# Appendix A

## SBP – Regulatory and Supervisory Developments in CY23

Ensuring financial stability is one of the statutory mandates of State Bank of Pakistan.[1] It strives to fulfil this responsibility through effective regulation and supervision of financial institutions (FIs) and payment systems (i.e., Banks, Microfinance Banks (MFBs), Development Finance Institutions (DFIs), Exchange Companies (ECs), Payment System Operators and Providers (PSOs/PSPs), and Electronic Money Institutions (EMIs)). Keeping abreast with international best standards, the SBP plays a vital role in ensuring financial stability, developing the financial sector and promoting economic growth.

CY23 saw adverse geo-economic conditions, marked by the March 2023 banking turmoil and rising geopolitical tensions. Many central banks around the world continued to hike policy rates to curb the multi-decade high inflation which appeared to be sticky in the backdrop of post-pandemic Russia-Ukraine and Middle East conflict. These interest rate hikes had unintended consequences for financial stability, leading to the shutdown of major regional US banks, including First Republic Bank, Silicon Valley Bank, and Signature Bank, and rescue of a Global Systemically Important Bank (G-SIB), Credit Suisse.[2] The strain on the stability of the financial systems across the globe posed serious regulatory and supervisory challenges for central banks around the world. In Pakistan's case, financial conditions remained tight during CY23, testing the resilience of the financial system. Despite significant increase in the interest rates in Pakistan (i.e., 600 bps in CY23) to historic high levels i.e., 22.0 percent, and persistently high inflation, the banking sector showed strong resilience and remained well capitalized and profitable.

During CY23, the SBP's regulatory and supervisory efforts were mainly aimed at strengthening foreign exchange policy and operations, and developing digital financial services infrastructure.

### *Financial Stability – A Macro Perspective*

**Crisis Preparedness:** Ensuring stability of financial system requires navigating through financial crisis-like situations effectively through prompt response from regulatory and supervisory bodies. Planning for these crisis situations and building the capacity to manage such critical events in a structured and timely manner is crucial for the regulator. In pursuance of this objective, SBP engaged with Toronto Centre, Canada and World Bank to conduct Crisis Simulation Exercises (CSEs) to build the capacity of its staff and test the effectiveness of its actions, decisions and communication in a hypothetical financial crisis situation, tailored to the local dynamics. SBP, along with its relevant subsidiaries, participated in these CSEs and were able to practice contingency planning, resolution options for dealing with failing banks and systemic consequences of bank failures. These CSEs provided valuable insights for preparing and managing a crisis as well as an opportunity to check the adequacy of the powers and tools available to the supervisory authorities. Post CSE drill, SBP remained engaged with World Bank in order to strengthen crisis preparedness framework in light of the feedback received during the CSE exercise.

Based on the learning from World Bank CSE, held in March 2023, World Bank fielded a

[1] State Bank of Pakistan Act, 1956

[2] Basel Committee on Banking Supervision. (2023). Report on the 2023 Banking Turmoil. October. For details, please visit: Report on the 2023 banking turmoil (bis.org)

mission in June, 2023 to discuss the observations made during the CSE, which culminated into an understanding to undertake Technical Assistance (TA) from World Bank to enhance financial sector stability and crisis preparedness of SBP. Subsequently, the World Bank fielded a technical assistance mission in September, 2023 which covered the following themes: (i) strengthening the SBP's regime for early intervention and recovery planning, (ii) bank resolution, (iii) deposit insurance, (iv) strengthening of the current operational framework for emergency liquidity assistance (ELA) and (v) crisis coordination mechanism. In addition, the mission also discussed SBP's existing climate stress-testing arrangements. The said TA particularly focused on the capacity development of officers and provision of guidance to draft secondary legislation and internal policies along the main work streams.

**Macro Stress Testing (MST) Framework:** Under enhanced supervisory requirements for systemically important banks, sample Domestic-Systemically Important Banks (D-SIBs) were advised to develop and implement Macro Stress Testing (MST) framework under Stress Testing Guidelines 2020 and submit it as part of Internal Capital Adequacy Assessment Process (ICAAP) documents on annual basis. Financial Stability Department (FSD) reviewed the relevant sections of submitted ICAAP documents, conducted physical and online meetings with sample D-SIBs and provided detailed feedback to the sample D-SIBs on an individual basis to improve their existing MST frameworks. A one-week hand-on technical training was also conducted for the sample D-SIBs on MST.

SBP regularly shares its assessment of financial stability with external stakeholders to keep them abreast with emerging risks, resilience of the system and financial soundness performance of the sector. In this connection, SBP published Quarterly Compendium of Banking Statistics and Financial Soundness Indicators (FSIs), Mid-year Performance Review of banking sector for H1CY23, annual Financial Stability Review for CY22, and Governor's Annual Report for FY23.

SBP actively participated in cross-border experience, knowledge sharing events and initiatives, which are beneficial in understanding and tackling the challenges being faced by financial systems. In December 2023, SBP officials held a virtual meeting with Central Bank of Uzbekistan to exchange information on macroprudential supervision. Moreover, SBP participated in Financial Stability Board (FSB) Regional Consultative Group for Asia (RCG Asia) meetings where vulnerabilities and financial stability issues affecting Asia were discussed, along with other emerging issues including crypto assets regulation and non-bank financial intermediation. Additionally, SBP provided feedback on FSB and IMF surveys.

## *Financial Stability – A Micro Perspective*

**Assessment of Cyber Hygiene:** Cyber security has been an eminent threat across the globe. Under its supervisory mandate, SBP performed cybersecurity assessment throughout the year under review. Cyber Hygiene controls and practices play a significant role in providing baseline fortification against the cyber-attacks. In this regard, SBP initiated assessment of Cyber Hygiene practices in the industry, and developed a Cyber Hygiene Control Questionnaire. It comprised 52 controls based on international best practices and regulatory prescriptions in various jurisdictions. Subsequently, a few financial institutions were engaged to share the self-assessment of Cyber Hygiene Practices of their respective institutions.

**International Financial Reporting Standard (IFRS) 9:** State Bank of Pakistan identified the key elements of supervisory concerns in the implementation of IFRS-9 and assessed current level of preparedness of the banks. Based on assessment, SBP developed a Supervisory Assessment Manual (SAM) to enhance supervisory capacity and understanding of the critical facets of IFRS-9. The SAM covers all essential elements of the Standard that include qualitative elements i.e., Governance, Credit Risk Management Framework, Business Model assessment, Impairment assessment, as well as quantitative elements, which included Expected Credit Loss model and the adjustments of the SBP findings in the profitability and capital ratios.

**Development of Business Intelligence Tools:** During CY23, SBP developed a business intelligence tool namely 'Trade Data Analytical Tool (TDAT)' for monitoring of international trade transactions and identification of trade-based red-flags. This tool is based on the data extracted from Pakistan Single Window (PSW).[3] The salient features of TDAT include, i) Analysis of bank-wise and commodity wise import trends, ii) importer & exporter profiling iii) suspected over/under invoicing, iv) transactions with related parties v) import of dual use goods, and vi) mis-utilization of financial instruments through multiple tagging of shipping documents.

### *Foreign Exchange Policy and Operations*

**Structural reforms in** ECs **sector:** SBP introduced structural reforms in the ECs sector to improve governance quality, internal controls and compliance with laws and regulations. As part of these reforms, SBP initiated a transformation program whereby the ECs-B and Franchise ECs were provided the following options: Conversion of ECs-B into full-fledged ECs and conversion of franchises into branches of the ECs.[4] Moreover, in order to strengthen the solvency of ECs and enable them to have robust infrastructure and systems, the minimum paid-up capital requirement of ECs was enhanced from Rs 200 million to Rs 500 million (free of losses).[5] These reforms were introduced to bring transparency and competitiveness in the ECs sector and provide better services to the general public.

**Timely Realization of Export Proceeds:** In order to ensure timely realization of export proceeds, SBP decided to initiate necessary action in all those export cases where full export proceeds were not realized within prescribed time period as defined in Para 6 of Chapter 12 of the Foreign Exchange (FE) Manual.[6] Accordingly, necessary changes were made in the relevant sections of the FE Manual.[7]

**Facilitation of IT Based Exporters/Freelancers:** To facilitate the freelancers, SBP has developed a comprehensive framework for opening and operations of their bank accounts. Under the framework, freelancers will be able to open an Exporters' Special Foreign Currency Account (ESFCA) as defined in the Foreign Exchange Manual for retention of export proceeds concurrently with corresponding primary PKR account, in-person or remotely through digital means.[8] Furthermore, in order to encourage the exporters of Software, Information Technology (IT), IT enabled Services (ITeS), and freelance services to boost their export earnings, SBP increased the retention limit in ESFCAs from 35 percent to 50 percent of the export proceeds and further liberalized the utilization of the retained funds. Going forward, such exporters may freely make payments abroad of current account nature using these accounts, without prior approval of the SBP.[9] Moreover, SBP advised Authorized Dealers (ADs) to facilitate these exporters in opening their ESFCAs and for carrying out remittances transaction from their Exporters' Special FCY retention accounts by issuing corporate debit cards and providing digital platforms, including FX digital portal. SBP further advised ADs to provide proper training to relevant staff of all foreign exchange dealing branches to ensure facilitation to the IT

[3] PSW is an Integrated Digital Platform that allows parties involved in trade to lodge standardized information and documents with a single-entry point to fulfill all import, export, and transit-related regulatory requirements.
[4] FE Circular No. 03 of 2023
[5] EPD Circular Letter No. 13 of 2023
[6] FE Circular No. 01 of 2023
[7] FE Circular No. 02 of 2023
[8] BPRD Circular No. 05 of 2023
[9] EPD Circular Letter No. 17 of 2023

based exporters and freelancers, and establish permanent help desks.[10]

**Incentive Scheme for Marketing of Home Remittances:** In order to encourage domestic FIs to enhance their marketing efforts for mobilizing home remittances through formal channels, the Government of Pakistan approved revisions in the scheme. Under the revised scheme, a performance based incentive will be granted, by the end of FY24, to those financial institutions whose home remittance mobilization efforts result in growth of their home remittances from the previous year (FY23). Moreover, the scheme will be effective from FY24 onwards on perpetual basis.[11]

**Import of Cash US Dollars:** Under the ECs Manual (ECM), ECs were allowed to export permissible foreign currencies other than US Dollars through cargo and security companies and repatriate equivalent US Dollars in their foreign currency accounts maintained with banks in Pakistan. However, in order to facilitate customers, SBP introduced a temporary measure to allow ECs to import cash US Dollars, on need basis, against the value of their export consignments of permissible foreign currencies, through reputed cargo and security companies. This arrangement was in place till December 31, 2023 and was subject to the condition that total cash US Dollars imported by an EC during this period shall not exceed 50 percent of the value of its export consignments.[12]

**Foreign Investment in Real Estate Investment Trust (REIT) Schemes:** The existing provisions allowed non-residents to invest in REIT Schemes listed at Stock Exchange and through new Public Offers. In order to further facilitate foreign investment in REIT Schemes, SBP also decided to allow general permission to REIT Management Companies (RMC) to issue their units through private placements and transfer such units, in favor of non-residents.[13]

**Margin Restriction on Import of Items:** SBP, in 2017, advised banks to obtain 100 percent cash margin on import of certain items.[14] However, the cash margin requirement (CMR) was later relaxed in August 2022 to 25 percent and zero percent for term of payment from import of 91 to 180 days and 181 days and above, respectively.[15] In 2023, SBP decided to withdraw existing CMR on import of items with effect from March 31, 2023, while also withdrawing all previous instructions pertaining to margin restriction on import of items.[16]

## Islamic Banking

**Adoption of 'Accounting and Auditing Organization for Islamic Financial Institutions' (AAOIFI) Shariah Standards:** With a view to further strengthen Shariah compliance framework and harmonize the Shariah practices in Islamic banking industry, the AAOIFI Shariah Standards No. 15 (Ju'alah), No. 39 (Mortgage and its Contemporary Applications) and No. 46 (Al-Wakalah Bi Al-Istithmar (Investment Agency)) were adopted during the year under review.[17]

## Digital Financial Services

**Launch of Raast Person to Merchant (P2M) Service:** As part of Raast implementation project, the SBP also launched an interoperable Raast P2M service to facilitate digital payment acceptance for merchants and businesses. The P2M service will enable payment acceptance by businesses using Quick Response (QR) Codes, Raast Alias, IBAN and Request to Pay (RTP). The Raast P2M service is set to accelerate the pace of digitization of merchant and business transactions in Pakistan. Accordingly, SBP advised its Regulated Entities (REs) to enable

10 EPD Circular Letter No. 02 of 2023
11 EPD Circular Letter No. 15 of 2023
12 EPD Circular Letter No. 11 of 2023
13 EPD Circular Letter No. 07 of 2023
14 BPRD Circular No. 02 of 2017
15 BPRD Circular Letter No. 25 of 2022
16 BPRD Circular Letter No. 06 of 2023
17 IFPD Circular No. 01 of 2023

necessary capabilities for processing P2M transactions via their delivery channels and take necessary measures for creating awareness about Raast Merchant Services and promoting its adoption.[18]

**Regulations for EMIs:** SBP issued Regulations for EMIs with the aim of fostering innovation in the payments industry and promoting financial inclusion through digital financial services in the country. In order to increase the uptake of *e*-money services, encourage new as well as already established EMIs to come up with new business models, use cases and technological solutions, SBP revised the Regulations for EMIs in light of the indigenous experiences and international best practices. The updated regulations allow EMIs to offer their customers, including minors and freelancers, increased monthly wallet limits, offer new payment services such as Payments Aggregation, Invoice Aggregation, Payment Initiation, Account Information, Escrow Services for domestic *e*-commerce transactions, Services via APIs to FIs/FinTechs/ Third Party Service Providers and inward cross border remittances to their customers.[19] Since the issuance of these Regulations, SBP has received an encouraging response from the market participants and a number of entities have been licensed to provide electronic money (*e*-money) services in the market.[20] SBP expects that the revised regulations would attract more FinTech companies from Pakistan and across the globe to enter into the EMI business in Pakistan and provide innovative, affordable and improved payment services, thus increasing digital financial inclusion in Pakistan.

**Digital Payment Services to Unauthorized Digital Lending Apps:** A number of un-authorized and un-licensed digital lending mobile applications and platforms were using banking channels, for loan disbursement and collection, and to perform credit worthiness checks through integration with bank accounts of customers. Such usage of digital banking channels and integrations with mobile banking platforms by these un-authorized and un-licensed digital lending apps could pose serious concerns on consumer protection and be a cause of reputational risk for banks as well. As such, REs were advised to ensure that the licensing status of digital lending platforms and mobile applications and their authorization to conduct business are duly verified from the relevant regulatory bodies (SECP, SBP etc.) as part of the KYC/CDD process. Moreover, SBP advised REs to implement reasonable measures, including, at the time of customer on-boarding and transaction monitoring, ensuring that their banking channels and platforms are not used by unauthorized financial service providers, either directly or indirectly. SBP also advised REs not to extend services such as deposits or lending products, mobile application integration with third parties, payment gateway services, credit scoring and credit worthiness checks, wallet services, and/or API integration services to unauthorized and unlicensed digital lending platforms (individuals or businesses), either directly or indirectly.[21]

**Guidelines for Downtime of Digital Channels and Services:** In recent years, the use of digital channels for carrying out day-to-day transactions has increased manifold. However, it was observed that in cases of service outages, customers were not informed in a timely manner, causing inconveniences for them. Accordingly, SBP issued instructions to all REs to timely inform SBP and their customers about any planned activity or any unanticipated service disruption of more than thirty minutes, which may result in the unavailability of services. Furthermore, SBP advised all REs to establish mechanisms to continuously monitor social media platforms in order to proactively identify and address customer complaints or issues relating to the availability of digital

[18] PSP&OD Circular No 04 of 2023
[19] External Communications Department | Press Release June 21, 2023
[20] PSP&OD Circular No 03 of 2023
[21] PSP&OD Circular No 02 of 2023

channels. SBP, on its part, shall also be regularly monitoring the availability of digital channels.[22]

**Improving Payment Card Acceptance Infrastructure in Pakistan:** In 2020, SBP identified some key challenges being faced by the Point of Sale (POS) acquiring industry in Pakistan, including high Interchange Reimbursement Fee (IRF), lower than cost Merchant Discount Rate (MDR) to onboard high value merchants and less interest by banks in offering low cost domestic payment cards to their customers. SBP addressed these challenges by setting limits on IRF at maximum of 0.5 percent and MDR at 1.5-2.5 percent, and by advising card issuers to offer the SBP approved Domestic Payment Scheme (DPS) Card as the default card at the time of issuance or renewal of debit cards.[23] In 2023, to further facilitate the acceptance of card-based payments, SBP took the following steps, (i) capped IRF at 0.2 percent and 0.7 percent for debit/prepaid cards and credit cards, respectively; (ii) abolished lower range of MDR i.e., 1.5 percent, and (iii) advised all *e*-commerce and online payment acquirers to enable acceptance of Domestic Payment Scheme (DPS) card for card-not-present (CNP) transactions on their respective payment gateways.[24]

**Digital Retail Banks:** In a bid to foster innovation, financial inclusion and availability of affordable digital financial services, SBP granted In-Principle Approval (IPA), in CY23, for establishing five digital retail banks, namely, HugoBank Limited, KT Bank Pakistan Limited, Mashreq Bank Pakistan Limited, Raqami Islamic Digital Bank Limited and Telenor Microfinance Bank Limited.[25] As these would be the first digital banks to be established in Pakistan, therefore, SBP developed a Supervisory Framework for supervision of these banks to be implemented once they start operations.

**Measures to Enhance Security of Digital Banking Products and Services:** The rapid growth in digital banking products and services supports digital transformation of the financial landscape and enables the banks and MFBs to cater to the growing needs of banking customers. However, adoption of digitization needs to be supplemented with necessary controls to mitigate the risk of fraudulent activities. in order to enhance the security of digital banking products and services, SBP prepared a set of comprehensive control measures covering governance, management control, operational controls, and liability framework. Accordingly, SBP advised Banks and MFBs to develop a comprehensive plan with monthly milestones to be implemented by December 31, 2023 and required them to submit monthly progress reports.[26] These new measures are part of wider SBP objective to enhance digital financial inclusion and promote digital financial services by creating and enhancing customer trust in the safety, security and soundness of the digital banking ecosystem.[27]

**Framework on Outsourcing to Cloud Service Providers (CSPs):** SBP developed the CSP Framework to enable SBP's REs to design and offer innovative products and services by embracing the cloud technology and effectively manage the risks arising out of these arrangements. The framework sets out minimum requirements for the SBP's REs to outsource their material and non-material workloads to CSPs through a risk-based approach in a safe and secure manner.[28]

### *Anti-Money Laundering and Combating the Financing of Terrorism (AML/ CFT)*

**AML/CFT Regulations:** In order to further strengthen the controls against Money Laundering (ML) and Terrorist Financing (TF) risks, SBP issued the following instructions to

[22] PSP&OD Circular No 01 of 2023
[23] PSD Circular No. 01 of 2020
[24] PSP&OD Circular Letter No 01 of 2023
[25] External Communications Department | Press Release September 20, 2023
[26] BPRD Circular No. 04 of 2023
[27] External Communications Department | Press Release May 18, 2023
[28] BPRD Circular No. 01 of 2023

banks and MFBs offering Branchless Banking services: (i) perform Biometric Verification (BV) of account and wallet holders for all types of 'cash-in' and 'cash-out' transactions at Branchless Banking agents' locations effective from January 31, 2024, (ii) deploy new BV devices at agents' locations, (iii) strengthen their Automated Transaction Monitoring Systems (ATMS) to ensure that all Branchless Banking transactions are captured, and (iv) ensure adequate and meaningful coverage of BB operations in the Internal Risk Assessment Reports (IRARs) as required under the SBP's AML/ CFT/ Countering Proliferation Financing (CPF) Regulations.[29]

**Implementation of Shared Electronic Know Your Customer (e-KYC) Platform:** SBP, over the years, has strengthened the AML/CFT regime including processes for "Know Your Customer (KYC)" and "Customer Due Diligence (CDD)". To further streamline the KYC/CDD processes, SBP allowed banks to rely on third party financial institutions for performing effective and efficient KYC/CDD. With an objective of bringing further efficiency in KYC and onboarding process, Pakistan Banks Association (PBA), under the guidance of SBP, has undertaken the development of a "shared e-KYC platform". This new platform will provide a number of benefits to banks including; timely exchange and updating of customers KYC/ CDD information across the banking industry through a secure digital channel, standardization of KYC/ CDD data, enhancing customer onboarding experience and cost savings for the banks. The 'shared e-KYC platform' has been built on Distributed Ledger Technology (DLT) whereby customer's KYC/ CDD related information shall reside with the banks only, without the need for a central entity to house this critical customers' data. Further, to protect the rights of the banks' customers, the data will be accessed only with their explicit consent.[30]

### *Consumer Protection*

**Launch of Sunwai - A Customer Complaint Management Service by the SBP:** SBP, to further improve the effectiveness and fairness of the banking system, has developed a Portal and Mobile App namely 'Sunwai- a customer complaint management service' with an aim to facilitate customers in the lodgment of their complaints with the Banks, DFIs and MFBs. Furthermore, SBP advised Banks, DFIs and MFBs to (i) ensure meticulous compliance of the respective Turn-Around-Time (TAT) for the resolution of various types of complaints as prescribed by SBP, (ii) update in an accurate and timely manner status of complaints on the said portal, (iii) ensure that senior management reviews and monitors the breaches of TATs and takes corrective measures for the resolution of complaints on timely basis, and (iv) create awareness amongst the customers about Sunwai.[31]

## *Financial Inclusion*

**ASA Microfinance Bank Limited:** SBP has allowed ASA Microfinance Bank (Pakistan) Limited to commence microfinance lending business nationwide from November 13, 2023. ASA Microfinance Bank (Pakistan) Limited, licensed by the SBP under the Microfinance Institutions Ordinance 2001, is a wholly owned subsidiary of ASA International Group plc. which is recognized as one of the largest international microfinance institutions. By commencing business, ASA Microfinance Bank (Pakistan) Limited became the 12th Microfinance Bank (MFB) to operate in the country. MFBs play an important role to serve a large number of microcredit borrowers and depositors. The commencement of business by ASA Microfinance Bank (Pakistan) Limited is expected to increase the market share of MFBs regulated by SBP within the overall financial sector. Given the focus on women across their international network, ASA Microfinance Bank

[29] BPRD Circular Letter No. 20 of 2023
[30] BPRD Circular Letter No. 22 of 2023
[31] CPD Circular No. 01 of 2023

(Pakistan) Limited is expected to play an important role towards gender mainstreaming and female empowerment by providing small, socially responsible loans to low-income women entrepreneurs belonging to less-privileged and unbanked segments of the society.[32]

[32] External Communications Department | Press Release November 14, 2023

# Appendix B

## Indicators used to derive Financial Sector Vulnerability Index (FSVI)

FSVI was first introduced in FSR 2016, and since then it has been modified and regularly published in the subsequent reviews. In FSR-2018, few modifications were made in terms of coverage, indicators and methodology (See Appendix A in FSR-2018).

To recall, FSVI is a composite index derived from averaging the sub-indices of macro-economy, financial markets, banking sector, Non-Banking Financial Institutions, Development Finance Institutions, Insurance Companies and Corporate Sector. The complete list of indicators used within each dimension is given in the table below:

**Financial Sector Vulnerability Index (FSVI) and Financial Sector Heat Map (FSHM): Risk Areas, Risk Dimensions and Indicators** **Table 1**

| Sr. No. | Risk Area | Risk Dimension | Risk Indicator(s) | Impact on Financial Stability |
|---|---|---|---|---|
| 1 | Macro-economy<br>$\frac{1}{n}\sum Ex, R, F, In$<br>n = 4 | External Sector (Ex)<br>$Ex = \frac{1}{n}\sum_{i=1}^{n} ex_i,$<br>$n = 3$ | $ex_1$ = *Total Liquid Foreign Reserve Position (with SBP) as percent of GDP*<br>$ex_2$ = *Current Account Balance as Percentage of GDP*<br>$ex_3$ = *Balance of Trade as Percentage of GDP*<br>$ex_4$ = *Terms of Trade Index*<br>$ex_5$ = *Real Effective Exchange Rate Index* | Positive<br>Positive<br>Positive<br>Positive<br>Negative |
| | | Real Sector (R) | *Real GDP Growth* | Positive |
| | | Fiscal Sector (F) | Fiscal Deficit as Percentage of GDP | Negative |
| | | Inflation (In) | CPI inflation | Negative |
| 2 | Financial Markets<br>$\frac{1}{n}\sum FE, MM, CM$<br>n = 3 | Foreign Exchange (FE) | *Mark-to-market Revaluation Exchange Rate Exponential Moving Weighted Average (EMWA) Volatility* | Negative |
| | | Money Market (MM) | *Overnight Repo Rate Exponential Moving Weighted Average (EMWA) Volatility* | Negative |
| | | Capital Market (CM) | *KSE-100 Index Exponential Moving Weighted Average (EMWA) Volatility* | Negative |
| 3 | Banking Sector<br>$\frac{1}{n}\sum C, AQ, E, L, D, I$<br>n = 6 | Capital Adequacy (C)<br>$C = \frac{1}{n}\sum_{i=1}^{n} c_i, n = 3$ | $c_1$= *Capital Adequacy Ratio(CAR)*<br>$c_2$=*TIER 1 (CAR)*<br>$c_3$=*Capital to Asset Ratio* | Positive<br>Positive<br>Positive |
| | | Asset Quality (AQ)<br>$AQ = \frac{1}{n}\sum_{i}^{n} aq_i,$<br>$n = 4$ | $aq_1$ = *NPLs to Total Loans*<br>$aq_2$ = *Net NPLs to Capital*<br>$aq_3$ = *Provisions to NPLs*<br>$aq_4$ = *Loss to NPLs* | Negative<br>Negative<br>Positive<br>Negative |
| | | Earnings (E)<br>$E = \frac{1}{n}\sum_{i=1}^{n} e_i,$<br>$n = 6$ | $e_1$= *Return on Assets Before Tax*<br>$e_2$=*Return on Equity (Avg. Equity and Surplus) Before Tax*<br>$e_3$ = *Net Interest Margin*<br>$e_4$ = *Net Interest Income/Gross Income*<br>$e_5$ = *Cost to Income Ratio*<br>$e_6$ = *Trading Income to Total Income* | Positive<br>Positive<br>Positive<br>Positive<br>Negative<br>Negative |
| | | Liquidity (L)<br>$L = \frac{1}{n}\sum_{i=1}^{n} l_i,$<br>$n = 4$ | $l_1$= *Liquid Assets/Total Assets*<br>$l_2$= *Liquid Assets/Total Deposits*<br>$l_3$= *Liquid Assets/Short term liabilities*<br>$l_4$=*Borrowings/Assets* | Positive<br>Positive<br>Positive<br>Negative |
| | | Deposits (D)<br>$D = \frac{1}{n}\sum_{i=1}^{n} d_i,$<br>$n = 2$ | $d_1$= *Deposits to Assets*<br>$d_2$= *Deposit growth (YoY)* | Positive<br>Positive |
| | | Interconnectedness (I)<br>$I = \frac{1}{n}\sum_{i=1}^{n} i_i,$<br>$n = 2$ | $i_1$= *Call lending and borrowing/Total Assets*<br>$i_2$= *Financial Liabilities (SBP exclusive)/Total Assets* | Negative<br>Negative |

| | | | | |
|---|---|---|---|---|
| 4 | Non-Banking Financial Institutions<br>$\frac{1}{n}\sum A, E$<br>n = 2 | Assets (A) | *Asset Growth (YoY)* | Positive |
| | | Earnings (E) | *Net Sales* | Positive |
| 5 | Development Finance Institutions<br>$\frac{1}{n}\sum C, AQ, E, L$<br>n = 4 | Capital Adequacy (C)<br>$C = \frac{1}{n}\sum_{i=1}^{n} c_i,\ n = 3$ | $c_1$= *Capital Adequacy Ratio(CAR)*<br>$c_2$=*TIER 1 (CAR)*<br>$c_3$=*Capital to Asset Ratio* | Positive<br>Positive<br>Positive |
| | | Asset Quality (AQ)<br>$AQ = \frac{1}{n}\sum_{i}^{n} aq_i,$<br>$n = 3$ | $aq_1$ = *NPLs to Total Loans*<br>$aq_2$ = *Net NPLs to Capital*<br>$aq_3$ = *Net NPLs to Net Loans* | Negative<br>Negative<br>Negative |
| | | Earnings (E)<br>$\mathrm{E} = \frac{1}{\mathrm{n}}\sum_{i=1}^{n} e_i,$<br>$n = 4$ | $e_1$= *Return on Assets Before Tax*<br>$e_2$=*Return on Equity (Avg. Equity and Surplus) Before Tax*<br>$e_3$ = *Net Interest Income/Gross Income*<br>$e_4$ = *Cost to Income Ratio* | Positive<br>Positive<br>Positive<br>Negative |
| | | Liquidity (L)<br>$L = \frac{1}{n}\sum_{i=1}^{n} l_i,$<br>$n = 3$ | $l_1$= *Liquid Assets/Total Assets*<br>$l_2$= *Liquid Assets/Total Deposits*<br>$l_3$= *Advances /Deposits* | Positive<br>Positive<br>Positive |
| 6 | Insurance Companies<br>$\frac{1}{n}\sum Li, NL$<br>n = 2 | Life (Li)<br>$\mathrm{Li} = \frac{1}{\mathrm{n}}\sum_{\mathrm{i}=1}^{\mathrm{n}} \mathrm{li_i},$<br>n = 4 | $li_1$= *Claims ratio*<br>$li_2$= *Return on Assets before tax*<br>$li_3$= *Return on Investment before tax*<br>$li_4$= *Capital to Assets* | Negative<br>Positive<br>Positive<br>Positive |
| | | Non-life (NL)<br>$\mathrm{NL} = \frac{1}{\mathrm{n}}\sum_{\mathrm{i}=1}^{\mathrm{n}} \mathrm{nli_i},$<br>n = 5 | $nli_1$= *Claims ratio*<br>$nli_2$= *Premium Retention*<br>$nli_3$= *Return on Assets before tax*<br>$nli_4$= *Return on Investment before tax*<br>$nli_5$= *Capital to Assets* | Negative<br>Negative<br>Positive<br>Positive<br>Positive |
| 7 | Corporate Sector | Corporate Debt | *Debt Burden (average of asset/equity and debt/equity)* | Negative |