J.P.Morgan

Asia Pacific Emerging Markets Research
16 December 2022

India in 2023

Balancing Growth with Stability

Emerging Markets Asia, Economic and Policy Research

Sajjid Z Chinoy
(91-22) 6157-3386
sajjid.z.chinoy@jpmorgan.com
JPMorgan Chase Bank, N.A., Mumbai Branch

Toshi Jain
(91-22) 6157-3387
toshi.jain@jpmorgan.com
JPMorgan Chase Bank, N.A., Mumbai Branch

Divyanit Sood
(91-22) 6157-3786
divyanit.sood@jpmchase.com
J.P. Morgan India Private Limited

- **GDP growth on course to print close to 7% this year (2022-23); while buoyant, it would still leave output about 7% below its pre-pandemic potential trend, reflective of impact of the pandemic and adverse terms of trade shock from higher commodity prices in 2022**
- **Growth is expected to slow in 2023-24, on the back of a sharp global slowdown, which is weighing on exports, and the progressive fiscal and monetary policy normalization at home**
- **That said, corporate and bank balance sheets appear in much better shape than in recent years; Corporate debt/GDP is at its lowest since 2006 and banks are far more inclined to lend**
- **But a broader private investment cycle will take time to fructify amidst elevated global uncertainty, slowing growth, tightening monetary conditions, manufacturing utilization rates still <80%**
- **Key to the 2023 outlook will be whether slowing growth will be enough to correct imbalances, both external (current account deficit) and internal (core inflation)**
- **The Current Account Deficit (CAD) is on track to print above 3% of GDP this year as exports have slowed and imports remain very sticky; bringing the CAD back to sustainable levels will have to be a key policy imperative in 2023**
- **In turn, key to CAD compression is continued fiscal consolidation off still-elevated levels; we expect the Center to achieve the budgeted fiscal deficit of 6.4% of GDP this year and target a consolidation of ~0.5% of GDP next year; the fiscal balancing act will involve reducing the deficit while sustaining strong capex**
- **Inflation is expected to remain sticky in the coming months before gradually rolling off in 2023-24 as growth slows and input price pressure abate; that said, the stickiness of core inflation since the pandemic raises the risk of whether the Phillips Curve has moved up in India?**
- **With the RBI raising rates by about 300 bps in 2022 and tightening liquidity, we expect the MPC is getting close to a pause, with the risk of a final 25 bps hike at the February review.**
- **If global financial conditions remain benign, growth slows discernibly in 2023 and inflation rolls over, the RBI can be expected to modestly ease policy rates by 50 bps at the end of the 2023**
- **Alternatively, if global financial conditions become hostile again or core inflation doesn't abate, space for any easing will foreclose with external pressures having to be absorbed across multiple instruments: FX reserves, the Rupee, interest rates and sustained fiscal consolidation**

Contents

See page 12 for analyst certification and important disclosures.

JPMorgan Chase Bank, N.A., Mumbai Branch
Sajjid Z Chinoy (91-22) 6157-3386
sajjid.z.chinoy@jpmorgan.com
Toshi Jain (91-22) 6157-3387
toshi.jain@jpmorgan.com
Divyanit Sood (91-22) 6157-3786
divyanit.sood@jpmchase.com

I. Parsing the recovery

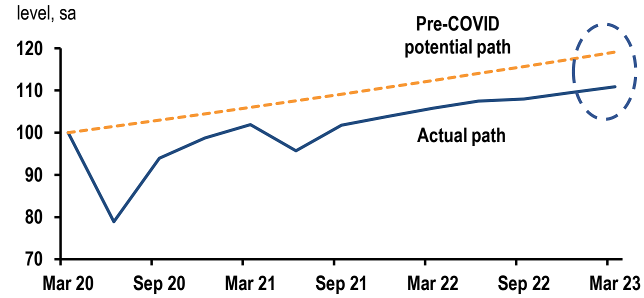
Twelve months ago, our year ahead outlook for 2022, had emphasized three phenomena to be cognizant of this year. First, that year-on-year growth rates in 2022, helped by large and favourable base effects early in the year, would overstate the underlying sequential momentum of growth. Second, that the current account deficit – which had been benign for almost a decade and turned into surplus in the pandemic year – could widen meaningfully and be a variable to monitor closely. Third, that monetary and fiscal policy – after being substitutes in 2021 with fiscal slowly consolidating but monetary remaining very accommodative – would need to become complements in 2022 with the RBI embarking on normalizing monetary policy, after exceptional pandemic-time support. All three of these played out in 2022 and were dramatically reinforced and accentuated by the Russia-Ukraine war.

Putting the recovery into context

We start with growth. As virus cases have receded in recent months, the economic recovery has both progressed and broadened. This is perhaps best seen in retail services (captured in the "trade, hotels and transport" services sub-sector within GDP) – a contact-intensive sector that had been the slowest to recover from the pandemic but in the recently released July-September GDP print, has picked-up steam and surpassed pre-pandemic levels.

With the July-September quarterly GDP growth coming in close to expectations at 6.3%, there is a growing consensus that full-year 2022-23 GDP will print close to 7% (RBI: 6.8%; J.P. Morgan: 6.9%). While the full-year number remains buoyant, there are two caveats that policy will have to be cognizant of. First, that full-year growth of 7% benefits from base effects and corresponds to an average annualized sequential momentum of closer to 5% across the four quarters of 2022-23. Second, by March 2023, the level of GDP would still be about 7% below its pre-pandemic potential trend (Figure 1). The shortfall was also implicit in the quarterly GDP, with July-September GDP about 8% above its 2019 levels, suggesting a 3-year compound annual growth rate of 2.5%. Assuming trend growth at 6%, this would still correspond to a discernible shortfall. At some level this should not be surprising because just as the economy was recovering from the pandemic, it was buffeted by an adverse terms of trade shock, reflected in the ~20-25% increase in crude and commodity prices this fiscal year. Sustained efforts will therefore be needed to narrow and close the GDP gap over time.

Figure 1: Actual GDP verus pre-pandemic path

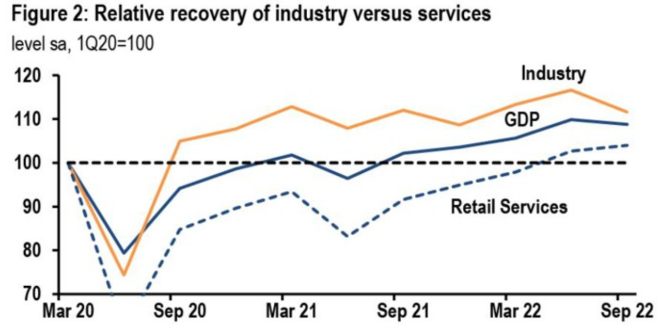


Source: J.P. Morgan

Growth rotates: manufacturing to services

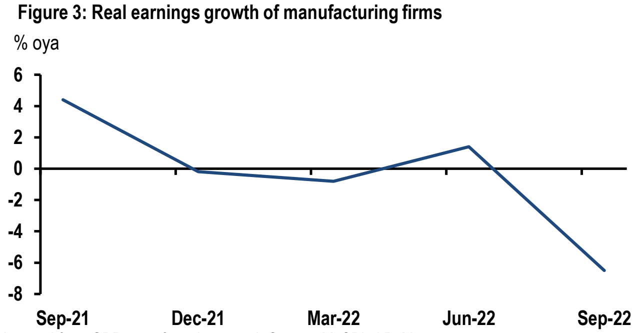
Aggregate growth dynamics apart, there is a rotation of growth occurring from goods to services (Figure 2). Manufacturing drove growth for much of FY22, helped by a strong rebound in exports, which contributed ~3 percentage points to last year's 8.7% growth, almost twice its share in GDP. However, manufacturing has slowed in recent quarters both because of the adverse terms of trade shock from higher commodity prices as well as slowing global growth. This was strikingly visible in the 3Q GDP data with manufacturing contracting 4.3% oya. Manufacturing GDP is computed using a weighted average of IIP and earnings. With manufacturing IIP growing at 1.4% last quarter, the implication is earnings contracted meaningfully in real terms, reflecting the sharp margin compression from higher input and commodity prices symptomatic of the adverse terms of trade shock (Figure 3).

Figure 2: Relative recovery of industry versus services



Source: MoSPI

Figure 3: Real earnings growth of manufacturing firms



imputed from GDP manufacturing growth Source: MoSPI, J.P. Morgan

JPMorgan Chase Bank, N.A., Mumbai Branch
Sajjid Z Chinoy (91-22) 6157-3386
sajjid.z.chinoy@jpmorgan.com
Toshi Jain (91-22) 6157-3387
toshi.jain@jpmorgan.com
Divyanit Sood (91-22) 6157-3786
divyanit.sood@jpmchase.com

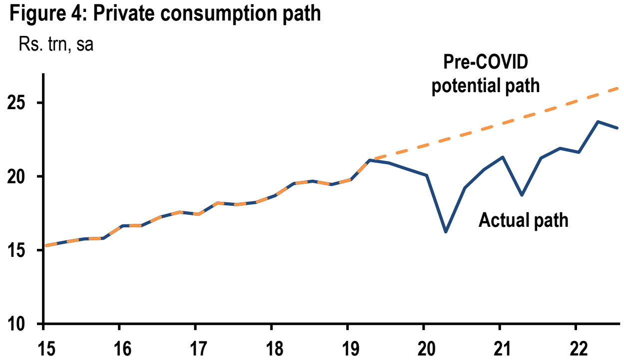
Meanwhile, the services sector has continued to normalize progressively. An open question, however, is how much of the recent services growth is simply pent-up demand which will fade in the coming quarters? Or will recent services momentum have legs? Key to the 2023 outlook is whether sustained growth in the non-tradable services growth can offset the anticipated slowing in the tradable goods sector.

Consumption: Recovering but still uneven

On the expenditure side, consumption recovered smartly in the July-September quarter, growing at close to double digits. Yet, it continues to lag the other components of demand and still remains below its pre-pandemic trend (Figure 4). Encouragingly, auto sales (both four wheelers and two wheelers) had a very strong October and November, raising hopes of a stronger consumption revival. However, because this overlapped with the festival season, it remains to be seen if the buoyancy sustains. For example, the first two weeks of December have seen a sharp drop-off in auto registrations.

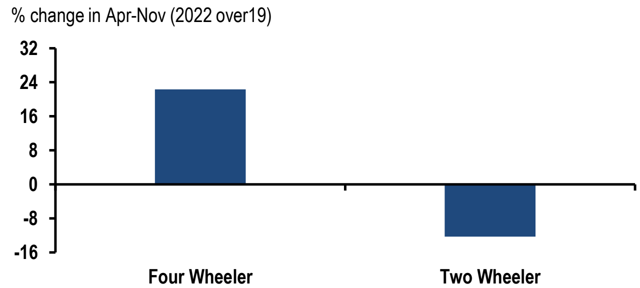
More broadly, consumption prospects in 2023 will hinge upon: (i) how the labour market evolves (discussed below); (ii) how monetary normalization impacts the rate-sensitive sectors; and (iii) whether rural consumption turns up, on the back of some recent improvement in the agrarian terms of trade.

Figure 4: Private consumption path



Aggregates apart, the consumption recovery continues to be uneven. This is visible, for example, in the underperformance of two-wheel vehicle sales versus four-wheelers. That said, two-wheeler sales have picked up smartly over the last two months, but it remains to be seen whether this was a festival-related phenomenon and therefore sustains and also whether it reflects improved prospects at the bottom of the pyramid or easier financing conditions, as financial institutions grow less risk averse. (Figure 5).

Figure 5: Four wheeler versus two wheeler sales



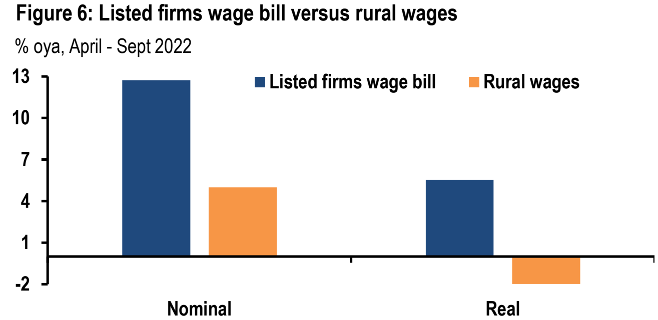
Source: VAHAAN

The skewness of consumption towards the upper end of the income spectrum also likely explains why consumer goods imports have been disproportionately strong, because consumption baskets at the upper end tend to be much more import-intensive.

An uneven labour market throws up conflicting signals

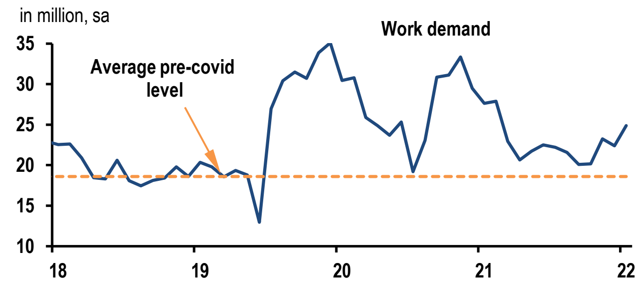
The outlook for a sustained consumption recovery will hinge crucially on the evolution of the labour market (income effects) next year, given that monetary conditions (price effects) are normalizing. The skewness of consumption, for instance, likely has its genesis in the unevenness of the labour market thus far. The wage bill of the 4000 listed companies has averaged 12% growth in nominal terms over the last year, while that of rural wages has averaged just 5%, still negative in real terms (Figure 6). Encouragingly, demand for Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) has reduced from last year (Figure 7), and surveys (PMI and RBI) shows employment sentiment is improving. But, on the other end of the spectrum, Center for Monitoring Indian Economy (CMIE) Employment/Population Ratio has remained flat in recent quarters and much below pre-pandemic levels (Figure 8), and the monthly momentum of real rural wages still remains very tepid.

Figure 6: Listed firms wage bill versus rural wages



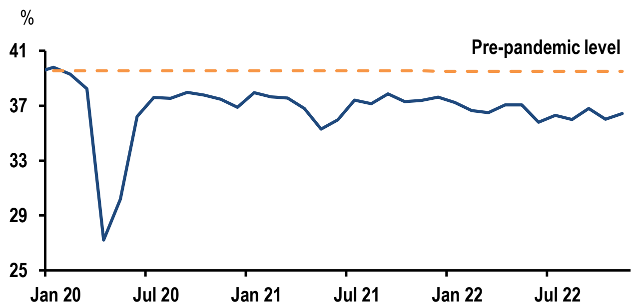
Source: Company reports, J.P. Morgan

Figure 7: NREGA work demand



Source: CMIE

Figure 8: Employment/Population ratio



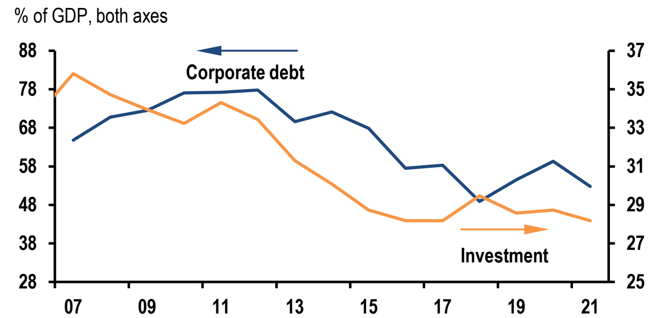
Source: CMIE

It's conceivable that FY24 could see a role reversal in the labour market. A strong Rabi harvest, and improving agrarian terms of trade could help the healing at the bottom of the pyramid, even as white-collar jobs face headwinds from slowing global growth and the tech cycle rolling over. All told, however, a more convincing job market recovery is key to a more durable and broad-based consumption recovery.

Private Investment: structural headwinds abate, cyclical headwinds remain

Like consumption, fixed investment grew smartly last quarter. The good news on the investment front is that the twin-balance sheet constraint that had held investment back for almost a decade appears to have largely alleviated. Years of deleveraging, helped by a profit surge during the pandemic, has meant that corporate debt/GDP is at its lowest level in 2006 (Figure 9). Similarly, bank balance sheets are much-improved, enabling banks to lend more freely again.

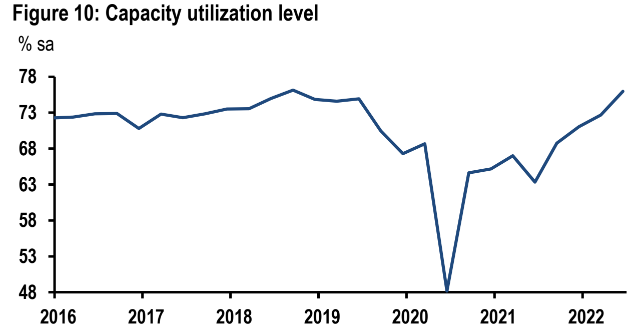
Figure 9: Investment and corporate debt



Source: BIS, MoSPI

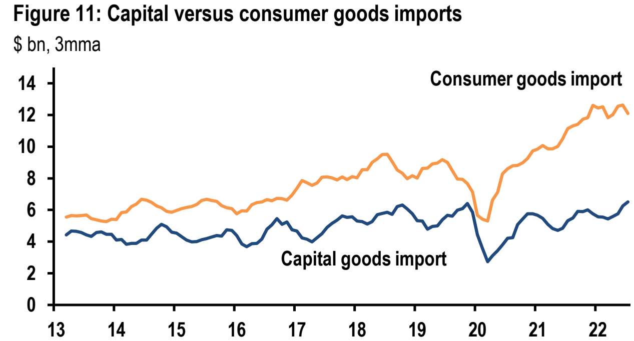
That said, a broad-based investment cycle is likely to take time to manifest. The constraint has shifted from supply to demand – and from balance sheets to utilization rates – with manufacturing utilization rates, while inching up, still at about 76% (Figure 10). Amid worries of a global recession, utilization rates may need to increase further to trigger a broad-based investment cycle. This is reinforced by the recent evolution of domestic capital goods production and capital goods imports, both of which remain relatively muted for now (Figures 11 and 15).

Figure 10: Capacity utilization level



Source: RBI

Figure 11: Capital versus consumer goods imports



Source: MoC, J.P. Morgan

That said, after a long period of dormancy, bank credit growth has accelerated smartly in recent months. Is that not a sign of a capex cycle commencing? The accompanying Box 1 tries to put the credit growth acceleration in some perspective: much of nominal growth is explained by elevated inflation, along with some substitution from bonds to loans. Real credit growth is more tepid and, even though it's rising, bank credit/ GDP is still slightly below pre-pandemic levels. Encouragingly, however, the fact that banks are willing to lend again, is more confirmation of much-improved balance sheets.

Centre continue to push infrastructure

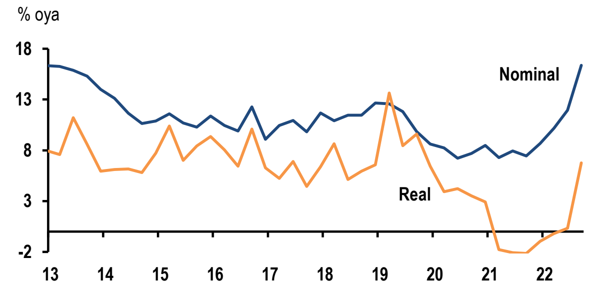
Even as private investment takes time to recover, the central government's continued emphasis on infrastructure spending has been a key support. Central government capital expenditure has increased from 1.7 to 2.7 % of GDP over the last 3 years (Figure 14). Despite the fiscal constraints, 2022 central capex is growing 60% over last year, ahead of budgetary targets. A broader measure of public sector capex, is less buoyant though. This is because (i) part of the central capex increase include spending previously undertaken by NHAI and therefore, when the data becomes available later this year, both central and PSU capex will need to be aggregated; and (ii) state capex has lagged, contracting by 2% from April to September vis-à-vis nominal GDP growth of 21% oya.

Making sense of the credit pick-up

Nominal bank credit has meaningfully accelerated over the last six months with September credit growth rising to an 11-year high of 19%. However, much of the nominal growth is explained by elevated inflation, along with some substitution from bonds to loans. For example, nominal credit growth averaged 13.5% between April and September but India's GDP deflator also grew 10.4% during that period, indicating that a significant fraction of nominal credit growth can be attributed to higher inflation. To be sure, "real credit growth" — which was negative for six quarters till June 2022 — has picked significantly to above 6% last quarter. But this is simply in line with real GDP growth, such that Credit/ GDP is still a tad below pre-pandemic levels. Another way to see this is that the 3Y CAGR of real credit is 1.5% versus the 3Y CAGR of GDP of 2.5%. This also suggests some "catch-up" is inevitable and credit growth could outpace GDP for some time.

This year also saw a shift in corporate funding behaviour from foreign and domestic bonds to domestic bank lending, stemming from higher yields in global and domestic bond markets. Given these substitution effects, it's important to compute a "broader flow-of-funds"" to the economy that incorporates all the sources of funding. We find that, like in the case of bank credit, the broader credit growth in the September quarter was buoyant in nominal terms, however, once deflated for inflation, the real broader credit growth is more tempered at 6.8% and, still a bit lower than the five-year-average of 7.7% between 2015 and 2019 (Figure 12).

Figure 12: Broader flow-of-funds growth



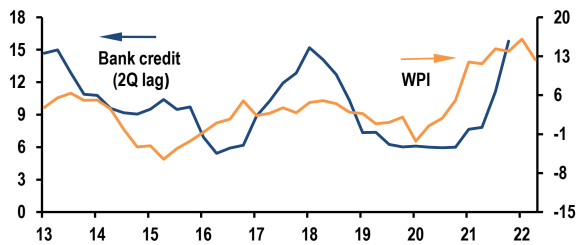
Source: RBI, MoSPI, J.P. Morgan

That said, where is this credit being directed to? While the share of lending to households (~40%) is approximately the same as in the pre-pandemic period, there has been a sharp change in the internal composition. While the share of mortgages has reduced, there has been a meaningful pick-up in unsecured lending to households. Its share within the total lending portfolio has nearly doubled to 24% between April and October 2022, from 13% in the corresponding period in 2018. Similarly, lending to MSMEs has also increased sharply, growing at 30% in September 2022, after a very long lull. Consequently, their share in total credit offtake has risen to about 3% over the last seven months vis-à-vis a retrenchment in 2018. The fact that MSMEs can access credit is important, especially if working capital requirements have been driven up because of inflation. But unsecured lending and MSMEs are typically the more risky parts of the portfolio. Back in 2018 they constituted 10% of credit offtake; in the last six months they have made up 27% of offtake. Therefore even as NPAs are low, bank balance sheets are in very good shape, and they have made sufficient provisions as of now; one will need to keep a close eye on this part of the portfolio.

With nominal credit growth discernibly underpinned by inflation, the evolution of price pressures — especially the WPI — will have an important bearing on the future trajectory of credit growth (Figure 13). To the extent that WPI momentum has already topped out — with headline WPI contracting for three of the last four months — expect year-on-year WPI inflation to continue rolling off. It's therefore likely that credit growth will also moderate in tandem. But just as the acceleration in credit growth in 2022 overstates the recovery, any deceleration in 2023 may overstate the slowing and will, therefore, have to be interpreted carefully.

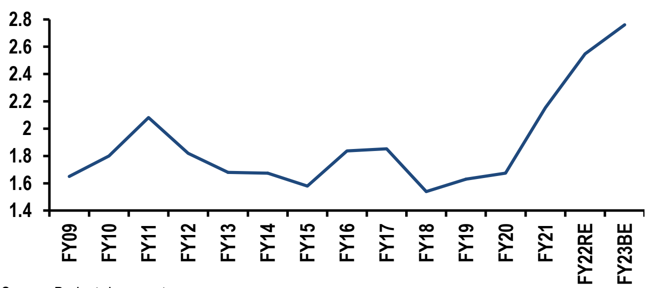
JPMorgan Chase Bank, N.A., Mumbai Branch
Sajjid Z Chinoy (91-22) 6157-3386
sajjid.z.chinoy@jpmorgan.com
Divyanit Sood (91-22) 6157-3786
divyanit.sood@jpmchase.com
Toshi Jain (91-22) 6157-3387
toshi.jain@jpmorgan.com

Figure 13: WPI and bank credit
% oya, both axes



Source: RBI, MoSPI, J.P. Morgan

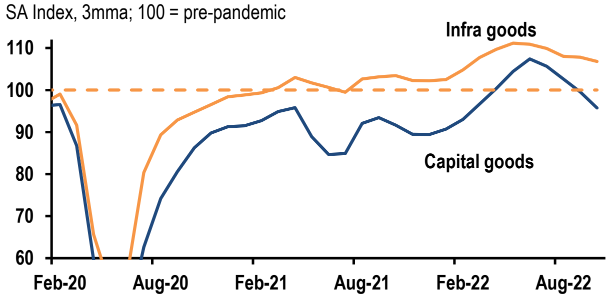
Figure 14: Central government capex
% of GDP



Source: Budget documents

All that said, the infrastructure push is showing up in the data. Production of infrastructure goods in IIP is more than 10% higher than capital goods (Figure 15). At the moment, therefore, investment appears to be driven more by the public, than private, sector, and more will likely be needed to eventually crowd in the private sector.

Figure 15: Production of capital versus infrastructure goods (IIP)
SA Index, 3mma; 100 = pre-pandemic



Source: CSO and J.P. Morgan

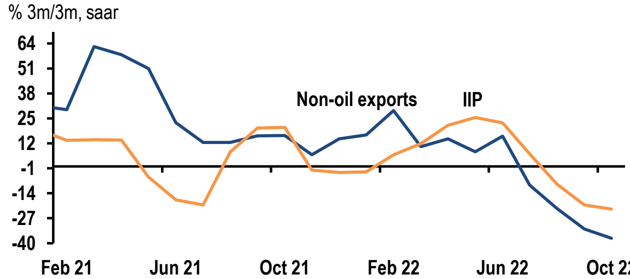
FY24 growth to slow

We expect GDP growth to slow from 6.9% in FY23 to 5% in FY24. To be sure, the slowing in the annual year-on-year growth overstates the slowing in the underlying sequential momentum because, as discussed above, FY23 year-on-year growth is buoyed by favourable base effects.

What is likely to underpin slowing growth next year? (i) A meaningful global slowdown; (ii) a normalization of monetary policy that offered exceptional support during the pandemic, and (iii) fiscal policy that (correctly) will need to keep consolidating from elevated starting points.

- Exports have played a key role in India's recovery from the pandemic, contributing ~3 percentage points to last year's 8.7% growth (FY22), almost twice its share in GDP. But this was a year in which global growth rebounded sharply, with global GDP clocking 6% growth. This year, as global growth has halved (~2.9%), the contribution of exports has already slowed by a percentage point – from 3 ppts to 2 ppts. With global growth – even in the more benign scenario of a relative soft landing – expected to halve again to 1.7% in 2023, exports can be expected to slow further, and weigh on India's growth momentum (Figure 16).

Figure 16: Non-oil exports and IIP
% 3m/3m, saar

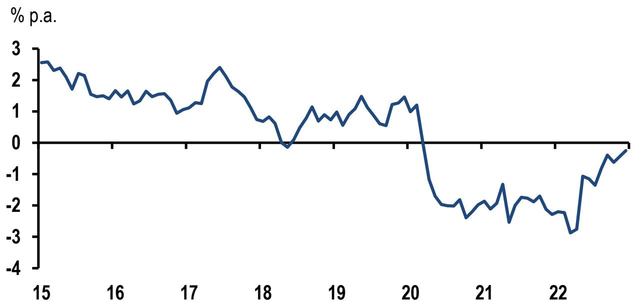


Source: J.P. Morgan

- While a global slowdown is likely to impact the export sector, domestic demand – which has been helped by supportive fiscal and monetary policy during the pandemic – will be impacted by the progressive normalization of both fiscal and monetary policy:
  - Real policy rates have averaged negative 250 bps since the start of the pandemic , and are expected to average positive 100 bps in 2023-24, constituting a swing of over 300 bps (Figure 17). While other rates in the economy have reacted more sluggishly, one would expect transmission to occur progressively, especially as liquidity has tightened. This was much needed normalization but will temper demand going forward.

JPMorgan Chase Bank, N.A., Mumbai Branch
Sajjid Z Chinoy (91-22) 6157-3386
sajjid.z.chinoy@jpmorgan.com
Toshi Jain (91-22) 6157-3387
toshi.jain@jpmorgan.com
Divyanit Sood (91-22) 6157-3786
divyanit.sood@jpmchase.com

Figure 17: Real policy rates



Deflated via core-core inflation. Source: MoSPI, J.P. Morgan

- On the fiscal side, total public sector borrowing requirement is still expected to be close to a still-elevated 10% of GDP at the end of this fiscal year, necessitating continued fiscal consolidation. We expect the Center to print a fiscal deficit of 6.4% of GDP in FY23 and expect a consolidation of ~0.5 of GDP in the FY24 Budget which, unless undertaken by asset sales, will impinge on aggregate demand (Table 1). Like monetary policy, however, the fiscal consolidation is much needed off elevated starting points.

Table 1: Central Government Fiscal (% of GDP)

	FY20	FY21	FY22A	FY23E	FY24E
Net Tax Revenues	6.8	7.2	7.7	7.6	7.5
Gross Taxes	10.0	10.2	11.4	11.1	11.1
Non-tax revenues	1.6	1.0	1.5	1.0	1.0
Asset Sales	0.3	0.3	0.2	0.3	0.2
Total Receipts	8.7	8.5	9.3	8.9	8.8
Revenue Expenditure	11.7	15.6	13.5	12.5	12.0
Subsidies	1.3	3.8	2.2	2.2	1.8
Capital Expenditure	1.7	2.2	2.5	2.7	2.7
Total Expenditure	13.4	17.7	16.0	15.3	14.7
Fiscal Deficit	-4.7	-9.2	-6.7	-6.4	-5.9

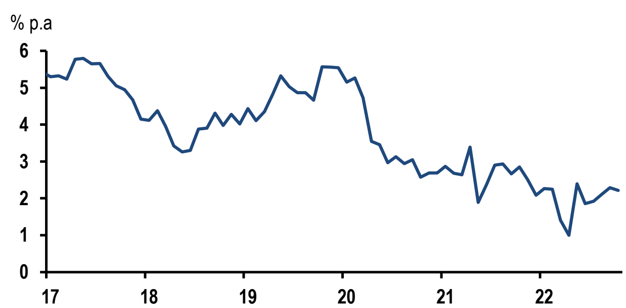
Source: Budget docs, J.P. Morgan

All told, a growth slowdown in 2023 should not come as a surprise because it is the inevitable consequence of slowing global growth and policy normalization at home. The latter was hastened by the adverse terms of trade shock that accentuated imbalances (CAD and core inflation) and necessitates tighter fiscal and monetary policy. As we discuss below, however, a key question is the extent to which slowing growth will rein in the imbalances and/or whether other instruments will need to be used.

What are the upside risks to growth next year?

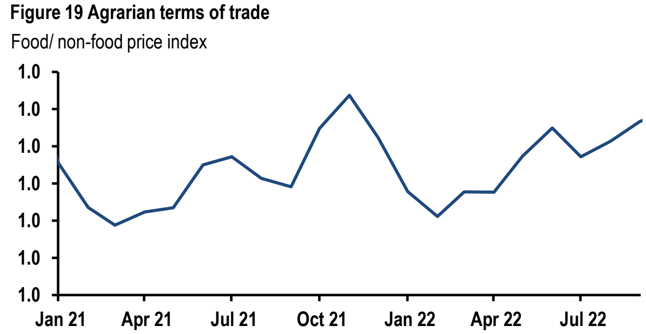
- **Terms of Trade:** Perhaps, the biggest upside risk to growth is if the recent correction in global crude prices continues. Recall, crude prices have averaged $100/barrel in 2022 (calendar year) – a 40% increase over 2021. This has been symptomatic of the broader commodity price index surging 36% in 2022 – and thereby constituting a large adverse terms of trade shock for India in 2022. To the extent that the recent correction in crude prices (almost $10/barrel decrease over the last 3 weeks) continues and sustains in 2023, a significant fraction of the terms of trade shock, would have abated and be growth-supportive in 2023.
- **Housing and Rural**: A second upside risk runs through the housing sector and rural economy. After a decade of dormancy, the housing sector has seen some green shoots in recent months on the back of accommodative monetary conditions, excess savings and pent-up demand from the upper end. Normalizing monetary conditions should be expected to temper demand, but if the residential real estate cycle, after a decade of drift, gathers some momentum, that will create upside growth risks, given its large multipliers. Similarly, with the agrarian terms of trade gradually improving, a strong winter crop and a normal 2023 monsoon could give some impetus to the rural economy, which is still confronting negative real wages (Figure 19).

Figure 18: Real bank lending rate (fresh loans)



Note: deflated by core-core, Source: RBI, MoSPI, J.P. Morgan

Figure 19 Agrarian terms of trade



Source: MoSPI, J.P. Morgan

Sajjid Z Chinoy (91-22) 6157-3386
sajjid.z.chinoy@jpmorgan.com
Divyanit Sood (91-22) 6157-3786
divyanit.sood@jpmchase.com
Toshi Jain (91-22) 6157-3387
toshi.jain@jpmorgan.com

II. Will slowing 2023 growth narrow imbalances?

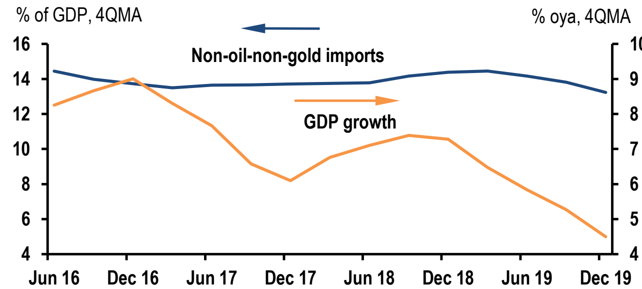
The Case of the CAD

The current account deficit is on course to printing at about ~3.3% of GDP in 2022-23 and has resulted in a large BoP deficit, necessitating a drawdown of FX reserves by the RBI. A key policy objective for 2023-24 will be to bring the CAD closer to sustainable levels — between 2 and 2.5% of GDP. But with global growth slowing sharply next year, export growth can be expected to soften further, so bringing the CAD down would require softer imports.

If the recent correction in crude prices holds (with crude currently close to at $80/barrel versus the ~100/barrel average of 2022) that would provide some relief. What's less appreciated, however, is the sharp rise in non-oil, non-gold imports in recent years, and the role that they will need to play going forward. As the accompanying box reveals, the entire widening of the CAD in the first half of FY23 vis-à-vis the first half of FY19 (pre-pandemic year) and then some, can be attributed to non-oil, non-gold imports. Non-oil, non-gold imports have increased by 1.6% of GDP across these four years (exceeding the CAD widening of 1.3% of GDP). Of this, about 1% of GDP is on account of higher energy (coal and fertilizer) while 0.6% of GDP is on account of higher consumer goods imports.

For the CAD to narrow, therefore, reliance on coal imports will have to reduce, necessitating increased production at home. Similarly, consumer goods imports will also have to be compressed. This will likely necessitate both an income effect (some slowing of domestic demand) and a price effect (some depreciation of the trade weighted real effective exchange rate). Key will be the consumer goods elasticity of imports to GDP growth and the lags between slowing growth and imports. In 2018-19, quarterly GDP growth slowed from 9 to 3 across 8 quarters. Yet, non-oil, non-gold imports remained sticky for 7 quarters before finally slowing (Figure 20).

Figure 20: Imports and GDP growth



Source: RBI, MoSPI, MoC, J.P. Morgan

Even as imports have been sticky, one important and pleasant tailwind to the CAD and BoP has been the sharp jump in service exports, across both IT services and other business services (see box). To the extent that this represents a structural uptick from increased digitalization and business process offshoring during and post the pandemic, this would represent an unambiguous improvement for India's CAD, even though the cyclical slowdown in developed markets could weigh on near-term growth of services.

All told, a key imponderable is the extent to which slowing growth in FY24 will compress the CAD? In our baseline case, we forecast the CAD narrowing to 2.8% of GDP (Table 2), but there are many moving parts: India's growth differential with the world, energy prices, whether domestic coal production can be increased, and what the import elasticity of slowing growth is.

India: Current account balance
US$ billion

	FY19	FY20	FY21	FY22	FY23F	FY23F
Current a/c balance	**-57**	**-25**	**24**	**-39**	**-112**	**-98**
% of GDP	-2.1	-0.9	0.9	-1.2	-3.3	-2.8
Merchandise trade balance	-180	-158	-102	-189	-291	-283
% of GDP	*-6.6*	*-5.5*	*-3.8*	*-5.9*	*-8.6*	*-7.9*
Non-oil exports	290	279	269	362	345	325
% of GDP	*10.7*	*9.7*	*10.1*	*11.4*	*10.1*	*9.1*
Non-oil, non-gold imports	340	316	280	411	466	444
% of GDP	*12.5*	*11.0*	*10.5*	*12.9*	*13.7*	*12.5*
Net oil imports	94	89	57	94	128	125
% of GDP	*3.5*	*3.1*	*2.1*	*3.0*	*3.8*	*3.5*
Gold	37	31	34	46	42	38
% of GDP	*1.4*	*1.1*	*1.3*	*1.7*	*1.5*	*1.4*
Net Invisibles	123	133	126	151	179	185
% of GDP	*4.5*	*4.6*	*4.7*	*4.7*	*5.3*	*5.2*
Oil prices per barrel ($)	*69.7*	*64*	*44*	*74*	*91*	*85*

Source: RBI, J.P. Morgan

Digging Deeper: Elevated Goods Imports; Buoyant Services Exports

The widening of the current account deficit (CAD) from 2.1% of GDP in FY19 to 3.4% of GDP in FY23 is largely on account of the rise in non-oil-non-gold (NoNG) imports. But what's driving the pick-up in the latter?

Comparing NoNG imports between FY23 and FY19 (April to September) reveals that commodities imports (ex oil and gold) contributed more than 75% of the

JPMorgan Chase Bank, N.A., Mumbai Branch
Sajjid Z Chinoy (91-22) 6157-3386
sajjid.z.chinoy@jpmorgan.com
Toshi Jain (91-22) 6157-3387
toshi.jain@jpmorgan.com
Divyanit Sood (91-22) 6157-3786
divyanit.sood@jpchase.com

NoNG jump (1.4% out of the total rise of 1.6% of GDP). Coal, by far, is the largest contributor, explaining more than half of the increase in NoNG imports.

Consumer goods imports also contributed meaningfully to the rise in NoNG imports (0.6% out of the total rise of 1.6% of GDP) though much of this is led by intermediate goods such as chemicals and plastics . While electronics did not contribute to the increase, their share in the basket remains meaningful Meanwhile, capital goods share in the import basket shrank, consistent with the notion that a capex cycle will take time (Table 3).

Table 3: Breakdown of NoNG (% of GDP)

	Apr - Sept (% of GDP)	
	FY19	**FY23**
Non-oil-Non-gold commodities o/w	3.3	4.7
Coal	1.0	1.8
Fertilizer	0.3	0.5
Cap goods	2.4	2.1
Consumer goods	5.1	5.7
Electronics	2.3	2.4
Gems & Jewellery (re-export)	1.1	1.0
Misc	1.0	1.0
Non-oil-non-gold	**12.9**	**14.5**
CAD (% of GDP annual)	**2.1**	**3.4**

Source: RBI, J.P. Morgan

Even as imports have been sticky, one important and pleasant tailwind to the CAD and BoP has been the sharp jump in service exports, across both IT services and other business services (Table 4). To the extent that this represents a structural uptick from increased digitalization and business process offshoring during and post the pandemic, this would represent an unambiguous improvement for India's CAD, even though the cyclical slowdown in developed market could weigh on the near-term growth of services.

Table 4: Net services exports breakdown (% of GDP)

	Jan-June	
	2019	**2022**
IT industry	3.0	3.5
Other business services	-0.1	0.4
Travel (including education)	0.2	-0.2

Source: RBI, J.P. Morgan

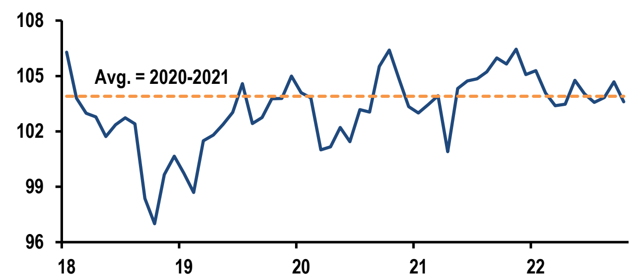
The Role of the Rupee

Precisely because slowing growth may not be enough to compress the CAD enough, the exchange rate must be considered as a key instrument to be deployed. Thus far, even as the nominal exchange rate has depreciated by 10% against the U.S. dollar, the REER has been flat (Figure 21). With India facing a relatively persistent negative terms of trade shock, arguably the underlying equilibrium REER should be thought of as being weaker. There is now a growing body of work that has found that REER depreciation helps compress the CAD on both the export and import fronts.

One way that policymakers could facilitate a weaker REER is that — in a weakening dollar (DXY) environment, as has been the case in recent weeks — even as other DM and EM currencies are appreciating, the RBI should step-in to purchase Dollars and prevent Rupee appreciation. This would both: i) result in a trade-weighted depreciation – even as the Rupee remains flat against the dollar – and ii) allow the RBI to rebuild its FX reserves.

Figure 21: Real effective exchange rate (40 currency)

Index, increase = appreciation



Source: RBI

The curious case of core inflation

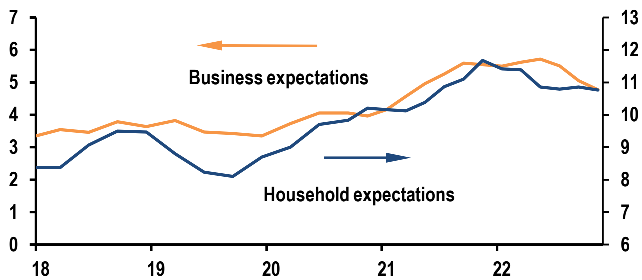
A second question is whether slowing growth will be enough to soften core inflation, which has averaged 5.5% since March 2020 and accelerated to above 6% since March .

There is cautious optimism that the worst of food inflation may be over. To be sure, the sharp downside surprise to November was underpinned by larger-than-expected vegetable disinflation, which could reverse in the coming months. But with sowing for the Rabi crop strong and global food prices softening in recent months, there is an expectation that the 7% food inflation in 2022 may gradually roll over in 2023 under the presumption of a normal monsoon next year.

Instead, the focus will need to be on whether and to what extent core inflation will soften in 2023. Slowing growth and some relief of input prices should help. But what explains core inflation averaging above 5% even before the war at a time when India was witnessing a large output gap? Has the Phillips curve moved up? Is it on account of rising inflation expectations (Figure 22), which have begun to soften in recent months? Or has the Phillips curve moved up because the increased formalization triggered by the pandemic has reduced competitive intensity and increased pricing power?

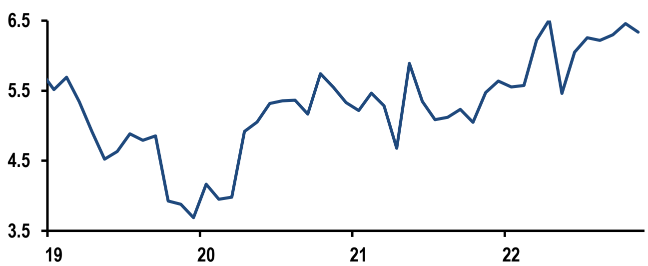
These are questions that policy will have to grapple with in 2023. Expectations are that inflation will average close to 6% till March and then soften to the 5% handle in 2023. But arguably this is predicated on the outlook for core inflation , because in the medium term, [we have found that it is headline CPI that converges to core and not vice-versa.]

Figure 22: Inflation expectations (1 year ahead)
%, 3mma, both axes



Source: IIM Ahmedabad survey

Figure 23: Core-Core inflation
% oya



Source: MoSPI

III. Policy Under Uncertainty

As challenging as policymaking was in 2020 and 2021, at least the nature of the shock made the direction of travel very clear. The pandemic necessitated large fiscal and monetary support while the war forced policy to normalize faster than it otherwise would.

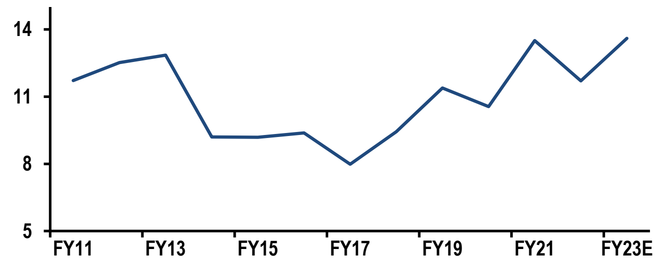
But now policymakers stand at a tricky crossroads. Like other emerging markets, India emerged from the pandemic below the pre-pandemic trend and the prospect of slowing global and domestic growth in 2023 risks increasing the shortfall with the pre-pandemic path. That would ordinarily call for more policy support. But juxtaposed with that shortfall are the aforementioned external and internal imbalances that need to be contained more durably: the current account deficit and core inflation. That will require policy to continue normalizing. How then should policy thread the needle?

The Fiscal Balancing Act

In the case of the fiscal, the answer seems more straightforward. Despite the fiscal pressures this year, authorities commendably appear determined to meet the budgeted fiscal deficit target of 6.4% of GDP. But this would still leave total public sector borrowing at an outsized 10% of GDP. The Center has laid out a glide map such that the Center's deficit is brought down to 4.5% of GDP in three years and, against this backdrop, we expect a 0.5% of GDP consolidation in FY24, such that the Center's fiscal deficit is pegged close to about 5.9% of GDP.

Why the imperative to continue with meaningful consolidation? Recall, the current account deficit is simply an economy's investment-savings gap. That, in turn, is a combination of the public sector investment-savings gap (i.e. total public sector borrowing requirements) and the sum of the private sector investment-saving gap. The fiscal deficit understandably ballooned during the pandemic. But because private savings surged (as people could not spend) and private investment retreated, the private sector could absorb large deficits without the need for foreign capital, and the current account actually went into surplus. But as the private sector has progressively recovered (and its investment-savings gap is normalizing) a large, consolidated deficit is spilling over into a wider current account deficit, reinforcing the inevitable link between the "twin deficits". Therefore to ensure that the private sector recovery continues, without putting more pressure on the CAD, it's imperative that the consolidated fiscal deficit continues to be reduced.

Figure 24: Twin deficits
% of GDP



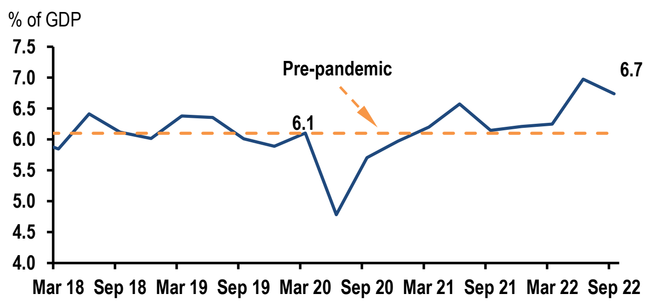
Source: Budget documents, J.P Morgan

But a needed reduction in the deficit accentuates the fiscal trade-offs. Capex spend has been key to the recovery while the pandemic and war-induced commodity surge has pushed up the subsidy bill. How then can authorities reduce the deficit and maintain or increase capex without dramatically pulling the plug on subsidies? Therein lies the fiscal trilemma.

JPMorgan Chase Bank, N.A., Mumbai Branch
Sajjid Z Chinoy (91-22) 6157-3386
sajjid.z.chinoy@jpmorgan.com
Divyanit Sood (91-22) 6157-3786
divyanit.sood@jpmchase.com
Toshi Jain (91-22) 6157-3387
toshi.jain@jpmorgan.com

To mitigate these trade-offs, next year's budget will need to be pragmatic, gradually rationalizing non-capex expenditure and tapering subsidies even as it prioritizes capex spend while consolidating the fiscal. Encouragingly, GST collections have been buoyant and have increased as a share of GDP, providing some fiscal elbow room (Figure 24). More fundamentally, though, a more careful targeting of subsidies and revenue generation is the key – whether through taxes or asset sales – in the coming years, because that is the only way the central deficit can be consolidated by 2% of GDP by 2025-26, without compromising on much needed physical and social infrastructure spending.

Figure 25: GST collections



Source: MoF, J.P. Morgan

To be sure, the 0.5% of GDP consolidation will weigh on growth next year, unless accomplished entirely by asset sales. But the impingement can be minimized (i) by improved quality of expenditure – given the larger multipliers of capex spending , and (ii) by situating deficit consolidation against the backdrop of a credible, medium-term fiscal anchor, which will reduce fiscal risk premia across the yield curve.

Monetary policy: the many known unknowns

To its credit, the MPC put its head down and raised the effective policy rate by more than 300 bps in 2022 along with tightening inter-bank liquidity. Now it must confront several uncertainties. How much will domestic growth slow? Will slowing growth cause core inflation and the CAD to narrow? Will input price relief and some softening of inflation expectations have a salutary influence on sticky core inflation? Or has the Phillips Curve moved up? Real policy rates are already in positive territory. But will a 1% positive real rate be enough to disinflate sustainably, given that real rates averaged 2% in 2019? How much has the neutral rate reduced in real years? There are just too many known unknowns.

Given these two-sided risks it will be important for the RBI to maintain optionality going forward. And that is exactly what the RBI exercised at the December policy review. After three successive 50 bps hikes, the RBI expectedly downshifted to 35 bps. Equally, however, the central bank stoically persevered with its stance of "withdrawal of accommodation" and the tone was appropriately hawkish. This duality is important because (a) it creates two-sided optionality for future meetings and (b) equally importantly, helps preserve monetary transmission of previous hikes, which has been incomplete as of now. Any indication of the rate hike cycle coming to an end would have undermined hard-earned transmission from prior rate hikes, at a time when underlying inflation is still very sticky.

So where to from here? Despite the RBI's cautious tone at the December review, we believe the central bank is coming close to a pause. Our baseline case is December was the last hike (taking the terminal rate to 6.25%) but with the risk of one final 25 bps hike at the February review. With forward-looking real rates in positive territory, we expect the RBI will pause to assess the impact of past actions, given that monetary policy works with long and variable lags.

What about monetary policy in 2023-24? Much will depend on the extent to which domestic growth slows and inflation softens but also on the relative hostility of global financial conditions. To the extent that headline CPI drifts towards the 5% handle as the RBI projects and the MPC gets concerned about the cyclical slowdown, the MPC is likely to turn its focus to addressing the growth slowdown later next year. To the extent the external environment enables some easing by emerging markets, we would expect modest easing (~50bps) by the MPC towards the end of 2023.

In contrast, if global financial conditions and the U.S. Dollar remain as hostile next year as they were through much of this year, then space for easing will foreclose and 2023 could be redux of 2022 – with the continuing focus on how the CAD will be funded, and external pressure being forced to be distributed across multiple instruments: FX reserves; interest rates, the exchange rate and fiscal consolidation.

Table 5: Economic projections

	FY19	FY20	FY21	FY22	FY23 F	FY24 F
Growth (% oya)	6.5	3.7	-6.6	8.7	6.9	5.0
CPI (avg. %oya)	3.4	4.8	6.2	5.5	6.9	5.2
Public sector borrowing requirement (% of GDP)	9.3	9.7	14.4	10.5	10.2	9.7
CAB (% of GDP)	-2.1	-0.9	0.9	-1.2	-3.4	-2.8
Policy rate (%, EOP)	6.25	4.00	3.35	3.35	6.25	5.75

Source: MoSPI, RBI, J.P. Morgan

Disclosures

Analyst Certification: The Research Analyst(s) denoted by an "AC" on the cover of this report certifies (or, where multiple Research Analysts are primarily responsible for this report, the Research Analyst denoted by an "AC" on the cover or within the document individually certifies, with respect to each security or issuer that the Research Analyst covers in this research) that: (1) all of the views expressed in this report accurately reflect the Research Analyst's personal views about any and all of the subject securities or issuers; and (2) no part of any of the Research Analyst's compensation was, is, or will be directly or indirectly related to the specific recommendations or views expressed by the Research Analyst(s) in this report. For all Korea-based Research Analysts listed on the front cover, if applicable, they also certify, as per KOFIA requirements, that the Research Analyst's analysis was made in good faith and that the views reflect the Research Analyst's own opinion, without undue influence or intervention.

All authors named within this report are Research Analysts who produce independent research unless otherwise specified. In Europe, Sector Specialists (Sales and Trading) may be shown on this report as contacts but are not authors of the report or part of the Research Department.

Important Disclosures

Company-Specific Disclosures: Important disclosures, including price charts and credit opinion history tables, are available for compendium reports and all J.P. Morgan–covered companies, and certain non-covered companies, by visiting https://www.jpmm.com/research/disclosures, calling 1-800-477-0406, or e-mailing research.disclosure.inquiries@jpmorgan.com with your request.

A history of J.P. Morgan investment recommendations disseminated during the preceding 12 months can be accessed on the Research & Commentary page of http://www.jpmorganmarkets.com where you can also search by analyst name, sector or financial instrument.

Explanation of Emerging Markets Sovereign Research Ratings System and Valuation & Methodology:
Ratings System: J.P. Morgan uses the following issuer portfolio weightings for Emerging Markets sovereign credit strategy: Overweight (over the next three months, the recommended risk position is expected to outperform the relevant index, sector, or benchmark credit returns); Marketweight (over the next three months, the recommended risk position is expected to perform in line with the relevant index, sector, or benchmark credit returns); and Underweight (over the next three months, the recommended risk position is expected to underperform the relevant index, sector, or benchmark credit returns). NR is Not Rated. In this case, J.P. Morgan has removed the rating for this security because of either legal, regulatory or policy reasons or because of lack of a sufficient fundamental basis. The previous rating no longer should be relied upon. An NR designation is not a recommendation or a rating. NC is Not Covered. An NC designation is not a rating or a recommendation. Recommendations will be at the issuer level, and an issuer recommendation applies to all of the index-eligible bonds at the same level for the issuer. When we change the issuer-level rating, we are changing the rating for all of the issues covered, unless otherwise specified. Ratings for quasi-sovereign issuers in the EMBIG may differ from the ratings provided in EM corporate coverage.

Valuation & Methodology: For J.P. Morgan's Emerging Markets Sovereign Credit Strategy, we assign a rating to each sovereign issuer (Overweight, Marketweight or Underweight) based on our view of whether the combination of the issuer's fundamentals, market technicals, and the relative value of its securities will cause it to outperform, perform in line with, or underperform the credit returns of the EMBIGD index over the next three months. Our view of an issuer's fundamentals includes our opinion of whether the issuer is becoming more or less able to service its debt obligations when they become due and payable, as well as whether its willingness to service debt obligations is increasing or decreasing.

J.P. Morgan Sovereign Research Ratings Distribution, as of October 1, 2022

	Overweight	Marketweight	Underweight
Global Sovereign Research Universe*	5%	82%	13%
IB clients**	67%	45%	50%

*Please note that the percentages might not add to 100% because of rounding.

**Percentage of subject issuers within each of the "buy, "hold" and "sell" categories for which J.P. Morgan has provided investment banking services within the previous 12 months.
The Sovereign Research Rating Distribution is at the issuer level. Issuers with an NR or an NC designation are not included in the table above. This information is current as of the end of the most recent calendar quarter.

Analysts' Compensation: The research analysts responsible for the preparation of this report receive compensation based upon various factors, including the quality and accuracy of research, client feedback, competitive factors, and overall firm revenues.

Registration of non-US Analysts: Unless otherwise noted, the non-US analysts listed on the front of this report are employees of non-US affiliates of J.P. Morgan Securities LLC, may not be registered as research analysts under FINRA rules, may not be associated persons of J.P. Morgan Securities LLC, and may not be subject to FINRA Rule 2241 or 2242 restrictions on communications with covered companies, public appearances, and trading securities held by a research analyst account.

Other Disclosures

J.P. Morgan is a marketing name for investment banking businesses of JPMorgan Chase & Co. and its subsidiaries and affiliates worldwide.

UK MIFID FICC research unbundling exemption: UK clients should refer to UK MIFID Research Unbundling exemption for details of JPMorgan's implementation of the FICC research exemption and guidance on relevant FICC research categorisation.

Any long form nomenclature for references to China; Hong Kong; Taiwan; and Macau within this research material are Mainland China; Hong Kong SAR (China); Taiwan (China); and Macau SAR (China).

J.P. Morgan Research may, from time to time, write on issuers or securities targeted by economic or financial sanctions imposed or administered by the governmental authorities of the U.S., EU, UK or other relevant jurisdictions (Sanctioned Securities). Nothing in this report is intended to be read or construed as encouraging, facilitating, promoting or otherwise approving investment or dealing in such Sanctioned Securities. Clients should be aware of their own legal and compliance obligations when making investment decisions.

Any digital or crypto assets discussed in this research report are subject to a rapidly changing regulatory landscape. For relevant regulatory advisories on crypto assets, including bitcoin and ether, please see https://www.jpmorgan.com/disclosures/cryptoasset-disclosure.

The author(s) of this research report may not be licensed to carry on regulated activities in your jurisdiction and, if not licensed, do not hold themselves out as being able to do so.

Exchange-Traded Funds (ETFs): J.P. Morgan Securities LLC ("JPMS") acts as authorized participant for substantially all U.S.-listed ETFs. To the extent that any ETFs are mentioned in this report, JPMS may earn commissions and transaction-based compensation in connection with the distribution of those ETF shares and may earn fees for performing other trade-related services, such as securities lending to short sellers of the ETF shares. JPMS may also perform services for the ETFs themselves, including acting as a broker or dealer to the ETFs. In addition, affiliates of JPMS may perform services for the ETFs, including trust, custodial, administration, lending, index calculation and/or maintenance and other services.

Options and Futures related research: If the information contained herein regards options- or futures-related research, such information is available only to persons who have received the proper options or futures risk disclosure documents. Please contact your J.P. Morgan Representative or visit https://www.theocc.com/components/docs/riskstoc.pdf for a copy of the Option Clearing Corporation's Characteristics and Risks of Standardized Options or http://www.finra.org/sites/default/files/Security_Futures_Risk_Disclosure_Statement_2018.pdf for a copy of the Security Futures Risk Disclosure Statement.

Changes to Interbank Offered Rates (IBORs) and other benchmark rates: Certain interest rate benchmarks are, or may in the future become, subject to ongoing international, national and other regulatory guidance, reform and proposals for reform. For more information, please consult: https://www.jpmorgan.com/global/disclosures/interbank_offered_rates

Private Bank Clients: Where you are receiving research as a client of the private banking businesses offered by JPMorgan Chase & Co. and its subsidiaries ("J.P. Morgan Private Bank"), research is provided to you by J.P. Morgan Private Bank and not by any other division of J.P. Morgan, including, but not limited to, the J.P. Morgan Corporate and Investment Bank and its Global Research division.

Legal entity responsible for the production and distribution of research: The legal entity identified below the name of the Reg AC Research Analyst who authored this material is the legal entity responsible for the production of this research. Where multiple Reg AC Research Analysts authored this material with different legal entities identified below their names, these legal entities are jointly responsible for the production of this research. Research Analysts from various J.P. Morgan affiliates may have contributed to the production of this material but may not be licensed to carry out regulated activities in your jurisdiction (and do not hold themselves out as being able to do so). Unless otherwise stated below, this material has been distributed by the legal entity responsible for production. If you have any queries, please contact the relevant Research Analyst in your jurisdiction or the entity in your jurisdiction that has distributed this research material.

Legal Entities Disclosures and Country-/Region-Specific Disclosures:
Argentina: JPMorgan Chase Bank N.A Sucursal Buenos Aires is regulated by Banco Central de la República Argentina ("BCRA"- Central Bank of Argentina) and Comisión Nacional de Valores ("CNV"- Argentinian Securities Commission" - ALYC y AN Integral N°51). **Australia:** J.P. Morgan Securities Australia Limited ("JPMSAL") (ABN 61 003 245 234/AFS Licence No: 238066) is regulated by the Australian Securities and Investments Commission and is a Market, Clearing and Settlement Participant of ASX Limited and CHI-X. This material is issued and distributed in Australia by or on behalf of JPMSAL only to "wholesale clients" (as defined in section 761G of the Corporations Act 2001). A list of all financial products covered can be found by visiting https://www.jpmm.com/research/disclosures. J.P. Morgan seeks to cover companies of relevance to the domestic and international investor base across all Global Industry Classification Standard (GICS) sectors, as well as across a range of market capitalisation sizes. If applicable, in the course of conducting public side due diligence on the subject company(ies), the Research Analyst team may at times perform such diligence through corporate engagements such as site visits, discussions with company representatives, management presentations, etc. Research issued by JPMSAL has been prepared in accordance with J.P. Morgan Australia's Research Independence Policy which can be found at the following link: J.P. Morgan Australia - Research Independence Policy. **Brazil**: Banco J.P. Morgan S.A. is regulated by the Comissao de Valores Mobiliarios (CVM) and by the Central Bank of Brazil. Ombudsman J.P. Morgan: 0800-7700847 / ouvidoria.jp.morgan@jpmorgan.com. **Canada**: J.P. Morgan Securities Canada Inc. is a registered investment dealer, regulated by the Investment Industry Regulatory Organization of Canada and the Ontario Securities Commission and is the participating member on Canadian exchanges. This material is distributed in Canada by or on behalf of J.P.Morgan Securities Canada Inc. **Chile:** Inversiones J.P. Morgan

Limitada is an unregulated entity incorporated in Chile. **China:** J.P. Morgan Securities (China) Company Limited has been approved by CSRC to conduct the securities investment consultancy business. **Dubai International Financial Centre (DIFC)**: JPMorgan Chase Bank, N.A., Dubai Branch is regulated by the Dubai Financial Services Authority (DFSA) and its registered address is Dubai International Financial Centre - The Gate, West Wing, Level 3 and 9 PO Box 506551, Dubai, UAE. This material has been distributed by JP Morgan Chase Bank, N.A., Dubai Branch to persons regarded as professional clients or market counterparties as defined under the DFSA rules. **European Economic Area (EEA):** Unless specified to the contrary, research is distributed in the EEA by J.P. Morgan SE ("JPM SE"), which is subject to prudential supervision by the European Central Bank ("ECB") in cooperation with BaFin and Deutsche Bundesbank in Germany. JPM SE is a company headquartered in Frankfurt with registered address at TaunusTurm, Taunustor 1, Frankfurt am Main, 60310, Germany. The material has been distributed in the EEA to persons regarded as professional investors (or equivalent) pursuant to Art. 4 para. 1 no. 10 and Annex II of MiFID II and its respective implementation in their home jurisdictions ("EEA professional investors"). This material must not be acted on or relied on by persons who are not EEA professional investors. Any investment or investment activity to which this material relates is only available to EEA relevant persons and will be engaged in only with EEA relevant persons. **Hong Kong**: J.P. Morgan Securities (Asia Pacific) Limited (CE number AAJ321) is regulated by the Hong Kong Monetary Authority and the Securities and Futures Commission in Hong Kong, and J.P. Morgan Broking (Hong Kong) Limited (CE number AAB027) is regulated by the Securities and Futures Commission in Hong Kong. JP Morgan Chase Bank, N.A., Hong Kong (CE Number AAL996) is regulated by the Hong Kong Monetary Authority and the Securities and Futures Commission, is organized under the laws of the United States with limited liability. Where the distribution of this material is a regulated activity in Hong Kong, the material is distributed in Hong Kong by or through J.P. Morgan Securities (Asia Pacific) Limited and/or J.P. Morgan Broking (Hong Kong) Limited. **India**: J.P. Morgan India Private Limited (Corporate Identity Number - U67120MH1992FTC068724), having its registered office at J.P. Morgan Tower, Off. C.S.T. Road, Kalina, Santacruz - East, Mumbai – 400098, is registered with the Securities and Exchange Board of India (SEBI) as a 'Research Analyst' having registration number INH000001873. J.P. Morgan India Private Limited is also registered with SEBI as a member of the National Stock Exchange of India Limited and the Bombay Stock Exchange Limited (SEBI Registration Number – INZ000239730) and as a Merchant Banker (SEBI Registration Number - MB/INM000002970). Telephone: 91-22-6157 3000, Facsimile: 91-22-6157 3990 and Website: http://www.jpmipl.com. JPMorgan Chase Bank, N.A. - Mumbai Branch is licensed by the Reserve Bank of India (RBI) (Licence No. 53/ Licence No. BY.4/94; SEBI - IN/CUS/014/ CDSL : IN-DP-CDSL-444-2008/ IN-DP-NSDL-285-2008/ INBI00000984/ INE231311239) as a Scheduled Commercial Bank in India, which is its primary license allowing it to carry on Banking business in India and other activities, which a Bank branch in India are permitted to undertake. For non-local research material, this material is not distributed in India by J.P. Morgan India Private Limited. **Indonesia**: PT J.P. Morgan Sekuritas Indonesia is a member of the Indonesia Stock Exchange and is registered and supervised by the Otoritas Jasa Keuangan (OJK). **Korea**: J.P. Morgan Securities (Far East) Limited, Seoul Branch, is a member of the Korea Exchange (KRX). JPMorgan Chase Bank, N.A., Seoul Branch, is licensed as a branch office of foreign bank (JPMorgan Chase Bank, N.A.) in Korea. Both entities are regulated by the Financial Services Commission (FSC) and the Financial Supervisory Service (FSS). For non-macro research material, the material is distributed in Korea by or through J.P. Morgan Securities (Far East) Limited, Seoul Branch. **Japan**: JPMorgan Securities Japan Co., Ltd. and JPMorgan Chase Bank, N.A., Tokyo Branch are regulated by the Financial Services Agency in Japan. **Malaysia**: This material is issued and distributed in Malaysia by JPMorgan Securities (Malaysia) Sdn Bhd (18146-X), which is a Participating Organization of Bursa Malaysia Berhad and holds a Capital Markets Services License issued by the Securities Commission in Malaysia. **Mexico**: J.P. Morgan Casa de Bolsa, S.A. de C.V.and J.P. Morgan Grupo Financiero are members of the Mexican Stock Exchange and are authorized to act as a broker dealer by the National Banking and Securities Exchange Commission. **New Zealand**: This material is issued and distributed by JPMSAL in New Zealand only to "wholesale clients" (as defined in the Financial Markets Conduct Act 2013). JPMSAL is registered as a Financial Service Provider under the Financial Service providers (Registration and Dispute Resolution) Act of 2008. **Pakistan**: J. P. Morgan Pakistan Broking (Pvt.) Ltd is a member of the Karachi Stock Exchange and regulated by the Securities and Exchange Commission of Pakistan. **Philippines**: J.P. Morgan Securities Philippines Inc. is a Trading Participant of the Philippine Stock Exchange and a member of the Securities Clearing Corporation of the Philippines and the Securities Investor Protection Fund. It is regulated by the Securities and Exchange Commission. **Russia**: CB J.P. Morgan Bank International LLC is regulated by the Central Bank of Russia. **Singapore**: This material is issued and distributed in Singapore by or through J.P. Morgan Securities Singapore Private Limited (JPMSS) [MCI (P) 060/08/2022 and Co. Reg. No.: 199405335R], which is a member of the Singapore Exchange Securities Trading Limited, and/or JPMorgan Chase Bank, N.A., Singapore branch (JPMCB Singapore), both of which are regulated by the Monetary Authority of Singapore. This material is issued and distributed in Singapore only to accredited investors, expert investors and institutional investors, as defined in Section 4A of the Securities and Futures Act, Cap. 289 (SFA). This material is not intended to be issued or distributed to any retail investors or any other investors that do not fall into the classes of "accredited investors," "expert investors" or "institutional investors," as defined under Section 4A of the SFA. Recipients of this material in Singapore are to contact JPMSS or JPMCB Singapore in respect of any matters arising from, or in connection with, the material. As at the date of this material, JPMSS is a designated market maker for certain structured warrants listed on the Singapore Exchange where the underlying securities may be the securities discussed in this material. Arising from its role as a designated market maker for such structured warrants, JPMSS may conduct hedging activities in respect of such underlying securities and hold or have an interest in such underlying securities as a result. The updated list of structured warrants for which JPMSS acts as designated market maker may be found on the website of the Singapore Exchange Limited: http://www.sgx.com. **South Africa**: J.P. Morgan Equities South Africa Proprietary Limited and JPMorgan Chase Bank, N.A., Johannesburg Branch are members of the Johannesburg Securities Exchange and are regulated by the Financial Services Board. **Taiwan**: J.P. Morgan Securities (Taiwan) Limited is a participant of the Taiwan Stock Exchange (company-type) and regulated by the Taiwan Securities and Futures Bureau. Material relating to equity securities is issued and distributed in Taiwan by J.P. Morgan Securities (Taiwan) Limited, subject to the license scope and the applicable laws and the regulations in Taiwan. According to Paragraph 2, Article 7-1 of Operational Regulations Governing Securities Firms Recommending Trades in Securities to Customers (as amended or supplemented) and/or other applicable laws or regulations, please note that the recipient of this material is not permitted to engage in any activities in connection with the material that may give rise to conflicts of interests, unless otherwise disclosed in the "Important Disclosures" in this material. **Thailand**: This material is issued and distributed in Thailand by JPMorgan Securities (Thailand) Ltd., which is a member of the Stock Exchange of

JPMorgan Chase Bank, N.A., Mumbai Branch
Sajjid Z Chinoy (91-22) 6157-3386
sajjid.z.chinoy@jpmorgan.com
Divyanit Sood (91-22) 6157-3786
divyanit.sood@jpmchase.com
Toshi Jain (91-22) 6157-3387
toshi.jain@jpmorgan.com

Thailand and is regulated by the Ministry of Finance and the Securities and Exchange Commission, and its registered address is 3rd Floor, 20 North Sathorn Road, Silom, Bangrak, Bangkok 10500. **UK:** Unless specified to the contrary, research is distributed in the UK by J.P. Morgan Securities plc (“JPMS plc”) which is a member of the London Stock Exchange and is authorised by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and the Prudential Regulation Authority. JPMS plc is registered in England & Wales No. 2711006, Registered Office 25 Bank Street, London, E14 5JP. This material is directed in the UK only to: (a) persons having professional experience in matters relating to investments falling within article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) (Order) 2005 (“the FPO”); (b) persons outlined in article 49 of the FPO (high net worth companies, unincorporated associations or partnerships, the trustees of high value trusts, etc.); or (c) any persons to whom this communication may otherwise lawfully be made; all such persons being referred to as "UK relevant persons". This material must not be acted on or relied on by persons who are not UK relevant persons. Any investment or investment activity to which this material relates is only available to UK relevant persons and will be engaged in only with UK relevant persons. Research issued by JPMS plc has been prepared in accordance with JPMS plc's policy for prevention and avoidance of conflicts of interest related to the production of Research which can be found at the following link: J.P. Morgan EMEA - Research Independence Policy. **U.S.**: J.P. Morgan Securities LLC (“JPMS”) is a member of the NYSE, FINRA, SIPC, and the NFA. JPMorgan Chase Bank, N.A. is a member of the FDIC. Material published by non-U.S. affiliates is distributed in the U.S. by JPMS who accepts responsibility for its content.

General: Additional information is available upon request. The information in this material has been obtained from sources believed to be reliable. While all reasonable care has been taken to ensure that the facts stated in this material are accurate and that the forecasts, opinions and expectations contained herein are fair and reasonable, JPMorgan Chase & Co. or its affiliates and/or subsidiaries (collectively J.P. Morgan) make no representations or warranties whatsoever to the completeness or accuracy of the material provided, except with respect to any disclosures relative to J.P. Morgan and the Research Analyst's involvement with the issuer that is the subject of the material. Accordingly, no reliance should be placed on the accuracy, fairness or completeness of the information contained in this material. There may be data discrepancy in this material as a result of calculations, adjustments and/or translations to different languages, as applicable. J.P. Morgan accepts no liability whatsoever for any loss arising from any use of this material or its contents, and neither J.P. Morgan nor any of its respective directors, officers or employees, shall be in any way responsible for the contents hereof, apart from the liabilities and responsibilities that may be imposed on them by the relevant regulatory authority in the jurisdiction in question, or the regulatory regime thereunder. Opinions, forecasts or projections contained in this material represent J.P. Morgan's current opinions or judgment as of the date of the material only and are therefore subject to change without notice. Periodic updates may be provided on companies/industries based on company-specific developments or announcements, market conditions or any other publicly available information. There can be no assurance that future results or events will be consistent with any such opinions, forecasts or projections, which represent only one possible outcome. Furthermore, such opinions, forecasts or projections are subject to certain risks, uncertainties and assumptions that have not been verified, and future actual results or events could differ materially. The value of, or income from, any investments referred to in this material may fluctuate and/or be affected by changes in exchange rates. All pricing is indicative as of the close of market for the securities discussed, unless otherwise stated. Past performance is not indicative of future results. Accordingly, investors may receive back less than originally invested. This material is not intended as an offer or solicitation for the purchase or sale of any financial instrument. The opinions and recommendations herein do not take into account individual client circumstances, objectives, or needs and are not intended as recommendations of particular securities, financial instruments or strategies to particular clients. The recipients of this material must make their own independent decisions regarding any securities or financial instruments mentioned herein and should seek advice from such independent financial, legal, tax or other adviser as they deem necessary. J.P. Morgan may trade as a principal on the basis of the Research Analysts’ views and research, and it may also engage in transactions for its own account or for its clients’ accounts in a manner inconsistent with the views taken in this material, and J.P. Morgan is under no obligation to ensure that such other communication is brought to the attention of any recipient of this material. Others within J.P. Morgan, including Strategists, Sales staff and other Research Analysts, may take views that are inconsistent with those taken in this material. Employees of J.P. Morgan not involved in the preparation of this material may have investments in the securities (or derivatives of such securities) mentioned in this material and may trade them in ways different from those discussed in this material. This material is not an advertisement for or marketing of any issuer, its products or services, or its securities in any jurisdiction.

"Other Disclosures" last revised November 12, 2022.

Completed 16 Dec 2022 03:58 AM HKT
Disseminated 16 Dec 2022 03:58 AM HKT