

Asia Economic Weekly

Excess weight on global excess savings

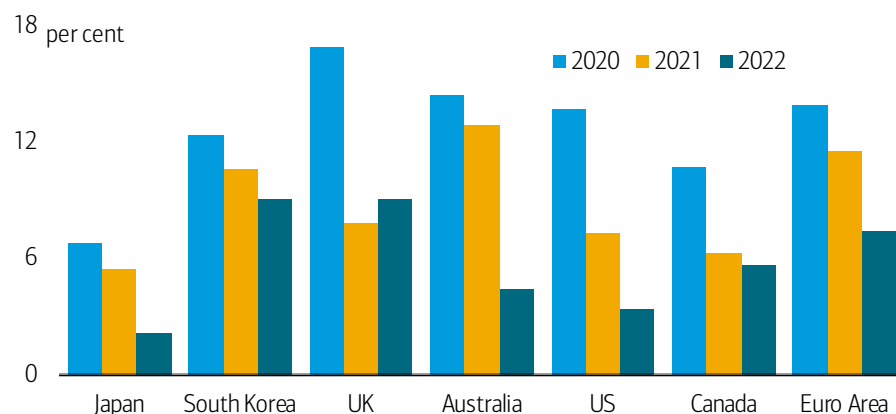
Excess savings are falling at uneven paces

Interest rates have increased sharply in major economies since last year. Yet, the toll on consumption and housing prices has been smaller than expected in 2023 in Asia, US, Europe, and Australia. The accumulation of a large stock of household savings during the pandemic was one of the reasons why consumption was more resilient than anticipated, but this is now changing as savings continue to fall.

Despite distinct economic outlooks for 2024 across regions (See: [Asia Economic Weekly: Year Ahead 2024: A year of divergence and uncertainty 24 November 2023](#)), we think the rundown of excess savings is unlikely to produce a sharp decline in consumer spending. Excess savings (defined by the amount of savings accumulated since the pandemic) are not evenly distributed across income levels while the sharp increase in cost of living has impacted all households and it's weighing on spending behavior.

Exhibit 1: Change in household savings since 2020

The pace of drawdowns has been uneven



Source: Macrobond, ABS, OECD

BofA GLOBAL RESEARCH

Some uncertainty ahead

The outlook for household spending relies on the labour market and wages growth rather than savings, in our view. A preference to save given global uncertainty, slower economic growth and softer labour markets could keep savings elevated and consumption weaker. Further traction from higher rates could also add pressure to household spending in 2024. See: [Global Economics: Year Ahead 2024: Growing apart, cutting together 19 November 2023](#)

- M. Fuchila

BofA Securities participated in the preparation of this report, in part, based on information provided by Philippine Equity Partners, Inc. (Philippine Equity Partners). ^^Philippine Equity Partners employees are not registered/qualified as research analysts under FINRA rules. Refer to "Other Important Disclosures" for information on certain BofA Securities entities that take responsibility for the information herein in particular jurisdictions.

BofA Securities does and seeks to do business with issuers covered in its research reports. As a result, investors should be aware that the firm may have a conflict of interest that could affect the objectivity of this report. Investors should consider this report as only a single factor in making their investment decision. Refer to important disclosures on page 9 to 10.

12632994

Timestamp: 30 November 2023 03:00PM EST

01 December 2023

GEM Fixed Income Strategy & Economics
Asia

Table of Contents

Global excess savings in focus	2
Data Preview	5
Macro Forecast	7
Research Analysts	11

Helen Qiao

China & Asia Economist
Merrill Lynch (Hong Kong)
helen.qiao@bofa.com

Izumi Devalier

Japan and Asia Economist
BofAS Japan

Takayasu Kudo

Japan and Asia Economist
BofAS Japan

Miao Ouyang

China & Asia Economist
Merrill Lynch (Hong Kong)

Benson Wu

China & Korea Economist
Merrill Lynch (Hong Kong)

Aastha Gudwani

India Economist
BofAS India

Xiaoqing Pi

China Economist
Merrill Lynch (Hong Kong)

Micaela Fuchila

Economist
Merrill Lynch (Australia)
micaela.fuchila@bofa.com

Kai Wei Ang

Asia & ASEAN Economist
Merrill Lynch (Singapore)

Ting Him Ho, CFA

Asia Economist
Merrill Lynch (Hong Kong)

Jojo Gonzales ^^

Research Analyst
Philippine Equity Partners

Pipat Luengnaruemitchai

Emerging Asia Economist
Kiatnakin Phatra Securities

Asia FI Strategy & Economics

Merrill Lynch (Hong Kong)

See Team Page for List of Analysts

Global excess savings in focus

Micaela Fuchila

Merrill Lynch (Australia)

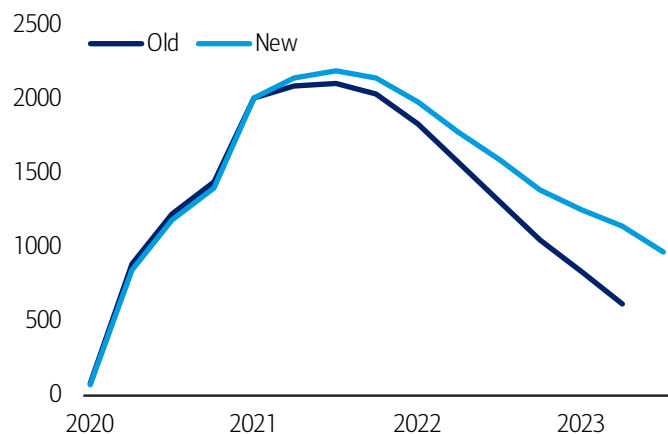
Measures of excess savings are constructed by comparing the accumulation of savings during the pandemic versus its trend. Given unusually large fiscal and monetary policy stimulus that followed the pandemic shock and the nature of “forced savings” we think these measures are not reflective of current conditions in the household sector. Instead, the outlook for household spending relies more on the health of the labor market and wages growth rather than savings, in our view.

Our **United States** team believes that while in decline, the rundown of excess savings is unlikely to produce a cliff edge in consumer spending in the US. In their view, the impact of the rundown of liquid assets on household balance sheets will look much more like a gentle slope than a cliff edge. This is due to firstly, measures of excess savings ignoring important issues such as the impact of inflation and how the savings are invested. Secondly, excess savings increased by around US\$500bn when the path of savings was (mostly) revised down in the September GDP revisions (Exhibit 2). The latter is clearly problematic.

BofA’s conclusion is that households don’t have a specific number in mind when they think about their “excess savings”. Rather, they get increasingly uncomfortable - and slowly pull back spending - as their liquid assets runs down. See: [Morning Market Tidbits: The excess savings “cliff” is really a slope 14 November 2023](#)

Exhibit 2: US excess savings

A gentle slope

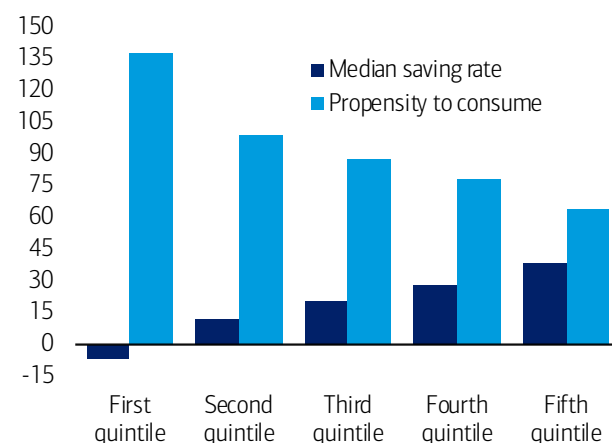


Source: BEA

BofA GLOBAL RESEARCH

Exhibit 3: Euro area savings rates and propensity to consume (2015, % of disposable income), by income quintile

Low-income groups have higher propensity to consume and save less



Source: Eurostat, BofA Global Research

BofA GLOBAL RESEARCH

Economic literature¹ suggests the poorest households tend to spend down their excess savings the fastest, increasing other households’ incomes and their excess savings. This leads to a long-lasting increase in aggregate demand until, ultimately, excess savings have “trickled up” to the richest savers with the lowest propensity to consume, raising wealth inequality.

Data for the **Euro Area** is largely consistent with this. While household savings being stubbornly high, lower income households who have higher propensity to consume have experienced a larger decline in savings (Exhibit 3). Therefore, higher savings rates don’t have to mean bigger buffers against a renewed real income squeeze, either, given the

¹ Harvard, The Tricking Up of Excess Savings, Jan 2023

very unequal distribution across income groups. See: [Europe Economic Weekly: Excess savings are so 2020 10 November 2023](#)

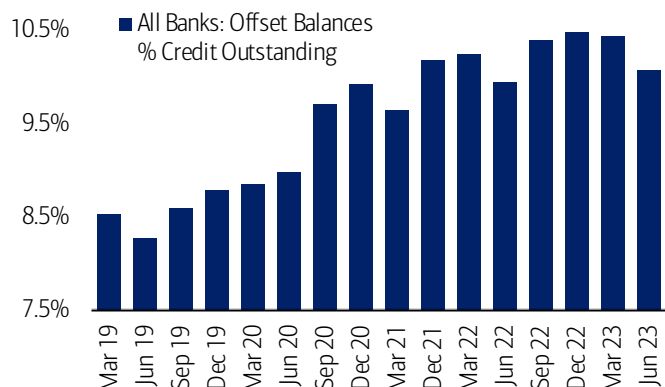
Notably, Euro area real consumption is still stuck below pre-Covid levels. While real disposable income now stands ca 2% above pre-pandemic levels, one could argue that income recovery has been “absorbed” by a higher savings preference. Also, the temporary correction in savings rates last year might have been driven by the need to limit further consumption losses on the back of the energy shock, more than a voluntary savings “normalisation”.

What is happening in Asia?

For those economies with high levels of household income debt such as **Australia**, **Korea** and **Singapore**, higher savings avoided a much larger decline in consumer spending in 2023. See: [BofA Australia Household Consumption Tracker: Household spending: Decline, but no cliff 12 October 2023](#)

In **Australia**, The Reserve Bank believes buffers built during the pandemic supported growth and spending, but the stronger-than-expected aggregate demand was also supported by strong immigration. Notably, the savings rate remains positive despite the sharp rise in interest rates See: Australia Economic Viewpoint: Year Ahead 2024: No landing down under 22 November 2023. The household sector is now close to depleting the stock of excess savings they accumulated during the pandemic. Using average savings levels in 2019 as a baseline, the stock of households’ excess savings is just AUD 11bn above pre-pandemic levels – and fell AUD 15bn last quarter. However, data from mortgage offset accounts continues to reflect solid savings versus net savings measures (Exhibit 4 & Exhibit 5).

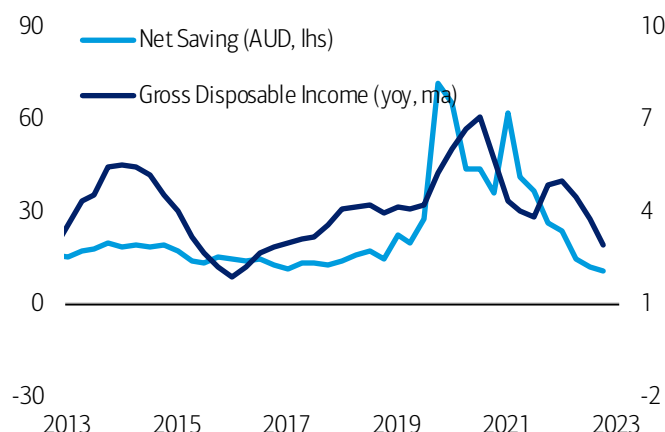
Exhibit 4: AU mortgage offset balances have remained elevated
% of credit



Source: APRA

BofA GLOBAL RESEARCH

Exhibit 5: While AU net savings have fallen
As did disposable income



Source: ABS

BofA GLOBAL RESEARCH

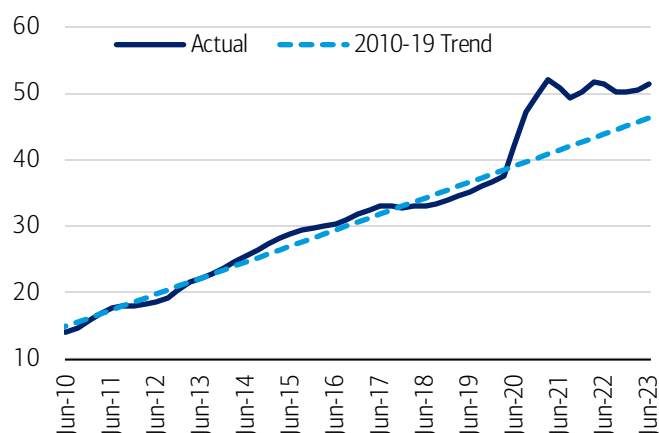
In **Korea**, the allocation of household savings suggests not much of them were used on consumption as overall household income conditions had been modest until last year and they were held mostly in liquid assets like deposits and stocks rather than going to pay down debt. Research from the Bank of Korea suggests going forward, savings could act as a buffer to consumption shocks and have the potential to flow into the asset market with expectation changes.

In **Singapore**, personal savings rate has remained considerably higher compared to pre-COVID trends. On a 4QMA basis, personal savings rate stood at 34% as of 2Q23, down from the peak of 41% in 3Q21, but still above the average of 28% in 2015-19 (Exhibit 6).



Exhibit 6: Singapore savings remain above the pre-pandemic average

We estimate excess savings of around S\$5bn as of 2Q 2023

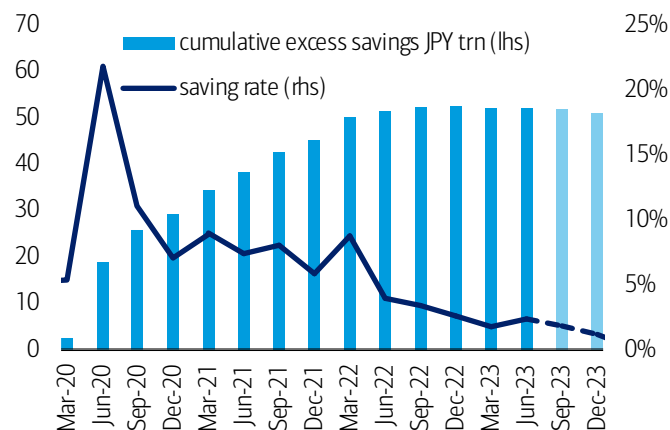


Source: Singstats Note:(1)Our starting point for accumulated personal saving is 1Q8. (2) Savings are reported in nominal terms

BofA GLOBAL RESEARCH

Exhibit 7: Japan's macro-based savings rate is declining

But the stock of savings is still accumulating since CY20 (JPYtn)



Source: Cabinet Office

BofA GLOBAL RESEARCH

Possible reasons, in our view, include (a) outbound travel spending still below pre-COVID levels (72% as of 2Q23, based on BOP data, (b) increased precautionary savings in the face of macro uncertainties, and/or (c) structural upward shift in personal savings rate post-pandemic (e.g. reduced spending from increased work-from-home). Into 2024, further draw down of "excess savings"(even if some of it goes to outbound travel) should provide some support for real private consumption growth, with the latter facing some headwinds from subdued (or even negative) real median income growth See: [Singapore Watch: Year Ahead 2024: Better in time 20 November 2023](#)

In Japan, while the savings rate has declined, it is yet to return to pre-pandemic levels and it is still high on a per-household basis (Exhibit 7). Consistent with the Euro Area, excess savings have continued to accumulate until now and we uncertainty around the motivation of continued savings.

The latter is consistent across all regions. The concept of forced savings due to reduced spending opportunities has faded once the pandemic-related lockdowns ended, but the share of savings related to "non-traditional" or "unexplained" factors is on the rise again this year, particularly for the Euro Area.

Some uncertainty ahead

A period of high inflation and higher inflation expectations along with increased geopolitical uncertainty and higher living costs may be impacting consumer spending versus savings behavior so risks are evenly balanced. Lower inflation in the year ahead could boost real purchasing power and sentiment. Then, consumption could recover more strongly than expected. Conversely, a preference to save given global uncertainty and slower economic growth and softer labor markets could keep savings elevated and consumption weaker than expected. Further traction from higher rates could also add pressure to household spending in 2024.

Data Preview

Exhibit 8: Week of 3 to 9 December

Data calendar for next week with BofA estimates and Bloomberg consensus

Local time	Country	Data/Event	BofAe	Cons.†	Previous	Comments
Monday, December 4, 2023						
** 11:00	Australia	Melbourne Institute Inflation (Nov, mom)		--	-0.1%	--
** 11:30	Australia	Inventories SA (3Q, qoq)	0.2%	--	-1.9%	Following a sharp decline in inventories in 2Q we expect a modest positive contribution to growth in 3Q
** 11:30	Australia	Company Operating Profit (3Q, qoq)	1.3%	--	-13.1%	We expect some unwinding of the large decline in profits in 3Q consistent with higher commodity prices and stronger
Tuesday, December 5, 2023						
*** 8:00	South Korea	GDP F (3Q, yoy)		--	1.4%	--
** 8:00	South Korea	CPI (Nov, yoy)	3.4%	--	3.8%	We expect headline CPI to decelerate to 3.4% in Nov from 3.8% in Oct, given the sequential drop in food prices and moderation in oil prices.
*** 8:30	Japan	Tokyo CPI Ex-Fresh Food (Nov, yoy)		--	2.7%	In the November Tokyo CPI, we expect Japan-style core CPI (ex fresh food) to sharply drop to +2.2% YoY from +2.7% YoY in October. Energy CPI will likely drop further due to another MoM moderation reflecting slightly lower commodity prices and higher comparison base for the YoY growth. More importantly, we expect ex-energy BOJ-core CPI (ex fresh food and energy) to slow to +3.6% YoY from +3.8% YoY in October. While services inflation will remain solid, the large negative base effects of non-perishable food prices will likely drag the YoY growth of BoJ-core CPI. As a result, the CPI print will confirm that Japan's inflation has peaked out in the YoY term, though we expect the pace of decline to remain slow.
*** 9:00	Philippines	CPI Nov, yoy)		4.3%	4.9%	--
** 11:30	Australia	Net Exports of GDP (3Q)	0.0	--	0.8	We expect a flat contribution from net exports in GDP driven by rises in both exports and import volume
** 11:30	Australia	BoP Current Account Balance (3Q)		--	A\$7.7b	--
** 13:00	Singapore	Retail Sales (Oct, yoy)		--	0.6%	--
** 13:00	Singapore	Retail Sales Ex Auto (Oct, yoy)		--	0.5%	--
*** 14:30	Australia	RBA Cash Rate Target	4.35%	4.35%	4.35%	Following softer CPI and retail sales we expect the RBA to remain on hold at this meeting and reinforce hawkish guidance
Wednesday, December 6, 2023						
*** 11:30	Australia	GDP SA (3Q, qoq)		0.2%	0.4%	--
*** 11:30	Australia	GDP (3Q, yoy)		1.6%	2.1%	--
** 16:00	Taiwan	CPI (Nov, yoy)	2.7%	--	3.1%	CPI inflation likely edged down to 2.70% yoy in Nov from 3.05% in Oct, helped by a sequential decline in vegetable prices. Core CPI inflation could remain steady due to sticky services prices.
Thursday, December 7, 2023						
** 10:30	Thailand	CPI (Nov, yoy)		-0.4%	-0.3%	--
** 11:30	Australia	Trade Balance (Oct, yoy)		--	A\$6786m	Slight improvement in the surplus to reflect stronger commodity prices
** 11:30	China	Exports (Nov, yoy)		--	-6.4%	--
Friday, December 8, 2023						
*** 8:50	Japan	GDP Annualized SA F (3Q, qoq)	A\$7000	--	-2.1%	--
*** 8:50	Japan	GDP SA F (3Q, qoq)		--	-0.5%	--
*** 10:00	India	RBI Cash Reserve Ratio	4.50%	4.50%	4.50%	RBI to continue to tighten liquidity through non rate measures, such as OMO sales
*** 10:00	India	RBI Repurchase Rate	6.75%	6.50%	6.50%	RBI to hike policy repo rate one last time and turn to neutral stance alongside.
** 16:00	Taiwan	Exports (Nov, yoy)	5.5%	--	-4.5%	We expect export growth to rebound to 5.5% yoy in Nov from -4.5% in Oct, as the year-ago base becomes lower. Despite likely continued support from AI-related demand, the pace of sequential improvement should be limited, as the new export orders sub-index underlying mfg. PMI still remains below 50.
Saturday, December 9, 2023						
** 9:30	China	CPI (Nov, yoy)		--	-0.2%	--

Notes: †Bloomberg consensus; * = level of importance; A = advanced; F = final; P = preliminary; sa = seasonally adjusted; saar = seasonally adjusted annualized rate; nsa = not seasonally adjusted; wda = working-day adjusted; n.a. = not available; mom = month-on-month; qoq = quarter-on-quarter; yoy = year-on-year, Central banks * denotes previous month

Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH



Exhibit 9: Government bond auction calendar

Auction calendar for the week of 3 to 9 December

	Country	Event	Comments
Monday, 04 Dec			
	China	China to sell 3y CGB	
Wednesday, 06 Dec			
	China	China to sell 30y CGB	
Friday, 08 Dec			
	Korea	Korea to sell KRW 50y KTB worth 0.1 tn	
	India	India to sell INR 390bn worth of 7y, 10y, 14y and 40y govt bonds	

Source: BofA Global Research, Bloomberg, RBI, Korea MoEF, MoF China

BofA GLOBAL RESEARCH

Macro Forecast

Exhibit 10: Key Macroeconomic Indicators

BofA estimates for important indicators

30 November, 2023				BofA Global Research Forecasts				BofA Global Research Forecasts			
				2023	2024	2025		Dec-24	Dec-25		
GDP Growth (yoy)				F'cst	F'cst	F'cst	Exchange rate (vs USD, eop)	Current	F'cst	F'cst	
Asia				4.6	4.3	4.3	Asia	-	-	-	
China				5.3	4.8	4.6	China	7.13	6.90	6.70	
Hong Kong				3.4	2.1	2.4	Hong Kong	7.81	7.78	7.75	
India				6.3	5.8	6.0	India	83.33	82.00	81.00	
Indonesia				5.0	5.1	5.2	Indonesia	15488	15200	15000	
Korea				1.4	2.3	2.5	Korea	1290	1230	1150	
Malaysia				4.0	4.6	4.8	Malaysia	4.66	4.50	4.10	
Philippines				5.4	5.4	5.5	Philippines	55.45	55.00	53.00	
Singapore				0.7	2.3	2.6	Singapore	1.33	1.26	1.22	
Taiwan				1.1	3.2	2.3	Taiwan	31.27	31.15	30.15	
Thailand				2.8	3.7	2.7	Thailand	34.91	34.00	32.00	
Vietnam				5.0	6.2	6.8	Vietnam	24260	24800	24500	
Australia				1.8	1.4	2.0	Australia	0.66	0.71	0.71	
Japan				1.7	0.8	1.0	Japan	147.12	142.00	136.00	
Note: FY22/23, FY23/24, FY24/25 for India											
CPI inflation (yoy, avg)				2023	2024	2025	Fiscal balance (% of GDP)				
				F'cst	F'cst	F'cst					
Asia				3.6	2.7	2.4	Asia	-	-	-	
China				0.4	1.4	1.6	China	-3.8	-3.5	-3.3	
Hong Kong				1.8	1.0	1.7	Hong Kong	-3.5	-1.5	1.2	
India				5.4	4.6	4.5	India	-5.9	-5.3	-4.5	
Indonesia				3.6	3.0	3.0	Indonesia	-1.8	-2.3	-2.6	
Korea				3.6	2.3	2.0	Korea	-0.6	-1.9	-0.9	
Malaysia				2.6	2.3	2.5	Malaysia	-5.0	-4.3	-3.5	
Philippines				6.0	3.3	3.1	Philippines	-6.1	-5.3	-4.8	
Singapore				4.8	2.6	2.3	Singapore	0.4	-1.0	-0.4	
Taiwan				2.5	2.0	1.5	Taiwan	-2.1	-2.0	-2.1	
Thailand				1.6	1.7	1.0	Thailand	-3.7	-5.7	-4.3	
Vietnam				3.4	3.8	4.1	Vietnam	-4.0	-3.6	-3.5	
Australia				5.7	3.4	2.9	Australia	-	-	-	
Japan				3.2	3.2	1.6	Japan	-	-	-	
Note: FY22/23, FY23/24, FY24/25 for India											
Policy rate (% eop)				2023	2024	2025	CA balance (% of GDP)				
				F'cst	F'cst	F'cst					
Asia				-	-	-	Asia	-	-	-	
China				3.45	3.45	3.35	China	1.5	1.2	1.4	
Hong Kong				5.40	4.60	3.85	Hong Kong	5.2	4.0	4.4	
India				6.50	6.25	5.50	India	-	-	-	
Indonesia				6.00	5.25	4.25	Indonesia	-0.3	-0.7	-0.5	
Korea				3.50	2.75	2.50	Korea	1.7	2.1	1.9	
Malaysia				3.00	3.00	3.00	Malaysia	1.7	2.1	2.4	
Philippines				6.50	5.50	4.50	Philippines	-3.4	-3.4	-3.6	
Singapore				-	-	-	Singapore	18.0	17.4	16.9	
Taiwan				2.00	2.00	2.00	Taiwan	12.6	13.5	13.4	
Thailand				2.50	2.50	2.00	Thailand	1.5	2.1	3.8	
Vietnam				4.50	4.50	5.00	Vietnam	3.6	3.8	3.9	
Australia				4.35	4.35	3.50	Australia	2.1	1.5	1.1	
Japan				-0.10	0.25	0.50	Japan	0.2	0.2	-	
Note: FY22/23, FY23/24, FY24/25 for India. 3M interbank rate forecast for Singapore											
Note: FY22/23, FY23/24, FY24/25 for India											

Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Special Disclosures

In accordance with the SEBI (Foreign Portfolio Investors) Regulations, 2019 and with guidelines issued by the Securities and Exchange Board of India (SEBI), foreign investors (individuals as well as institutional) that wish to transact the common stock of Indian companies must have applied to, and have been approved as per SEBI (Foreign Portfolio Investors) Regulations, 2019. Each investor who proposes to transact common stock of Indian companies will be required to obtain Foreign Portfolio Investor (FPI) registration as per SEBI (Foreign Portfolio Investors) Regulations, 2019. Certain other entities are also entitled to transact common stock of Indian companies under the Indian laws relating to investment by foreigners. BofA Securities reserves the right to refuse to provide a copy of research on common stock of Indian companies to a person not resident in India. American Depositary Receipts (ADR) representing such common stock are not subject to these Indian law restrictions and may be transacted by investors in accordance with the applicable laws of the relevant jurisdiction. Global Depositary Receipts (GDR) and the Global Depositary Shares (GDS) of Indian companies, Indian limited liability corporations, have not been registered under the U.S. Securities Act of 1933, as amended, and may only be transacted by persons in the United States who are Qualified Institutional Buyers (QIBs) within the meaning of Rule 144A under the Securities Act. Accordingly, no copy of any research report on Indian companies' GDRs or GDSs will be made available to persons who are not QIBs.

BofA Securities India Limited (BofAS India) is regulated by the Securities and Exchange Board of India (SEBI) and provides the following services in India: Research, Equity Sales & Trading, Futures & Options, Electronic Trading, Equity Capital Markets, Debt Capital Markets and M&A. SEBI Registration Nos. Research Analyst: INH000000503, Stock Broking: INZ000217333 (Trading and Clearing Member of NSE and BSE – Capital Markets and Equity Derivatives), Merchant Banker: INM000011625, CIN U74140MH1975PLC018618. Registration granted by SEBI and certification from National Institute of Securities Markets (NISM) in no way guarantee performance of the intermediary or provide any assurance of returns to investors. BofAS India's registered office is at Ground Floor, A Wing, One BKC, G Block, Bandra Kurla Complex, Bandra (East), Mumbai 400 051, India, Tel: +91 22 6632 8000 and the contact details of its Compliance Officer (Shervin Purohit) are: Tel: (91-22) 6632 8853, Email: shervin.purohit@bofa.com. For specific grievances, if any, please contact the Grievance Officer (Amish Shah) and contact details are: Tel: (91-22) 6632 8000, Email: dg.rsch_in_complaint@bofa.com. Investment in securities market are subject to market risks. Read all the related documents carefully before investing.

This report is issued and distributed outside the Philippines solely by BofA Securities. Philippine Equity Partners is not licensed to provide advisory services outside the Philippines. Investors should contact their BofA Securities representative or Merrill Global Wealth Management financial advisor if they have questions concerning this report or concerning the appropriateness of any investment idea described herein for such investor.

Disclosures

Important Disclosures

BoFA Global Research personnel (including the analyst(s) responsible for this report) receive compensation based upon, among other factors, the overall profitability of Bank of America Corporation, including profits derived from investment banking. The analyst(s) responsible for this report may also receive compensation based upon, among other factors, the overall profitability of the Bank's sales and trading businesses relating to the class of securities or financial instruments for which such analyst is responsible.

Other Important Disclosures

Prices are indicative and for information purposes only. Except as otherwise stated in the report, for any recommendation in relation to an equity security, the price referenced is the publicly traded price of the security as of close of business on the day prior to the date of the report or, if the report is published during intraday trading, the price referenced is indicative of the traded price as of the date and time of the report and in relation to a debt security (including equity preferred and CDS), prices are indicative as of the date and time of the report and are from various sources including BoFA Securities trading desks.

The date and time of completion of the production of any recommendation in this report shall be the date and time of dissemination of this report as recorded in the report timestamp.

Recipients who are not institutional investors or market professionals should seek the advice of their independent financial advisor before considering information in this report in connection with any investment decision, or for a necessary explanation of its contents.

Officers of BoFA or one or more of its affiliates (other than research analysts) may have a financial interest in securities of the issuer(s) or in related investments.

Individuals identified as economists do not function as research analysts under U.S. law and reports prepared by them are not research reports under applicable U.S. rules and regulations.

Macroeconomic analysis is considered investment research for purposes of distribution in the U.K. under the rules of the Financial Conduct Authority.

Refer to [BoFA Global Research policies relating to conflicts of interest](#).

"BoFA Securities" includes BoFA Securities, Inc. ("BoFA") and its affiliates. Investors should contact their BoFA Securities representative or Merrill Global Wealth Management financial advisor if they have questions concerning this report or concerning the appropriateness of any investment idea described herein for such investor. "BoFA Securities" is a global brand for BoFA Global Research.

Information relating to Non-US affiliates of BoFA Securities and Distribution of Affiliate Research Reports:

BoFA and/or Merrill Lynch, Pierce, Fenner & Smith Incorporated ("MLPF&S") may in the future distribute, information of the following non-US affiliates in the US (short name: legal name, regulator): Merrill Lynch (South Africa): Merrill Lynch South Africa (Pty) Ltd., regulated by The Financial Service Board; MLI (UK): Merrill Lynch International, regulated by the Financial Conduct Authority (FCA) and the Prudential Regulation Authority (PRA); BoFASE (France): BoFA Securities Europe SA is authorized by the Autorité de Contrôle Prudentiel et de Résolution (ACPR) and regulated by the ACPR and the Autorité des Marchés Financiers (AMF). BoFA Securities Europe SA ("BoFASE") with registered address at 51, rue La Boétie, 75008 Paris is registered under no 842 602 690 RCS Paris. In accordance with the provisions of French Code Monétaire et Financier (Monetary and Financial Code), BoFASE is an établissement de crédit et d'investissement (credit and investment institution) that is authorised and supervised by the European Central Bank and the Autorité de Contrôle Prudentiel et de Résolution (ACPR) and regulated by the ACPR and the Autorité des Marchés Financiers. BoFASE's share capital can be found at www.bofam.com/BoFASEdiscclaimer; BoFA Europe (Milan): Bank of America Europe Designated Activity Company, Milan Branch, regulated by the Bank of Italy, the European Central Bank (ECB) and the Central Bank of Ireland (CBI); BoFA Europe (Frankfurt): Bank of America Europe Designated Activity Company, Frankfurt Branch regulated by BaFin, the ECB and the CBI; BoFA Europe (Madrid): Bank of America Europe Designated Activity Company, Sucursal en España, regulated by the Bank of Spain, the ECB and the CBI; Merrill Lynch (Australia): Merrill Lynch Equities (Australia) Limited, regulated by the Australian Securities and Investments Commission; Merrill Lynch (Hong Kong): Merrill Lynch (Asia Pacific) Limited, regulated by the Hong Kong Securities and Futures Commission (HKSF); Merrill Lynch (Singapore): Merrill Lynch (Singapore) Pte Ltd, regulated by the Monetary Authority of Singapore (MAS); Merrill Lynch (Canada): Merrill Lynch Canada Inc, regulated by the Canadian Investment Regulatory Organization; Merrill Lynch (Mexico): Merrill Lynch Mexico, SA de CV, Casa de Bolsa, regulated by the Comisión Nacional Bancaria y de Valores; Merrill Lynch (Argentina): Merrill Lynch Argentina SA, regulated by Comisión Nacional de Valores; BoFA Japan: BoFA Securities Japan Co., Ltd., regulated by the Financial Services Agency; Merrill Lynch (Seoul): Merrill Lynch International, LLC Seoul Branch, regulated by the Financial Supervisory Service; Merrill Lynch (Taiwan): Merrill Lynch Securities (Taiwan) Ltd., regulated by the Securities and Futures Bureau; BoFA India: BoFA Securities India Limited, regulated by the Securities and Exchange Board of India (SEBI); Merrill Lynch (Israel): Merrill Lynch Israel Limited, regulated by Israel Securities Authority; Merrill Lynch (DIFC): Merrill Lynch International (DIFC Branch), regulated by the Dubai Financial Services Authority (DFSA); Merrill Lynch (Brazil): Merrill Lynch S.A. Corretora de Títulos e Valores Mobiliários, regulated by Comissão de Valores Mobiliários; Merrill Lynch KSA Company: Merrill Lynch Kingdom of Saudi Arabia Company, regulated by the Capital Market Authority.

This information has been approved for publication and is distributed in the United Kingdom (UK) to professional clients and eligible counterparties (as each is defined in the rules of the FCA and the PRA) by MLI (UK), which is authorized by the PRA and regulated by the FCA and the PRA - details about the extent of our regulation by the FCA and PRA are available from us on request; has been approved for publication and is distributed in the European Economic Area (EEA) by BoFASE (France), which is authorized by the ACPR and regulated by the ACPR and the AMF; has been considered and distributed in Japan by BoFA Japan, a registered securities dealer under the Financial Instruments and Exchange Act in Japan, or its permitted affiliates; is issued and distributed in Hong Kong by Merrill Lynch (Hong Kong) which is regulated by HKSF; is issued and distributed in Taiwan by Merrill Lynch (Taiwan); is issued and distributed in India by BoFA India; and is issued and distributed in Singapore to institutional investors and/or accredited investors (each as defined under the Financial Advisers Regulations) by Merrill Lynch (Singapore) (Company Registration No 198602883D). Merrill Lynch (Singapore) is regulated by MAS. Merrill Lynch Equities (Australia) Limited (ABN 65 006 276 795), AFS License 235132 (MLEA) distributes this information in Australia only to 'Wholesale' clients as defined by s.761G of the Corporations Act 2001. With the exception of Bank of America N.A., Australia Branch, neither MLEA nor any of its affiliates involved in preparing this information is an Authorised Deposit-Taking Institution under the Banking Act 1959 nor regulated by the Australian Prudential Regulation Authority. No approval is required for publication or distribution of this information in Brazil and its local distribution is by Merrill Lynch (Brazil) in accordance with applicable regulations. Merrill Lynch (DIFC) is authorized and regulated by the DFSA. Information prepared and issued by Merrill Lynch (DIFC) is done so in accordance with the requirements of the DFSA conduct of business rules. BoFA Europe (Frankfurt) distributes this information in Germany and is regulated by BaFin, the ECB and the CBI. BoFA Securities entities, including BoFA Europe and BoFASE (France), may outsource/delegate the marketing and/or provision of certain research services or aspects of research services to other branches or members of the BoFA Securities group. You may be contacted by a different BoFA Securities entity acting for and on behalf of your service provider where permitted by applicable law. This does not change your service provider. Please refer to the [Electronic Communications Disclaimers](#) for further information.

This information has been prepared and issued by BoFA and/or one or more of its non-US affiliates. The author(s) of this information 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. BoFA and/or MLPF&S is the distributor of this information in the US and accepts full responsibility for information distributed to BoFA and/or MLPF&S clients in the US by its non-US affiliates. Any US person receiving this information and wishing to effect any transaction in any security discussed herein should do so through BoFA and/or MLPF&S and not such foreign affiliates. Hong Kong recipients of this information should contact Merrill Lynch (Asia Pacific) Limited in respect of any matters relating to dealing in securities or provision of specific advice on securities or any other matters arising from, or in connection with, this information. Singapore recipients of this information should contact Merrill Lynch (Singapore) Pte Ltd in respect of any matters arising from, or in connection with, this information. For clients that are not accredited investors, expert investors or institutional investors Merrill Lynch (Singapore) Pte Ltd accepts full responsibility for the contents of this information distributed to such clients in Singapore.

General Investment Related Disclosures:

Taiwan Readers: Neither the information nor any opinion expressed herein constitutes an offer or a solicitation of an offer to transact in any securities or other financial instrument. No part of this report may be used or reproduced or quoted in any manner whatsoever in Taiwan by the press or any other person without the express written consent of BoFA Securities.

This document provides general information only, and has been prepared for, and is intended for general distribution to, BoFA Securities clients. Neither the information nor any opinion expressed constitutes an offer or an invitation to make an offer, to buy or sell any securities or other financial instrument or any derivative related to such securities or instruments (e.g., options, futures, warrants, and contracts for differences). This document is not intended to provide personal investment advice and it does not take into account the specific investment objectives,

financial situation and the particular needs of, and is not directed to, any specific person(s). This document and its content do not constitute, and should not be considered to constitute, investment advice for purposes of ERISA, the US tax code, the Investment Advisers Act or otherwise. Investors should seek financial advice regarding the appropriateness of investing in financial instruments and implementing investment strategies discussed or recommended in this document and should understand that statements regarding future prospects may not be realized. Any decision to purchase or subscribe for securities in any offering must be based solely on existing public information on such security or the information in the prospectus or other offering document issued in connection with such offering, and not on this document.

Securities and other financial instruments referred to herein, or recommended, offered or sold by BofA Securities, are not insured by the Federal Deposit Insurance Corporation and are not deposits or other obligations of any insured depository institution (including, Bank of America, N.A.). Investments in general and, derivatives, in particular, involve numerous risks, including, among others, market risk, counterparty default risk and liquidity risk. No security, financial instrument or derivative is suitable for all investors. Digital assets are extremely speculative, volatile and are largely unregulated. In some cases, securities and other financial instruments may be difficult to value or sell and reliable information about the value or risks related to the security or financial instrument may be difficult to obtain. Investors should note that income from such securities and other financial instruments, if any, may fluctuate and that price or value of such securities and instruments may rise or fall and, in some cases, investors may lose their entire principal investment. Past performance is not necessarily a guide to future performance. Levels and basis for taxation may change.

BofA Securities is aware that the implementation of the ideas expressed in this report may depend upon an investor's ability to "short" securities or other financial instruments and that such action may be limited by regulations prohibiting or restricting "shortselling" in many jurisdictions. Investors are urged to seek advice regarding the applicability of such regulations prior to executing any short idea contained in this report.

Certain investment strategies and financial instruments discussed herein may only be appropriate for consideration in accounts qualified for high risk investment.

Foreign currency rates of exchange may adversely affect the value, price or income of any security or financial instrument mentioned in this report. Investors in such securities and instruments effectively assume currency risk.

BofAS or one of its affiliates is a regular issuer of traded financial instruments linked to securities that may have been recommended in this report. BofAS or one of its affiliates may, at any time, hold a trading position (long or short) in the securities and financial instruments discussed in this report.

BofA Securities, through business units other than BofA Global Research, may have issued and may in the future issue trading ideas or recommendations that are inconsistent with, and reach different conclusions from, the information presented herein. Such ideas or recommendations may reflect different time frames, assumptions, views and analytical methods of the persons who prepared them, and BofA Securities is under no obligation to ensure that such other trading ideas or recommendations are brought to the attention of any recipient of this information.

In the event that the recipient received this information pursuant to a contract between the recipient and BofAS for the provision of research services for a separate fee, and in connection therewith BofAS may be deemed to be acting as an investment adviser, such status relates, if at all, solely to the person with whom BofAS has contracted directly and does not extend beyond the delivery of this report (unless otherwise agreed specifically in writing by BofAS). If such recipient uses the services of BofAS in connection with the sale or purchase of a security referred to herein, BofAS may act as principal for its own account or as agent for another person. BofAS is and continues to act solely as a broker-dealer in connection with the execution of any transactions, including transactions in any securities referred to herein.

Copyright and General Information:

Copyright 2023 Bank of America Corporation. All rights reserved. iQDatabase® is a registered service mark of Bank of America Corporation. This information is prepared for the use of BofA Securities clients and may not be redistributed, retransmitted or disclosed, in whole or in part, or in any form or manner, without the express written consent of BofA Securities. BofA Global Research information is distributed simultaneously to internal and client websites and other portals by BofA Securities and is not publicly-available material. Any unauthorized use or disclosure is prohibited. Receipt and review of this information constitutes your agreement not to redistribute, retransmit, or disclose to others the contents, opinions, conclusion, or information contained herein (including any investment recommendations, estimates or price targets) without first obtaining express permission from an authorized officer of BofA Securities.

Materials prepared by BofA Global Research personnel are based on public information. Facts and views presented in this material have not been reviewed by, and may not reflect information known to, professionals in other business areas of BofA Securities, including investment banking personnel. BofA Securities has established information barriers between BofA Global Research and certain business groups. As a result, BofA Securities does not disclose certain client relationships with, or compensation received from, such issuers. To the extent this material discusses any legal proceeding or issues, it has not been prepared as nor is it intended to express any legal conclusion, opinion or advice. Investors should consult their own legal advisers as to issues of law relating to the subject matter of this material. BofA Global Research personnel's knowledge of legal proceedings in which any BofA Securities entity and/or its directors, officers and employees may be plaintiffs, defendants, co-defendants or co-plaintiffs with or involving issuers mentioned in this material is based on public information. Facts and views presented in this material that relate to any such proceedings have not been reviewed by, discussed with, and may not reflect information known to, professionals in other business areas of BofA Securities in connection with the legal proceedings or matters relevant to such proceedings.

This information has been prepared independently of any issuer of securities mentioned herein and not in connection with any proposed offering of securities or as agent of any issuer of any securities. None of BofAS or any of its affiliates or their research analysts has any authority whatsoever to make any representation or warranty on behalf of the issuer(s). BofA Global Research policy prohibits research personnel from disclosing a recommendation, investment rating, or investment thesis for review by an issuer prior to the publication of a research report containing such rating, recommendation or investment thesis.

Any information relating to the tax status of financial instruments discussed herein is not intended to provide tax advice or to be used by anyone to provide tax advice. Investors are urged to seek tax advice based on their particular circumstances from an independent tax professional.

The information herein (other than disclosure information relating to BofA Securities and its affiliates) was obtained from various sources and we do not guarantee its accuracy. This information may contain links to third-party websites. BofA Securities is not responsible for the content of any third-party website or any linked content contained in a third-party website. Content contained on such third-party websites is not part of this information and is not incorporated by reference. The inclusion of a link does not imply any endorsement by or any affiliation with BofA Securities. Access to any third-party website is at your own risk, and you should always review the terms and privacy policies at third-party websites before submitting any personal information to them. BofA Securities is not responsible for such terms and privacy policies and expressly disclaims any liability for them.

All opinions, projections and estimates constitute the judgment of the author as of the date of publication and are subject to change without notice. Prices also are subject to change without notice. BofA Securities is under no obligation to update this information and BofA Securities ability to publish information on the subject issuer(s) in the future is subject to applicable quiet periods. You should therefore assume that BofA Securities will not update any fact, circumstance or opinion contained herein.

Certain outstanding reports or investment opinions relating to securities, financial instruments and/or issuers may no longer be current. Always refer to the most recent research report relating to an issuer prior to making an investment decision.

In some cases, an issuer may be classified as Restricted or may be Under Review or Extended Review. In each case, investors should consider any investment opinion relating to such issuer (or its security and/or financial instruments) to be suspended or withdrawn and should not rely on the analyses and investment opinion(s) pertaining to such issuer (or its securities and/or financial instruments) nor should the analyses or opinion(s) be considered a solicitation of any kind. Sales persons and financial advisors affiliated with BofAS or any of its affiliates may not solicit purchases of securities or financial instruments that are Restricted or Under Review and may only solicit securities under Extended Review in accordance with firm policies.

Neither BofA Securities nor any officer or employee of BofA Securities accepts any liability whatsoever for any direct, indirect or consequential damages or losses arising from any use of this information.

Research Analysts

Asia Economics

China, Hong Kong, Taiwan

Helen Qiao

China & Asia Economist
Merrill Lynch (Hong Kong)
+852 3508 3961
helen.qiao@bofa.com

Miao Ouyang

China & Asia Economist
Merrill Lynch (Hong Kong)
miao.ouyang@bofa.com

Benson Wu

China & Korea Economist
Merrill Lynch (Hong Kong)
benson.wu@bofa.com

Xiaoqing Pi

China Economist
Merrill Lynch (Hong Kong)
xiaoqing.pi@bofa.com

North Asia

Ting Him Ho, CFA

Asia Economist
Merrill Lynch (Hong Kong)
+852 3508 8744
tinghim.ho@bofa.com

India

Aastha Gudwani

India Economist
BofAS India
aastha.gudwani@bofa.com

The Philippines

Jojo Gonzales ^^

Research Analyst
Philippine Equity Partners
jojo.gonzales@pep.com.ph

Thailand

Pipat Luengnaruemitchai

Emerging Asia Economist
Kiatnakin Phatra Securities
pipat.luen@kkpfg.com

Australia

Micaela Fuchila

Economist
Merrill Lynch (Australia)
micaela.fuchila@bofa.com

Indonesia, Malaysia, Singapore

Kai Wei Ang

Asia & ASEAN Economist
Merrill Lynch (Singapore)
kaiwei.ang@bofa.com

Japan

Izumi Devalier

Japan and Asia Economist
BofAS Japan
izumi.devalier@bofa.com

Takayasu Kudo

Japan and Asia Economist
BofAS Japan
takayasu.kudo@bofa.com

Global FX and Rates Strategy

Claudio Piron

Emerging Asia FI/FX Strategist
Merrill Lynch (Singapore)
claudio.piron@bofa.com

Adarsh Sinha

FX Strategist
Merrill Lynch (Hong Kong)
adarsh.sinha@bofa.com

Abhay Gupta

Emerging Asia FI/FX Strategist
Merrill Lynch (Singapore)
abhay.gupta2@bofa.com

Chun Him Cheung, CFA

Emerging Asia FI/FX Strategist
Merrill Lynch (Hong Kong)
chunhim.cheung@bofa.com

Janice Xue

Emerging Asia FI/FX Strategist
Merrill Lynch (Hong Kong)
janice.xue@bofa.com

Equity and Credit Strategy

Nigel Tupper >>

Quant Strategist
Merrill Lynch (Australia)
nigel.tupper@bofa.com

Ruben Segura-Cayuela

Europe Economist
BofA Europe (Madrid)
ruben.segura-cayuela@bofa.com

Aditya Bhawe

US Economist
BofAS
aditya.bhave@bofa.com

BofA Securities participated in the preparation of this report, in part, based on information provided by Philippine Equity Partners, Inc. (Philippine Equity Partners). ^^Philippine Equity Partners employees are not registered/qualified as research analysts under FINRA rules.

>> Employed by a non-US affiliate of BofAS and is not registered/qualified as a research analyst under the FINRA rules.

Refer to "Other Important Disclosures" for information on certain BofA Securities entities that take responsibility for the information herein in particular jurisdictions.