BOC Research Institute

Global Economic and Financial Outlook

2023 (Issue 53) November 30, 2022

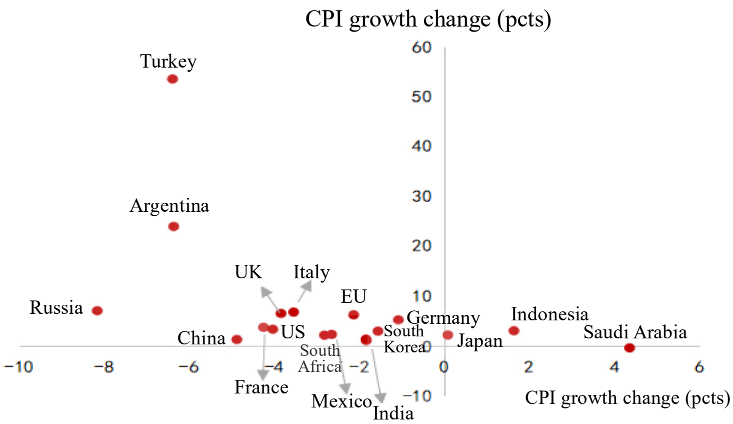
Highlights

● The world economy faced a mounting risk of "stagflation" through 2022 due to the Russia-Ukraine conflict, energy shortage and monetary tightening of developed economies. The US Dollar Index and US Treasury yields soared with reshoring of capital to the United States, continuous tightening of offshore dollar liquidity and volatile financial markets.

● Looking forward to 2023, the world economy will shift from "stagflation" to recession. Developed economies such as the EU and the US will likely sink into a recession in 2023H1 while emerging economies in the Asia Pacific will see stressed exports growth. The hot inflation will cool down across the world. The US Federal Reserve is expected to slow its interest rate hikes, which will lead to a slower pace and a smaller scale of capital reshoring to the United States.

● Some hot issues are worth noting, including new progress in global technological innovation, reshaping of the global industry landscape amid an energy crisis, the role and prospects of RMB in global foreign exchange trading and the US balance of payments characteristics.

GDP and CPI Growth of Major Economies in 2022 VS. 2021



Sources: IMF, BOC Research Institute

BOC Research Institute Global Economic and Financial Research Team

Team leader: Chen Weidong

Deputy leader: Zhong Hong
Liao Shuping

Team members: Bian Weihong
Xiong Qiyue
Wang Youxin
Zhao Xueqing
Cao Hongyu
Li Yingting
Lyu Haomin
Wang Ningyuan
Chu Xiao
Huang Xiaojun (New York)
Lu Xiaoming (New York)
Hou Mengjing (New York)
Wen Yingkun (Frankfurt)
Li Zhenlong (London)
Wang Zhe (Tokyo)
Xie Jinming (Hong Kong)

Contact: Wang Youxin

Telephone: 010-66594127

Email: wangyouxin_hq@bank-of-china.com

Developments in Global Economic and Financial Landscape amid Recession and Turmoil

– Global Economic and Financial Outlook (2023)

The world economy faced a mounting risk of "stagflation" through 2022 due to the Russia-Ukraine conflicts, energy shortage and monetary tightening of developed economies. Major economies slowed down significantly with soaring inflation. The US Dollar Index and US Treasury yields climbed with reshoring of capital to the United States, continuous tightening of offshore dollar liquidity and volatile financial markets. Looking forward to 2023, the world economy will shift from "stagflation" to recession. Developed economies such as the EU and the US will likely sink into a recession in 2023H1 while emerging economies in the Asia Pacific will see stressed export growth. The hot inflation will cool down across the world, yet still higher than the pre-COVID level. The US Federal Reserve is expected to slow its interest rate hikes, which will lead to a slower pace and a smaller scale of capital reshoring to the United States. Global stock markets will remain volatile with commodity prices consolidating at highs. This report provides a special analysis of some issues, including new progress in global technological innovation, reshaping of the global industry landscape amid an energy crisis, the role and prospects of RMB in global foreign exchange trading and the US balance of payments characteristics.

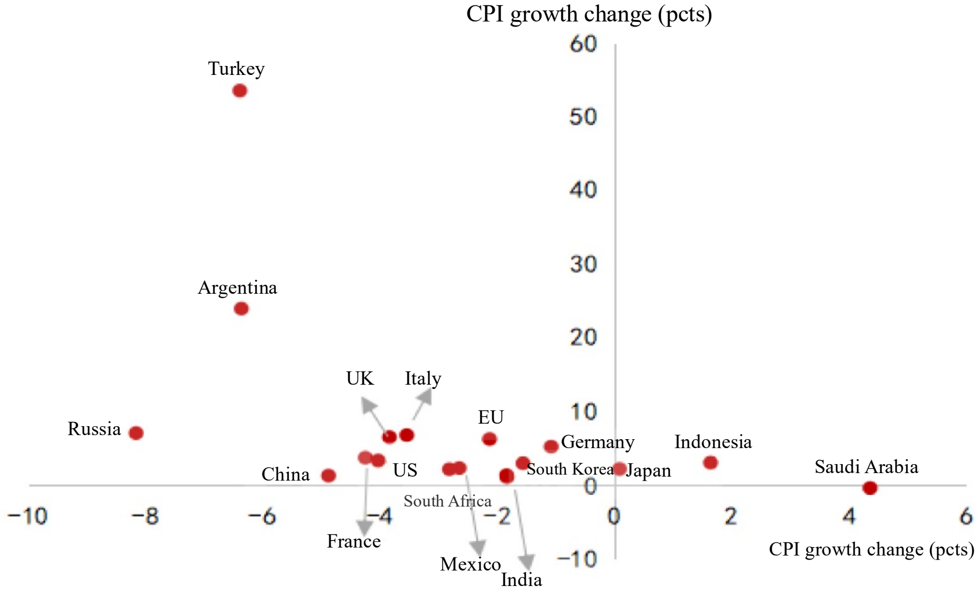
I. Global Economic Review and Outlook

I.1 Global recession is likely in 2023H1

The global economy faced a rising risk of stagflation in 2022. The global economic developments followed a clear logic in 2022, that is, "outbreak of the Russia-Ukraine conflict → soaring commodity prices → runaway inflation → faster monetary tightening → slowing economic growth". Under this logic, the global economy gradually evolved from inflation to "stagflation" and to recession, facing the risk of a full-blown downturn.

First, economic growth was stalling. In 2022, most G20 economies felt the pressure of "slower growth and hotter inflation", a defining feature of "stagflation". Developed economies even faced more acute difficulties in terms of growth, prices and financial stability (Fig. 1). This was mainly because developed economies such as the EU suffered more from the energy shock, placing greater pressure on prices, industrial production, trade balance and exchange rate. By contrast, some emerging economies benefited from rising energy prices and their improved trade balance alleviated the pressure of economic downturn and currency depreciation. Major emerging economies such as Latin America raised interest rates in advance to mitigate part of the impact of interest rate hikes.

Fig. 1: YoY GDP and CPI Growth of Major Economies in 2022 VS. 2021



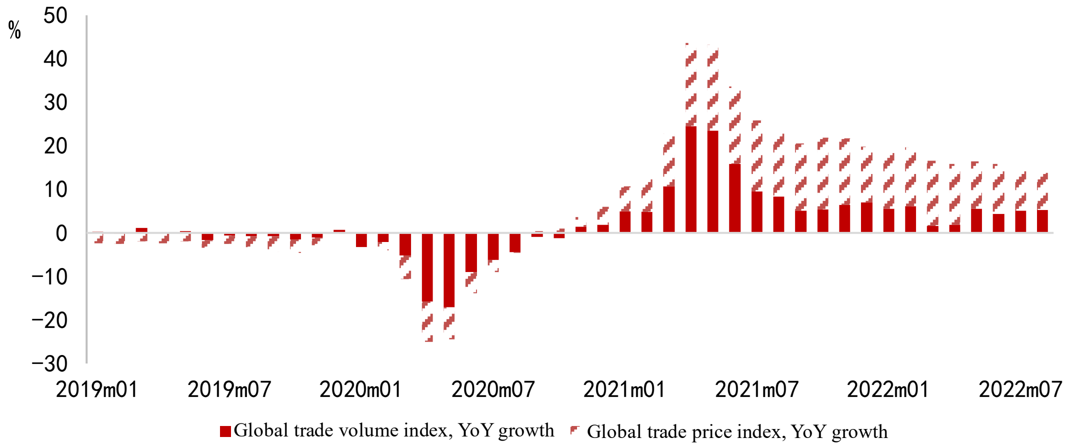
Sources: IMF, BOC Research Institute

Second, the pace of monetary tightening accelerated in major economies, whose inflationary pressure has not eased significantly. In the face of mounting inflationary pressure, central banks of developed economies, including the US Federal Reserve (the Fed), the European Central Bank (ECB) and the Bank of England (BoE), accelerated their pace of monetary tightening, raising interest rates by 375 bps, 200 bps and 275 bps respectively in 2022. However, major economies have not felt any alleviation in inflationary pressure. The US core CPI inflation picked up in August and September and fell again in October, hitting a still-high level of 6.3%. CPI and core CPI in the EU refreshed to record highs, making the inflation worse. As for the path of inflation, the inflation pressure has gradually spread from the supply side to the consumption side amid rebounding consumer activity and rising inflation expectations, making the inflation more stubborn and softening the monetary policy effect in cooling the inflation.

Third, investment is more prone to rising interest rates than consumption, with possible time lag in monetary policy effect on consumption. With the interest rates moving higher to increase the cost of financing and darken economic prospects, the investment in capital equipment and real estate is obviously strained. Total private investment in the US declined quarter by quarter in 2022, with investment in Q3 down 5.8% from Q1. In particular, the residential investment sensitive to interest rate fell 11.8%. Gross fixed capital formation in the UK and Germany was also lower in Q2 than in Q1. However, the consumer sector outperformed the investment sector, with the US retail and food service sales continuing to grow and the EU retail sales index rising again in September. Consumption data did not decline as fast as expected, indicating a time lag in the effect of monetary policy, possibly due to the impact of rising prices, stickiness of consumption and COVID-19 restrictions.

Fourth, global trade kept growing on the whole, at a significantly lower pace in 2022 driven principally by price factors rather than volume factors. Global trade continued to grow rapidly in 2022H1, mainly driven by rising commodity prices (Fig. 2). According to the Netherlands Bureau for Economic Policy Analysis (CPB), the international trade volume index in August 2022 was only 1.9% higher than at the beginning of the year, slower than the growth rate of the international trade price index (3.1%). After Q3 began, however, the price index gradually came under pressure due to the ebbing demand and monetary tightening across countries. The export performance of major economies also gradually weakened. The growth of global trade is expected to slow to around 3% in 2022.

Fig. 2: Changes in YoY Growth of Global Trade Volume and Price Indices



Sources: The Netherlands Bureau for Economic Policy Analysis (CPB), BOC Research Institute

As for the global economic trend in 2023, such factors as the COVID-19 developments, demand changes and inflation evolution will in general be headwinds to the global economy, which may slip into a recession in 2023H1.

First, the pandemic situation and COVID-19 policy will be uncertain. As some economies including the US and Europe have relaxed COVID-19 restrictions early and chosen to live with the virus, the WHO estimates that about 10%-20% of COVID-19 infected people may suffer from medium- to long-term "after-effects". This is not only a threat to public health, but also has serious negative socio-economic impacts. Some workers in developed economies have chosen to exit the labor market, resulting in insufficient labor force participation and high job vacancy rate. The study of a US think tank found that about 2 million to 4 million Americans have been forced to leave their jobs due to chronic COVID-19 symptoms, causing hundreds of billions of dollars in economic losses.

Second, the hot inflation and rate hikes threaten both domestic demand and international trade simultaneously. Developed economies have to extend their monetary tightening to manage the stubborn inflation, raising the interest rate peak to a higher level than expected. In this context, the tight monetary policy's curb on domestic demand and inflation will be more evident. The domestic demand growth in 2023 is expected to be 1.5% in the US, 0.9% in the UK and 1.6% in the euro area, down for 1.9, 7.0 and 1.5 percentage points (pcts) compared with 2022, respectively. Developed economies are the world's major consumer markets, whose subdued domestic demand will have a significant spillover effect on the upstream export-oriented economies. Since 2022H2, export growth in Vietnam, Indonesia, India and China has slowed down with a decreasing number of new export orders, suggesting that global trade and economic growth will face greater pressure.

Third, as the fallout from the Russia-Ukraine conflict persists, the energy market will remain depressed and global industrial output may shrink. Due to the war and sanctions, the world's fragmented energy market is unlikely to be improved markedly in 2023. The World Bank expects Brent crude to average USD92 a barrel in 2023, an improvement from 2022 but still well above the average of USD60 a barrel over the past five years. The energy shortage in the EU and the UK will continue to throttle industrial production. Some European enterprises have started to relocate the industrial chain out of the continent and relevant adjustments will accelerate in 2023. The economic slowdown alongside sluggish demand may send European industrial output into a rapid downturn. The industrial output of emerging economies in the Asia Pacific will also come under pressure. With the external demand retreating and the orders declining, exporters will face lower bargaining power and less profit margin, and will be forced to lay off workers or cut production. The industrial capacity utilization rate and actual output will shrink.

Fourth, the hot inflation and high debt level result in limited elbow room of public finance and weaker macro-control capacity of governments. Governments generally have introduced aggressive fiscal stimulus after the COVID-19 pandemic, resulting in a sharp rise in fiscal deficit and debt burden, which to some extent squeezes the space for future fiscal expenditure. The accommodative fiscal and monetary policies also lead to much hotter inflation, showing prominent side-effects. Even if there is another economic recession in 2023, in order to avoid runaway inflation fueled by expanding demand, governments may not be able to provide sufficient fiscal support, and the macro-control ability and economic support will be weakened.

Fifth, the tightening offshore USD liquidity may spread financial risks to the real economy. The US Treasury yields soared alongside quicker reshoring of private capital to the US as the Fed accelerated its pace of monetary tightening. As a result, the US Dollar Index remains elevated and the offshore USD liquidity became further tightened. Developed economies also face greater pressure from financial risks. Central banks in developed economies such as Japan and South Korea have stepped up intervention in foreign exchange markets, selling US dollars to keep their currencies stable and further driving up the demand for dollar liquidity in offshore markets. The Fed will continue to raise interest rates and shrink its balance sheet in 2023. In 2023H1, the shortage of US dollars in offshore markets may intensify to batter international settlement, corporate foreign-currency financing of enterprises and cross-border credit of banks. Related risks may spread to the real economy and further aggravate downward pressure on the economy.

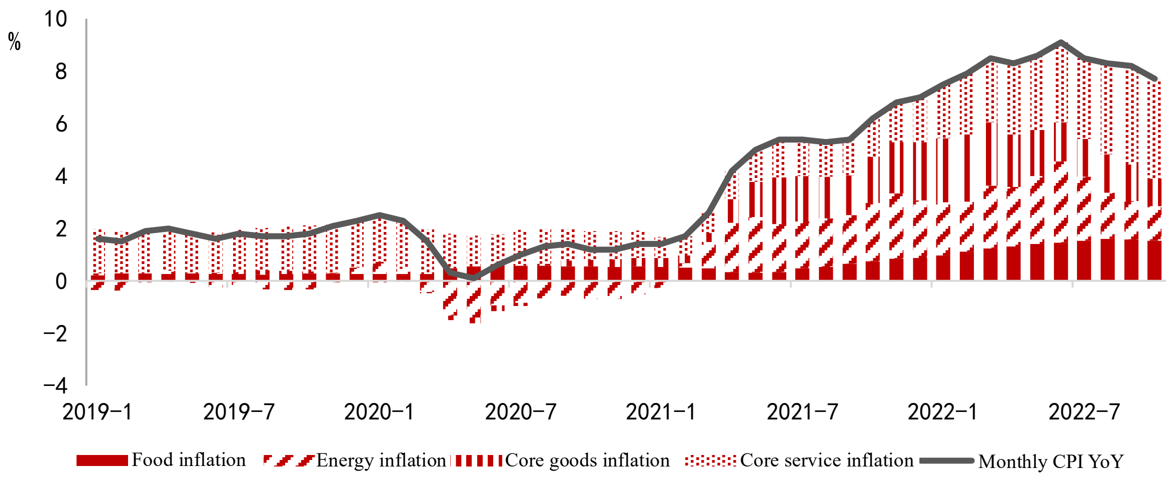
Sixth, developed economies including the US and the EU will likely fall into recession, dragging down global economic growth. According to information available at present, the EU and the UK may fall into recession as early as in 2022Q4, while the US is likely to see a recession in 2023H1. The three economies together represent a share of about 45% in the global economy. Their recession will be a major drag on the world economy.

From the perspective of timing, the global economy will likely sink into a technical recession in 2023H1, and some positive factors may emerge in 2023H2 after the recession accelerates the market clearing. First, global demand and output will continue to shrink, leading to lower prices of energy and other commodities as well as softer inflation. Monetary policies of various countries will hit turning points one after another, with financing and liquidity conditions expected to improve. Second, as the global COVID-19 containment and supply-demand situation changes, supply chain bottlenecks will gradually ease to help stabilize and recover global production and consumption. Third, emerging economies in the Asia Pacific, less hit by this recession, will take the lead in recovering in 2023H2 and become an important stabilizer for global economy. The global economy is expected to grow by 2.0% in 2023, down 0.7 pct from 2022. Global CPI inflation will be 6.5% year-on-year, down 2.3 pcts from 2022, but still significantly higher than the 3.5% average over the past decade. From the perspective of a longer cycle, the global economy will stage an "L-shaped" recovery. Compared with the "U-shaped" recovery, the "L-shaped" recovery will have a longer bottoming period with a typical prolonged depression, and the economy will long remain volatile with modest growth.

I.2 Economic outlook for major countries/regions

The US economy may experience a mild recession. The US economy was losing steam in 2022 amid soaring inflation and the Fed's faster rate hikes. First, the domestic private-sector investment was hit hard by rate hikes, with the quarter-on-quarter annualized growth rate down 14.3% and 8.5% in 2022Q2 and Q3, respectively. The private inventory and residential and construction investment highly sensitive to interest rate and economic trend are the biggest drag. Second, the growth of personal consumer spending gradually slowed down. The consumption growth for durable goods and non-durables has turned into the negative territory since Q2. Third, the net export deficit gradually narrowed in Q2 and Q3 due to declining private spending, strong dollar index and the soaring US exports of high-tech, energy and arms, which became a major driver of growth. Fourth, the government consumption expenditure and investment were relatively stable. **In addition, the US inflationary pressure has gradually receded, yet at a slower pace than expected given the stubborn trend.** Although the Fed turned to relatively aggressive monetary tightening in 2022 and raised interest rates by a total of 375 bps as of November, the inflation trend is relatively stubborn, with the overall CPI still high at 7.7% year-on-year. As the US gradually relaxed COVID-19 restrictions, the inflation gradually shifted from commodities to services from 2021H2. Currently, service inflation contributes more than 50% to the overall inflation (Fig. 3).

Fig. 3: Trends in Overall US Inflation and Its Components



Source: Wind, BOC Research Institute

Looking forward to the US economy in 2023, we first need to examine when the US inflationary pressure will ease and when the Fed will reverse its monetary policy. There are currently three key factors influencing inflation in the US: energy prices, core goods prices and rents. Under high-base effect, energy inflation is expected to ease substantially by the end of 2023Q1. As supply chains gradually normalize and demand shifts to services, core goods inflation will gradually turn into deflation. US housing prices and market rents are gradually falling on higher interest rates, and the effect of rents on inflation is likely to peak in 2023Q1 or Q2. US inflation is expected to further cool, possibly to 6% or so around 2023Q1, to about 4% in 2023Q2, and to around 3% by the end of the year. The Fed may end its rate hikes by the end of 2023Q1. The next few hikes will be mainly 50 bps or 25 bps, possibly driving the terminal policy rate up to the 5%-5.5% range and staying there at least through 2023Q2. **The US will feel greater pressure on economic growth as interest rates further increase. First, consumption's contribution to economic growth will further recede.** As more excess savings are spent, the surplus in savings will be increasingly concentrated in high-income groups. Given the marginal propensity to consume among different populations, the impulse to consume caused by excess savings will be reduced. **Second, the expenditure on fixed investment, especially residential investment and non-residential investment, may further decrease as interest rates move higher.** At present, the US sees its total business inventories to sales ratio retreating from its peak at end-2021, indicating the beginning of the business destocking phase. In the future, business destocking is likely to continue as consumer demand declines and inventory investment is likely to remain subdued. **Third, government investment will shrink.** Partisan jockeying will intensify after the midterm elections, making it harder to pass new government spending plans. Government spending will provide softer stimulus to the US economy in 2023. **Fourth, the contribution of net exports to economic growth may soften.** US energy exports are expected to keep growing in 2023, but lower energy prices will offset the growing volume of energy exports. Net exports are expected to continue bolstering growth in some quarters, but less so than in 2022. **Overall, the US economy is expected to gradually recover in 2023H2 after a mild recession in 2023Q2. The US economy is projected to grow by around 1% in 2023, down 0.6 pct from 2022.**

The European economy faces multiple challenges. Due to increased uncertainty, elevated energy prices, strained household spending and tighter financing conditions, the Commission expects the EU, the euro area and most member states to usher in a recession in 2022Q4, with activity continuing to contract in 2023Q1. Record highs of inflation have dragged down real incomes of consumers, pushed up production costs for companies and depressed personal consumption and corporate investment. The euro area CPI rose 10.6% year-on-year in October, up from 9.9% in September to hit another record high. The UK CPI rose 11.1% year-on-year to a 40-year high. The energy crisis weighed on economic performance, plunging the European industrial production into trouble. The rising energy prices have eroded European industrial profits and even directly halted production. the EU's heavy chemical industry showed signs of moving away from the continent. The monetary policy remained hawkish. CEB raised interest rates by 75 bps for the second time in a row at its monetary policy meeting in October 2022. BoE also hiked rates by 75 bps to 3% in November. The market benchmark rates hit a new high since the global financial crisis. **Growth in the euro area and the UK is forecast to be around 2.5% and 3% respectively in 2022, before slowing to around 0.3% in 2023.**

Japan's economy remains sluggish. Japan's economy remained in a modest recovery. Household consumption only increased by 0.3% quarter-on-quarter in Q3. Foreign demand dragged down Japan's economic growth and contributed -0.7% quarter-on-quarter to its GDP. Under the combined effect of widening interest rate spread between the US and Japan and the expanding trade deficit of Japan, the Japanese yen depreciated sharply, at the fastest pace of currency depreciation among major developed economies. The yen depreciation once exceeded 22%, becoming the major cause of Japan's economy malaise and rising inflation. In the future, Japan's monetary policy will face multiple difficulties, and the performance of yen remains to be further observed. Japan's real economy remains weak and its piling fiscal debts will also constrain monetary policy operations. **Looking forward to 2023, the Japan's economy is expected to remain stable overall.** Japan's energy price subsidies for households and businesses, utilities spending and business support policies related to attracting foreign tourists and exports add up to JPY7 trillion, expected to add 1.1 pcts to GDP growth in 2023. On the other hand, external risks will remain a challenge to the Japan's economy, and the inflation persistently outpacing household income growth may deal a blow to Japan's consumption. **Japan's economy is expected to grow at around 1.5% in 2022 and recover slightly to around 1.6% in 2023 thanks to accommodative policies.**

Emerging economies showed divergent growth. Emerging economies generally performed better than developed economies in 2022. Asia's emerging economies grew relatively well with inflation staying stable. Strong economic growth in Turkey and Saudi Arabia has significantly boosted the overall growth in the Middle East. The emerging economies in Latin America and Africa showed average performance in general. Argentina and Kenya kept growing fast, but Brazil and South Africa lost momentum. Due to the Russia-Ukraine conflict, the emerging European economies slowed down sharply, expected to enter the negative territory in 2022. As downward pressure mounts on the global economy, the growth momentum of emerging economies is likely to weaken further in 2023H1. Given the different challenges facing different regions, the inflection point and pace of recovery will vary significantly across economies in 2023H2, so that the growth of emerging economies will continue to diverge. **GDP growth in emerging economies in 2023 is expected to be roughly flat with 2022, at around 3.7%.**

Table 1: Forecasts for Key Indicators of Major Economies in 2022 (%)

Region	Year / Country	GDP growth			CPI growth			Unemployment rate		
		2021	2022f	2023f	2021	2022f	2023f	2021	2022f	2023f
Americas	Argentina	10.4	4.0	2.0	48.4	72.4	76.1	8.7	6.9	6.9
	Brazil	4.6	2.8	1.0	8.3	9.4	4.7	13.2	9.8	9.5
	Canada	4.5	3.3	1.5	3.4	6.9	4.2	7.4	5.3	5.9
	The US	5.7	1.6	1.0	4.7	8.1	3.5	5.4	3.7	4.6
	Mexico	4.8	2.1	1.2	5.7	8.0	6.3	4.1	3.4	3.7
	Chile	11.7	2.0	-1.0	4.5	11.6	8.7	8.9	7.9	8.3
Asia Pacific	Australia	4.9	3.8	1.9	2.8	6.5	4.8	5.1	3.6	3.7
	South Korea	4.1	2.6	2.0	2.5	5.5	3.8	3.7	3.0	3.4
	Japan	1.7	1.5	1.6	-0.2	2.0	1.4	2.8	2.6	2.4
	India	8.7	6.8	6.1	5.5	6.9	5.1	—	—	—
	Indonesia	3.7	5.3	5.0	1.6	4.6	5.5	6.5	5.5	5.3
	China	8.1	3.4	5.5	0.9	2.0	2.2	4.0	4.2	4.1
Europe and Africa	Russia	4.7	-3.4	-2.3	6.7	13.8	5.0	4.8	4.0	4.3
	South Africa	4.9	2.1	1.1	4.6	6.7	5.1	34.3	34.6	35.6
	Nigeria	3.6	3.2	3.0	17.0	18.9	17.3	—	—	—
	Euro area	5.2	2.5	0.3	2.6	8.3	5.7	7.7	6.8	7.0
	Turkey	11.4	5.0	3.0	19.6	73.1	51.2	12.0	10.8	10.5
	The UK	7.4	3.0	0.3	2.6	9.1	9.0	4.5	3.8	4.8
Global		5.8	2.7	2.0	4.7	8.8	6.5	—	—	—

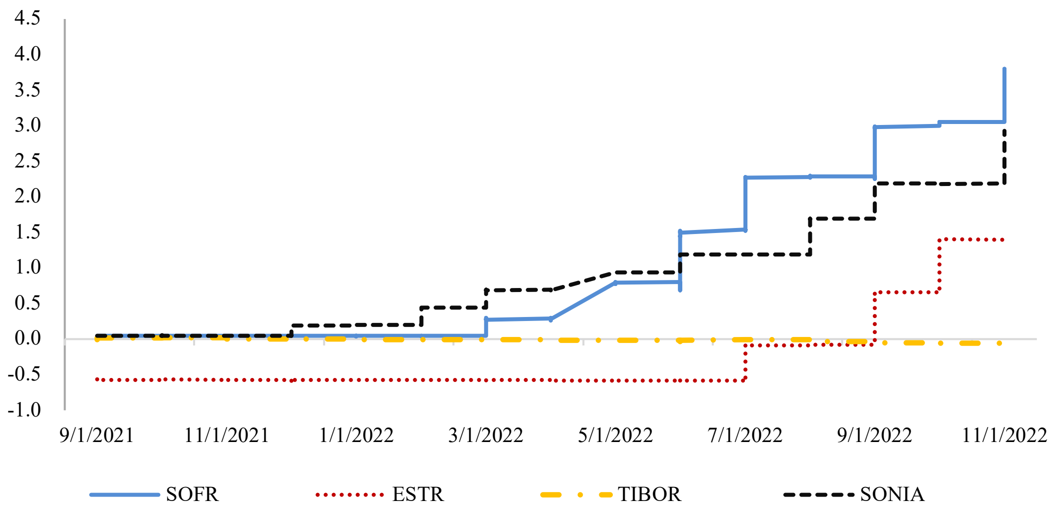
Note: "f" stands for forecast; global GDP growth is calculated using the market exchange rate approach.

Source: BOC Research Institute

II. Global Financial Review and Outlook

The money market and offshore USD liquidity continued to tighten, leading to a record-high level of capital repatriation to the US. First, the money market rates climbed. As at 9 November 2022, the US secured overnight financing rate (SOFR), the euro short-term rate (€STR) and the sterling overnight interbank average rate (SONIA) were 80 bps, 75 bps and 74 bps higher than at the end of Q3, respectively (Fig. 4). **Second,** Offshore USD liquidity tightened, with a narrowing USD swap spread against major currencies. By the end of June 2022, global offshore USD liquidity had fallen to 38.1%, down 7 pcts from its previous high. The offshore USD liquidity crunch was evidenced by changes in the dollar's swap spreads with sterling, yen and euro. As of November 14, 2022, the 1-year currency swap spread for the US dollar against sterling, euro and yen were down 85.7 bps, 135.9 bps and 620.9 bps, respectively, from the beginning of the year. **Third,** the repatriation of capital to the US hit a record high. From January to August 2022, the international capital returning to the United States totaled USD1,150.1 billion, a new high since 1979, which mainly went to US domestic long-term bonds. During the same period, cross-border investors offloaded their holdings in US stocks.

Fig. 4: Money Market Rates (%) in Major Economies



Sources: Bloomberg, BOC Research Institute

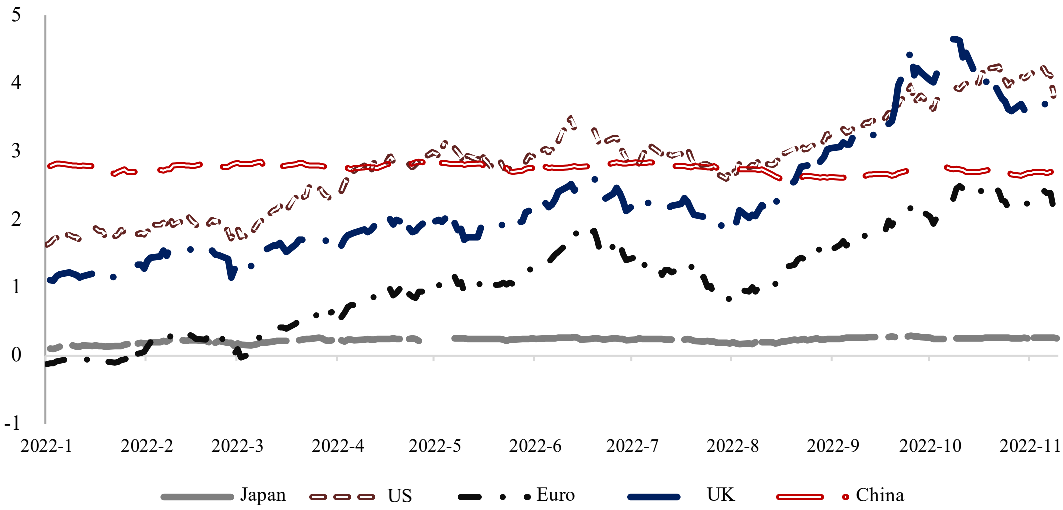
A strong US dollar exacerbated global currency volatility, prompting central banks to intervene to ward off currency storms. First, as the world has entered another strong dollar cycle, the currencies of developed economies are depreciating at an accelerated pace. The US Dollar Index (DXY) once exceeded the 114 mark and hit a 20-year high under the combined impact of the Fed's six interest rate hikes in a row, sluggish global growth and rising risk aversion due to geopolitical conflicts. Euro, sterling and some currencies of emerging economies depreciated sharply. **Second,** many Asian currencies depreciated, with a series of "currency defense" staged by Japan, South Korea and other countries. The resurging COVID-19 pandemic and the geopolitical crisis have aggravated the global supply chain disruptions, sharply increasing the prices of energy, minerals and agricultural products, putting resource importers such as Japan and South Korea in a worse situation of trade and adding to the downward pressure on local currencies. The central banks of Japan and South Korea were forced to intervene in foreign exchange markets several times in a series of "currency defense" to stabilize exchange rates and curb capital flight.

Global stock markets have experienced tightening-induced shocks, showing a significant regional divergence. First, the global stock markets staged a bumpy downturn amid depressed market sentiment. As of November 15, 2022, most global stock indexes registered a loss, with the exception of Brazil and India. Major stock indexes in several countries and regions were down more than 20%. The Nasdaq suffered the sharpest fall of 28.44%, followed by Russia's RTS Index down 26.68%. **Second,** global stock markets were obviously divergent, with developed economies outperforming emerging markets. In the first three quarters of 2022, the MSCI Emerging Markets Index fell (by 32.2%) significantly more than the MSCI index for developed economies (down 28.7%). In addition, the BRICS stock markets suffered a fall with lackluster performance in general. **Third,** global stock markets showed disparities in volatility and return. Stocks in developed economies were more volatile, but with a smaller drop in return. Stocks in emerging markets were less volatile but their yields suffered more from external shocks. UK equities as a whole performed better, while Asian markets saw lower annualized volatility.

The rise in government bond yields has slowed, the risk of sovereign debt default becoming a

concern. First, the rise in government bond yields has moderated. As at November 10, 2022, the 10-year government bond yields of the US, China, the euro area, Japan and the UK were 3.82%, 2.70%, 2.15%, 0.26% and 3.39%, respectively. The US, China, the UK and Japan saw the yield down 1 bp, 6 bps, 77 bps and 1 bp respectively from the end of Q3, while the euro area's yield was up 1.1 bps from the end of Q3 (Fig. 5). **Second,** the sovereign debt risk remains high. Since 2022Q4, the global sovereign debt risk has remained on the rise. There are 11 countries with a five-year credit default swap (CDS) spread of more than 1,000 bps and five countries with a five-year CDS rise of more than 100 bps, namely Ghana (6,521), Pakistan (3,360), Ecuador (1,552), Mongolia (316) and Costa Rica (126).

Fig. 5: Trends in 10-year Government Bond Yields of Major Countries and Economies (%)



Sources: Wind, BOC Research Institute

Commodity prices have retreated from peak, lacking upward momentum. Global commodity prices have soared and then retreated, but still at elevated levels as shortage in supply cannot be effectively rooted out. **First,** the crude oil price has fluctuated wildly, and the under-investment in the oil sector has exacerbated market panic. Global crude oil prices rose sharply, followed by range-bound movements at highs, and eventually fell in choppy trading amid a growing risk of global recession. In the long run, demand for oil will continue to grow and under-investment in the oil sector could worsen the capacity crisis going forward. **Second,** the gold price is depressed, sharply down after a brief rise. As major central banks in Europe and America have accelerated monetary tightening, DXY has kept strengthening against gold. The gold price remains stressed, sharply down after a transitory rise. **Third,** the copper price reversed to a dramatic decline after earlier solid growth at highs. The fast, solid growth in copper price was attributable to Covid-induced supply-demand mismatch prolonged by global energy crisis and the low global copper inventory. But later the copper price moved lower as the demand weakened month-on-month due to a slowing global economy.

The US and Europe led a "super rate hikes", while the Bank of Japan stuck to its ultra-loose policy. First, central banks in the US and Europe have tightened their monetary policy sharply. The Bank of England started selling government bonds directly. As the Fed accelerated its monetary tightening, most of the world's major central banks started "passive balance sheet reduction". The Bank of England has taken the most aggressive approach of selling government bonds. To curb inflation, the Bank of England started quantitative tightening in November 2022, directly tightening liquidity in financial markets by selling GBP750 million worth of government bonds with a tenor of three to seven years. **Second,** Japan raised its inflationary expectations but maintained an ultra-loose monetary policy. Japan's monetary policy has diverged markedly from that of major developed economies, facing the dilemma of hotter imported inflation and a weakening yen. In a further effort to stimulate the recovery, the Bank of Japan maintained a loose monetary policy, keeping short-term rates at -0.1% and long-term rates around zero by buying long-term government bonds. **Third,** the wave of rate hikes intensified across emerging markets, forcing many countries into aggressive rate increases. The US and Europe have led a wave of rate hikes in major countries around the world. Central banks in more than 90 countries and regions have started to raise interest rates, and half of them have hiked rates by at least 75 bps. To prevent capital flight triggered by their narrowing interest rate spread with the US, emerging markets have had to hike rates following the tightening pace of major advanced economies.

International financial markets are expected to show the following characteristics in 2023: **First,** as the Fed is likely to slow its pace of rate hikes, the persistently rising money market rates will change course. Inflationary pressures will continue in Europe, putting Japan under greater pressure to maintain its ultra-loose monetary policy. **Second,** DXY will gradually retreat from high, the euro and sterling exchange rates may gradually stabilize and pick up. Emerging market currencies will remain strained, with some on the brink of a currency crisis. **Third,** the global stock market may rebound in the short term but then weaken again due to a lack of long-term upward momentum. **Fourth,** major economies may show divergent trends in government bond yields. The US government bond yields are expected to peak, major European yields still have room to rise, and Japanese and Chinese yields are likely to remain flat. **Fifth,** the global energy crisis has further highlighted the fragility and unsustainability of the existing energy system. It will prompt countries to adjust their structure of energy supply and demand and accelerate the global energy system reform. **Sixth,** in 2023H1, inflation in the United States and Europe may remain "scorching", making it unlikely to reverse the monetary tightening. Emerging markets will feel relieved from the capital flight pressure to some extent, slowing or even ending their "passive rate hikes".

III. Special Research

III.1 Global sci-tech innovation progress and influences

Since the beginning of the 21st century, global sci-tech innovation has reached a new level. Cutting-edge technologies, represented by artificial intelligence, cloud computing, new materials and new energy, have witnessed explosive growth. Globalization has catalyzed international cooperation and competition, further accelerated the development of emerging technologies and expanded the application of innovation outputs. It has had a fundamental impact on the current industry ecosystem and the comparative advantages of countries, triggering systemic changes.

1. Sci-tech innovation will reshape the industry ecosystem and comparative advantages of countries

In the next few years, global sci-tech innovation will focus on digital technology, biotechnology and clean energy. Global sci-tech innovation has fueled the development of major industries. For example, drone mapping and modeling will accelerate the boost to construction quality and speed up works. The 5G technology can be applied to social security governance and enabling public security. The innovation of gene editing technology will fuel the development of biomedicine and agriculture. The digital technology is most influential on manufacturing. Technological innovations such as artificial intelligence, robotics and 3D printing will change the production mode of traditional manufacturing.

Global technological innovation will reshape the landscape of competition between countries. At present, the development of artificial intelligence, robotics and other technologies will further replace low- and medium-skilled workers, increasing the demand for skilled professionals and exacerbating the structural imbalance in employment. The comparative labor advantage of developing countries will be gradually weakened, while developed countries are expected to unleash their advantages in high skilled labor to quickly adapt to the labor force adjustment caused by frontier technology innovation, consolidate their strengths in high-tech industries and encourage the reshoring of some low- and medium-tech industries.

2. Impact of major countries' industrial policies on sci-tech innovation

In the context of new models, forms and structures of business sparked by global sci-tech innovation, various countries have formulated industrial policies related to sci-tech innovation. First, a strategic framework has been created to systematically plan the sci-tech development. The strategic industrial policies of countries mainly include overarching policies for overall sci-tech development in the future and plan for key sectors of sci-tech innovation industries. Second, enterprise' technological innovation is supported with more investments, subsidies and tax cuts. Some countries have developed a package of national investment plans covering a number of sci-tech sectors. Major countries and regions such as China, the US, the EU and Japan have introduced policies to increase incentives for key high-tech industries and leveraged private-sector investment with government funds. Third, stronger financial support for innovation is provided to foster high-quality tech firms. The US provides financial support to sci-tech SMEs through policy loan programs, guaranteed financing and other innovative financial instruments. Fourth, cultivation of high-skill labor and supporting facilities are strengthened to create a sound ecosystem for innovation.

3. Sci-tech nationalism hinders sci-tech cooperation and innovation

In recent years, the US, Europe and other developed economies have developed sci-tech protectionist policies to safeguard their sci-tech strengths. However, the specific policies are largely driven by sci-tech nationalism, which may trigger the risk of sci-tech decoupling and bring uncertainties to the ongoing global sci-tech innovation. First, export controls. In recent years, the US and Europe have strengthened the export management of their high-tech expertise, technologies and products to restrict their sci-tech competitors' access to key materials and innovative technologies. Second, investment screening. On the grounds of national security, Europe and the US have strengthened the screening of foreign direct investment (FDI), especially the cross-border investment activities of high-tech firms. Third, technology trading rules. On the grounds of information security, the US, the UK, Australia, India and other countries have imposed varying degrees of restrictions on the local activities of Chinese telecom companies. Fourth, formulation of technological standards. Technological standards are of strategic significance. The dominance in formulation of emerging technological standards has also become a key field in the power game among countries. Fifth, multilateral technology alliances. The exclusive technology alliance created by a number of sci-tech powers to establish barriers against technology distribution will widen the global technology gap, which may worsen the imbalance of sci-tech strengths between countries at a faster pace and intensify the disparities in global industrial chains.

III.2 Reshaping of Global Industrial Pattern in the Context of Energy Crisis

Over the past two decades, the world has developed a relatively stable system of division of labor, with major economies increasingly participating in the global supply chain and value chain and the international trade and investment growing rapidly. All participating countries have benefited a lot from this process. Since 2018, the global division of labor has entered a new stage of adjustment amid the great power competition, COVID-19 pandemic and the supply chain crisis. The outbreak of the Russia-Ukraine conflict in 2022 has triggered a domino effect on global economic activities, especially on the supply of fossil energy products. The rising price and short supply of fossil energy will inevitably bring a systemic shock on global industrial production. The ongoing energy crisis will reshape the global energy landscape at a faster pace and have a profound impact on global industrial pattern developments.

1. Energy crisis has an uneven impact on global industry development

The ongoing energy crisis, mainly sparked by the Russia-Ukraine conflict, has had an uneven impact on the global industrial landscape due to the different sources of energy supply and different attitudes towards the conflict among the world's economies. Europe was hit immediately and hardest by the energy crisis. Europe's large-scale industry shutdown will have a huge impact on global industrial output, and its impact on downstream economies should never be underestimated. Outside Europe, export-oriented economies such as Japan, which are heavily dependent on energy imports, have also suffered a lot. Japan's trade balance has deteriorated substantially due to a sharp rise in the price of imported goods such as energy. By contrast, the US and the emerging industrial economies in the Asia-Pacific region are less affected. The US is less dependent on Russian energy products due to its strong energy self-sufficiency. As its industrial production has received a less direct impact from the ongoing energy crisis, the US is seeking additional global market share when European industrial capacity is broadly shut down. China, India, ASEAN and other emerging industrial economies in the Asia Pacific did not "take sides" in the Russia-Ukraine conflict. Their external energy supplies are relatively stable and their industrial systems are relatively robust, filling part of the global supply gap caused by the European industry shutdown.

2. From a long-term perspective, the energy crisis bears a close tie to changes in the global industrial landscape

In the middle and late 20th century, the world experienced several rounds of oil crises that dealt a heavy blow to the global economic growth. At a deeper level, they led to major economies' industrial rebalancing and the global industrial pattern change. In the face of severe challenges from the energy crisis, developed countries such as the US and the UK chose to shift from real economy to a virtual economy to create new growth poles, while Japan embarked on adjusting the industrial structure, improving energy efficiency and optimizing energy sources, ushering in a fresh round of rapid industry development. The different choices of major economies have also had a profound impact on the global division of labor.

3. The ongoing energy crisis also has a huge impact on the global industrial pattern

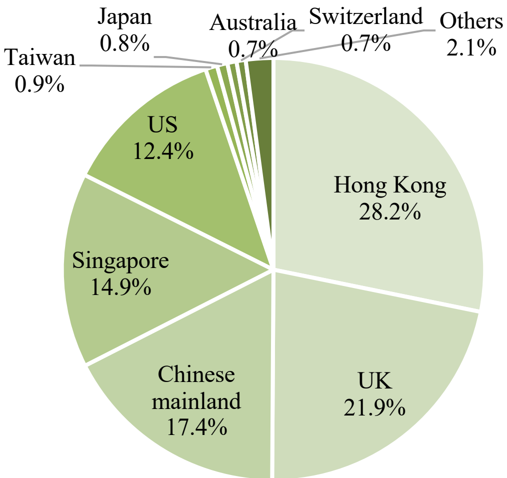
The global industrial development can hardly break away from traditional energy in the near future. It is estimated that fossil fuels such as crude oil, coal and natural gas accounted for more than 80% of global energy consumption in 2021 and will continue to play a key role in global energy supply for a long time to come. The ongoing traditional energy crisis will profoundly reshape the global division of labor. On the one hand, energy costs in Europe are likely to remain high for a long time, and European industrial capacity may have to relocate permanently. On the other hand, the energy crisis also has created more opportunities for the broader use of renewable energy and low-carbon products, including new energy vehicles.

III.3 The Role and Prospect of RMB in Global Forex Trading – Interpretation and analysis of BIS' 2022 Triennial Central Bank Survey

Global forex trading volume hit a record high. In terms of total volume, the daily global forex trading averaged USD7.5 trillion in April 2022, up 14% year-on-year (compared to the April 2019 survey, the same below), a more than five-fold expansion since the beginning of the century and the highest level in history. Three factors account for the persistent expansion of global forex trading. **First,** financial markets became more volatile. Since 2022, amid stubbornly high inflationary pressure, a wave of rate hikes started by central banks and the ongoing Russia-Ukraine conflicts led to sharp fluctuations in global exchange rates. Dealers traded positions more frequently with each other to rebalance the "stock", leading to a substantially swelling volume of forex trading. **Second,** forex derivatives trading grew rapidly. In April 2022, forex derivatives accounted for about 51% of total trading volume, surpassing the forex spot market. **Third,** the forex market is more diversified. "Other financial institutions", including small and medium-sized banks, hedge funds, private equity funds, institutional investors and proprietary trading firms (PTFs), saw their trading volume soaring to USD3.6 trillion in aggregate, still outpacing the largest dealers.

With the US still in a dominant position, while RMB remains the most traded emergency market currency and became the fifth most traded currency in global forex market. The active trading in RMB is mainly due to the steady advance in RMB internationalization, higher flexibility of RMB exchange rate and China's faster pace of financial market opening-up. In terms of the geographical distribution of RMB trading, Hong Kong remains the world's largest RMB trading center, but its global share has decreased. The UK became more active in RMB trading, surpassing the Chinese mainland to become the second largest RMB trading center in the world, followed by the Chinese mainland in third place. Singapore and the US ranked fourth and fifth among the world's RMB trading markets (Fig. 6). In terms of currency pairs and product mix in forex trading, the global forex swap has become the mainstream product. The RMB forex derivatives trading has expanded rapidly and the RMB forex trading structure has undergone great changes, getting close to the overall global pattern. As the global currency anchor, the US dollar has become the dominant currency in RMB forex trading.

Fig. 6: Distribution of Global RMB Forex Trading Markets in 2002



Sources: BIS, BOC Research Institute

The world is undergoing profound changes unseen in a century, with the international monetary order and the global foreign exchange market evolving at a faster pace. RMB is playing a bigger role in the global financial landscape, and its status as an international currency is increasingly consolidated with bright prospects ahead. **First,** the mechanism for setting and managing the RMB exchange rate will be further improved. China should pay great attention to the trend of monetary policy in major developed economies and retain its domestic orientation while seeking a balance with external markets, unleashing the role of RMB exchange rate as an "automatic stabilizer". **Second,** an open and competitive RMB forex market will be built at a faster pace. China will further facilitate cross-border trade, investment and financing while giving priority to the use of RMB, enrich the RMB toolbox for forex trading and risk management in the Belt and Road countries and RCEP members, cement Shanghai's position as an international financial center and Hong Kong's status as an offshore RMB hub and enhance the RMB pricing power. **Third,** Chinese banks should improve their market-making and trading capabilities. Chinese banks should remain customer-centered and market-oriented to improve their global business and service networks, expand the coverage of international RMB business and actively participate in competition and trading in the global forex market. The few largest Chinese banks should strive for a bigger share of the global forex trading market and further consolidate the global pricing power of RMB.

III.4 The US BOP characteristics – an analysis on the BOP statement for 2022

The world economy has been stuck in stagflation since 2022. Major economies have undergone significant changes in their balance of payments (BOP) as the world has embarked on a super rate hike cycle, coupled by intensifying geopolitical conflicts. The BOP adjustment of the US, as the world's largest economy, has far-reaching implications for global economic and financial stability. **First,** the current account deficit hit a record high, mainly driven by the goods trade deficit. The rising DXY has widened the US current account deficit since 2022, increasing the trade deficit in goods and reducing the trade surplus in services. **Second,** geopolitical factors had a stronger impact on trade structure, with energy trade growing significantly faster. In 2022H1, the US trade with "friendly countries" maintained relatively fast growth, showing notably faster growth in exports of industrial raw material supplies, soybeans, steel and aluminum and markedly slower growth in exports of products with a high value-added tech products. The rising commodity prices, among other factors, fueled fast growth in the US imports from Saudi Arabia, Australia, Vietnam, Taiwan, Brazil and Canada, and the imports of industrial raw materials gained pace. **Third,** the financial account maintained a large surplus, mainly driven by other investments and securities investment. In 2022H1, the US financial account had a net inflow of USD395.2 billion, with the net financial account inflow/current account deficit remaining at a high level of 74.1%. Against the background of a large current account deficit, maintaining a financial account surplus is an important support for the US to achieve an overall BOP equilibrium. In 2022H1, the US saw a net inflow of USD225.9 billion from other investments, becoming the main driver of the financial account surplus.

The financial account surplus is the main channel for the US to maintain a BOP equilibrium under the high current account deficit. Since 2022, offshore US dollars have tended to return US as global investors' risk appetite, contributing to a large financial account surplus. The capital influx into the US is principally short-term investments in, for example, securities. They have mainly increased their holdings of fixed income assets such as medium and long-term US domestic bonds, loans, deposits and money market instruments while significantly reduced their holdings of equity assets. The influx of short-term capital is mainly driven by private sector funds, dominated by cross-border capital repatriation to the US. In the Russia-Ukraine conflicts, the US imposed a freeze on Russia's official reserves, impairing the credibility of USD-denominated official reserve assets and government department-sector offloading of US Treasuries. The change in geopolitical pattern has had a significant effect on the FDI from and to the US. The FDI between the US and Russia and Venezuela shows an increasingly prominent feature of "decoupling". The growth of FDI between the US and its rivals slows down, while the FDI with its allies is expected to maintain rapid growth.

Monetary policy shifts and geopolitical factors are the primary factors reshaping the global BOP landscape in 2022. The changes of interest rate and exchange rate have a significant impact on short-term capital trends, while the geopolitical developments have had a profound effect on the industrial chains and FDI pattern. China should keep a close eye on the changing BOP pattern of major economies such as the US, promote higher-standard opening up and create a new development pattern at a faster pace.

Disclaimer

BOC Research Institute
1 Fuxingmen Nei Street, Beijing, 100818 China
Postal Code: 100818
Telephone: +86-10-66592780
Fax: +86-10-66594040