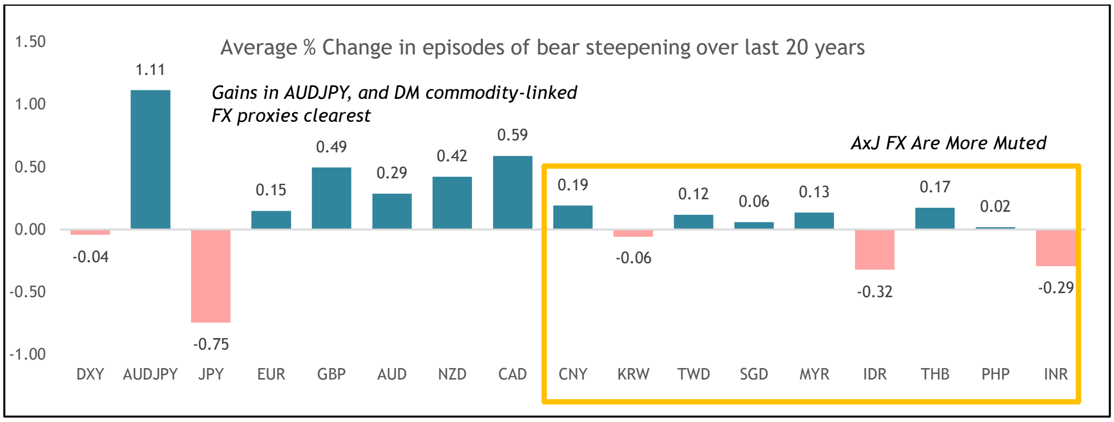
Our Observations for the Different Regimes

Bear Flattening of the UST curve - Interest Rates Rise, Yield Curve Flatter

A look at the table above (bear flatten) revealed that USD thrives the best when the US Treasury curve bear flattens which basically describes an environment that sees interest rates rise and the yield curve flattens. This typically happens when the economy show signs of heating up and the Fed moves to tighten monetary policy. The US treasury curve then bear flattens as short-term interest rates rise faster than the long term interest rates. As the Fed acts to cool the economy, bear flatteners typically signal potential economic contraction in the horizon. The DXY index rose an average of 0.27% in the months when the US Treasury curve bear flattened. In contrast, non-USD currencies tend to weaken in those episodes of rising US rates that precede a deceleration in economic growth. Higher yielding IDR was especially hurt in those observed periods over the past two decades when financial conditions tightened, recording an average depreciation of -0.60% vs. the USD. INR was also hurt but to a lesser extent of -

0.26%. Another notable currency move is the JPYUSD which fell an average of -0.96%, a pair that is typically sensitive to the JGB-UST yield differential.

Figure 9: Bear Steepening of the UST Curve - Interest Rates Rise, Yield Curve Steeper (Reflationary)

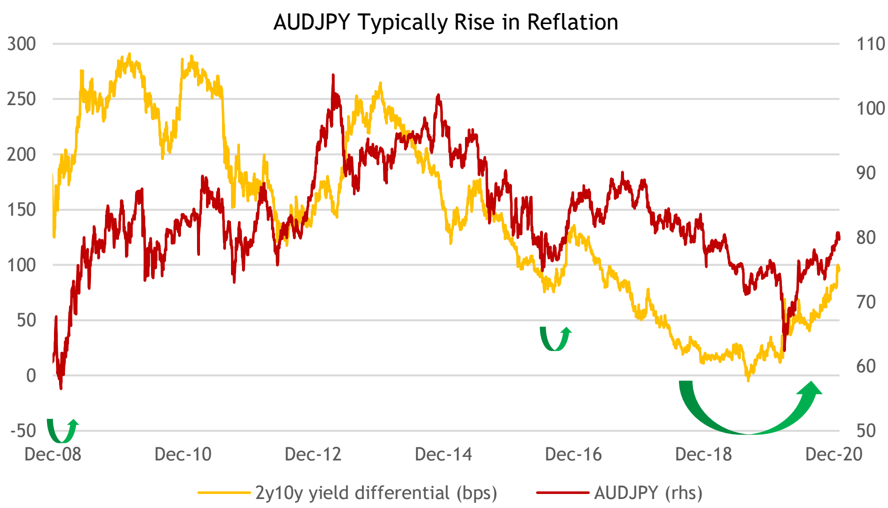


Note: Apart from the DXY index and AUDJPY, monthly changes of other currencies in the table are measured against the USD. Data is extracted from the full table in the page before for easy reference.

Source: Bloomberg, Maybank FX Research & Strategy

Our study reveals that in periods of bear steepening (interest rates rising, yield curve steeper), **AUDJPY strengthened the most** (gaining +1.1% on average) relative to other currency pairs and vs. its own performance in other regimes. This is in line with conventional wisdom as AUDJPY tends to be seen as a barometer of reflation. Along with the reflation that is ongoing across the world, the rise in activity, infrastructure projects that include fresh green initiatives in major developed economies, improvement in investor and consumer confidence that are bolstered by fiscal support, would inevitably lift the demand for resources. Observations in the past two decades saw **DM commodity currencies such as the AUD, NZD, CAD and to some extent, GBP (typically has a positive correlation with oil) appreciating substantially in past episodes of bear steepening of the US sovereign curve. To some extent, these currencies have already logged significant gains and could continue to thrive into 2021.**

Figure 10: AUDJPY Has Already Started Rising in Current episode of Reflation

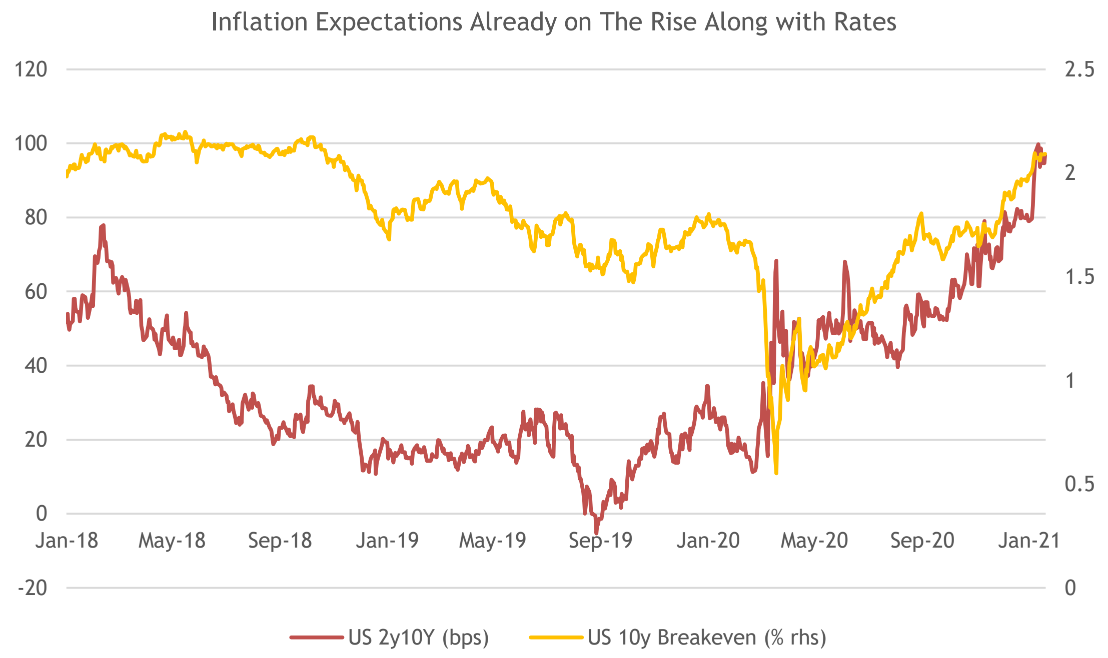


Source: Bloomberg, Maybank FX Research & Strategy

Nearer to home however, the performance of Asian currencies (vs. the USD) are very much uneven. Higher yielding currencies such as **INR, IDR** may **underperform** slightly given the broad increase in interest rates that characterize such an environment.

As mentioned at the start of this section, we look for reflation to gain traction this year as the real economy is expected to reap the rewards from seeds of unprecedented fiscal and aggressive monetary easing sown in 2020. In fact, there are already market indications of inflation expectations rising alongside the rise in rates (chart below). US 10Y breakeven rate has been on the rise and just crossed the 2% mark, in a sign that market players look for price pressure to rise.

Figure 11: Inflation Expectations Rise alongside the Rise in the 2y10y Yield Differential

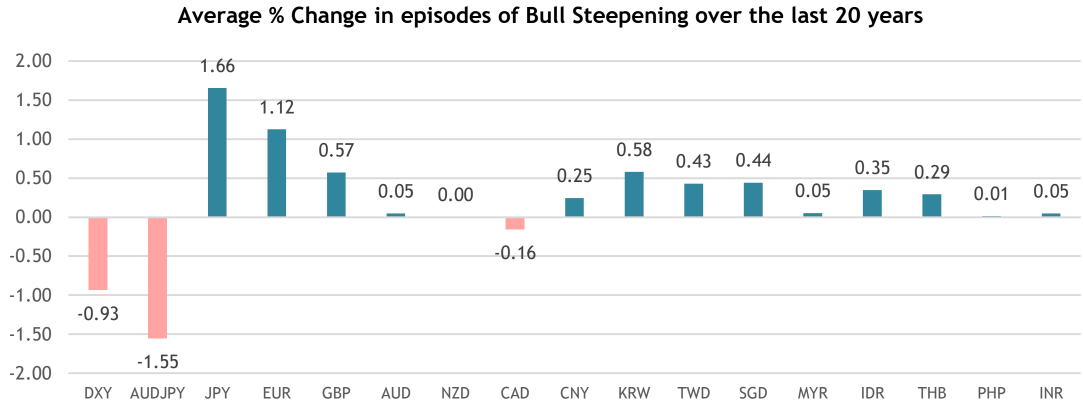


Note: US 2y10y denotes the yield differential between UST 10y and 2y. US 10y breakeven rate is known as the breakeven inflation rate. It reflects the inflation rate expectations of market participants over the next 10years derived from the difference of 10-Year Treasury Constant Maturity Securities and 10-Year Treasury Inflation-Indexed Constant Maturity Securities (Fed Reserve of St. Louis).

Source: Bloomberg, Maybank FX Research & Strategy

In past episodes of reflation, an environment such as this could mean muted action for the ASEAN FX currencies vs. strong beneficiaries DM commodity FX (AUD, NZD and CAD). We also note a bear steepening regime typically has little bearing on the USD, possibly due to the fact that the positive effect of the rise in US rates could be negated by the countercyclical nature of the USD. This study suggests that IDR and INR might possibly weaken a tad vs. the USD and we do not rule out pockets of weakness in INR, IDR should US rates rise further or faster than expected. However, it is more likely that central banks including the Fed would manage forward guidance in a way to keep the recovery from derailing. The concerns over a potentially sharp increase in borrowing required by Biden may also be addressed by the fact that the support of some republicans are still required in the Senate for any relief package to be approved. Hence, the pace of increase in interest rates will continue to be dampened from time to time. We also prefer to take into consideration the current structural and fundamental weakness of the greenback (USD debasement concerns, payment trends towards non-USD currencies as well as the deterioration in the US fiscal deficit) that could still be able to bring the USD broadly lower for much of this year even including the USDIDR and USDINR.

Figure 12: Bull Steepening of the UST Curve - Interest Rates Fall, Yield Curve Steeper



Note: Apart from the DXY index and AUDJPY, monthly changes of other currencies in the table are measured against the USD.

Source: Bloomberg, Maybank FX Research & Strategy

Bull steepening of the UST curve typically happens when the Fed is expected to lower interest rates. Short term interest rates would fall faster than the long term interest rates, resulting in a steeper yield curve. This typically happens when the Fed sees the need to stimulate a weakening economy. Along with the fall in US rates, the greenback would weaken in reaction. That is confirmed in our study. Observations made in the past two decades revealed the bull steepening yield curve to be the most bearish regime for the DXY index. In the meantime, EM currencies would benefit from such an environment. In particular, SGD and IDR outperform their ASEAN-5 peers with an average respective appreciation of +0.44% and +0.35% vs. the USD in months when the UST curve bull steepens.

FX Misalignments—Refreshing Our Estimates

Amid the transition to "a new dawn", i.e., a Biden presidency and the onset of vaccine distribution globally, we take the opportunity to update our Maybank Behavioral Effective Exchange Rate Panel model (**Maybank-BEER**) to get a sense of current extent of FX mis-alignments from fundamentals after the period of upheaval and subsequent recovery in FX markets last year.

We make slight amendments to the previous model specification (see here for original model), removing relative labor productivity as an explanatory variable due to poor data quality (lags in data release). We also replace the short-run real rate differentials variable with its components, i.e., nominal rate differentials and inflation rate differentials more explicitly, to better capture shifts in monetary policy. A summary of the model characteristics is as follows:

Maybank-BEER Panel

- **Tracks Misalignments in REER terms (i.e., basket of trading partners' currencies).**
- **Relevant for 3 to 5 Year View**
- Based on BEER literature (Clark & MacDonald, 1999)
- Quarterly Data, Dynamic OLS Panel Estimation
- Data from Q1 2006 to Q4 2020
- Data used in Panel for *Country I* include:

  - Net Foreign Assets (% of GDP)
  - Trade Openness (Total Trade as % of GDP)
  - Short-run Nominal Rates (%-Pt Deviation from Trading Partners' Weighted Average)
  - Inflation (%-Pt Deviation from Trading Partners' Weighted Average)

As usual, technical details such as specifications and a table of the estimated misalignments will be provided in the Appendix.

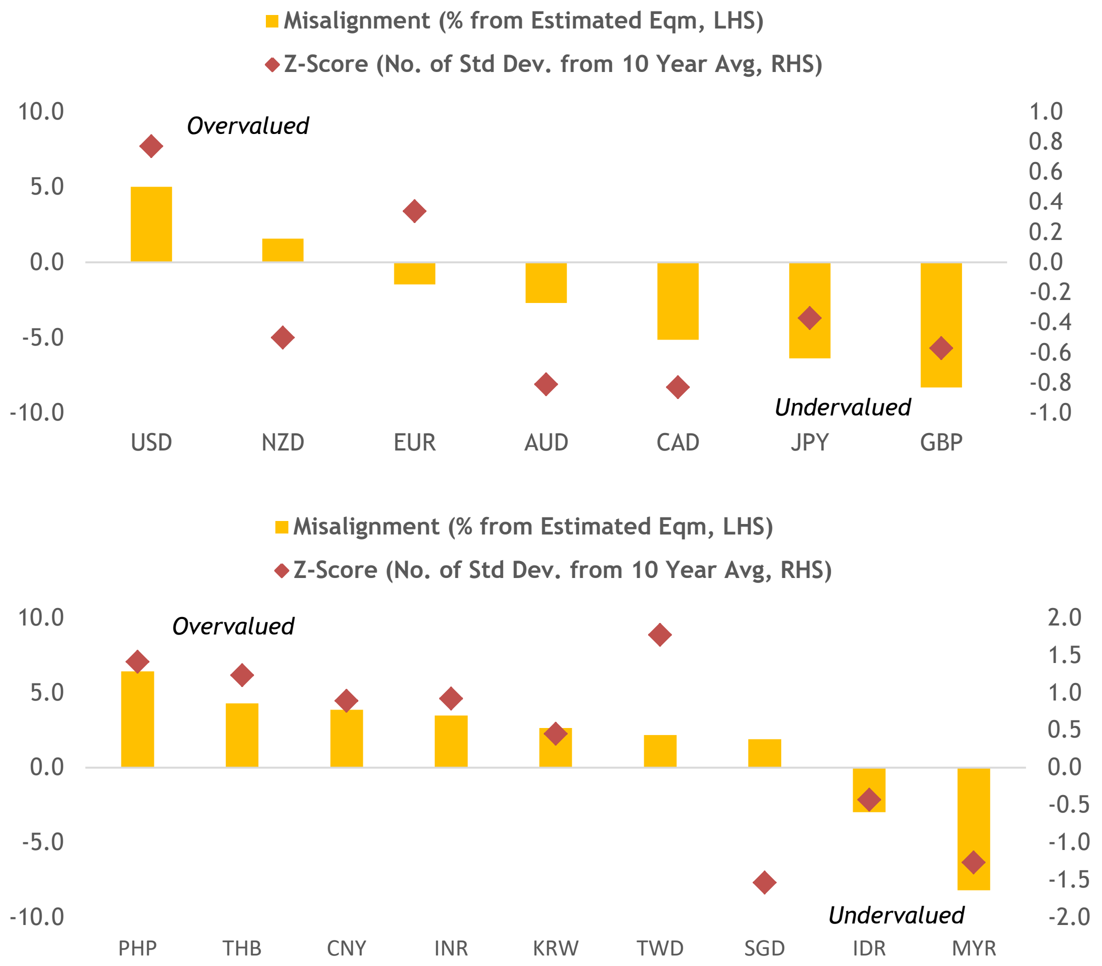
It is important at this point to remind readers of the usual caveats. Empirically-derived "equilibrium" or "fair" FX valuations provide the most value added when they are used to supplement existing understanding of market conditions. They are not meant to provide point forecasts for fixed durations, and it is common for long stretches of time to pass before spot values converge towards their supposed "equilibrium".

Still, when significant misalignments exist between spot levels and valuations suggested by structural drivers, there can be some informational relevance to subsequent FX moves.

We first provide a snapshot of the estimated FX valuation misalignments for both DM and Asian currencies, according to our proprietary model. Positive estimates indicate overvaluations in REER terms, while negative estimates suggest undervaluations.

We also add in a set of Bloomberg-computed Z-Scores (based on 10-year moving averages) to get a sense of the extent (number of standard deviations) to which each currency's REER is above or below its 10-year average. A more positive number indicates that a currency is relatively more expensive relative to its historical performance, and a negative figure indicates that a currency is relatively cheap relative to history.

Figure 13: FX Misalignments—Maybank-BEER, Z-Score (Vs. 10-Year Avg)



Note: Maybank-BEER model is a dynamic OLS panel; data from Q1 2006 to Q4 2020. Bloomberg-computed Z scores were extracted on 19 Jan.

Source: Bloomberg, CEIC, Maybank FX Research & Strategy Estimates

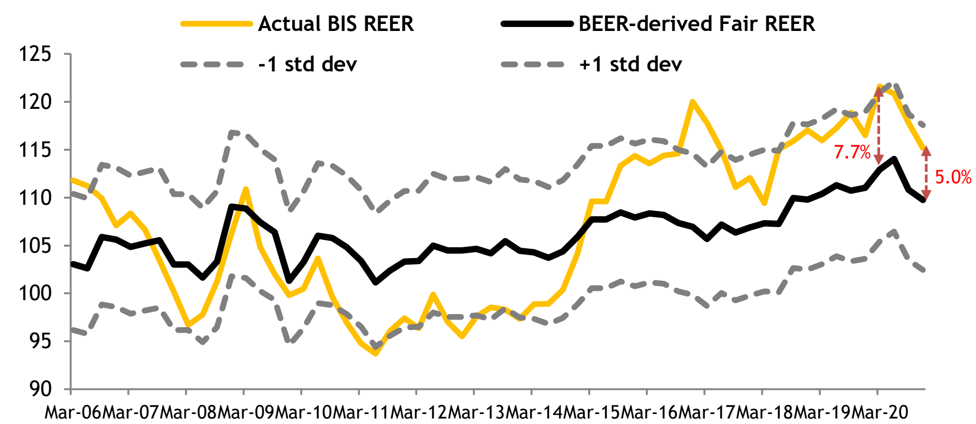
We note that with the exception of a few currencies, our Maybank-BEER model estimates and the 10-year relative Z-scores are largely in agreement on whether a currency is under- or overvalued. Differences are not surprising, given the different approaches involved.

We attempt to extract some key insights here, with a key focus on USD and ASEAN FX.

US Dollar is Still Dear

Despite the approximately 12% decline in DXY from its interim peak last March, our model estimations suggest that the USD is still expensive. Most DM currencies are also undervalued from the REER perspective, with room to appreciate and hence adding to the weaker USD narrative.

Figure 14: USD Overvaluation Narrowed Modestly, But Still Intact



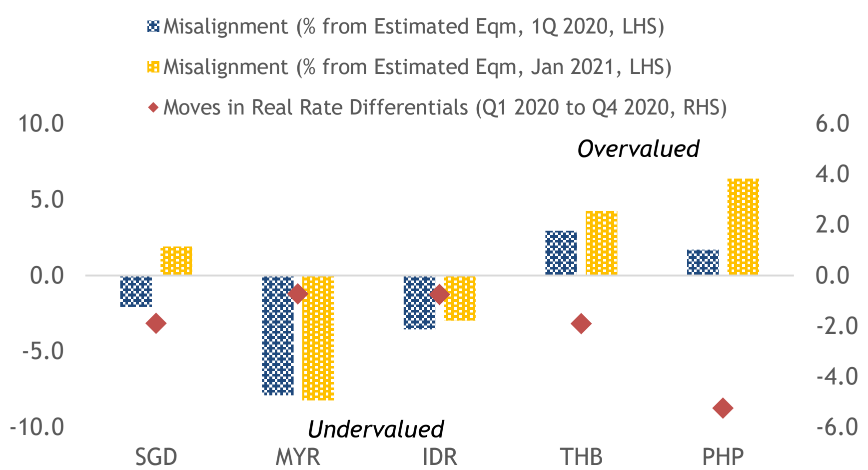
Source: Bloomberg, CEIC, Maybank FX Research & Strategy Estimates

Notably, compared to 1Q 2020, while actual USD REER had fallen significantly, the **model-implied equilibrium (i.e., "fair value") of the dollar had fallen as well, largely as falling (on relative basis) US nominal rates and rising inflation had led to a decline in real rate differentials, diminishing the appeal of the dollar.**

On net, the extent of overvaluation in REER terms has narrowed modestly, from around +7.7% (vs. model estimated "equilibrium") in end-1Q 2020 to around +5.0%. This finding is in line with our call in our FX Annual outlook published in early Dec (see here). **While we maintained our bias for dollar downsides, we were of the view that the near-term pace of decline could be more cautious.**

Among ASEAN FX, THB & PHP Looks a Tad Overvalued

Figure 15: Declines in Real Interest Rates (Relative Basis) Contributed to Shifts in Misalignments



Note: Real Rate differentials are computed as weighted differentials vs. trading partners'.

Source: Bloomberg, CEIC, Maybank FX Research & Strategy Estimates

Notably, actual REERs of most ASEAN FX were relatively stable (or rising slightly) even as USD-AxJ pairs were trending down from Q2 2020 to now. FX moves were predominantly due to dollar weakness, and on a trade-weighted basket basis, relative strength in ASEAN currencies were milder. PHP for instance, only saw a slightly >1% rise in its REER over the period.

In this case, the reason why SGD flipped from slight under-valuation to slight overvaluation, and THB and PHP became even more overvalued over this period, was partly due to some deterioration in “fair” valuations of these currencies (to differing extents).

The model captured this deterioration in “fair” valuations via decline in real interest rates (i.e., drop in nominal rates, rise in inflation). This decline could be reflecting the extent to which monetary conditions had to be kept accommodative in order to support still-soft macro fundamentals. We note that the decline in real interest rates (in weighted differentials versus trading partners’) was most significant for Philippines among ASEAN. Shifts in valuations due to changes in trade openness or net foreign asset positions were generally milder.

On net, with actual REERs for ASEAN FX largely stable or rising, and what the model perceives as “fair” being mostly lower, misalignments shifted, leaning towards incremental overvaluation bias. This was most discernible for PHP over the period. Misalignment shifts for MYR and IDR were notably milder, given smaller moves in rate differentials vs. peers.

Figure 16: THB REER Ticked Up Even as Fundamentals Remained Soft; Overvaluation Extent Increases Mildly

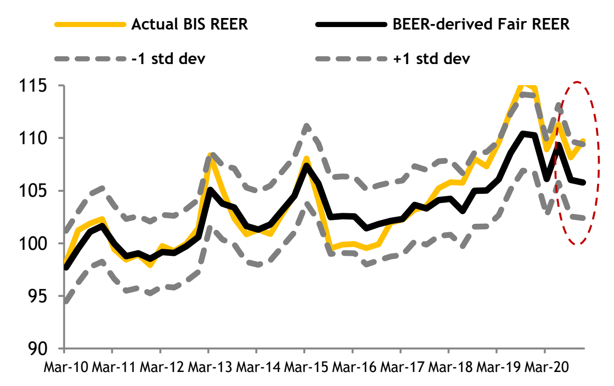
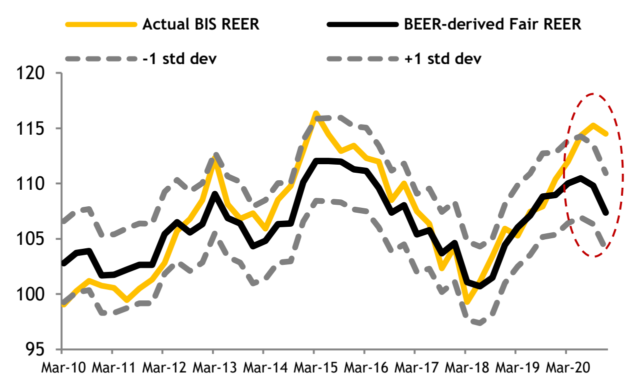


Figure 17:PHP REER Rose While Estimated Fair Valuation Declined, Signalling Some Overvaluation in REER Terms



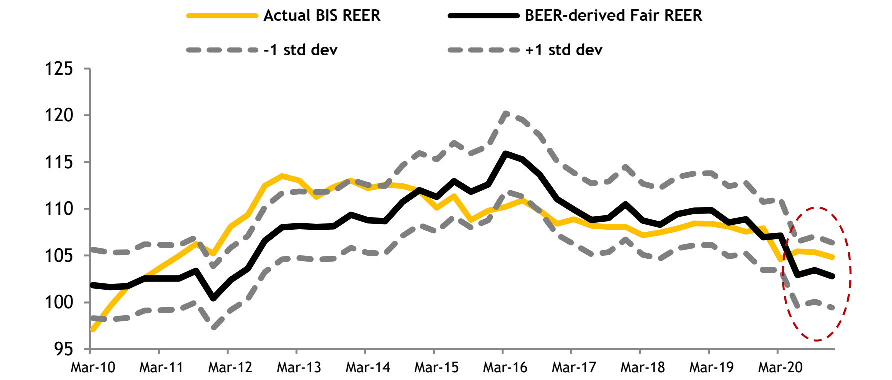
Source: Bloomberg, CEIC, Maybank FX Research & Strategy Estimates

For the THB and PHP, insights gleaned from our model and Bloomberg Z-scores, as well as other near-term macro challenges, could mean that up-moves in their REERs could be constrained in 2021.

For the PHP in particular, it has gained around 6% against the USD since early-2019, largely unfazed by the pandemic despite a significant pullback in demand (GDP not expected to return to pre-pandemic levels till 2022), potential scarring in labor markets (underemployment still high at 14.4% in Oct 2020), and some early signs of increasing fiscal stresses (debt to GDP could rise from 39.6% in 2019 to around 58.1% in 2021).

If the broad dollar softness narrative is sustained in the quarters ahead, this could mean that the pace of decline in USDTHB and USDPHP may be more modest vs. other USD-AxJ pairs. This is corroborated by our earlier studies, which shows that PHP tends to be lower-beta in nature, even during bouts of risk-on recoveries.

Figure 18: SGD REER Largely in Line With Fundamentals Still



Source: Bloomberg, CEIC, Maybank FX Research & Strategy Estimates

For SGD, we note that the estimated extent of overvaluation is relatively modest, and resilient macro fundamentals should ensure that it performs in line, if not slightly better than regional peers.

SGD NEER (+0.3% above implied policy mid-point as of writing) has repeatedly bounced off the estimated policy mid-point over the past few quarters and we expect it to remain largely in the upper half of the policy band going forward.

Commodity-Linked MYR and IDR Are Still Undervalued

Both misalignment estimates and Z-score indicators hint that among ASEAN FX, commodity-linked MYR and IDR still have some room to appreciate. The same holds true for DM counterparts CAD and AUD.

Figure 19: MYR REER Dipped Even as Fair Valuation Dipped Slightly, Maintaining Extent of Undervaluation

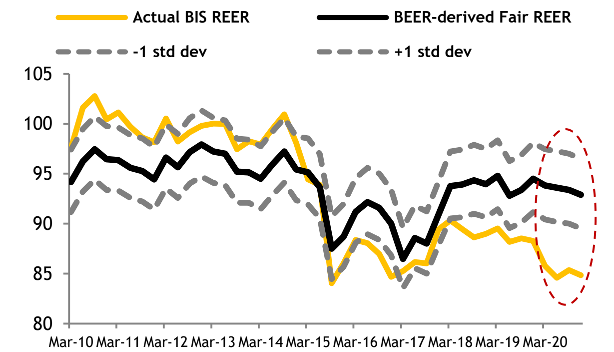
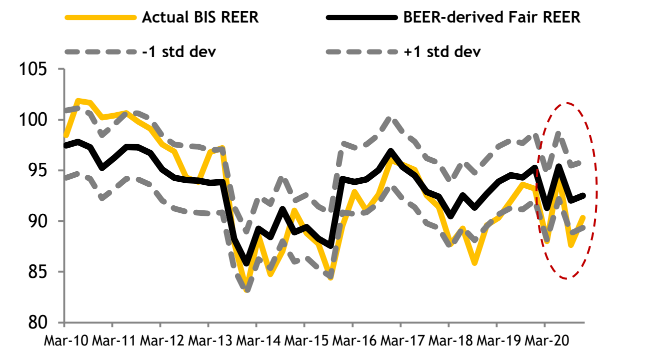


Figure 20: IDR REER and Fair Valuation Stable; Still Modestly Undervalued



Source: Bloomberg, CEIC, Maybank FX Research & Strategy Estimates

Malaysia and Indonesia accounts for around 85% of global palm oil production and crude palm oil price trajectory in the medium-term could be a contributing factor for FX sentiments as well. While a modest pullback was observed YTD, we note that spot crude palm oil price (MYR3445 as of writing) is still comfortably higher vs. the past 5-year average (around MYR2500). The Council of Palm Oil Producing Countries remains positive on palm oil prices in 2021, partly due to continued restocking of edible oil inventories in China. On net, palm oil exports should continue to contribute to trade surpluses in these economies.

More broadly, we had explored the commodity/reflation theme quite substantially in our FX Annual outlook, with the view that Biden's US$2trn infrastructure plans and the ongoing construction and manufacturing recovery in China, could be two key drivers for commodity demand in 2021. For oil, while there are still demand concerns over recent sporadic lockdowns, OPEC+ seems to be managing supply-side expectations modestly well at the moment, and prices could be supported on net.

Our model tentatively suggests that oil-linked MYR (-8.2%, undervalued) and CAD (-5.1%) could have more room to appreciate in the medium-term vs. AUD (-2.7%) and IDR (-3.0%).

Conclusion

A smooth and safe vaccine rollout can be a game changer. However, the reality so far is mixed and uneven, considering 3 aspects: (1) vaccines secured for population vs. (2) vaccine roll-out vs. (3) vaccine hesitancy. Most DMs have high vaccine coverage and have started inoculation. This suggests DM nations may achieve herd immunity earlier. But willingness to be vaccinated and administration delays will be key hurdles. **Singapore, Taiwan, Australia and NZ with relatively low covid spread and high vaccine per capita should be better positioned to ride the growth recovery. We expect their respective asset prices including FX to benefit as well.** On net, vaccine is a positive but there is a risk that markets may have overpriced excessive optimism at this point. Failure to meet inoculation schedule/timeline could undermine sentiment. At some stage in the near future, we expect EM world including Southeast Asia countries to play catchup on inoculation timeline and their risk assets including FX to benefit then.

Vaccine rollout globally (in hope of containing covid pandemic) and fresh stimulus spending (blue wave in US) spur reflation dynamics. The shifts of the yield curves are taken as indicators of business cycles and we looked at currency performances in the past 20 years under the four regimes – bull steepening, bear steepening, bull flattening and bear flattening of the yield curve. Right now the ongoing reflation across the globe has already started with the bear-steepening of the UST curve witnessed in recent months. DM commodity currencies has already been on the rise along with AUDJPY, a cross that is commonly known as the barometer of reflation. **We continue to look for DM commodity currencies including AUD, NZD, CAD and to some extent GBP to thrive in the year ahead vs. ASEAN FX.** Higher yielders IDR and INR tend to underperform in such a landscape in the past. It is curious to note that despite the rise in US rates, a bear-steepening UST curve does not have much of a bearing on the greenback. We take into consideration the structural and fundamental weakness of the USD that could still take most USDAxJ lower, even including USDINR and USDIDR.

For the fair valuation exercise, we note that actual REERs of most ASEAN FX were relatively stable (or rising slightly) even as USD-AxJ pairs were trending down from Q2 2020 to now, as FX moves were predominantly due to dollar weakness. Our model showed a modest deterioration in fair valuations for most ASEAN FX, capturing this largely via a decline in real interest rates differentials, which could be reflecting the extent to which monetary conditions had to be kept accommodative in order to support still-soft macro fundamentals. On net, with actual REERs for ASEAN FX largely stable or rising, and what the model perceives as “fair” being mostly lower, misalignments shifted, leaning towards incremental overvaluation bias. This was most discernible for PHP over the period.

Results-wise, we show that USD is still overvalued, although the extent of overvaluation is more modest now. Among ASEAN FX, SGD looks to be roughly fairly valued—our model suggests slight overvaluation, Z-score suggests some undervaluation. Commodity-linked MYR and IDR looks cheap in REER terms, especially MYR. While THB and PHP looks overvalued in comparison, the extent of estimated overvaluation are yet to be “excessive” by historical standards.

Taking into consideration the inoculation programmes, the reflation thematic and the valuation point of view, we have a preference for SGD long over THB and PHP while maintaining a neutral view on MYR and IDR for now. The latter currencies could be primed for outperformance when COVID-19 containment show material progress as our Maybank-BEER model suggests significant undervaluation.

Appendix: Model Estimation & Results

Maybank-BEER Panel

We utilised panel dynamic ordinary least squares estimation (panel DOLS) which allows for the inclusion of non-stationary variables in the estimation, by incorporating lags and leads of the independent variables.

Under the assumption of cointegrated variables, DOLS investigates the long-run relationship between the real exchange rate and a set of fundamentals. In a sense, the coefficient on each variable can be taken to be the average long-term sensitivity of an economy's REER to changes in the aspect of macroeconomic fundamentals captured by the variable, based on the common experience of the group of countries in question. Data period used is from Q1 2006 to Q4 2020, for all 16 currencies.

Variables chosen were largely in line with BEER literature, and have the following interpretations and coefficients. Signs/magnitudes of coefficients are largely reasonable and comparable to those derived from other studies.

Variable	Form	Interpretation	Coefficient
Dependent: BIS REERs	*Natural Log of REER Indices*	-	-
Net Foreign Assets to GDP	*NFA as % of GDP*	Reflects a country's savings and investment flows.	-0.0015 (0.000)
Trade Openness	*Total Trade as % of GDP*	Trade liberalization generally lowers the domestic price of tradable goods, thus depreciating the REER.	-0.0017 (0.000)
Nominal Interest Rate Differential	*Deviation from Trading Partners' Weighted Avg.*	A higher real interest rate differential should be related to a REER appreciation, and this relationship should be stronger with greater capital account openness.	0.012 (0.015)
Inflation Rate Differential	*Deviation from Trading Partners' Weighted Avg.*		-0.019 (0.000)

P-values in brackets ().

Note: These model sensitivities are applied to the historical values of the dependent variables to obtain a fitted "equilibrium" or "fair value" REER series for each currency (i.e., the black lines in Figures 14, 16-20). The deviation between actual REER (yellow lines in above figures) and fitted "fair values" (black lines) is taken as the extent of REER misalignment for a currency. If actual REER is significantly above the fitted "fair value" line, it is an indication of overvaluation, and vice versa.

Estimated misalignments from medium-term "fair values" are as follows:

Currency	BEER-Derived Medium-Term Misalignment (% from Equilibrium; +ve: Overvalued on REER Basis & v.v.)
USD	5.0
EUR	-1.5
JPY	-6.4
GBP	-8.3
CAD	-5.1
AUD	-2.7
NZD	1.6
CNY	3.9
SGD	1.9
MYR	-8.2
IDR	-3.0
INR	3.5
THB	4.3
KRW	2.6
TWD	2.2
PHP	6.4

Source: Maybank FX Research & Strategy Estimates

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Published by:

Malayan Banking Berhad
(Incorporated In Malaysia)

Foreign Exchange

Singapore

Saktiandi Supaat
Head, FX Research
saktiandi@maybank.com.sg
(+65) 6320 1379

Christopher Wong
Senior FX Strategist
Wongkl@maybank.com.sg
(+65) 6320 1347

Fiona Lim
Senior FX Strategist
Fionalim@maybank.com.sg
(+65) 6320 1374

Yanxi Tan
FX Strategist
tanyx@maybank.com.sg
(+65) 6320 1378

Fixed Income

Malaysia

Winson Phoon Wai Kien
Fixed Income Analyst
winsonphoon@maybank-ke.com.sg
(+65) 6231 5831

Se Tho Mun Yi
Fixed Income Analyst
munyi.st@maybank-ib.com
(+60) 3 2074 7606

Indonesia

Juniman
Chief Economist, Indonesia
juniman@maybank.co.id
(+62) 21 2922 8888 ext 29682

Myrdal Gunarto
Industry Analyst
MGunarto@maybank.co.id
(+62) 21 2922 8888 ext 29695

Sales

Malaysia

Azman Amiruddin Shah bin Mohamad Shah
Head, Sales-Malaysia, GB-Global Markets
azman.shah@maybank.com
(+60) 03-2173 4188

Singapore

Janice Loh Ai Lin
Head of Sales, Singapore
jloh@maybank.com.sg
(+65) 6536 1336

Indonesia

Endang Yulianti Rahayu
Head of Sales, Indonesia
EYRahayu@maybank.co.id
(+62) 21 29936318 or
(+62) 2922 8888 ext 29611

Shanghai

Joyce Ha
Treasury Sales Manager
Joyce.ha@maybank.com
(+86) 21 28932588

Hong Kong

Joanne Lam Sum Sum
Head of Corporate Sales Hong Kong
Joanne.lam@maybank.com
(852) 3518 8790