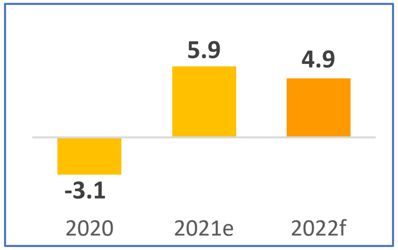
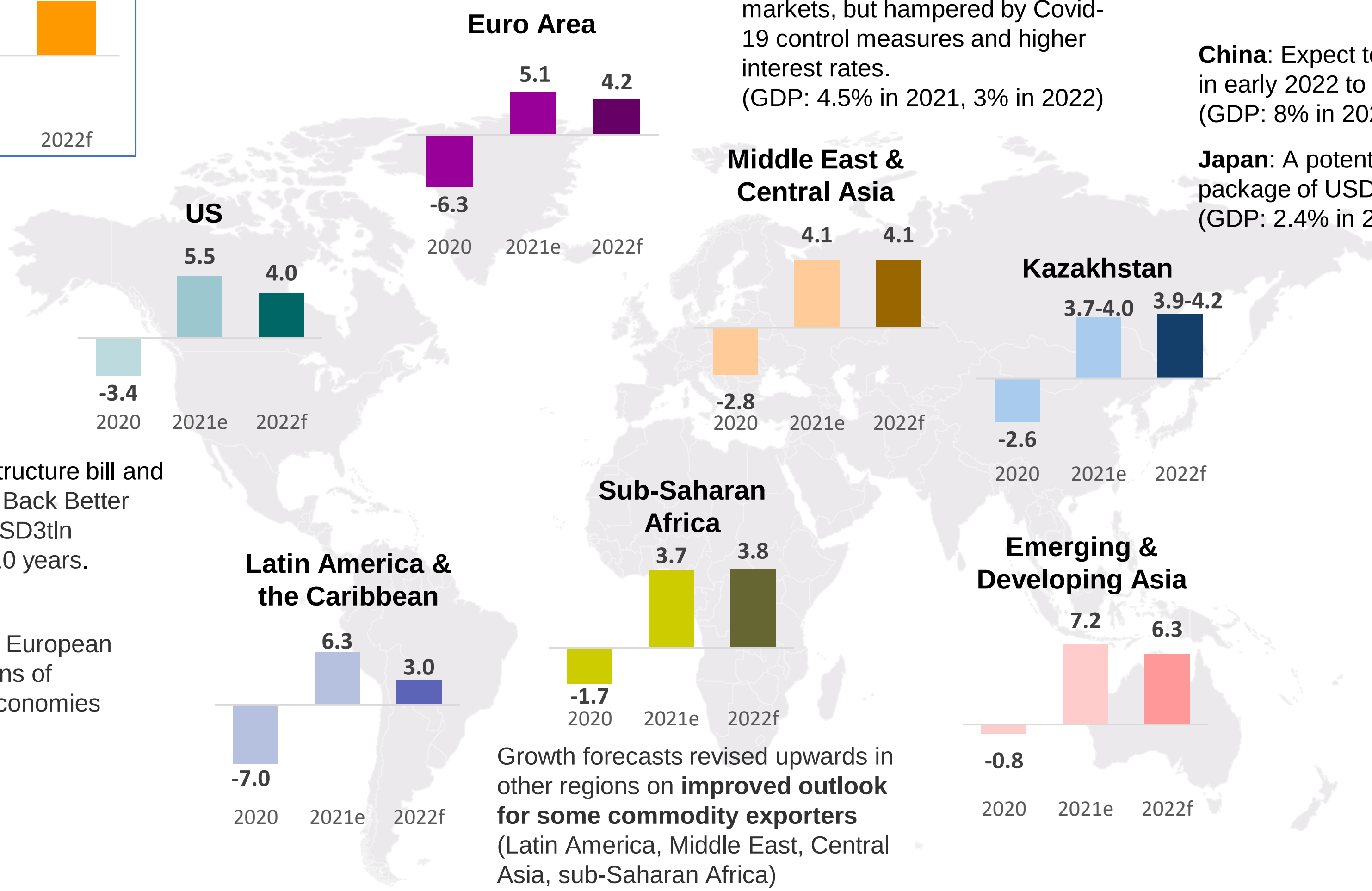
VERNY CAPITAL

Global Outlook 2022: "Treading With Caution"

Global economic recovery continues even as the pandemic resurges. Vaccine access and early policy support are the principal growth drivers

Global GDP growth projected at 4.9% in 2022 (2021: 5.9%)





Russia: Growth in 2022 supported by continued strength in commodity markets, but hampered by Covid-19 control measures and higher interest rates.
(GDP: 4.5% in 2021, 3% in 2022)

China: Expect to add more stimulus in early 2022 to ensure stability.
(GDP: 8% in 2021, 5.6% in 2022)

Japan: A potential stimulus package of USD383bln for 2022.
(GDP: 2.4% in 2021, 3.2% in 2022)

US: Approved Infrastructure bill and the anticipated Build Back Better act, equivalent to ~USD3tln spending over next 10 years.

EU: Next Generation European Union grants and loans of EUR750bln for EU economies during 2021-2023.

Growth forecasts revised upwards in other regions on **improved outlook for some commodity exporters** (Latin America, Middle East, Central Asia, sub-Saharan Africa)

Source: International Monetary Fund WEO Oct 2021, Central Banks (US Fed, ECB, CBR, NBK), Reuters, various sources

How worried should we be about the Omicron variant?

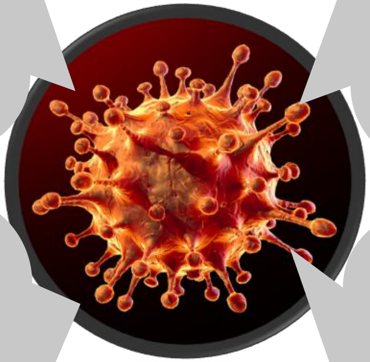
Covid-19 cases driven by the fast spreading Omicron variant are expected to peak in coming months, before receding in 2H 2022.

IS IT MORE CONTAGIOUS?

- **WHO warned that Omicron's high transmissibility meant it would become dominant within weeks in many places (4 Jan 2022).**
- Omicron now represents ~90% of Covid-19 cases in the US (US CDC, 13 Jan 2022).
- In South Africa, UK and Denmark, the number of new Omicron infections has been doubling every 2 days (Scripps Research Translational Institute, La Jolla, CA).

WHAT TYPE ILLNESS DOES IT CAUSE?

- **WHO sees more evidence that Omicron causes milder symptoms (4 Jan 2022).**
- Hospital admissions data found **comparatively few deaths**, and **median length of hospital stay have been reassuring**.
- Those infected with Omicron, **many have at least some immunity from vaccinations and/or prior infection**.



CAN IT RE-INFECT PEOPLE OR EVADE VACCINE PROTECTION?

- **WHO states that raising global vaccine rates will reduce Omicron's impact**, and calls for global coordination on vaccine development (4 Jan 2021).
- Preliminary data from a trial showed AstraZeneca generated **a higher antibody against Omicron variant & others when given a 3rd booster** (AZ, 13 Jan 2022).
- A UK government brief on 10th Dec said a **booster dose led to vaccine effectiveness of 70-75% soon after that extra shot**.

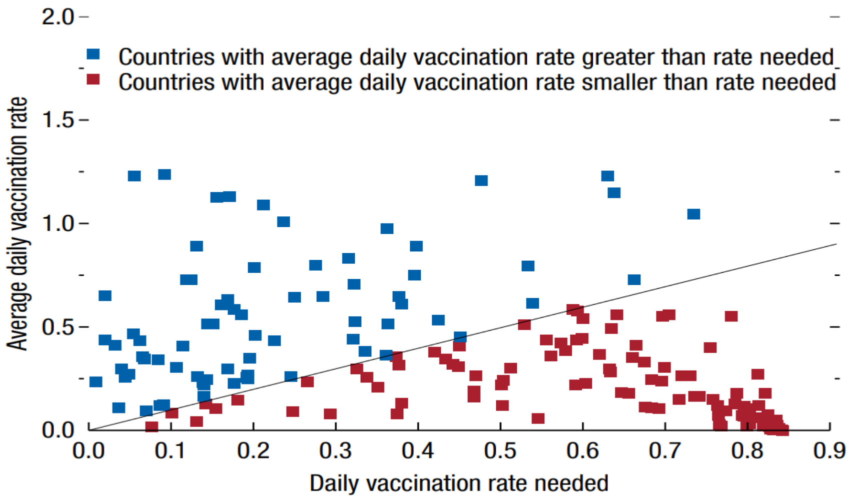
ARE CURRENT TREATMENTS STILL EFFECTIVE?

- **Omicron's mutations are expected to reduce the effectiveness of certain manufactured antibody**. GSK said on 7th Dec its antibody-based Covid-19 therapy was effective against Omicron in lab tests.
- Experimental antiviral pills (Pfizer's Paxlovid and Merch & Co's molnupiravir) target parts of the virus that are not changed in Omicron are likely to become important weapons if vaccine-induced and natural immunity are threatened.

Source: Reuters Healthcare article 14 Dec 2021 "How worried should we be about the Omicron variant?", WHO statement on 4 Jan 2022, Reuters news

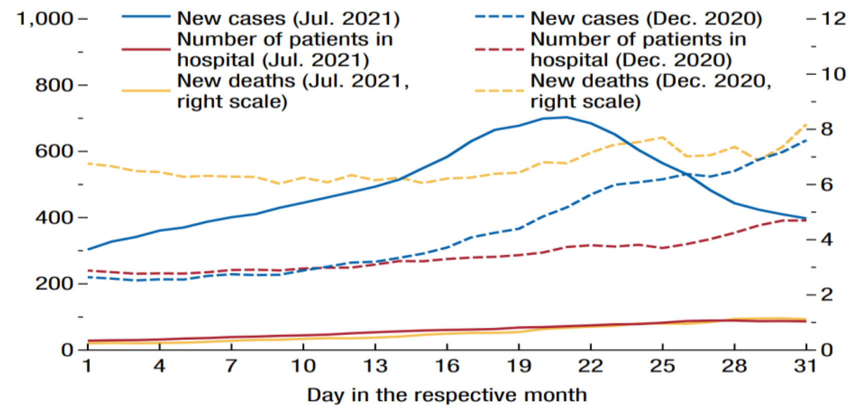
Widespread vaccinations can have powerful, positive economic effects, bolstering economic recovery

Gaps in Vaccination Rates across Economies, %



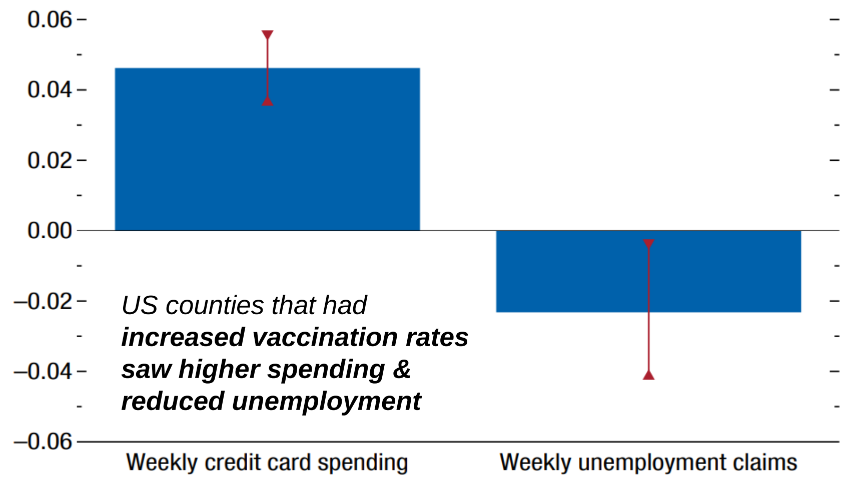
- ✓ The IMF vaccination plan targets to vaccinate 40% of the population in every country by end-2021 and 70% by July 2022.
- ✓ **Over 50% of the countries in the world, accounting for 35% of global population, are not on track to achieve the 40% mark by end-2021**. (Advanced: 58%, EM: 36%, low-income <5%)
- ✓ (i) Most of the currently approved vaccines markedly lower the risk of severe disease from all current Covid-19 variants, limit hospitalizations and deaths. (ii) Widespread vaccinations can have powerful, positive economic effects, bolstering the recovery.

UK: Covid-19 Vaccine Rollouts and Health Outcomes (per mln)



*UK's **hospitalization and death rates in 2021 were only 10-20% of the levels registered in 2020, post 2 shots vaccine***

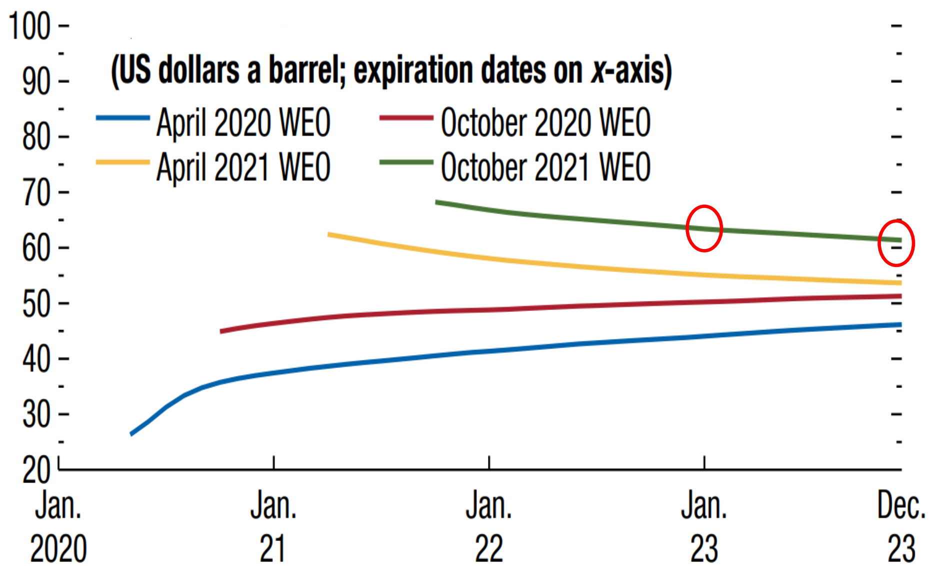
US: Covid-19 vaccines and economic activity, (% YoY, relative to pre-pandemic levels)



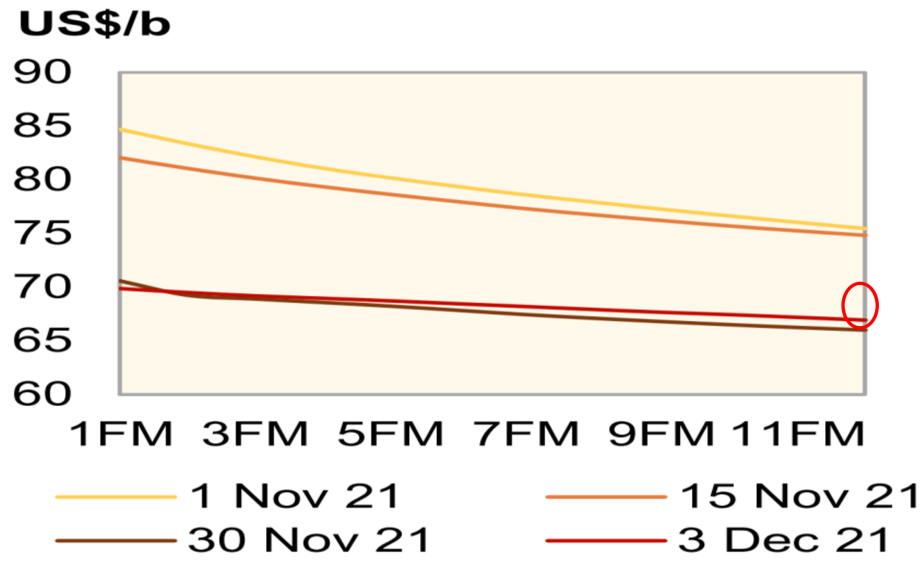
Source: International Monetary Fund WEO Oct 2021

Global Oil demand-supply to find balance in 2022, OPEC+ indicates oil price of USD65-80pb in 2022 as “comfortable”

Brent Futures Curves



Weekly Brent Futures Curves (November 2021)

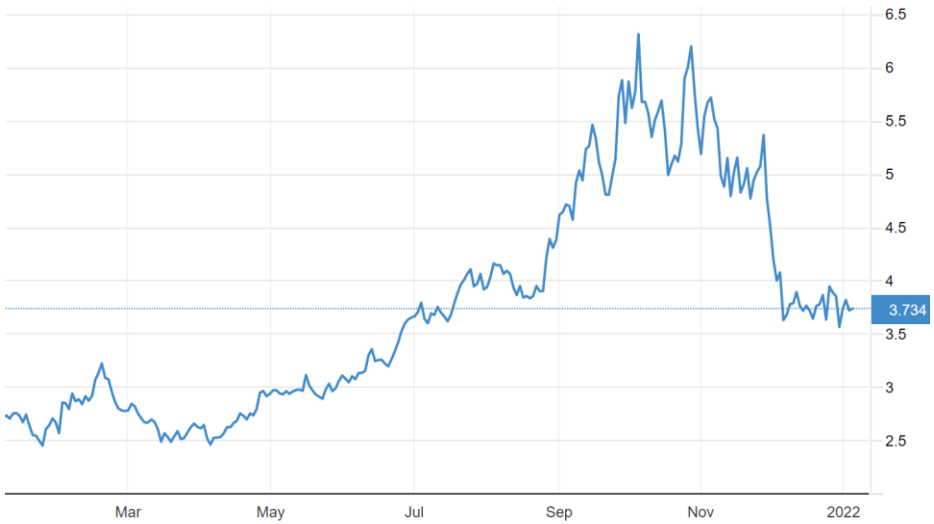


- ✓ Risks to global oil prices are balanced into 2022. Upside price potential supported by (i) recovery in demand (2021: +5.7mbpd YoY, 2022f: +4.2mbpd YoY), (ii) lower global production capacity (investment in non-OPEC upstream sector at USD350bln in each 2021-2022, 50% below 2014 level), and (iii) prolonged price support by OPEC+.
- ✓ Downside risks to global oil prices include (i) the rise of Omicron variants potentially impact growth and demand, (ii) higher output from uncommitted OPEC+ members (Iran, Libya, Venezuela), and (iii) US shale oil producers.
- ✓ **Brent price expected at USD70.05pb in 2022, as demand & supply find a relative balance starting 1Q22, giving limited upside price pressure**. OPEC+ indicated oil price of USD65-80pb would be “comfortable” for 2022.

Source: International Monetary Fund WEO Oct 2021, OPEC Monthly Report Dec 2021, VC

Global Natural Gas prices fail to maintain footing despite production drop in the US, low inventories and strong demand outside of the US

Henry Hub Natural Gas Spot Price in 2021, USD/mmbtu



Natural Gas Spot Prices & Forecasts (2020-2022f)

Natural gas price	2020 avg	2021 avg	% YoY chg	2021 peak	2022f
US Henry Hub	2.03*	3.90	+92.3	23.86	3.98-4.06*
EU Title Transfer Facility	3.0	14.1	+370.0	31.1***	8.0**
Japan Korea Marker^	4.218	18.000	+326.7	49.345	28.35^^

**Federal Reserve Bank of Dallas survey of 134 energy executive in the US (90 E&Ps and 44 OFS firms) and project natural gas price of USD4.06/mmbtu in 2022*
*** Fitch's forecast 7 Dec 2021*
****OPEC data for Oct average, 7 Dec 2021*
^historical prices by investing.com
^^Based on CME pricing for futures contract maturing Dec 2022, as at 4 Jan 2022

✓ **US' EIA expects continued volatility of global natural gas prices into 2022**, with 1Q22 forecast of USD4.58/mmbtu average (vs. earlier projection USD5.24/mmbtu). The EIA expects downward price pressure to emerge after 1Q22, with **2022 projection of USD3.98/mmbtu average** (vs. earlier forecast of USD4.10/mmbtu).

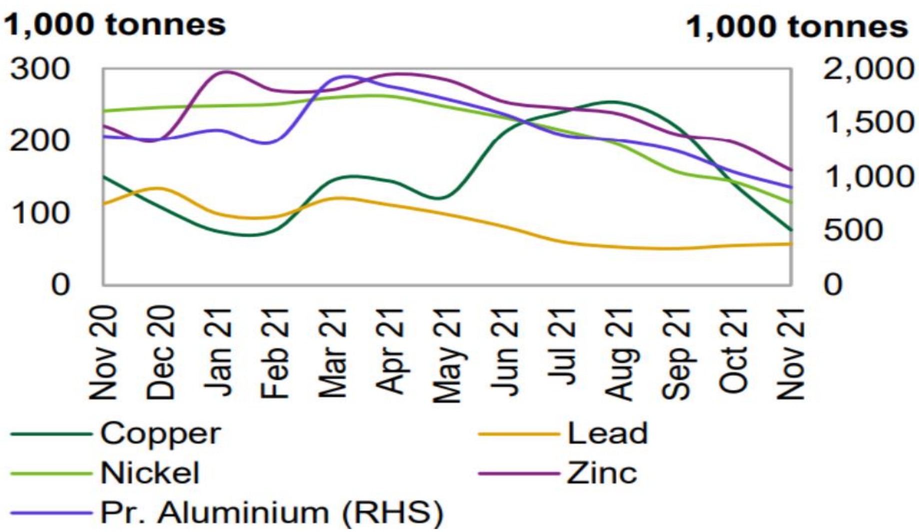
✓ Prices in Europe and Asia also retreated from panic levels. Europe prices fell to ~USD23/mmbtu on expectation of higher Russian supplies and lower coal prices. Colder average temperatures together with seasonally low inventories supported prices. EU's average natural gas prices in 2021 were almost 4x higher than 2020.

✓ **High global natural gas prices in recent months are expected to be transitory, as the global natural gas market has capacity to produce more gas, and increased demand from Asia and Europe is not sustainable once storage facilities are filled to normal levels**.

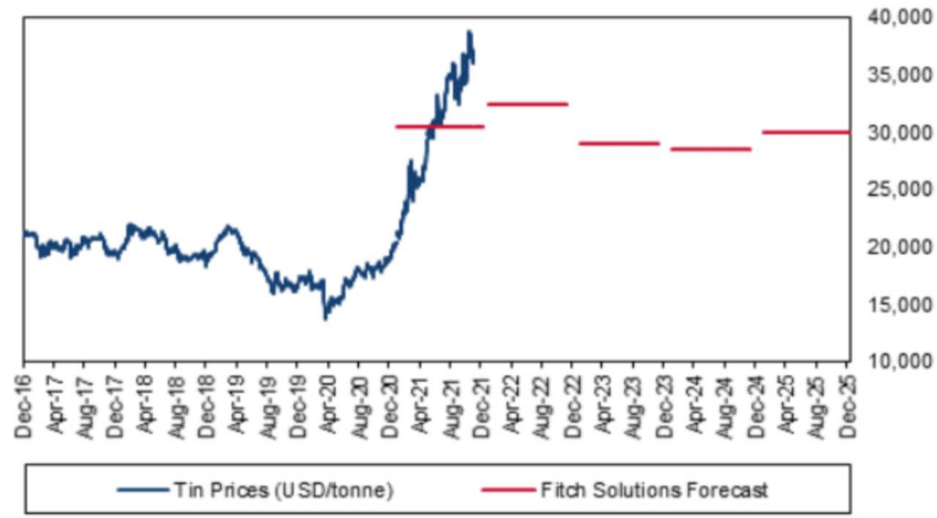
Source: US Energy Information Administration, OPEC Monthly Report Dec 2021, various sources

Moderate setback to global Copper prices in 2022 on improved supply, global Tin prices revised upward despite easing fundamentals

Metals Inventories at the LME



3-Month LME Tin Prices & Forecasts, USD/tonne



- ✓ ICSG estimated a small global copper deficit of 42mt in 2021, with 2022 global supply forecast to exceed global demand by a 328,000mt.
- ✓ **Global copper surplus in 2022** is based on expectations of a **3.9% increase in refined output**, the biggest increase in 8 years. **Global copper demand expected to grow by 2.4% in 2022**.
- ✓ **Expect a moderate setback in global copper prices on improved supply, expectations of USD9,315-USD9,880mt range in 2022.**

- ✓ Tin fundamentals expected to ease into 2022, driven by supply increases. **Fitch revised upward forecast for global tin prices to USD32,500/t in 2022** (vs. USD26,000/t previously).
- ✓ Global tin demand will continue to be robust in the long-term through the metal's use in electronics (solders in semiconductors, medical and home equipment, personal devices, electric vehicles) and solar panels (photovoltaic cells).

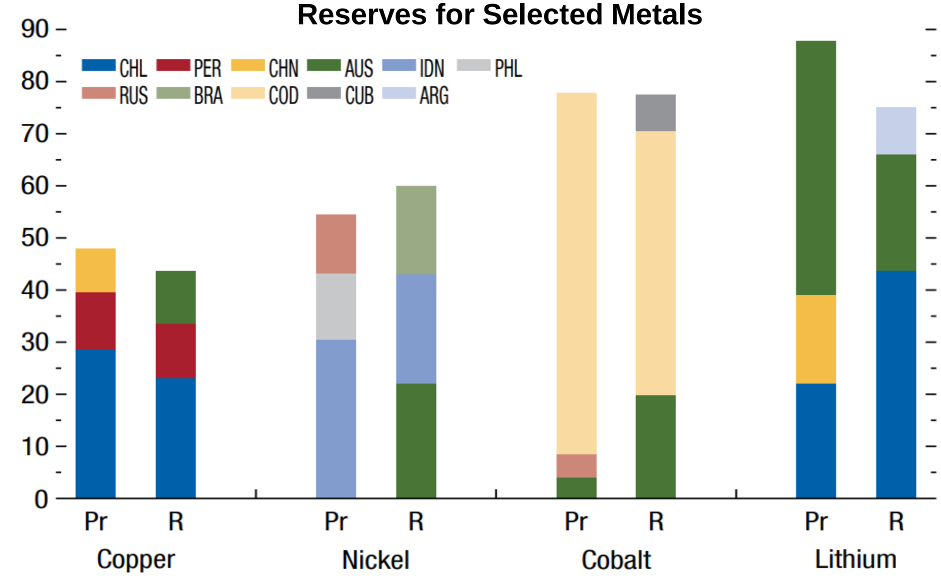
Source: London Metal Exchange, International Copper Group Study, S&P Global, Fitch Solutions, VC

Clean energy transition implies a long-term play for global Metals

Key Indicators for Energy Transition Metals

Metal	Exchange Traded	Energy Transition Usage: Renewable	Network	Battery	Hydrogen	Production (2020, $ billion)
Copper	✓	✓	✓	✓		123.0
Aluminum	✓	✓	✓	✓	✓	107.0
Nickel	✓	✓		✓	✓	28.0
Zinc	✓	✓				28.0
Lead	✓	✓		✓	✓	26.0
Silver	✓	✓				13.0
Manganese	No	✓		✓	✓	25.0
Chromium	Recent	✓				19.0
Silicon	No	✓				14.0
Molybdenum	Recent	✓			✓	5.0
Cobalt	Recent			✓		4.1
Lithium	Recent			✓		1.8
Vanadium	No			✓		1.3
Graphite	No			✓		1.3

Top 3 Producers by Share of Global Production & Reserves for Selected Metals



✓ The IMF projects that (i) **global demand/consumption of critical energy transition metals will increase in the long-term (and especially up to 2030s) i.e. lithium and cobalt by a factor of >6x, copper by 2x, nickel by 4x**, (ii) global **demand for metals will be frontloaded between now and 2030**, driven by the need of large initial investments for the switch from fossil fuels to renewables.

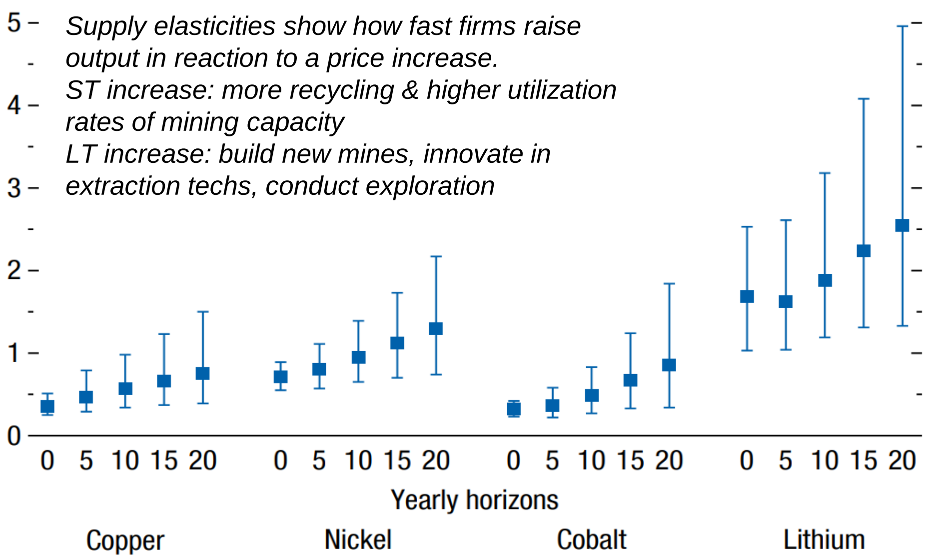
✓ **The global supply of metals is quite concentrated, implying that a few top producers may stand to benefit** e.g. Congo accounts for 70% of global cobalt output and 50% of reserves. Other countries that stand out in production and reserves include Australia (lithium, cobalt, nickel), Chile (copper and lithium), Peru, Russia, Indonesia and South Africa.

✓ The economic benefits for higher prices for metal exporters could be substantial. The IMF estimates that **a 15% increase in global metal prices adds an extra 1% to real GDP growth for metal exporters** vs. metal importers.

Source: International Monetary Fund WEO Oct 2021

Global Metal supply is more elastic over the long-term in response to a demand-push +ve price shock, revenues from metals production could potentially rival value of oil production

Supply Elasticities for Selected Metals



Projected Cumulated Real Revenue for the Global Production of Selected Metals 2021-2040 (USD bln)

Metals	Historical (1999-2018)	Stated Policies Scenario	Net Zero Scenario
Selected Metals	**3,043**	**4,974**	**13,007**
Copper	2,382	3,456	6,135
Nickel	563	1,225	4,147
Cobalt	80	152	1,556
Lithium	18	141	1,170
Fossil Fuels	**70,090**	-	**19,101**
Oil	41,819	-	12,906
Natural Gas	17,587	-	3,297
Coal	10,684	-	2,898

- ✓ A global demand-push positive **price shock of 10% increases the same-year output of copper by 3.5%, nickel 7.1%, cobalt 3.2%, lithium 16.9%**. **After 20 years, the same price shock raises the output of copper by 7.5%, nickel 13%, cobalt 8.6%, lithium 25.5%**.

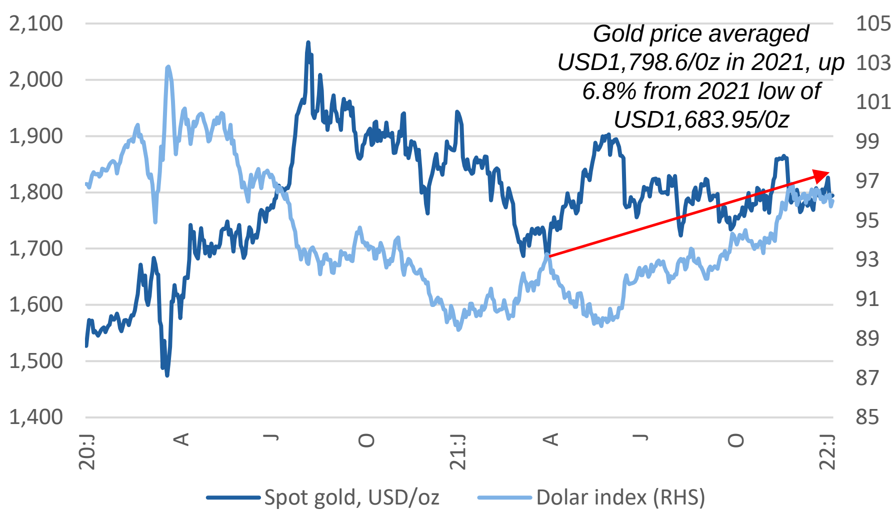
- ✓ **Global metal prices are expected to peak in 2030** (i) steep rises in global demand are frontloaded by 2030 due to the need to build infrastructures for clean energy, (ii) price boom induces a global supply reaction, reducing market tightness and potential price pressures after 2030, **implying global Metals play up to 2030s.**

- ✓ The IMF estimates that the **global demand boom for metals would lead to a 6x increase in the value of global metal production totaling USD12.9tln for the 4 energy transition metals** alone. This would rival the potential value of global oil production over the same period. Risks include technology change, the speed and direction of the energy transition depend on policy decisions.

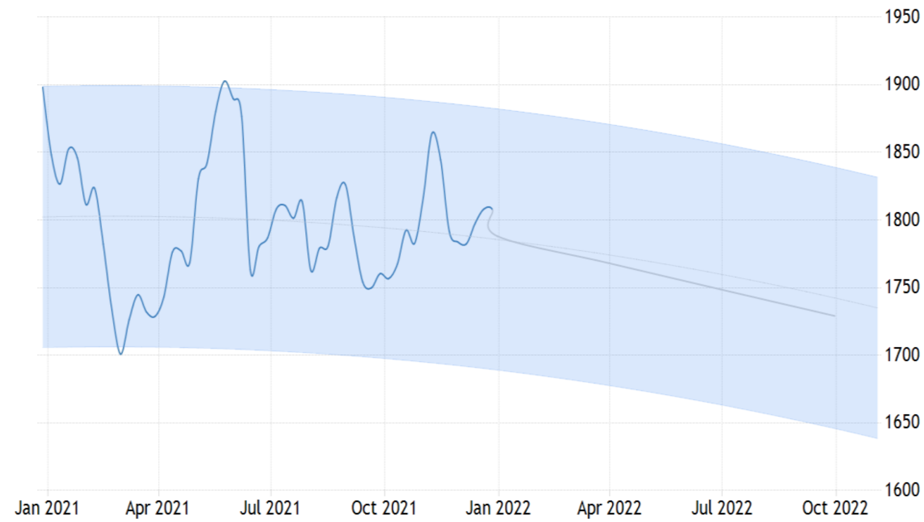
Source: International Monetary Fund projections based on the IEA Net Zero 2050 emissions

Global Gold price will be driven by inflation and interest rates in the short and medium-term, interest rate hikes could come earlier-than-expected

Global Spot Gold vs. Dollar Index (2020-2022YTD)



Global Spot Gold Trends & Forecasts*



Trading Economics global macro models & analysts expectations

Global Spot Gold Forecasts & Sources (as at 29 Dec 2021)

Source	2021	2022f	2023f
ABN Amro	1,700	1,500	1,300
ANZ	1,776	1,725	-
Capital Economics	1,805	1,600	-
Credit Suisse	-	1,850	1,600
JP Morgan	1,795	1,631	-
Scotia Bank	1,799	1,850	1,700
World Bank	1,795	1,750	1,730
Trading Economics	-	1,730	-
Average forecast		**1,705**	

Source: London Bullion Market Association, Bloomberg, Reuters, Trading Economics, VC

Global gold price drivers:

- ‼ If high inflation is persistent, gold will be a good hedge against rising inflation.
- ‼ New Covid variants may delay economic recovery, add on to the already risk-averse sentiment.
- ‼ Gradual economic recovery, government stimulus & sales promotions potentially support gold demand.
- ‼ Central banks have steadily increased allocation to gold in 2021 and research suggests they will continue to do so in 2022.

✓ **Downside risk: Interest rates increases make gold less attractive compared to other yield-bearing assets. Gold price is expected at USD1,705/oz in 2022.**

USD: Dollar strengthening against major currencies on solid economic recovery and interest rate hikes expectations in 2022

UUSD Index, (2021-5 Jan 2022)

DXY measures the performance of USD against a basket of major currencies EUR (57.6%), JPY (13.6%), GBP (11.9%), CAD (9.1%), SEK (4.2%), and CHF (3.6%)

USD vs. Selected Currencies (2021-2022f)

FX	31 Dec 2021	2022f
EUR/USD	1.1325	1.10
GBP/USD	1.3498	1.34
USD/TRY	13.18	17.44
USD/RUB	75.0725	81.41*
USD/JPY	114.5	120
USD/SEK	9.0447	9.10**
USD/CAD	1.2639	1.22

**Based on CME's RUB/USD futures maturing Dec 2022 at 0.012135, as at 6 Jan 2022*
***Based on CME's SEK/USD futures maturing Dec 2022 at 0.10989, as at 6 Jan 2022*

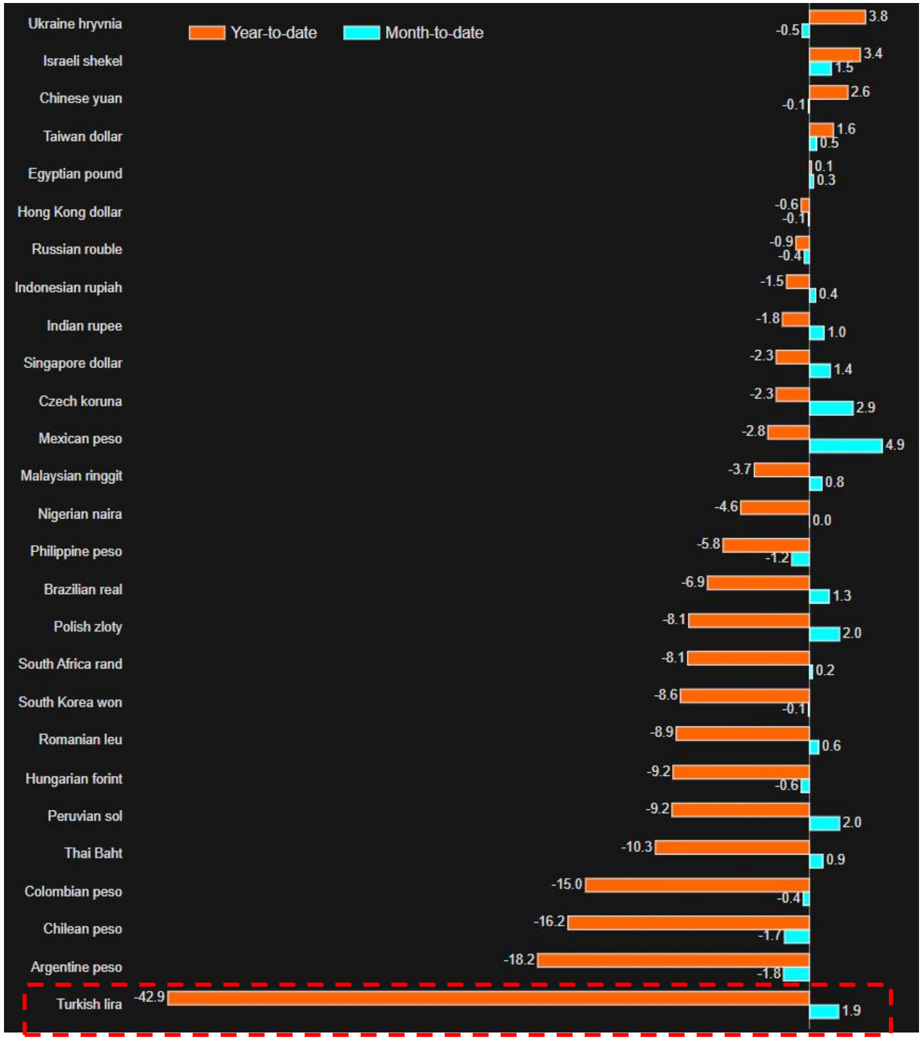
USD vs. EUR, GBP, TRY (2021)

- ✓ The dollar index traded range-bound ~96.2 in the first week of Jan 2022 (vs. 2021: +6.3% at 95.6).
- ✓ Fed officials said the "very tight" US labor market might warrant raising rates sooner, it could also reduce balance sheet size to tame high inflation.
- ✓ Yields on 2, 5 and 10-year US Treasuries surged to their highest levels in 2 years, 10-year yields rose above 1.7%.
- ✓ **US and Canada should be at the forefront of interest rates tightening in 2022 vs. EU, UK and Japan that could be more tolerant of inflation**.

Source: Chicago Mercantile Exchange (CME), Trading Economics, market consensus, VC

Lira at the worst annual performance since 1994, Turkey's real yield is at its lowest level in at least 10 years

EM Currencies vs. USD (% change)

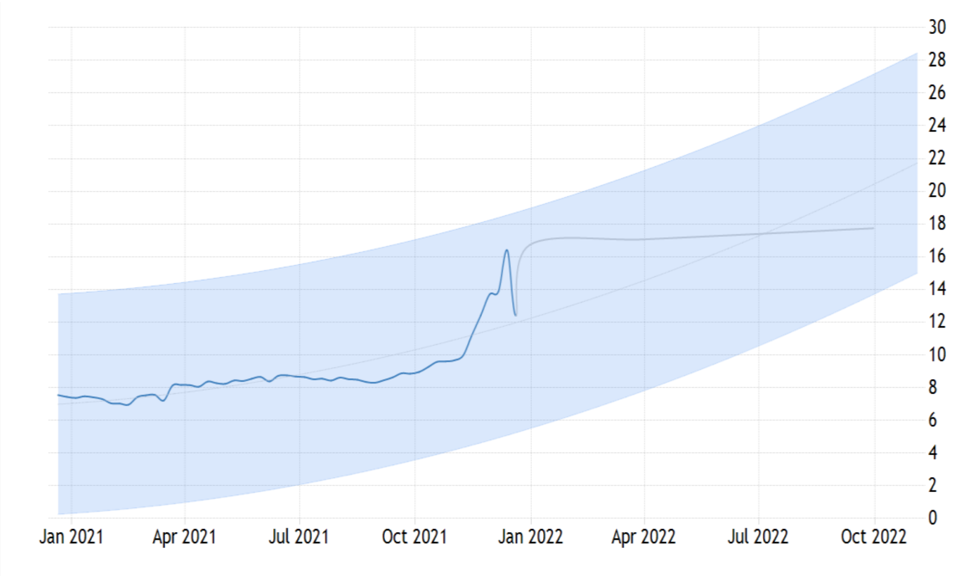


- ✓ **Lira plunged >40% in 2021, over fears of an inflationary spiral** brought on by Mr Erdogan's push for monetary easing.
- ✓ Under the pressure from Mr Erdogan, **Turkish central bank cut interest rates by 500bps since September to 14%**.
- ✓ **Real interest rate fell deep into negative territory (-22%). The market expects inflation to surge above 50% in 2022.**
- ✓ Right after the lira touched 18.4/USD, on 20th and 21st Dec respectively, Mr Erdogan and the central bank unveiled measures to protect lira deposits against market fluctuations.
- ✓ **Implied volatility on the lira jumped to 63%, the highest on record** as the lira fluctuated wildly and reflect uncertainty about the new lira support measures.
- ✓ **Turkey's 5-year USD credit default swap was at 622bps on 20th Dec, the highest since May 2020, reflecting the greater risk of a sovereign default driven by lira depreciation.**

Source: Bloomberg, Central Bank of Turkey, VC

The current strength in Lira is unsustainable, expected to trade at 16.00/USD by June 2022 and 17.74/USD by Dec 2022

USDTRY trends & expectations (2021-2022)



Inflation vs. USDTRY trends (2019-2021)

- ✓ **International banks stated they will review Turkish limits for the next debt roll over period based on the economic updates. Some have stopped cash trading in lira and were extremely cautious about offering liquidity for forward contracts, citing market volatility and policy risks** (Reuters news).

- ✓ A weaker lira, high international commodity prices and rising inflation expectations create upside risks to inflation projections. On 2nd December, **Fitch Ratings downgraded Turkey's sovereign outlook to negative on premature interest rate cuts and lira slide**. Fitch highlighted that **lira depreciation could reignite external financing pressures**

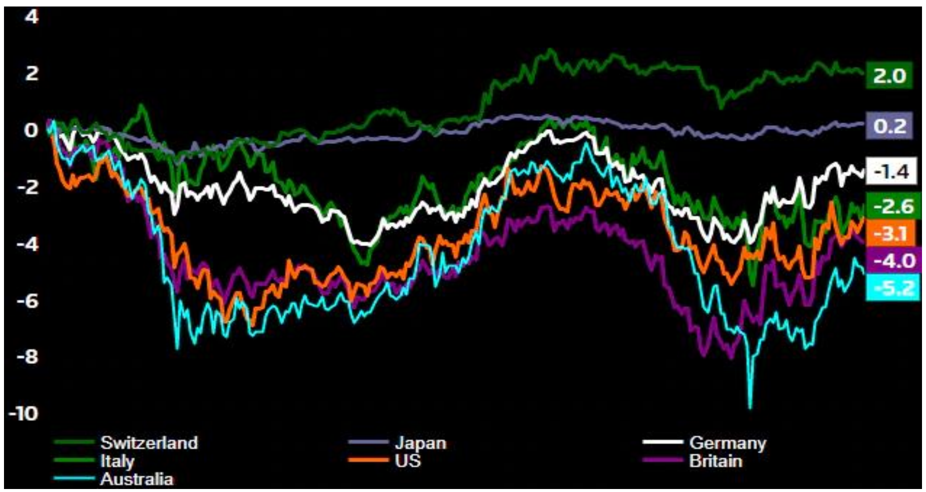
- ✓ The **market expects current lira rally to be unsustainable, expect lira to trade weaker at 16.00/USD by June 2022 and 17.74/USD December 2022**.

Source: Trading Economics, Fitch Ratings, analysts expectations, VC

World equities added USD10tln or 20% to market capitalization in 2021, while government bonds ended mostly in red

Global Equities Market Capitalization 2020-2021, USD tln

10Y Benchmark Government Bond Returns 2021, %



Global Equity & Bond Markets Performance in 2021

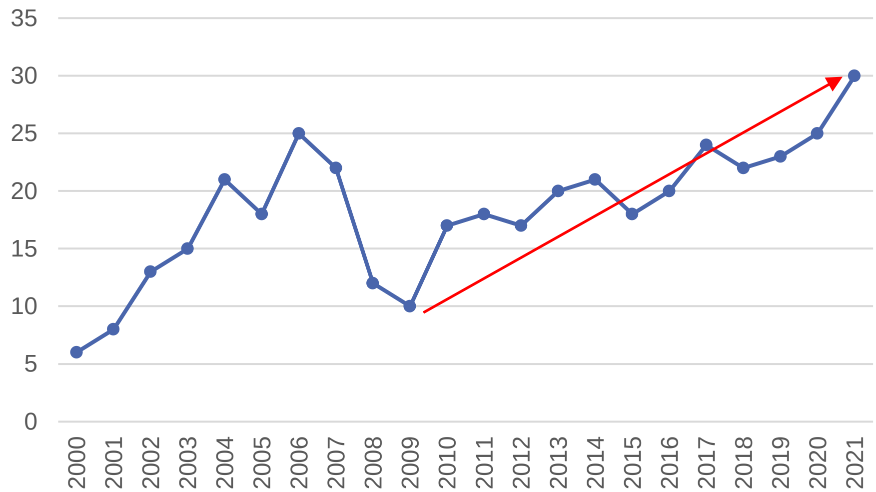
Equity	YoY chg	Bond	YoY chg
DJIA	+18.7%	US 2Y	+61bps
S&P 500	+26.9%	US 10Y	+59bps
Nasdaq	+21.4%	Germany 10Y	+17bps
DAX	+15.8%	UK 10Y	+76bps
FTSE 100	+14.3%	France 10Y	+52bps
CAC 40	+28.9%	Japan 10Y	+4bps
Shanghai Comp	+4.8%	S Korea 10Y	+51bps
Nikkei 225	+4.9%	China 10Y	-41bps
ASX 200	+13.0%	India 10Y	+56bps
Hang Seng	-14.1%	Australia 10Y	+65bps

- ✓ World equities market capitalization gained USD10tln or 20% in 2021.
- ✓ Global government bonds ended mostly in red, government bond prices in the US lost 3% while Germany shed 9%.
- ✓ Inflation-linked bonds have performed well in 2021, US TIPS returned 6%, euro-denominated equivalents earned 6.3% and British linkers delivered 3.7%.
- ✓ 2022 themes being how fast interest rates increase, how well growth holds up, this will support advanced market equities, inflation-protected fixed income, high-grade fixed income, and sectoral play e.g. ESG, green theme.

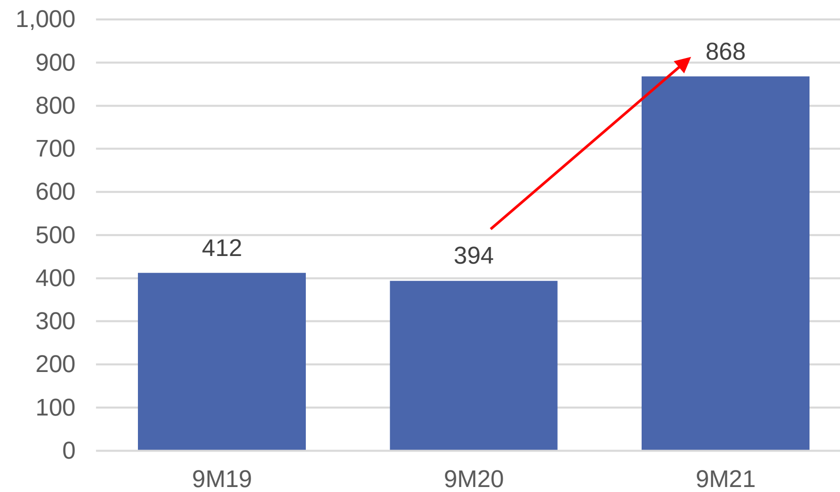
Source: World Government Bonds, Reuters, IHS Market

Global M&A activity set to reach a record high, with PE playing an active role at 30% of total value transacted in 2021

PE Share of M&A Market by Value, %



PE Global Acquisitions by Value, USDbln

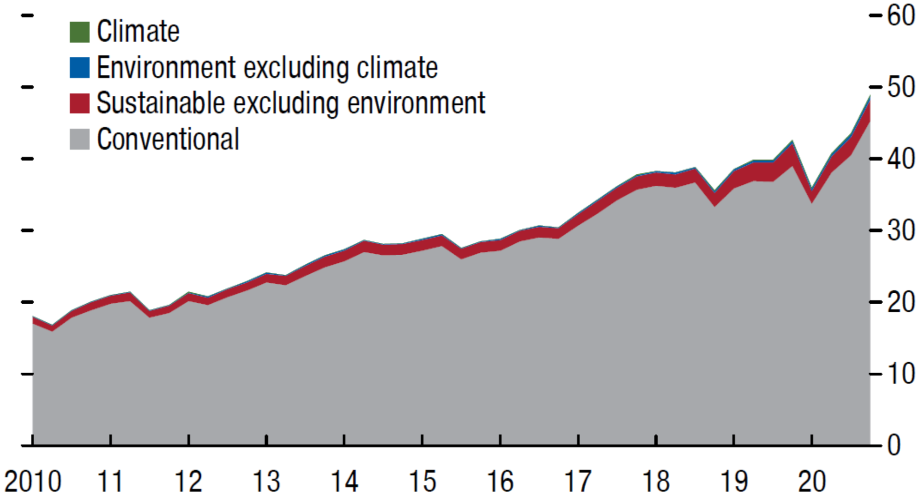


- ✓ **Global M&A activity continued at a record pace in the first 9 months of 2021** and was estimated to have reached a record level during the year, with **total deals announced at USD4.2tln** in the first three quarters.
- ✓ **PE firms played an active role, announcing deals valued at >USD867bln**, up 120% from 1Q21 and 110% from 9M19, putting the PE industry on track for its first trillion-dollar year on record.
- ✓ Currently, **30% of deals value transacted globally contain PE involvement**, up from 25% peak 15 years ago. PE exits contribute 15% of total M&A value, up from 5% in 2006. Companies owned by PE firms globally grow from 7,000 in 2006 to more than 20,000 today.
- ✓ PE firms raised ~USD400bln in 9M21, up 27% YoY and 19% from 9M19. Many PE funds were oversubscribed with some even exceeded USD10bln in commitments. According to Pitchbook data, PE firms currently manage USD3.6tln in investors' capital, double the amount a decade ago.

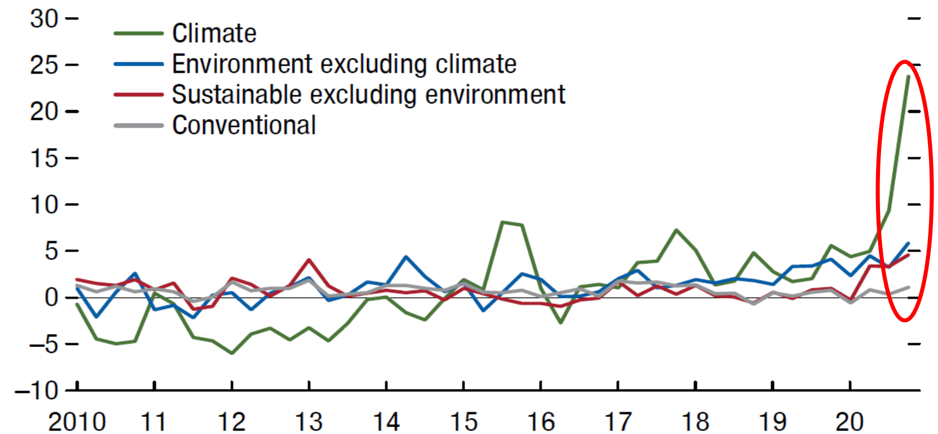
Source: EY Global PE Pulse 3Q21

Global AuM of sustainable investment funds are small but growing rapidly, to USD3.6tln in 2020, climate-oriented funds at USD130bln

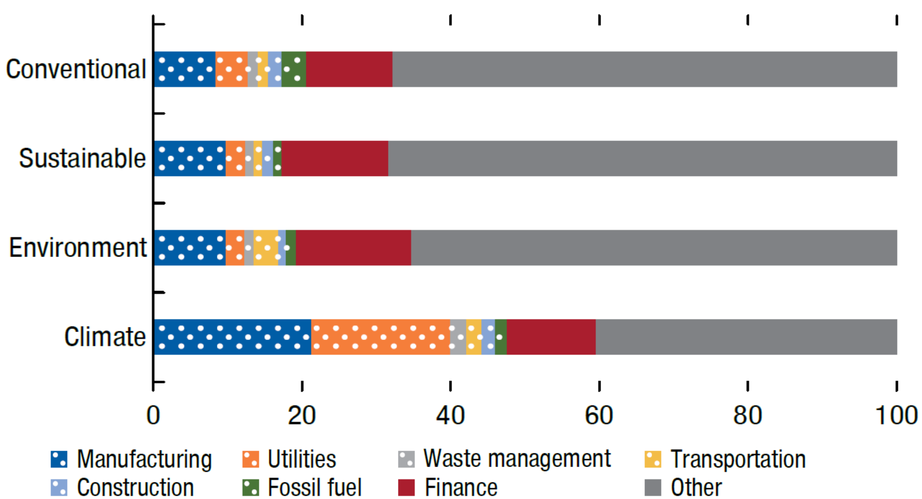
AuM by Fund Type, 1Q10-4Q20 (USDtln)



Net Flows into Funds by Fund Label 1Q10-4Q20, %



Funds Holdings by Industry Composition, as at 4Q20 (%)

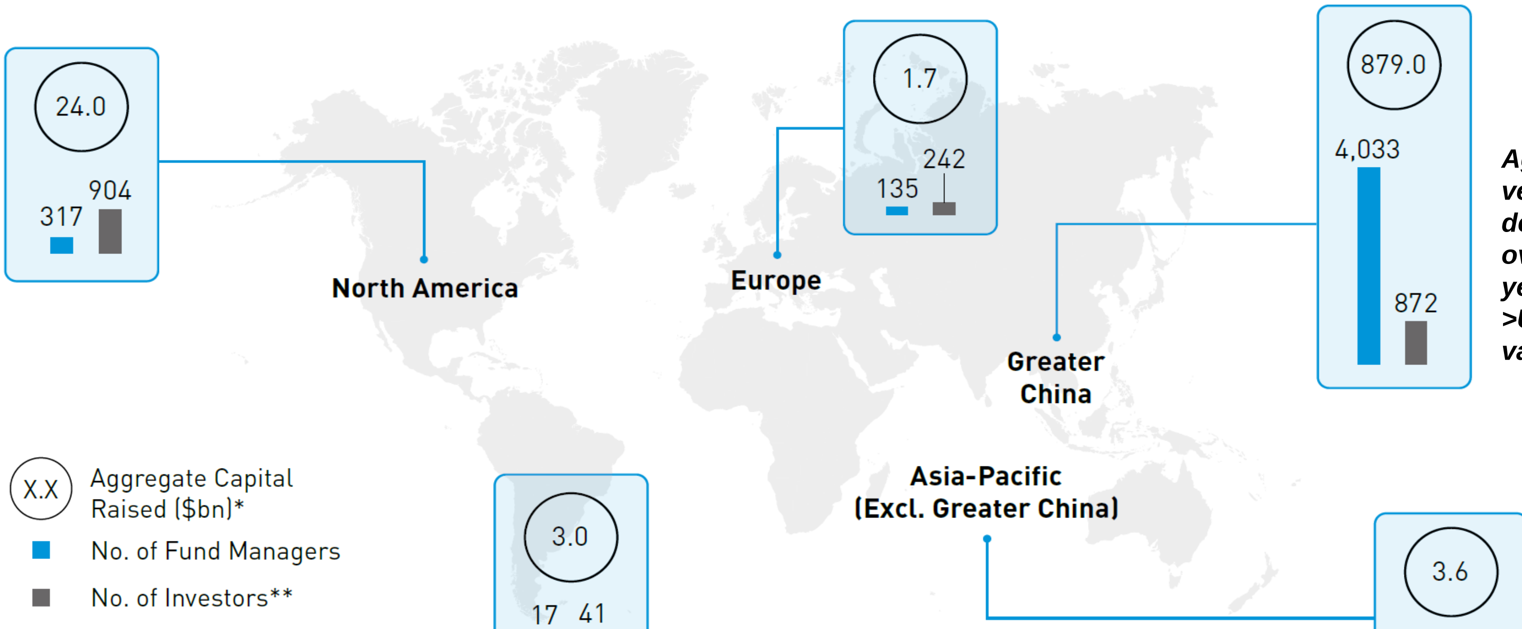


- ✓ Sustainable funds have a small market share but have grown rapidly. **AuM of investment funds at USD49tln** as at end-2020, of which **sustainable funds stood at USD3.6tln**, including funds with specific climate focus at USD130bln.
- ✓ Net flows into sustainable funds have increased notably in 2020 by 5%, while net flows into climate funds were at a staggering 48%, exceeded that of conventional funds.
- ✓ To achieve net-zero carbon emissions by 2050 will require **additional global investments of 0.6%-1.0% of annual global GDP over the next 2 decades, estimated at a cumulative USD12-20tln**. **70% of the required investment** would come from **private sources** (IMF, IEA).

Source: International Monetary Fund WEO Oct 2021

Asia Pacific private equity & venture capital dry powder has increased by 291% in the past decade, reaching a record high of ~USD343bln as at April 2021

Fund Managers & Institutional Investors Active in Greater China-Focused PE & VC by Location



Aggregate venture-backed deals in China over the past 5 years have >USD395bln in value.

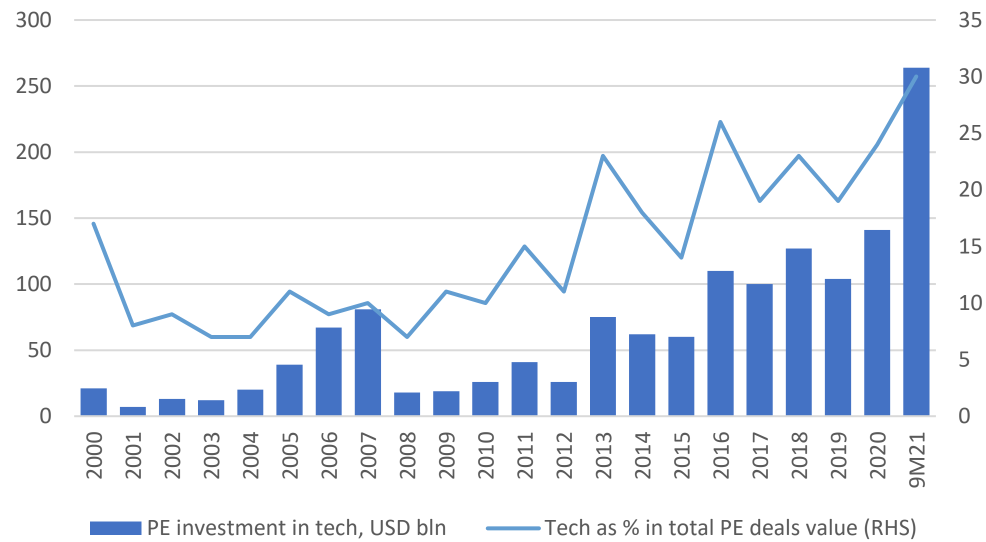
**Aggregate PEVC capital raised by Greater China-focused funds from 2010-1Q21*
***Investors with known past investments in PEVC funds with exposure to Greater China*

- ✓ Asia is the fastest growing region in the world, the IMF projects Asia Pacific GDP growth of 6.5% in 2021 and 5.7% in 2022. The World Economic Forum expects **Asia Pacific to contribute ~60% of global growth by 2030**, led by China, India and Southeast Asia.
- ✓ Preqin expects **PE AuM in Asia Pacific to increase with CAGR 28.2% from USD1.126tln to USD4.36tln over next 5 years**.

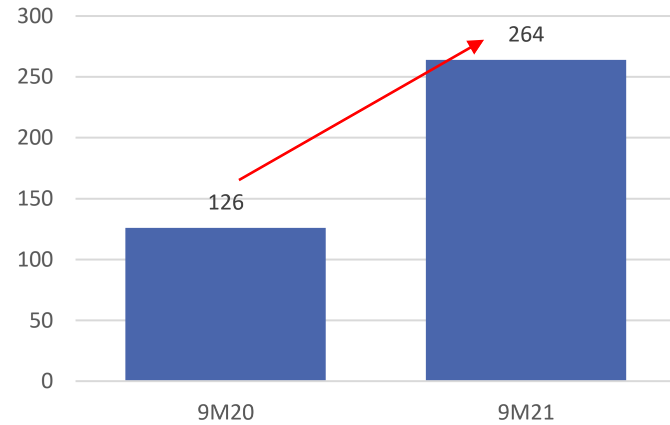
Source: Preqin Alternative Assets in Asia Pacific: Greater China Aug 2021

Global PE continues to deep-dive into Technology, with 30% of capital deployed and at ~25% of total deals volume in 9M21

PE Investments into Technology, USD bln



PE investments into tech sector surged 109.5% YoY to USD264bln in 9M21



Technology sector has seen a pullback in equity markets. Our view is value tech companies vs. speculative tech stocks which will continue to drive momentum. Long-term technological trends will outweigh short-term market fluctuations.

Thematic opportunities in Technology

Automation

Cybersecurity

Digital

Software

Supply chain technology

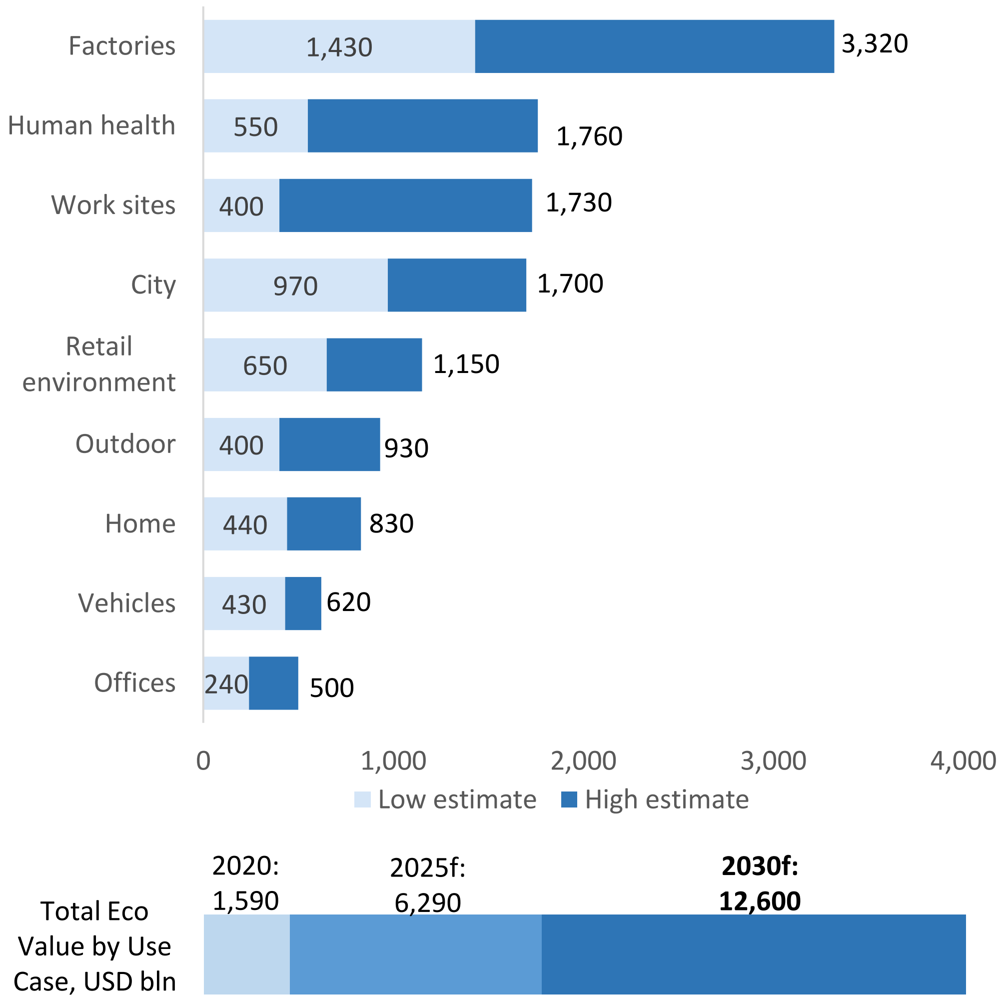
Financial scenario planning analytics

Machine learning
Cloud computing
Artificial intelligence
Digital payments

Source: EY Global PE Pulse 3Q21

The Internet of Things: catching up to an accelerating opportunity

Estimated Economic Value by Use Case, 2030, USD bln

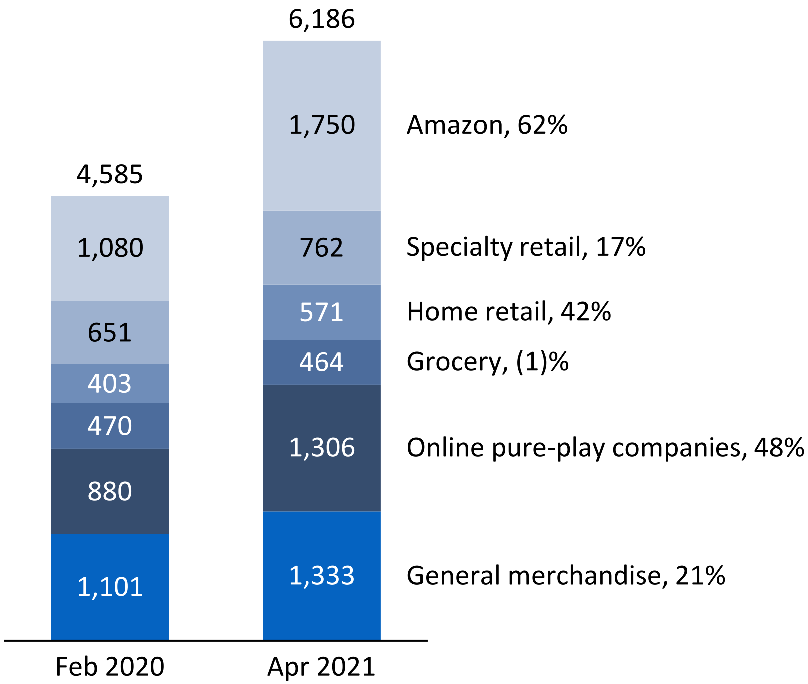


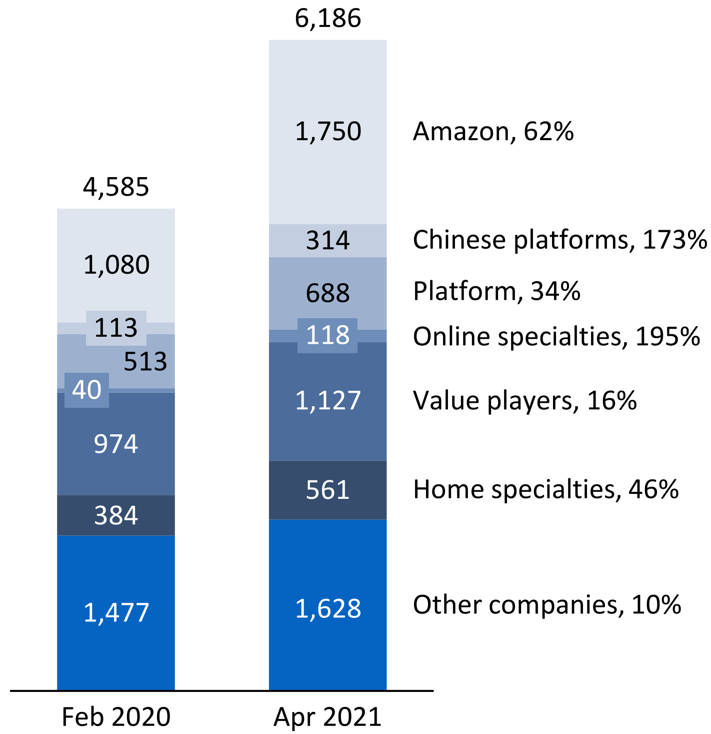
- ✓ The Internet of Things (IoT) - the convergence of the digital and physical worlds - has emerged over the past few years as one of the **fundamental trends underlying the digital transformation of business and the economy.**
- ✓ The potential economic value that the IoT could unlock is large and growing. McKinsey estimates that by 2030, **the IoT could enable USD5.5tln to USD12.6tln in value globally**, including the value captured by consumers and customers of IoT products and services.
- ✓ **The majority of value can be created in B2B applications**. By 2030, about **65% of the IoT's potential is estimated to be accounted for by B2B** applications.
- ✓ But **the value of B2C applications is growing quickly**, spurred by faster than expected adoption of IoT solutions within the home.

Source: McKinsey The IoT: Catching up to an accelerating opportunity, Nov 2021

The recent winners in Retail were best positioned to benefit from the pandemic-inspired flight to online sales

Market Capitalizations of Retail Players, USD bln

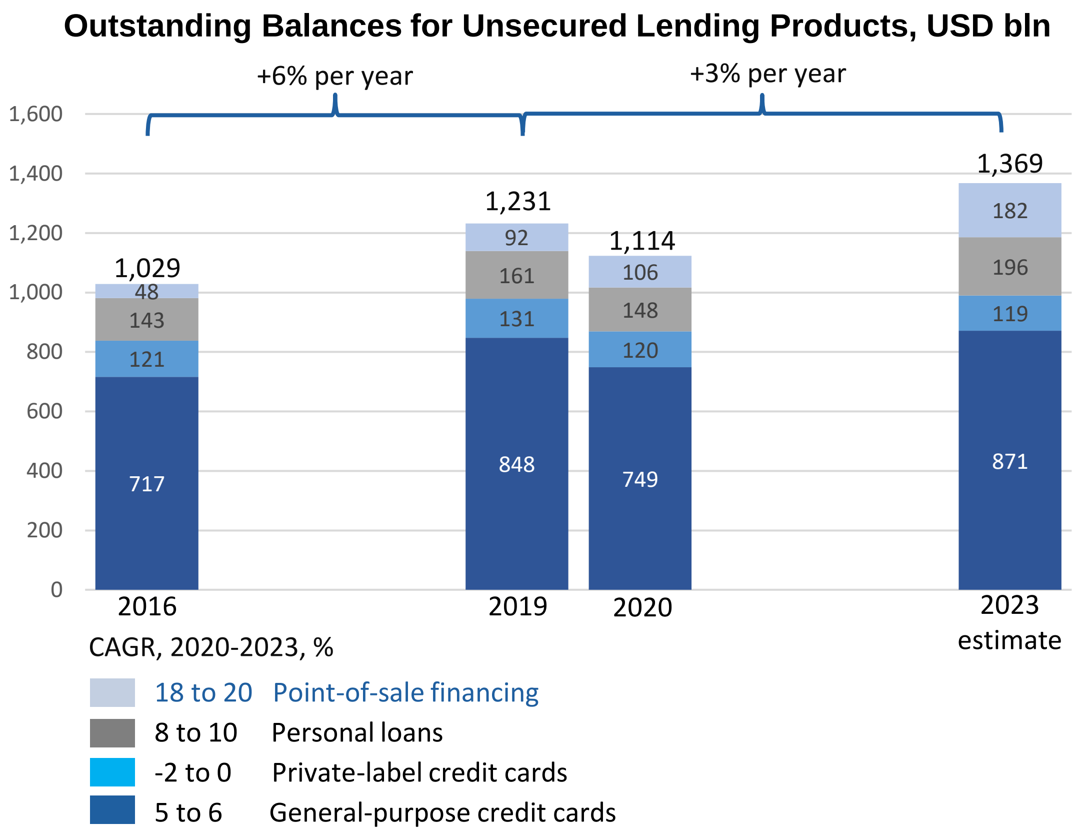


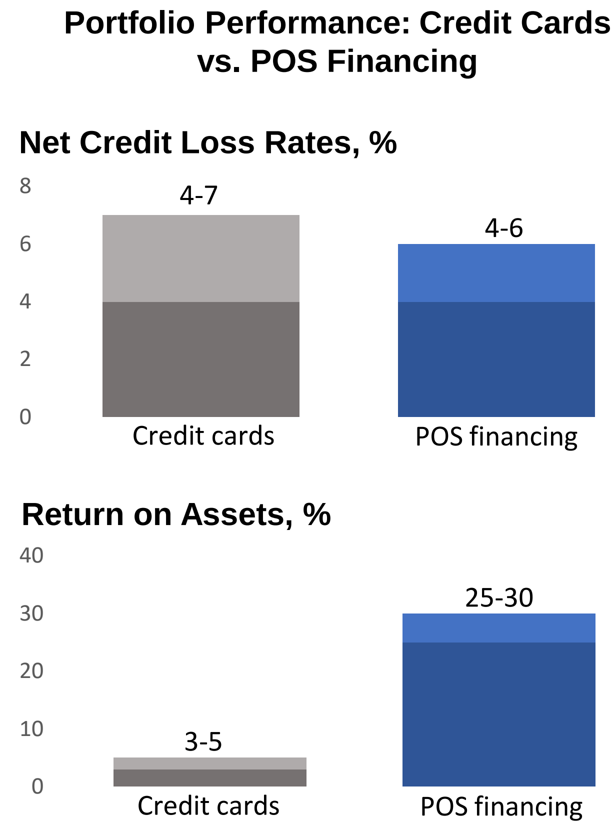


- ✓ **The retail industry has seen a huge shift of value to online.**
- ✓ During the Covid-19 pandemic, **90% of market-cap gains in retail have accrued to 25 companies.**
- ✓ These are primarily **highly capitalized, tech-forward, asset-light businesses** in four categories: home-economy players, value retailers, online specialists, and platform players.

Source: McKinsey on Investing, 7 Nov 2021

Buy now pay later: a small but rapidly growing new competitor to traditional unsecured lending





- ✓ **Point-of-sale financing is growing faster** than other unsecured lending - a trend likely to continue.
- ✓ Financing at the point of sale may be a small share of unsecured lending in the US today, but it is growing fast. This trend is repeating in different continents, including Kazakhstan.
- ✓ Thus far, **fintech companies have taken the lead, diverting USD8-10bln in annual revenues away from banks.**
- ✓ **Banks seeking long-term growth would be wise to explore market entry, and merchants should consider reassessing their financing offers.**

Source: McKinsey on Investing 7 Nov 2021, McKinsey on Buy Now Pay Later 29 Jul 2021

Consumer-centric Digital Health value pools in Asia are expected to grow by 21% per annum through 2025

Estimated Market Size of Digital Health in Asia

Category	Value pool	Example technologies	Market size 2020, USD bln	Market size 2025, USD bln	CAGR 2020-2025, %
Wellness & disease prevention	Improve wellness & prevent disease	Wearables, activity trackers, fitness	2.3	6.6	**23**
Screening and diagnosis	Intercept diseases through screening	Genomics, other omics	3.5	11.7	**28**
	Identify the right patient	Digital diagnostics, AI imaging	1.6	11.7	**18**
Care delivery	Provide more effective therapies	CDM, digital therapies (CDS, cognitive games)	6.1	7.6	**4**
Deals involving outpatient & home care companies rose >3x to USD3.9bln in 2020 (Bain PE report 2021)	Provide remote patient support	Telemedicine, remote monitoring	16.8	37.1	**17**
	Supply therapies to patients	Digital pharmacies	7.1	33.8	**37**
Total			**37.4**	**100.4***	**21 (average)**

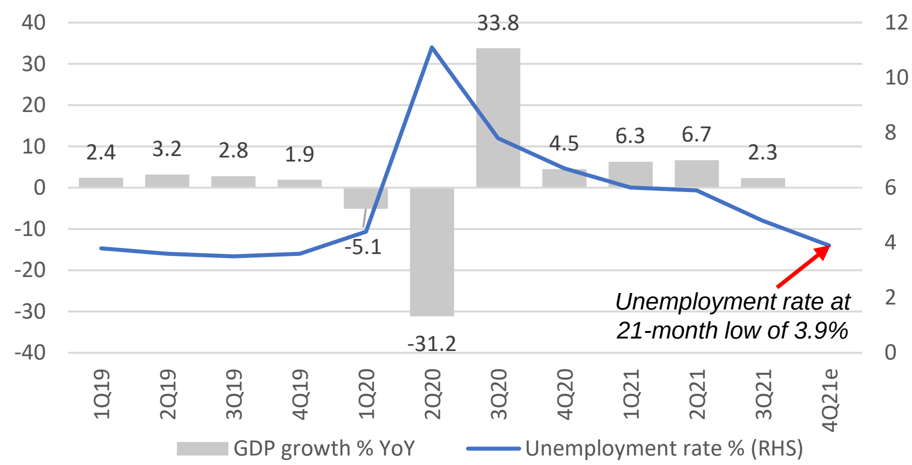
**Over 75% of value in 2025 driven by digitalization of care delivery*

✓ **Venture Capital and Private Equity investments in digital health in Asia have grown at 38% CAGR from 2015-2020**. As of 2020, Asia comprised **44% of global Venture Capital/Private Equity investments in digital health estimated at USD6bln-USD14ln**.

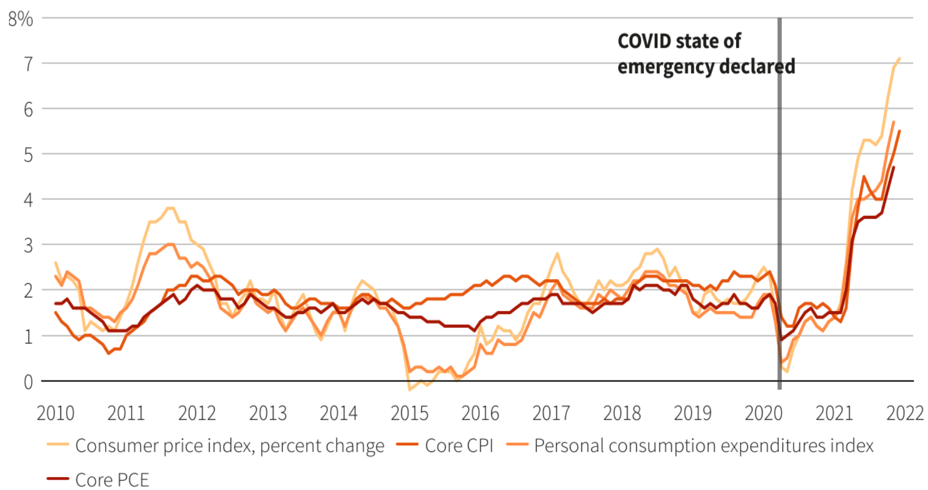
Source: McKinsey The future of healthcare in Asia: digital health ecosystems, Jul 2021

US: Activity picks up, putting the economy back on track to record its best performance since 1984

US' GDP Growth YoY (%) vs. Unemployment Rate (%)



US' Inflation Trends, %

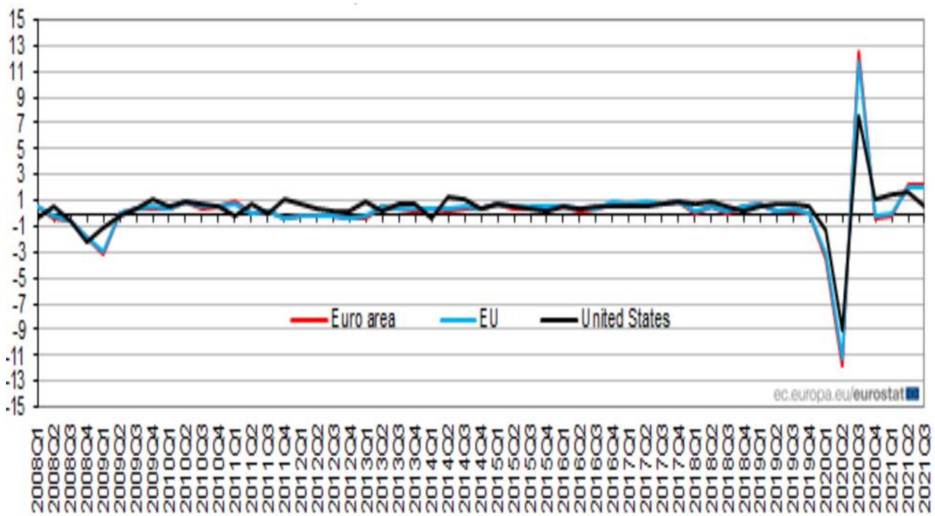


- ✓ Overall US economic activity has picked up - consumer spending rose and manufacturing has been buoyant. Trade deficit narrowed sharply as exports surged to a record high, and businesses build inventory steadily.
- ✓ Unemployment rate was at 3.9% as at end-2021, a 21-month low, and projected at pre-pandemic low of 3.5% by end-2022.
- ✓ Consumer confidence improved further, suggesting consumer spending and the economy would continue to expand in 2022.
- ✓ **Potential risks: emerging wave of covid-19 infections, driven by Delta and Omicron variants, high inflation and lingering supply chain issues** could significantly restrain growth into early 2022.
- ✓ **Economists scaled down US' quarterly growth in 2022: 1Q22 to 2% (vs. previous 3%), 2Q22 to 3% (vs. 3.5%), 3Q22 to 2.75% (vs. 3%)**.
- ✓ **The US GDP growth estimated at 5.5% in 2021 and projected at 4.0% in 2022.**

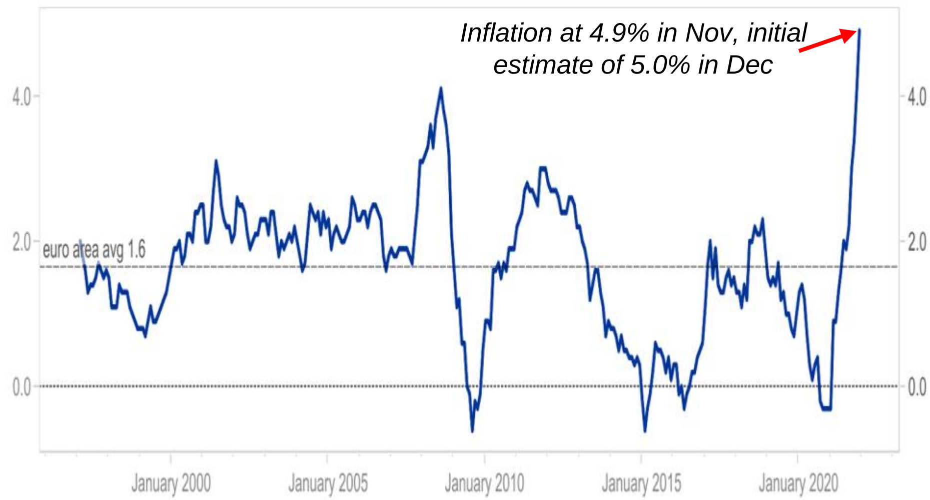
Source: US Federal Reserve, Reuters, VC

EU: Omicron infections, new restrictions & lockdowns, supply chain bottlenecks leave EU growth outlook uncertain

GDP Growth: Euro Area, EU, US



EU Consumer Price Index (2000-2021)

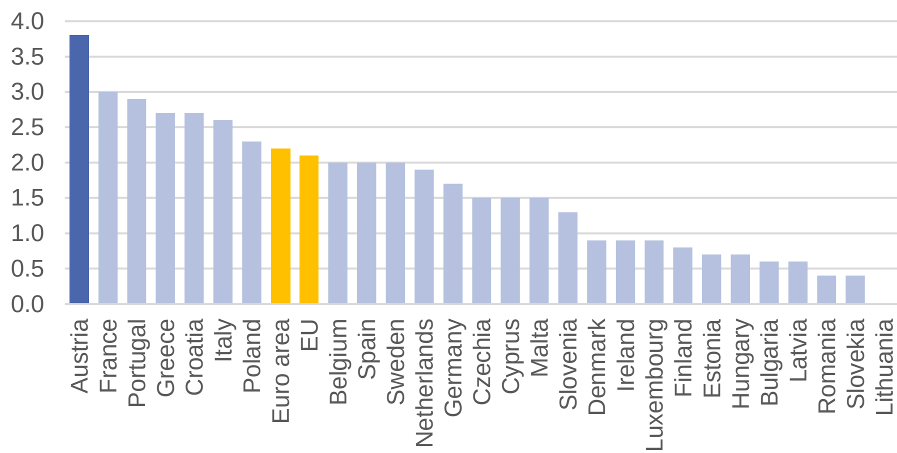


- ✓ IHS Markit's Composite Purchasing Manager's Index (PMI) sank to 53.3 in Dec vs. 55.4 in Nov, its lowest since Mar.
- ✓ Dec's PMI confirms that the EU economy ended 2021 on a weak note, though still expanding. Renewed wave of Covid-19 infections could weaken growth further if tighter restrictions are imposed in 2022.
- ✓ In Germany, the PMI index (both manufacturing & services sectors) fell to 49.9 in Dec vs. 52.2 in Nov.
- ✓ **EU GDP growth estimated at 5.1% in 2021, expected at 4.2% in 2022 (ECB).**
- ✓ **The European Central Bank expects inflation at 3.2% for 2022, above official target of 2.0%, but easing to 1.8% in 2023-2024**.
- ✓ **The central bank took a small step in rolling back crisis-era stimulus but pledged to hold down borrowing costs in 2022 and keeps the door open to restart emergency support**.
- ✓ Omicron infections leave EU outlook uncertain, there is no urgency for ECB to wind down monetary stimulus.

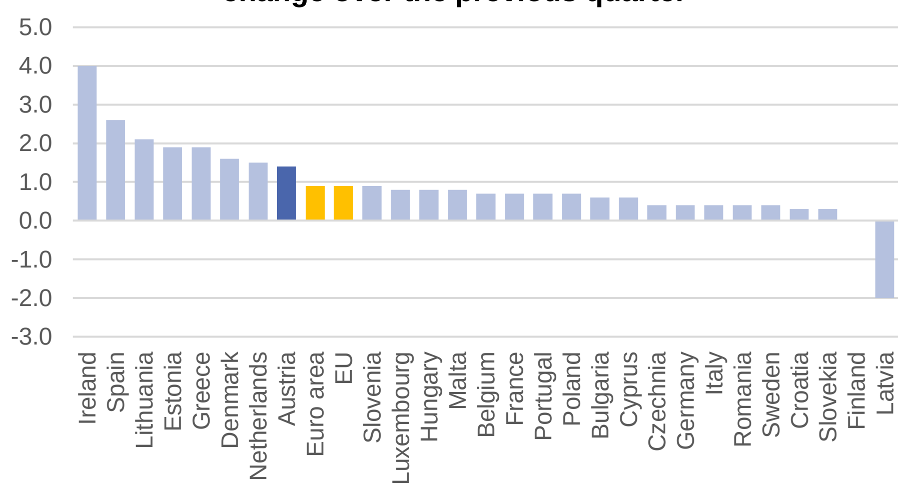
Source: European Central Bank, Eurostat, Reuters

Austria: Fourth wave of lockdown will impact growth in 2022, in particular the tourism sector

GDP Growth Rates in 3Q21, % change over the previous quarter



Employment Growth Rates in Person, 3Q21, % change over the previous quarter

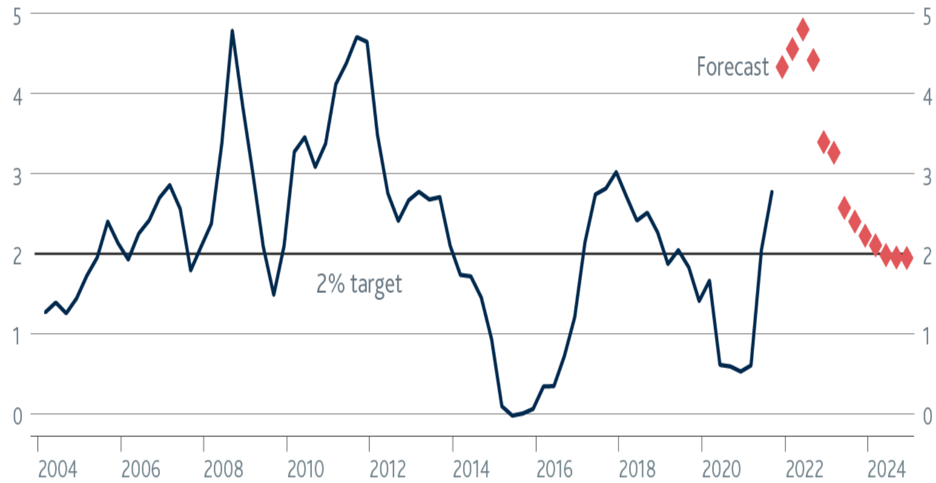


- ✓ **Austria recorded the highest increase in GDP of 3.8% QoQ in 3Q21 vs. peers.** Loosening of restrictions supported private consumption.
- ✓ Available data suggests fairly strong momentum in Oct-Nov. **GDP growth was estimated at 4.4% in 2021** with the fourth lockdown (started 15 Nov) having insignificant effect on economic output for 2021.
- ✓ The **fourth wave of infections is likely to inflict damage to growth in 2022**.
- ✓ **A week of lockdown costs EUR800mln in lost economic output, rising up to EUR1.2bln closer to year-end (WFO estimates), impacting winter tourism in particular. Tourism accounts for 5% of GDP**.
- ✓ **GDP growth in 2022 is expected at 4.2%**, below earlier forecast of 4.5%. Lower unemployment, an easing tax burden will boost domestic spending, while easy monetary policy should support investments.
- ✓ Austria's inflation is expected to peak at 5% in Jan 2022, easing to 2% by end-2022, with 2022 inflation at 3.3% average (2021e: 4.5% average) (WIFO).
- ✓ Risks: pandemic-related uncertainty, political instability.

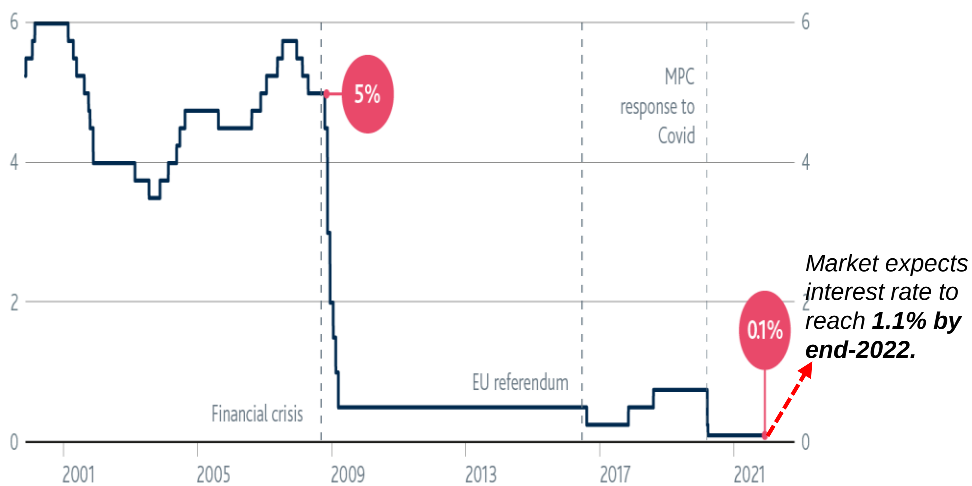
Source: European Central Bank, Eurostat, Austrian Institute of Economic Research (WIFO)

UK: Omicron variant has given Britain a challenging start in 2022 along with looming inflation, weak growth and rising bills

UK's Inflation & Forecasts, %



UK's Key Interest Rate, %

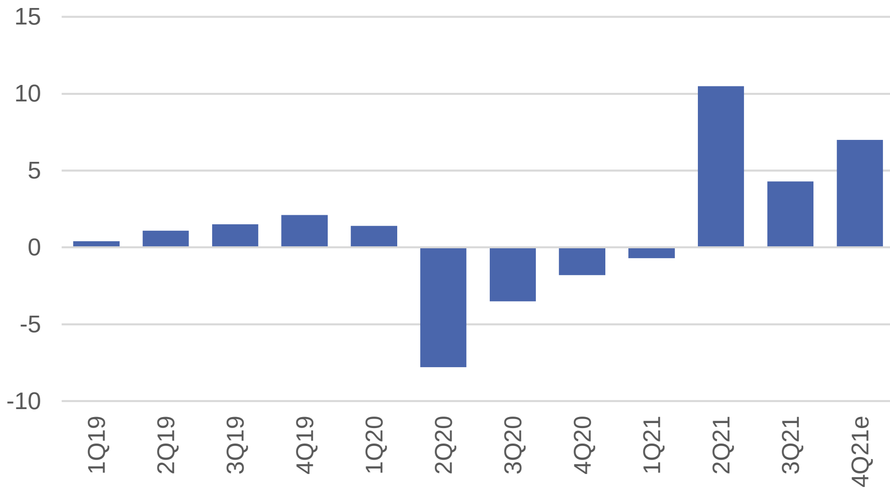


- ✓ **Economic activity may slow significantly in the first few months of 2022 on renewed reluctance among consumers to spend amidst inflation expectations**. (consumer spending contributes to 80% of UK's growth)
- ✓ **UK's official GDP growth projections of 7% for 2021 and 5% for 2022.**
- ✓ **Inflation hit 5.4% in Dec, the highest since March 1992**. The central bank warned that inflation will peak at 6% in Apr 2022, 3 times the official target of 2%, easing in 2H22.
- ✓ **The Bank of England raised rates by 15bps to 0.25% in Dec 2021**. The central bank would have to be cautious on further interest rate rises this year to avoid undermining confidence on an already fragile economic recovery.
- ✓ Brexit would worsen pandemic-related trade friction, with supply chain disruptions and labour shortages more persistent than in other countries, inflationary pressures are expected to be more pronounced.
- ✓ UK's high public debt means it would be hard for the government to engineer either a stimulus or a significant tax reform. (currently national debt of >GBP2tln or ~100% of GDP).

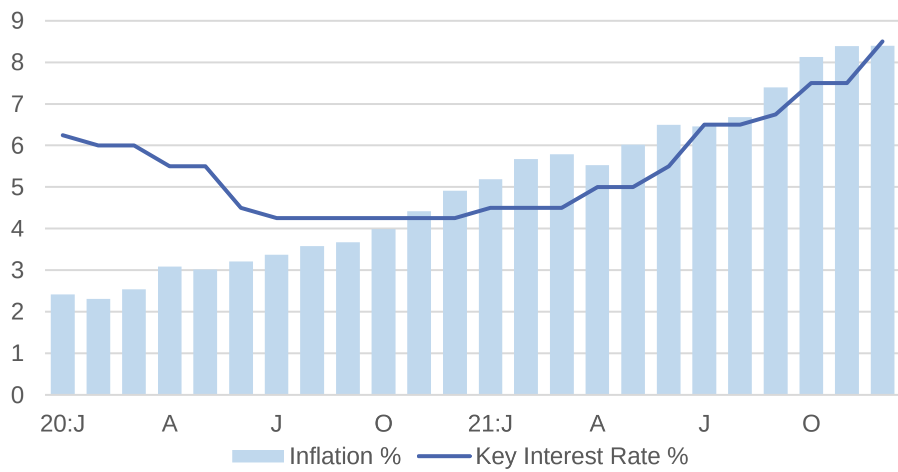
Source: Bank of England monetary policy summary 16 Dec 2021

Russia: Inflation doubled official target and expected to remain elevated. Monetary policy remains "neutral" to support growth in 2022

Russia's GDP Growth, % YoY



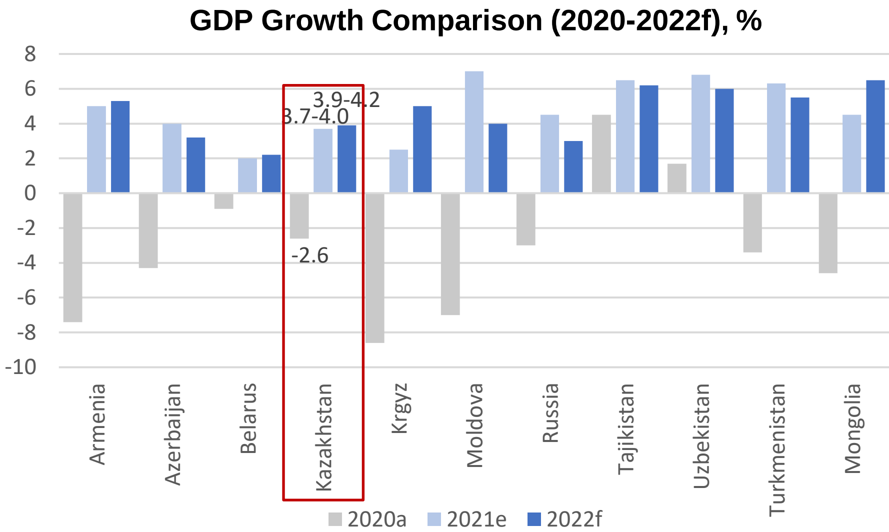
Russia's Inflation vs. Key Interest Rate, %

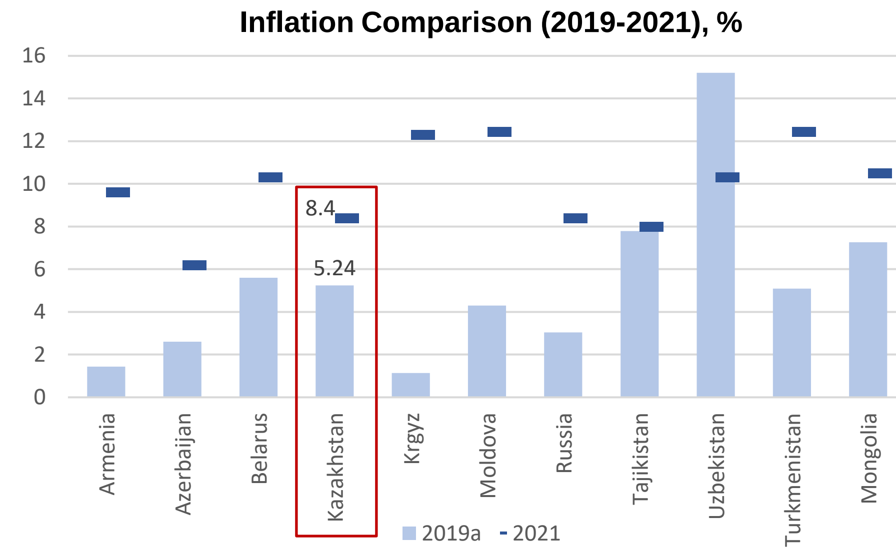


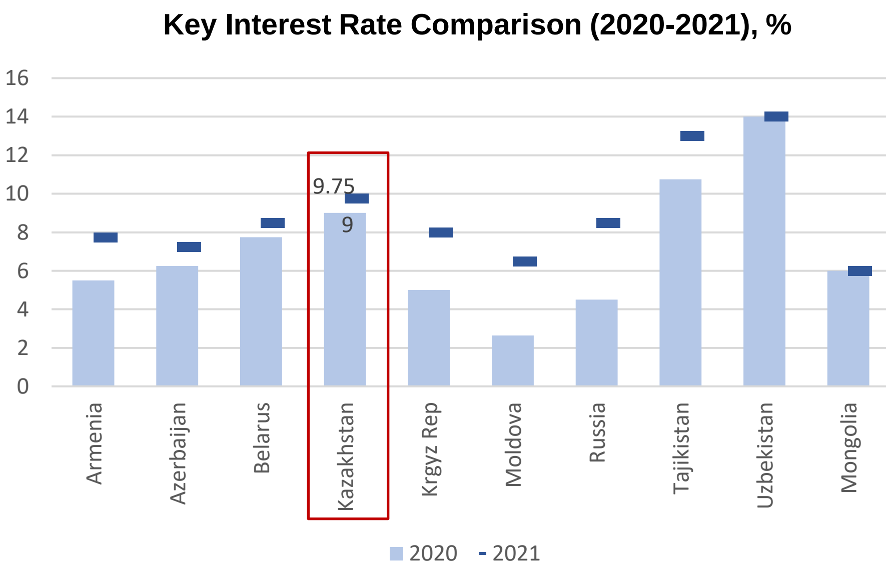
- ✓ Russia's output in services, oil & gas and passenger transportation are still below pre-pandemic levels, indicating room for further growth in 2022.
- ✓ However, **pandemic resurgence and tighter monetary policy could ease GDP growth to 3.0% in 2022 (EBRD)** vs. 4.5% in 2021 (CBR).
- ✓ **Inflation was at 8.4% in Dec, more than double official target of 4%**. The central bank raised interest rates 7 times in 2021 from a record low of 4.75% to 8.5%.
- ✓ **Monetary conditions in Russia remain neutral** currently evidenced by high growth rates in lending and still slow rise in deposits.
- ✓ **The central bank plans to keep the key interest rate above 6% until at least mid-2023 to bring down inflation**.
- ✓ Budget deficit improved to -0.3% of GDP in 2021 vs. -3.8% of GDP in 2020, owing to higher revenues from oil & gas sector and new export duties from metals, certain food and non-food products.
- ✓ Russia will continue to benefit from OPEC and non-OPEC efforts to stabilize the oil market.

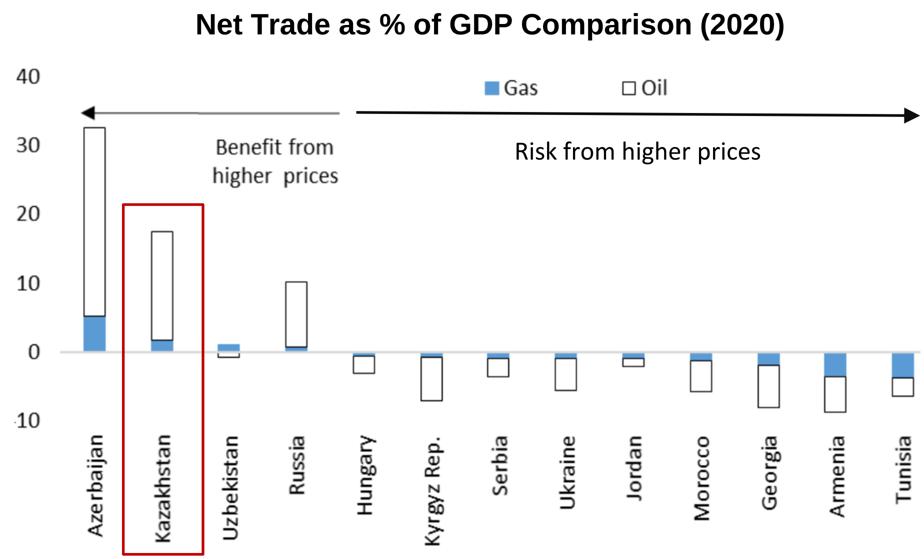
Source: Central Bank of Russia, Rosstat, EBRD, VC

CIS: High commodity prices have pushed up inflation, some economies started raising rates in response to inflation







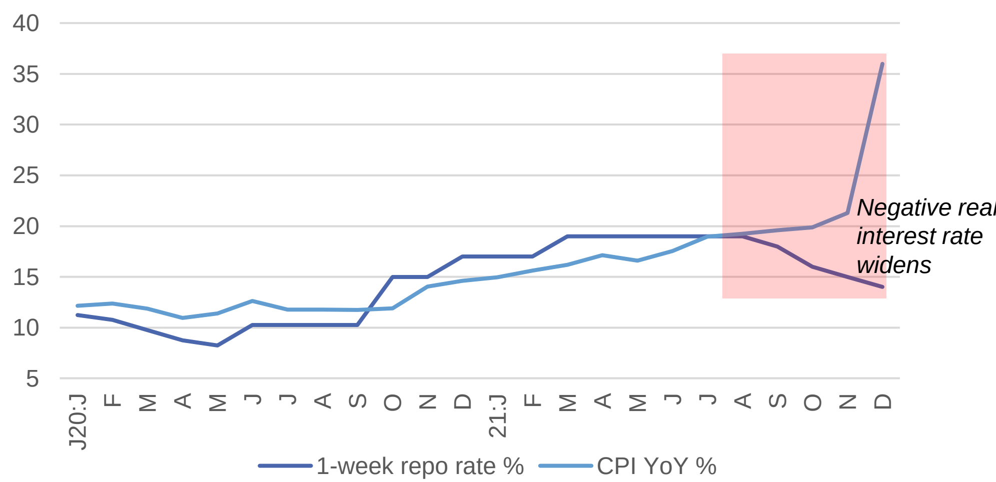


Source: IMF, EBRD, Central Bank of Russia, National Bank of Kazakhstan, other CIS Central Banks, VC

Turkey: High inflation impacts real wages, reduces consumer purchasing power, puts investment plans on hold. Lira depreciation raises external financing pressures

Inflation vs. USDTRY trends (2019-2021)

1-Week Repo Rate vs. Inflation trends (2020-2021)



- ✓ **Turkey's GDP rose by 7.4% YoY in 3Q21 on easing restrictions and the significant recovery in tourism.** Domestic demand i.e. private consumption and investments also drove third quarter growth.
- ✓ **Inflation jumped to 36% in Dec, a 19-year high. The market expects inflation to reach 50% by spring 2022** unless the direction of monetary policy was reversed.
- ✓ Turkey's foreign currency reserves plunged since 20th Dec suggested aggressive intervention to support the lira.
- ✓ **Turkey's budget deficit estimated ~3.5% of GDP for 2021, up from 1.5% in early-2021**.
- ✓ **Additional 12% lira depreciation over the lira interest rate could increase budget deficit by ~1% of GDP over a 6-month horizon** (JP Morgan).
- ✓ **Government debt is expected to increase to 47% of GDP in 2021** (vs. 40% in early-2021) mostly driven by lira depreciation (Fitch).
- ✓ Risks to growth: high inflation, credibility of economic & monetary policies, political instability.

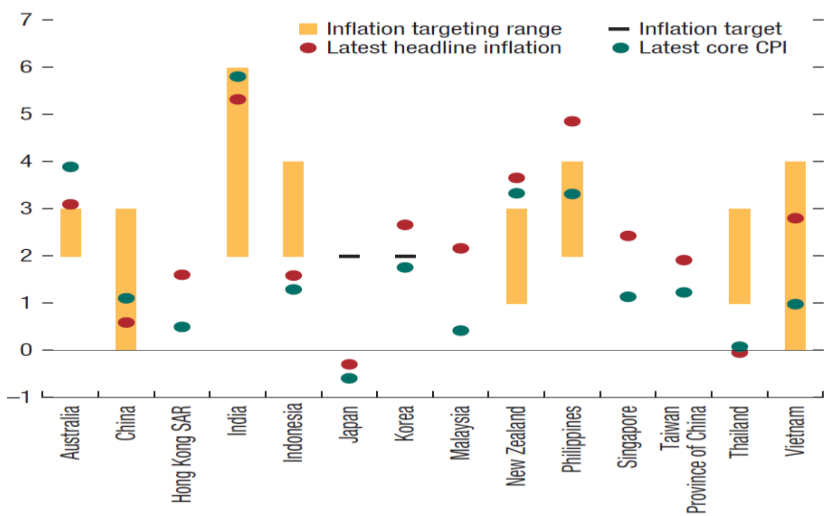
Source: Central Bank of Turkey, Bloomberg, VC

Asia Pacific: the fastest growing region in the world, led by China and India, despite the headwinds from new pandemic

GDP Growth Comparison (2021-2022), %

Country	2021e	2022f
Asia Pacific	**6.5**	**5.7**
China	8.0	5.6
India	9.5	8.5
Japan	2.4	3.2
South Korea	6.4	3.5
Australia	3.5	4.1
New Zealand	5.1	3.3
ASEAN	2.6	5.5
ASEAN-5	3.1	5.5

Headline vs. Core Inflation Comparison, %



- ✓ **China's economy estimated to grow at 8% in 2021 and expected at 5.6% in 2022**. Private consumption continues to lag due to property market downturn, debt tightening measures and repeated Covid-19 outbreaks.
- ✓ **India's GDP estimated at 9.5% in 2021 and projected at 8.5% in 2022**, growth will be supported by favorable external conditions and policy accommodation.
- ✓ **Japan's growth estimated at 2.4% in 2021 and forecast at 3.2% in 2022**, growth dragged down by state-of-emergency extensions.
- ✓ Most advanced economies in Asia have benefited either from high-tech or commodity boom but are facing renewed headwinds from pandemic waves.
- ✓ Asean-5 are still facing severe challenges from a resurgent virus and weakness in contact-intensive sectors.
- ✓ **Policy mix has remained accommodative i.e. sustained pace of asset purchases (advanced Asia) and low policy rates (emerging/developing Asia)**.
- ✓ **Headline inflation rising across the region, but expected to fall mostly within target ranges as transitory pressures subside, especially with substantial prevailing output gaps**.
- ✓ Current account surpluses to continue supported by exports of medical equipment, home electronics, consumer durables, subdued travel.

Source: International Monetary Fund Asia Pacific Outlook Oct 2021

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