Chapter 2: Financial Markets' Behavior

Domestic financial markets went through notable volatility during CY22. The market's dynamics were driven by the spillover effects from Russia-Ukraine war, significant strengthening of USD against (other currencies), elevated international commodity prices, weakening external balance, and tightening financial conditions. To contain the emerging risks, SBP continued to pursue the monetary tightening, and further raised the policy rate by a cumulative 625 bps during CY22. The market rates responded to the changes in policy rate and SBP maintained overnight repo rate (ONR) close to policy rate by managing the market liquidity through open market operations (OMOs). The foreign currency market, however, operated in stressed conditions, as the pressure on external account and ensuing uncertainties led to liquidity shortages and volatility in the FX market with exchange rate witnessing depreciation. The equity market witnessed several bouts of volatility and ended CY22 with a lackluster performance. Besides macroeconomic concerns, domestic political developments and the uncertainty regarding revival of IMF program led to risk averse behavior by investors. On an overall basis, financial markets remained in tight conditions but did not pose any imminent stability concerns for financial institutions, as banks showed adequate resilience to withstand market risk shocks.

Volatility in financial markets was mainly a reflection of the Russia-Ukraine war and its related spillovers effects during CY22 ...

Just as the world was struggling to recover from the Omicron wave of the COVID-19[34], associated supply chain shocks and building inflationary pressures, the geo-political tension in Eastern Europe resulted in the breakout of Russia-Ukraine war on February 24, 2022. Since Russia and Ukraine are among key players of global supply chains of many key food and energy related inputs, their conflict had implications for global trade. Accordingly, inflationary pressures, which were already high on the back of elevated energy prices and supply disruptions, further deepened. In the initial response to the war, commodity prices (as measured by IMF commodity index) sharply jumped 17.7 percent on MoM basis –the historical highest (MoM) increase in the index since January 2003. According to IMF, the global economic activity experienced a broad-based and sharper-than-expected slowdown. IMF expects the global economic growth to slow down to 2.8 percent in 2023 from 3.4 percent in 2022.[35]

A major source of the slowdown in global growth was the tightening cycle of monetary policy. To normalize the policy stance (that was relaxed to fight the pandemic) so as to counter the rising inflation and anchor inflation expectations, central banks, especially in EMDEs, began tightening their monetary policy stance. Advanced Economies (AEs) also followed suit in CY22, and tightening in some cases was sooner than the expected normalization of monetary policy in the aftermath of significant accommodation adopted during the COVID-19 pandemic. In this regard, the monetary tightening by AEs, especially US Fed, was noteworthy as it also resulted in capital outflows from emerging economies and strengthening of US dollar against many currencies.

In response to rising inflation, uncertain global economic outlook, and rising fears of global recession, major financial markets (such as equities) exhibited increased volatility during

[34] For instance, China began lockdowns in late Q1CY22 to conduct mass testing and control a growing outbreak in major cities such as Shanghai following its "zero-COVID" strategy.

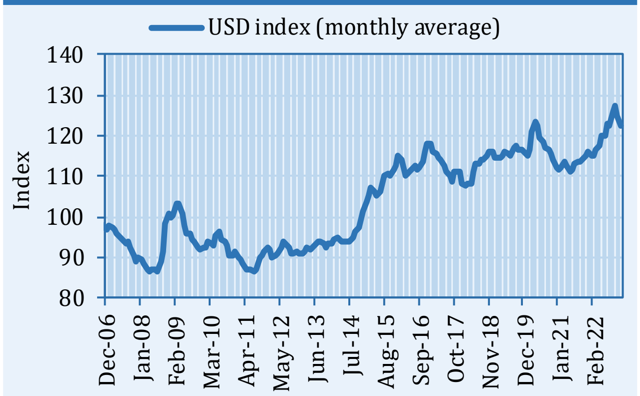
[35] International Monetary Fund. (2023). World Economic Outlook: A Rocky Recovery. *Washington, April*. For details, please visit https://www.imf.org/en/Publications/WEO/Issues/2023/04/11/world-economic-outlook-april-2023

CY22. Financial conditions continued to tighten across the globe and in some cases such as in AEs, they were tight by historical standards.[36] The dollar liquidity became more costly especially for many emerging market economies. In the backdrop of tighter global financial conditions, sustainability of external debt also emerged as an important concern for several emerging market economies.

A strengthened USD in global markets also put pressures on many currencies …

The significant strengthening of USD was a noteworthy development in global financial markets during CY22 (**Chart 2.1**). It adversely affected external accounts of EMDEs – especially net importers of commodities – and contributed to their inflationary pressures. Accordingly, the policy of monetary tightening generally remained common among EMDEs during CY22.

Chart 2.1: Trend in Nominal Broad U.S Dollar Index (Jan 2006=100)



Source: Federal Reserve Bank of St. Louis

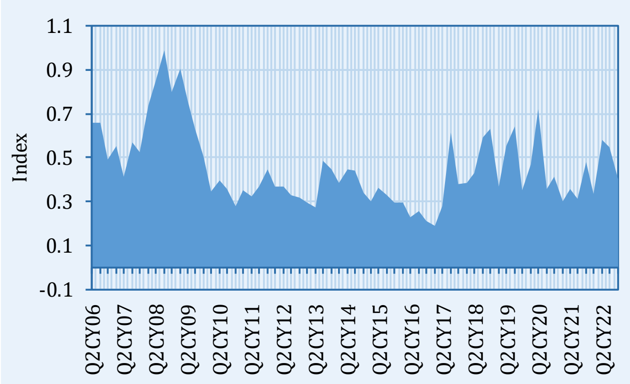
Monetary policy tightening continued …

On the domestic front, the monetary policy tightening cycle that had begun in September 2021 got further traction during CY22. SBP raised the policy rate by cumulative 625 basis points during CY22 to counter growing inflationary pressures and risks to external account. The year 2022 thus witnessed tightening in financial conditions as compared to the last year, when the macro-environment was relatively accommodative.

Domestic financial markets exhibited significant volatility and pressures during CY22 …

Domestic financial markets witnessed increased stress during CY22, which was a reflection of global as well as domestic developments (**Chart 2.2 & 2.3**). The foreign exchange (FX) market remained under pressure amid the widening current account deficit (particularly in H1CY22), external debt repayments and falling SBP's FX reserves. The money market witnessed strain on liquidity especially in H1CY22 due to increased government borrowings, financing for commodity operations and growing private sector credit. However, the open market operations (OMOs) augmented the interbank market liquidity and helped keep the overnight repo close to policy rate. For most of the year, bearish sentiments continued in the equity market and KSE-100 index fell 9.4 percent.

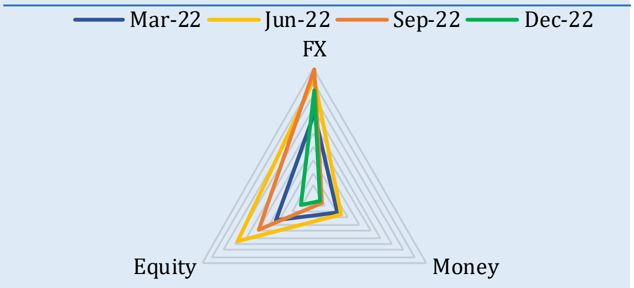
Chart 2.2: Trend in Financial Markets Stress Index



Source: SBP staff estimates

[36] International Monetary Fund. (2022). Global Financial Stability Report. *Washington, October*. For details, please visit https://www.imf.org/en/Publications/GFSR/Issues/2022/10/11/global-financial-stability-report-october-2022

Chart 2.3: Financial Markets Stability Map

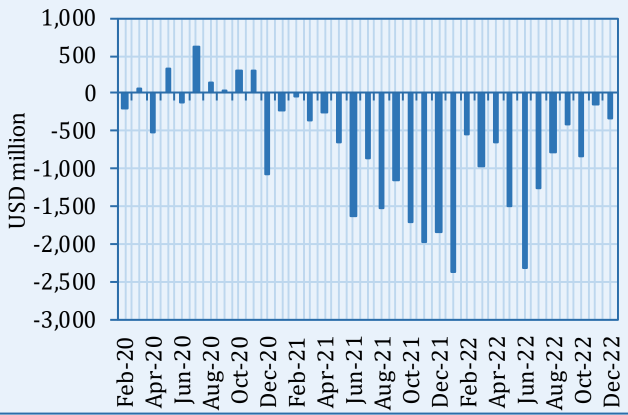


Note: Volatility in the respective markets is calculated using Exponential Weighted Moving Average (EWMA) method. Daily Overnight repo rate, KSE-100 index and Interbank PKR/USD Exchange Rate are used as indicators for the money, equity and foreign exchange markets, respectively.
Data source: SBP

FX market

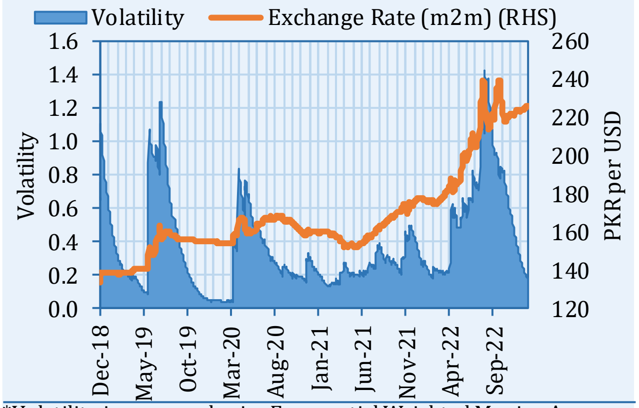
The external sector of the economy was at the forefront of spillover effects from the global and domestic developments. The Current Account Deficit (CAD), which was on a declining trend in the initial months of CY22, sharply widened in June 2022, mainly due to jump in high volume of petroleum imports at elevated price levels (**Chart 2.4**). Meanwhile, amid the strengthening of USD across the globe, uncertainty about revival of IMF program, domestic political environment, worsening macro-financial conditions and business sentiments, PKR came under significant pressure, especially in mid-June 2022. Volatility spiked in April 2022[37], peaked in August 2022 and then gradually declined by end of CY22 (**Chart 2.5**). On an overall basis, PKR depreciated by 22.0 percent in CY22 as compared to 9.4 percent depreciation in CY21.

Chart 2.4: Trend in Current Account Balance



Source: SBP

Chart 2.5: Trend in Exchange rate and its Volatility*

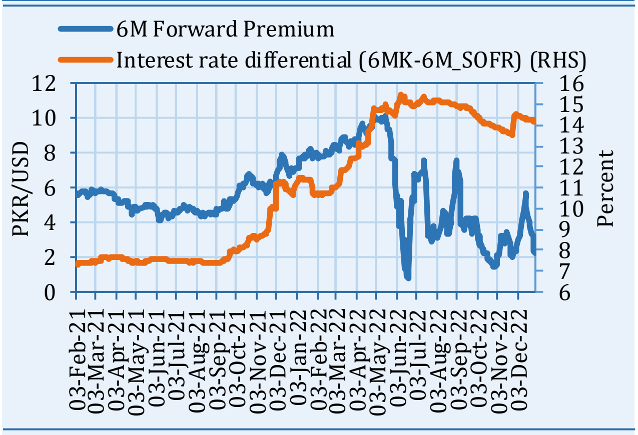


*Volatility is measured using Exponential Weighted Moving Average Method based on daily data. Data source: SBP

On one hand, after the completion of Debt Service Suspension Initiative (DSSI) and amid rising global interest rates, the increase in external debt servicing was expected. On the other hand, FX inflows were also affected due to delay in completion of IMF's 9th review, which contributed to pressure on PKR.[38] Moreover, the portfolio rebalancing by foreign investors contributed in outflows from FX market.[39] On various occasions during the year, the 6-month forward premium fell sharply, suggesting tight FX liquidity conditions (**see Chart 2.6**).This was also reflected in the higher pace of decline in FE-25 deposits vis-à-vis lower decline in FX loans extended against such deposits (**see Chart 2.7**).

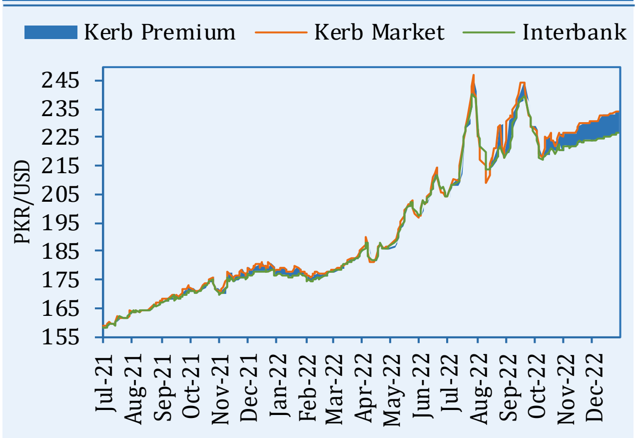
[37] By end of June 2022, PKR depreciated by 13.8 percent, when compared to end December 2021.
[38] External debt servicing (principal + markup) rose to USD 19.3 billion in CY22 from USD 12.4 billion in CY21.
[39] The net portfolio outflows were USD 0.8 billion in CY22 compared to USD 0.39 billion net outflows in CY21.

Chart 2.6: 6M Forward Premium



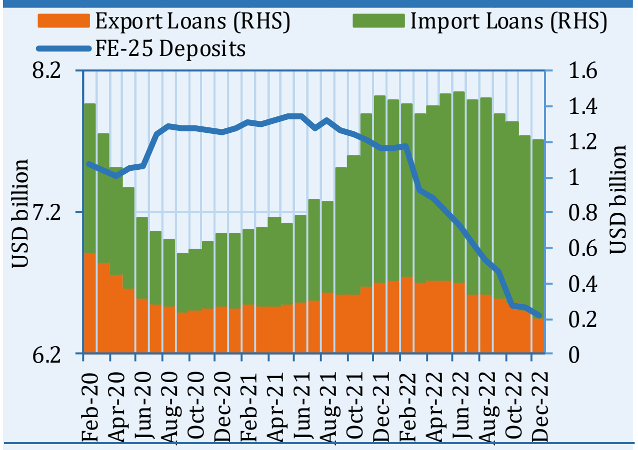
Source: SBP and New York Fed

Chart 2.8: Movement in Kerb-Interbank Premium



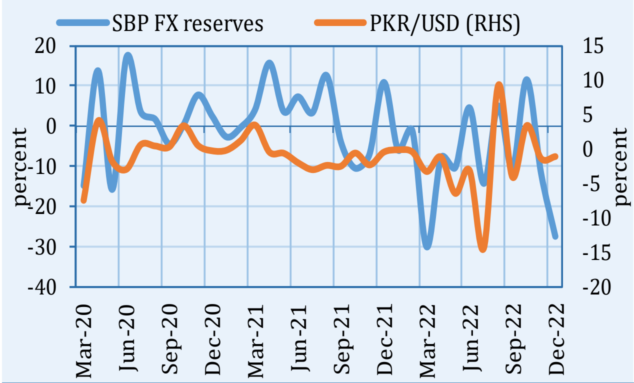
Source: SBP

Chart 2.7: FE-25 Deposits and Loans



Source: SBP

Chart 2.9a: MoM change in SBP FX Reserves and PKR per USD



Source: SBP

Amid persistent uncertainty, the KERB premium widened especially in H2CY22 …

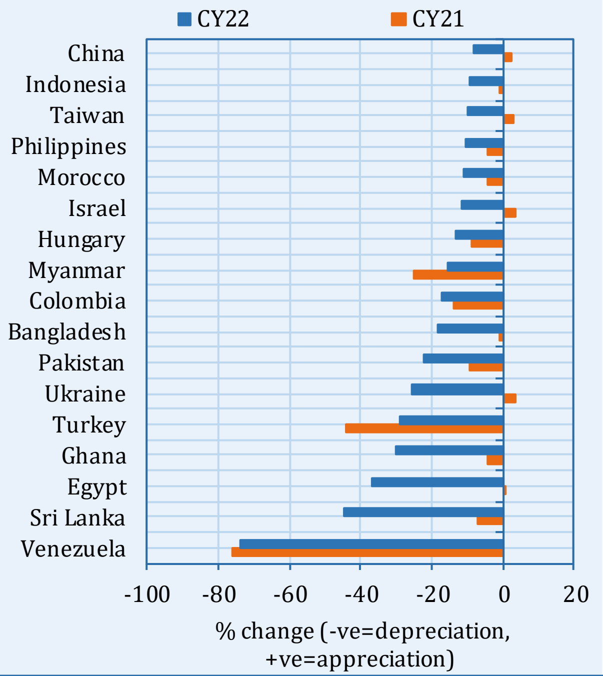
The open-interbank differential (KERB premium) also widened by mid-2022, which after some moderation in Q3CY22 again started rising till the end of CY22 (**Chart 2.8**).[40] This was despite the fact that the CAD showed visible improvement in H2CY22, as stabilization measures started to reflect in lower imports. However, due to repayment of loans, SBP reserves also fell significantly during Q4CY22 (**Chart 2.9a**). The rising stress coupled with exchange rate volatility widened the spread between open and interbank rates.

Currencies of other EMDEs also faced pressures during CY22 …

However, it may be important to note that the PKR was not the only currency, which remained under pressure; currencies of many other emerging market economies such as Türkiye, Bangladesh, Philippines and Indonesia also faced depreciation in CY22 (**Chart 2.9b**).

[40] The average spread between KERB and interbank spot rate rose to PKR 2.41 per USD in CY22 from average spread of PKR 0.60 per USD in CY21.

Chart 2.9b: Change in Exchange Rate in Selected EMs



Source: Haver Analytics

SBP regulated financial institutions such as banks showed resilience to volatility in the FX market…

Despite the significant volatility and liquidity pressures in the FX market, the major players of financial markets such as banks showed resilience to market conditions and continued to function smoothly, though the volume of their FX business significantly reduced as imports dampened due to stabilization measures of SBP and government of Pakistan.[41] Banks are subject to prudent regulatory limits on FX positions, and they usually maintain a limited exposure in FX.

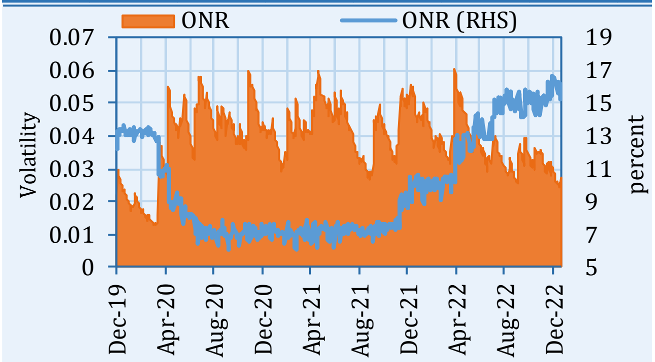
Nonetheless, some increase in Net Open Position was observed towards the end of CY22, which indicates slight increase in sensitivity to changes in markets rates. However, the small size of this open position vis-à-vis capital cushions of banks imply contained risks to solvency of banks (see the section on market risk in **chapter 3** on **Banking**).

Money market

To counter external imbalances and rising inflationary pressures, SBP continued its monetary tightening that was initiated in September 2021. During CY22, SBP further raised the policy rate by a cumulative 625 bps (250 bps in April, 150 bps in May, 125 bps in July and 100 bps in November 2022). The overnight rate responded accordingly, with the sharpest spike in volatility in April 2022 (**Chart 2.10**). Within the year, the money market exhibited relatively tight liquidity conditions in H1CY22, which was also reflected in positive spread between overnight repo rate and policy rate (**Chart 2.11**). Amid higher government borrowing, financing requirements for commodity operations and private sector credit during H1CY22, SBP had to opt for large OMOs; on a few occasions, SBP conducted around PKR 4 trillion OMOs injections during H1CY22.[42]
However, in the second half of the year, not only the average OMOs injections'[43] size fell to PKR 510.2 billion (from PKR 1.35 trillion in H1CY22), SBP also conducted 11 mop-ups with average size of PKR 317.1 billion – suggesting relatively liquid market conditions in H2CY22. Although some occasional spike of OMOs injections also occurred in later part of CY22 (**Chart 2.12**), which was in sync with the quarterly decline in deposits, as banks strategized to improve their ADR, so as to rationalize the impact of taxation on their income from government securities.[44]

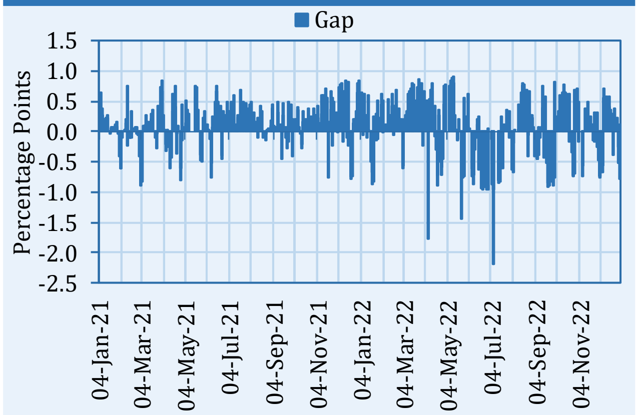
[41] These measures mainly include, increase in SBP policy rate, linking the interest rate on the export refinance scheme (EFS) and LTFF to policy rate, and widening the set of import items subject to cash margin requirements. For detail, see monetary policy statements of SBP.
[42] The longer tenor OMOs (63 days) introduced towards the end of CY21, was continued by SBP, in fact, introducing even longer term OMOs such as 70 days.
[43] SBP also started conducted Shariah-compliant OMOs for the eligible financial institutions, the numbers here also include them.
[44] For details, see the section on profitability in Mid-Year Performance Review of the Banking Sector for H1CY22.

Chart 2.10: EWMA Volatility of Overnight Repo Rate (ONR)



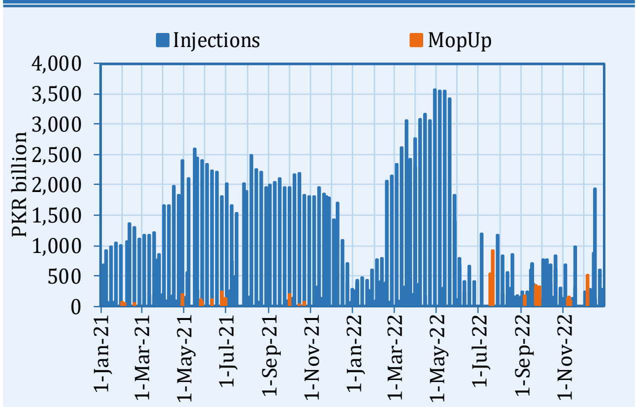
Volatility is calculated using Exponential Weighted Moving Average Method based on daily data Source: SBP

Chart 2.11: Gap between Overnight Repo Rate and policy rate



Source: SBP

Chart 2.12: OMOs Injections and Mop-ups

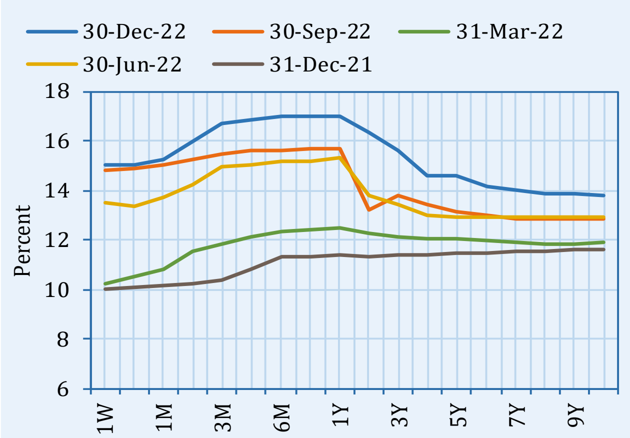


Source: SBP

Inversion in Yield curve deepened by end CY22 …

Amid sharply rising domestic inflation in H2CY22 and external account concerns, SBP continued raising policy rate in H2CY22. The yield curve showed upward movements but started inverting (**Chart 2.13**). By end of the year, the inversion in yield curve further deepened and it appeared that the market had already priced in the impact of macroeconomic stabilization measures in forming interest rate expectations. The higher yields on shorter tenors raised demand for these government securities in secondary markets (**Chart 2.14**), which seems in line with the rising interest rates scenario.

Chart 2.13: Upward shift in Yield Curve



Source: MUFAP

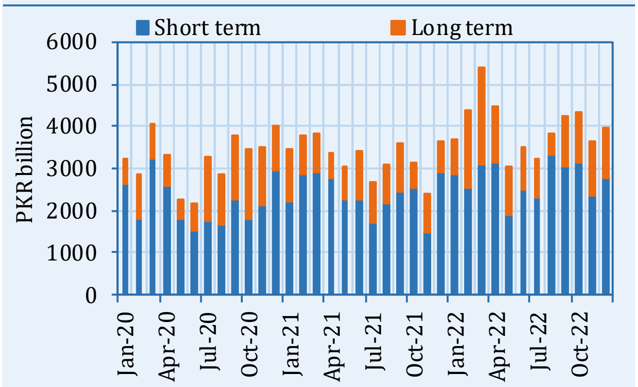
Market's auction behavior was dynamic in response to the changing environment …

The market took keen interest in short term instruments, though its intentions for placing funds in long-term fixed rate instruments such as PIBs were also visible in the offer to target ratios in H1CY22. It appears that some of the market participants perceived that long-term secondary market yields have reached their peak in Q2CY22, which might have influenced their bidding behavior in placing funds in fixed rate PIBs and Fixed Rental Rate (FRR) Sukuk in H1CY22.

However, with the rising inflation in H2CY22, interest in short term and floating rate instruments revived again but the government tried to mobilize resources from fixed rate PIBs and Sukuk, as it accepted higher than target amounts in all quarters of CY22 (except Q4CY22). In fact, the government tried to lock a part of cost of debt in the rising interest rate scenario.

In line with the increasing reliance of government on domestic resource mobilization especially from banks in recent years, investment in government securities has reached a significant level in banks' assets. A large share of this investment is held in available for sale (AFS) category followed by held for trading (HFT) investments in the secondary market; these two categories of investment are regularly marked to market. Accordingly, banks' exposure to interest rates changes have increased over time. Due to upward movements in PKRV rates, the revaluation deficit on banks' holding of government securities rose to PKR 235.8 billion at end Dec-22 from a deficit of PKR 70.9 billion at end Dec-21, and banks booked lower trading gains of PKR 2.2 billion on sale of government securities in CY22 compared to PKR 9.4 billion in CY21 and PKR 46.3 billion in CY20.

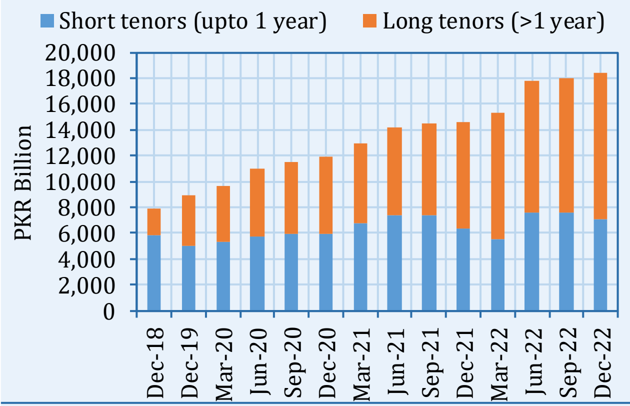
Chart 2.14: Short tenors dominated trading of Government Securities in Secondary markets



Source: SBP

Though the share of long-term investments (i.e. investment having remaining time to maturity greater than 1 year) in banks' total investments has increased to 62 percent by end Dec-22 (57 percent at end Dec-21) (**Chart 2.15**), the share of floating rate portfolio has also gradually increased to 50.2 percent by end Dec-22, which indicates lowering in sensitivity to interest rates movements. Moreover, the relatively lower upward shift in yield curve in the longer tenors (> 1 year) as compared to shorter-tenors,[45] also resulted in contained revaluation losses on long-term securities.

Chart 2.15: Trend in banks' investments as per remaining maturity



Source: SBP

Accordingly, banks' resilience to adverse market shocks largely remained firm over time. The results of sensitivity (stress testing) analysis shows that under the most severe shock scenario (i.e. parallel upward shift in the yield curve by 300 basis points), CAR of most of the banks remains well above the minimum requirement (for detail see **Chapter 3** on **Banking**). [46]

Equity market

CY22 was a challenging year for equities ...

Most of the equity markets across the globe could not perform well during CY22.[47] The domestic equity market also posted a lackluster performance in most of CY22 (**Chart 2.16**). The benchmark KSE-100 index fell 9.4 percent over CY22 (1.9 percent growth in CY21). Investors mostly exhibited cautious behavior as reflected by low trading volumes (**Chart 2.17**).[48] The volatility

[45] Short tenor rates rose 557 bps (average of change in 1 week to 1-year tenor PKRV rates), compared to only 276 bps (average of change in 2 years and above tenor PKRV rates) in CY22.

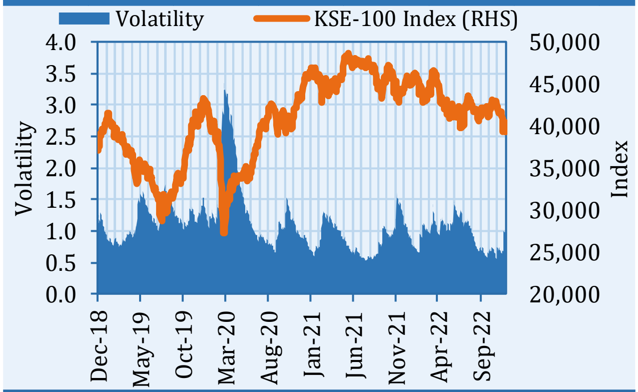
[46] For details, see the results of sensitivity analysis published in [Quarterly Compendium: Statistics of the Banking System for December 2022](#).

[47] For instance, the S&P 500 index declined 19.4 percent and Shanghai Stock Exchange Composite Index declined 15.1 percent YoY in CY22. GFSR (IMF) October 2022 has also highlighted the fall in equity prices during CY22.

[48] Average daily trading volume of KSE-100 declined to 100.1 million shares in CY22 as compared to average daily trading volume of 191.1 million shares in CY21. Data source: Bloomberg.

in KSE-100 index remained on higher side during H1CY22, which gradually declined before emerging again towards the end of the year, as the operating environment became more uncertain.

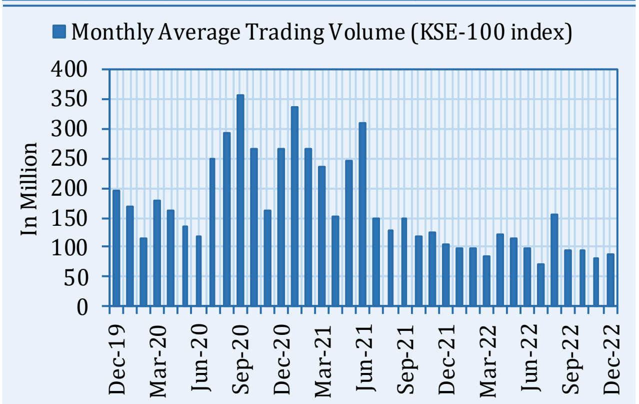
Chart 2.16: Trend in KSE-100 Index and its Volatility*



*Volatility is measured using Exponential Weighted Moving Average Method. Data source: PSX

The major reasons influencing the lackluster performance of equity market include: (i) macroeconomic imbalances, higher inflation, rising interest rates, (ii) a depreciating PKR, (iii) falling corporate profit margins, (iv) IMF program related uncertainties, (v) super tax on certain sectors (announced in mid-2022), (vi) heavy flash floods in H2CY22 and the ensuing damages to important industrial input such as cotton and other crops, and last but not least (vii) domestic political dynamics.

Chart 2.17: Trend in Trading volume of shares in KSE-100 Index

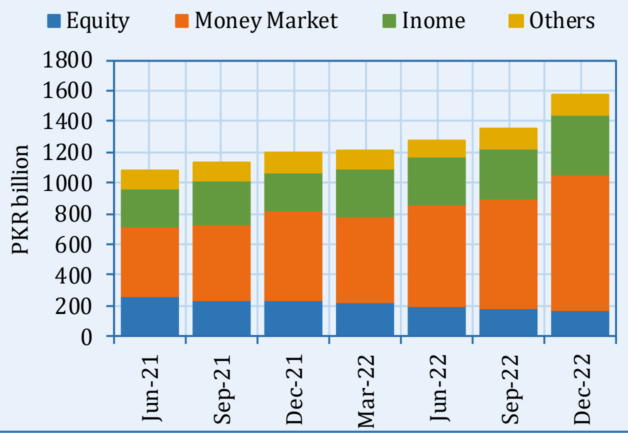


Source: Bloomberg

A general risk averse behavior was visible ...

Different investor types exhibited risk averse behavior. Insurance and mutual funds were net sellers of equities in CY22 and shifted their interest to money market avenues (**Chart 2.18**). Particularly, mutual funds (which are the major players in NBFIs) reduced their equities' holdings and increased the share of money market investments – a flight to safety behavior.

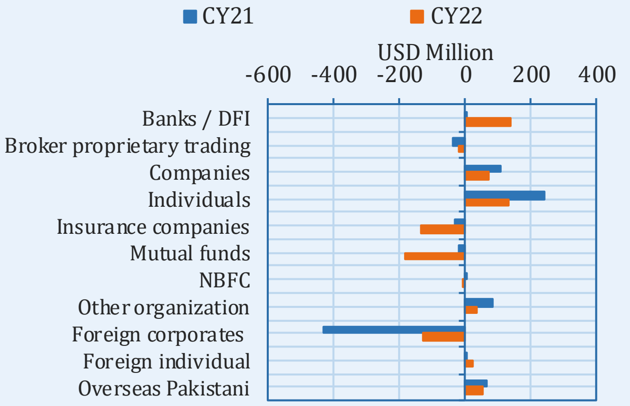
Chart 2.18: Composition of Mutual funds Assets



Data source: SECP

Foreign investors were net sellers which was consistent with their strategy to rebalance portfolio towards risk-free assets amid rising rates in AEs, and stressed macro financial conditions of the country. However, overseas Pakistanis showed interest in domestic equities, as they were also facilitated by the initiatives of SBP and SECP to allow Pakistani diaspora to invest in equities through their RDA accounts (**Chart 2.19**).[49]

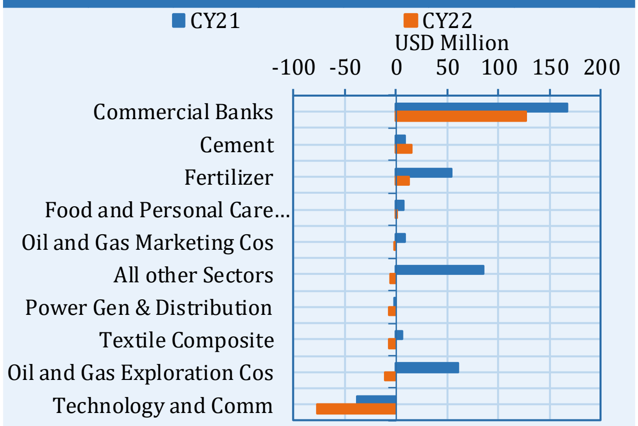
Chart 2.19: Mutual Funds and Insurance were prominent sellers in CY22



Source: NCCPL

Sector wise, banks' shares were the preferred stock among investors during CY22, as the rising policy rates further improved the earnings' outlook of banking sector (**Chart 2.20**). However, the amount of investment in banks' stock remained lower than in CY21, which was in line with general dampening in the investors' interest for equity stocks.

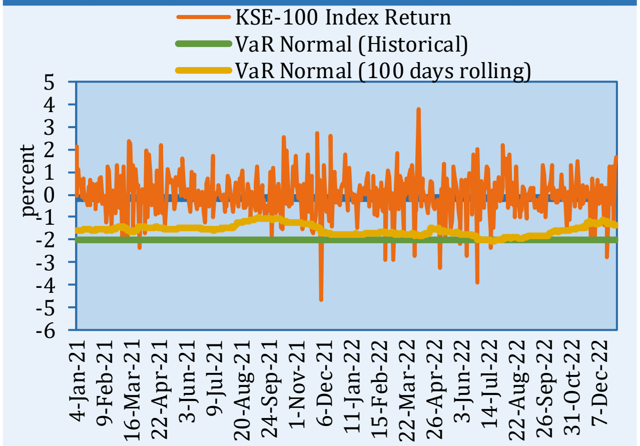
Chart 2.20: Investment in banks' stocks was prominent in CY22



Note: Cos = Companies, Source: NCCPL

During CY22, the daily returns of KSE-100 index breached the Value at Risk (VaR) Normal (100 days rolling) on 13 occasions (14 instances in CY21) but the average magnitude of breaches was higher in CY22 than last year (**Chart 2.21**).

Chart 2.21: Value at Risk of KSE-100 Index returns



Data source: PSX

However, the stress episodes could not translate into any significant stability concerns for SBP regulated entities such as banks. Due to a conservative regulatory regime of SBP, banks are maintaining limited exposure to the equity market, which results in lower sensitivity to the volatility in equity market. Banks' investment in equities declined to 6.8 percent of capital[50] at end Dec-22, from 7.3 percent at end Dec-21. The latest sensitivity (stress testing) results also suggest that even with a hypothetical shock scenario of 40 percent decline in equity prices, no CAR-compliant bank is expected to breach the regulatory minimum requirement of CAR.[51]

Lackluster fresh issuances during CY22…

Amid a challenging macroeconomic environment that was further hindered by the Omicron wave of COVID-19 and its ensuing stresses, domestic equity market witnessed the lowest listing of new companies during last three years. Despite the two

[49] The capital market entities, banks and SBP marked the launch of the Roshan Equity Investment (REI), a product offered to non-resident Pakistanis under the umbrella of Roshan Digital Account introduced by SBP in 2020. For details, see PSX press release.

[50] The ratio represents Net Open Position in equities to capital.

[51] For details see the results of sensitivity (stress testing) analysis published in Quarterly Compendium: Statistics of the Banking System for December 2022.

Initial Public Offerings (IPOs) during CY22, the total number of listed companies declined to 531, while no new debt instrument was issued during CY22 (**Table 2.1**).

The limited outreach and development of capital market constrains the corporate sector's ability to raise funds through tradable bonds.[52] Therefore, even large and relatively good quality borrowers which – unlike SMEs, agriculture borrowers – have better capacity to access capital market for meeting their financing needs, borrow from banks. As a result, banks remain the major supplier of credit and finance in the economy and a major part of their loan portfolio remains skewed towards large scale corporate borrowers. Though most of these borrowers have sound financial standings to withstand unexpected macroeconomic shocks (for details see chapter on **Risk Analysis of Non-financial (Corporate) Sector** and **box** on **Performance & soundness of top borrowing groups**), the corporate debt market only shares limited financial risks as compared to other players of the financial market especially banks.[53]

Importantly, the tame performance of domestic equity market was in line with the performance of other markets in CY22. Equity indices in regional economies such as Bangladesh, China, Malaysia, Philippine, South Korea, and Taiwan have also recorded YoY decline in CY22 (**Chart 2.22**).[54] Nonetheless, the Price to Earning (P/E) ratio of KSE-100 index suggested that valuations may be attractive and have good prospects, which was also reflected in buybacks of issued shares by several listed firms during CY22.

Table 2.1: Progress of capital market in Pakistan during CY20-CY22

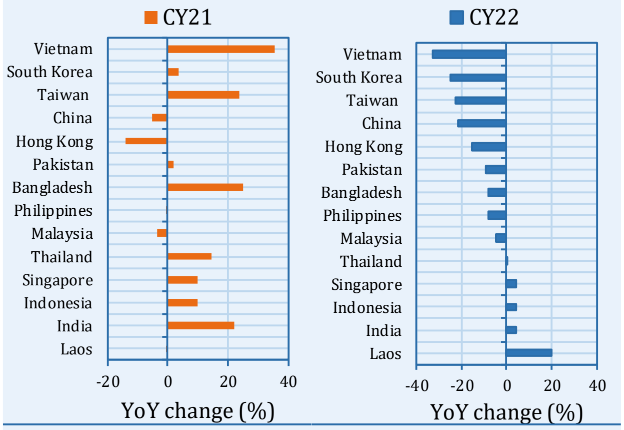
	2020	2021	2022
Total No. of Listed Companies	531	533	531
Total Listed Capital - Rs. in Million	1,421,094	1,485,103	1,552,728
Total Market Capitalisation - Rs. in Million	8,035,364	7,684,637	6,500,828
KSE-100™ Index	43,755	44,596	42,420
KSE-30™ Index	18,180	17,502	14,836
KMI-30 Index	71,168	71,687	68,278
KSE All Share Index	30,780	30,727	27,533
PSX-KMI All Shares Index	21,718	22,027	19,987
New Companies Listed during the year	3	7	2
Listed Capital of New Companies - Rs in Million	14,197	16,009	2,644
New Debt Instruments Listed during the year	7	5	-
Listed Capital of New Debt Instruments - Rs. in Million	246,967	25,100	-
Average Daily Turnover - Regular Market (Shares in Mn) (YTD)	330	474	230
Average Value of Daily Turnover - Regular Market (Rs in Mn) (YTD)	12,271	16,935	6,950
Average Daily Turnover - Future Market (Shares in Mn) (YTD)	102	141	94
Average Value of Daily Turnover - Future Market (Rs. In Mn) (YTD)	4,740	8,315	3,574

YTD = Year to date

EoP= End of Period

Source: SECP

Chart 2.22: Performance of Stock exchanges in selected EMs



Source: Haver Analytics

Going forward, the performance of domestic financial markets will depend on i) the evolving situation of Russian-Ukraine war, ii) global economic outlook and movement of commodity prices, iii) further adjustments in domestic monetary policy stance, iv) political developments, and iv) revival of IMF 9th review.

52 According to SECP, Pakistan has only 210,000 retail investors, which is quite low in comparison to regional markets such as Bangladesh having 2.7 million investors, Malaysia (2.5 million), Thailand (1.46 million), India (32 million retail investors) and Sri Lanka (630,000 retail investors). Further, Pakistan ranks lower on Market Capitalization to GDP among the regional countries such as India and Bangladesh. Source: Capital Markets Development Plan and Road Map 2020 -2027.

53 For details, please see SBP's Governor's Annual Report.

54 Dhaka Stock Exchange: General/Broad Index (EOP, Jan-17-08=2951.91) for Bangladesh, Shanghai Stock Price Index: Industry (EOP, Apr-30-1993=1358.78) for China, Stock Price Index: FTSE Bursa Malaysia KLCI (EOP, Jan-1-77=100) for Malaysia, Stock Price Index: Manila Composite (EOP, Jan-2-85=100) for Philippines, Korea Composite [KOSPI] (EOP, Jan-04-80=100) for South Korea, Taiwan Stock Exchange Capitalization Weighted Price Index (EOP, 1966=100) for Taiwan.