



PAKISTAN

SELECTED ISSUES

October 2024

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SELECTED ISSUES

September 11, 2024

Approved By
**Middle East and Central
Asia Department**

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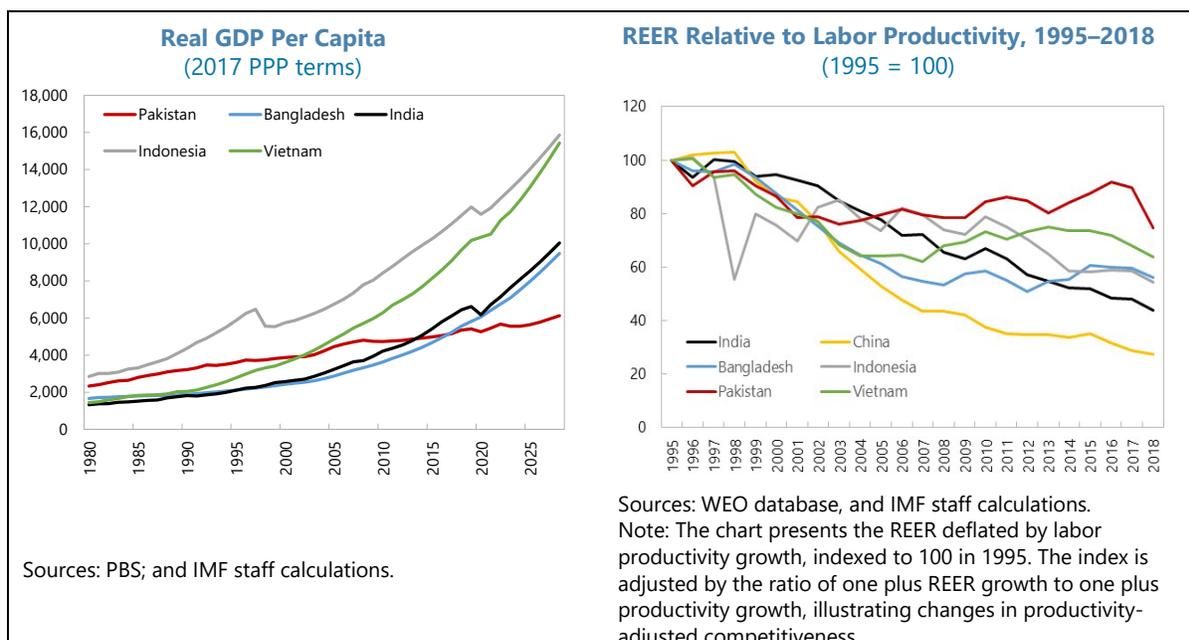
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PAKISTAN: ECONOMIC PERFORMANCE AND THE ROAD AHEAD¹

Pakistan's economy and living standards have lagged behind its regional peers for well over a decade. This paper highlights several macroeconomic distortions and policy-related restrictions that have contributed to the country's underperformance. These include protectionist interventions, a cumbersome regulatory and fiscal environment, and insufficient investment in human capital. In spite of these challenges, there are also many opportunities for Pakistan to achieve efficiency gains, reallocate resources towards more technologically advanced goods and services, and improve productivity and standards of living across the country.

A. Introduction

1. Pakistan has been falling behind its peers in recent decades in terms of income per capita, competitiveness, and export performance. From 2000 to 2022, Pakistan's GDP per capita grew at an average annual rate of only 1.9 percent. By contrast, Pakistan's peers achieved more than twice this rate: Bangladesh averaged growth of 4.5 percent, India reached 4.9 percent, Vietnam 5 percent, and China a growth of about 7.5 percent. As a result, Pakistan has moved further and further behind its peers in terms of living standards, underscoring the need for urgent policy correction. Moreover, compared to regional peers, the country's export growth has been weak, while its competitiveness has declined given an appreciated real exchange rate relative to productivity growth. The recent restoration of stability is an opportunity to implement reforms placing Pakistan on a path of sustained, inclusive, per capita economic growth with stronger export capacity.



¹ Prepared by Gon Huertas (SPR), Saihan Mohammad (MCD), and Nathan Porter (MCD).

B. Drivers of Decline in Living Standards

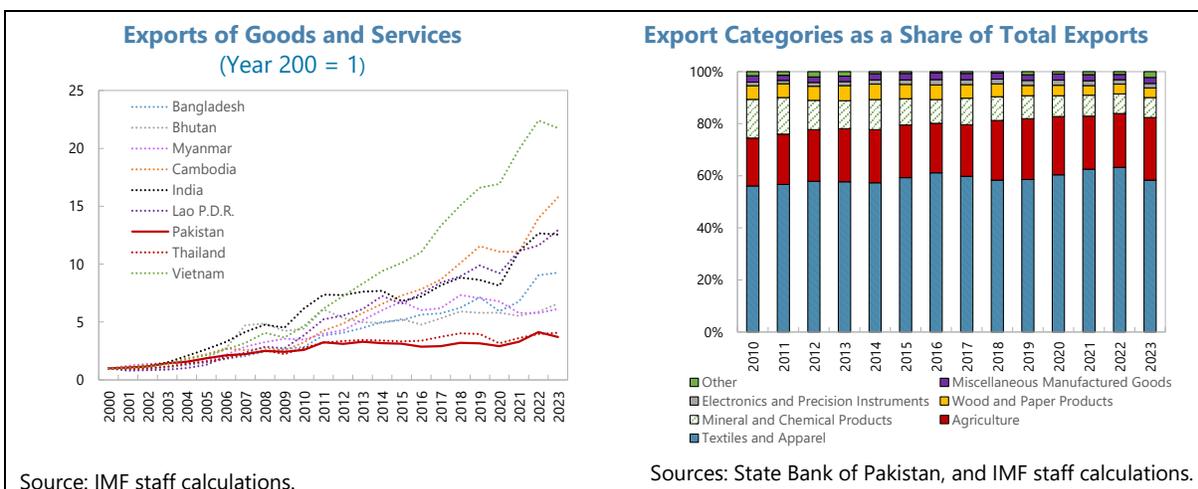
2. Pakistan’s growth underperformance reflects weak contributions from human and physical capital and shrinking productivity.

Economic growth during 2000–20 was mostly driven by physical capital accumulation and an increase in labor hours, with these factors contributing about 1.9 and 1.15 percentage points per year, respectively. Meanwhile, the contributions from other factors were markedly lower: total factor productivity (TFP) added about 0.8 percentage points per year (and very little in the most recent period) while improvements in labor quality providing only about 0.5 percentage points on average. Over the past four years, gains in total factor productivity and labor quality have shrunk even further.

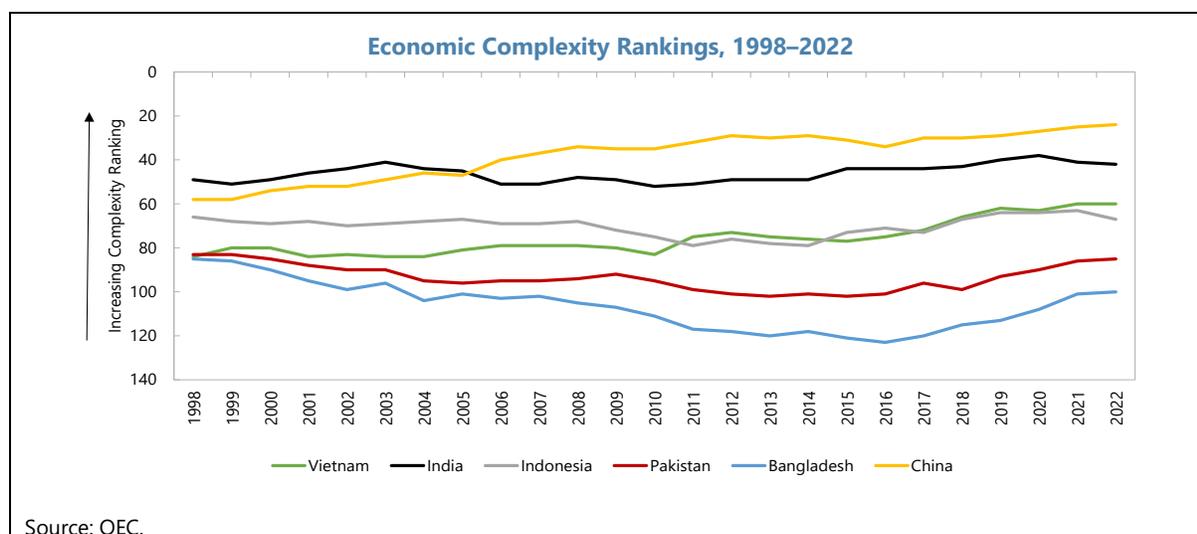


3. Declining export performance and limited openness to trade challenge Pakistan’s development and external viability.

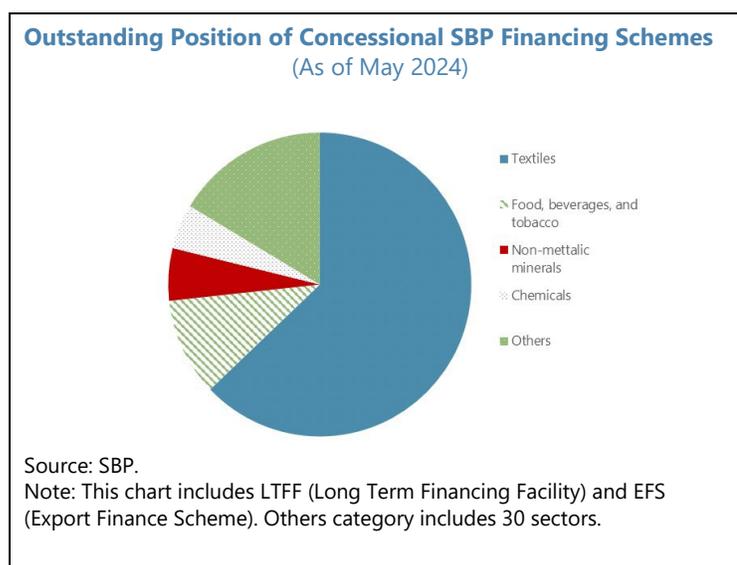
The relationship between international trade and economic growth is well established in the literature: exposure to global markets, both through exports and imports, promotes innovation among domestic firms, provides valuable inputs for more sophisticated goods production, and spurs increases in productivity (Lawrence & Weinstein, 1999; Grossman & Helpman, 1991). Compared to other regional peers, Pakistan’s export growth has been weak, with sales to the world particularly stagnant during the 2010s. Its many trade restrictions (including exchange measures, restrictions to payments, as well as tariff and nontariff barriers to imports) have consistently placed Pakistan around the 90th percentile of the Measurement of Aggregate Trade Restrictions index (Estefania-Flores and others, 2022). Greater integration to world trade and fundamentals-driven competitiveness gains would help spur Pakistan’s economic development.



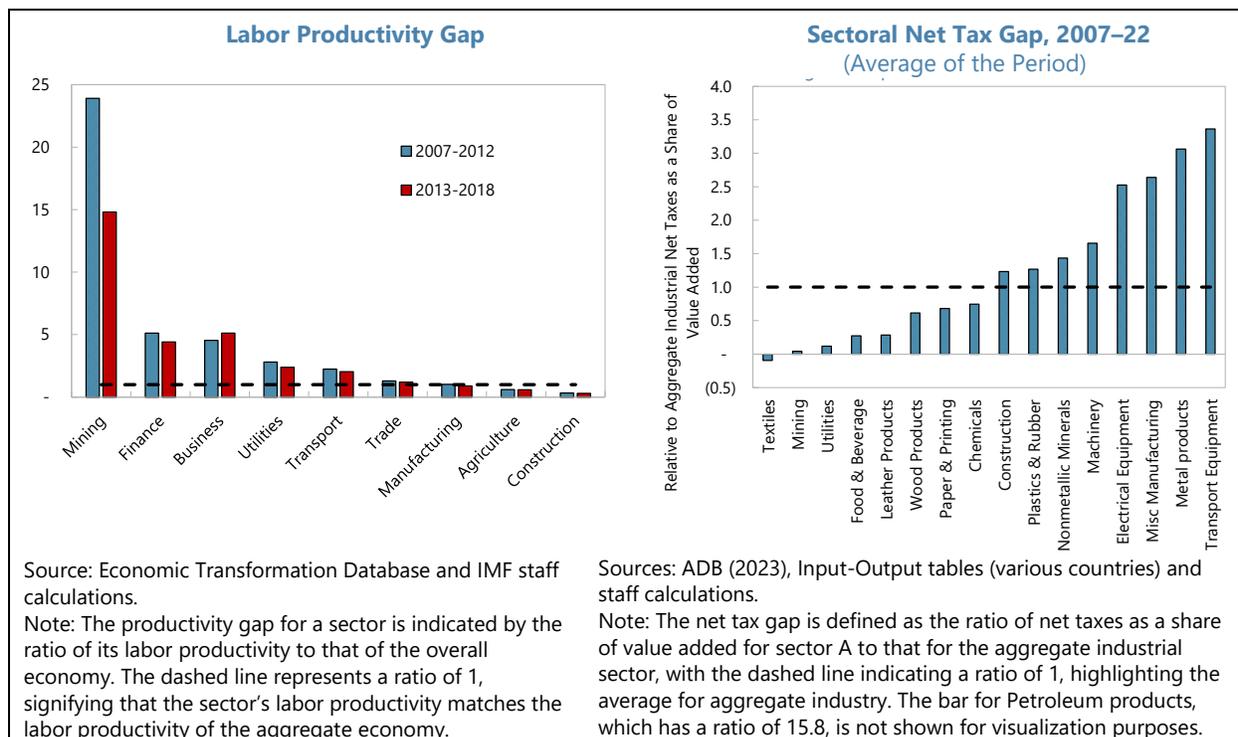
4. Beyond weak exports, Pakistan has struggled to innovate and develop production of more sophisticated export goods, as indicated by its low and declining share of “knowledge -intensive” exports. As of 2022, Pakistan ranked 85th in the Economic Complexity Index, the same value as in the year 2000. With an export basket strongly biased towards agriculture and textiles (cotton yarn, rice, woven fabrics, beef, leather apparel), the country has struggled to reallocate resources towards more technologically complex production. Its current agricultural specialization profile has also been found to limit the country’s ability to diversify towards more technologically sophisticated products (Hausmann and others, 2013) and although Pakistan does export a limited number of complex goods (including medicines, medical instruments, metal hand tools, batteries, and plastics), many of its higher value-added sectors operate within a highly distorted economic environment, including due to tariffs on intermediate and final goods, which undermine overall competitiveness and domestic competition, and which inhibits transition towards production of more sophisticated goods “related” to what is currently produced (¶10).



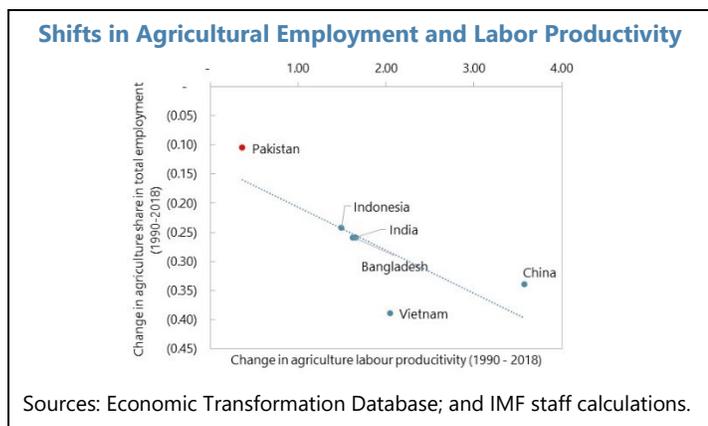
5. Persistent policy-induced resource misallocation lies behind the above facts, hampering the incentive to invest and enhance TFP by locking resources in low productivity sectors. Resource misallocation is immediately clear from the entrenched, persistent differences in labor productivity across sectors. Ordinarily such differences would be undone by labor and other factors of production moving from lower to higher productivity activities, eventually evening out the differences across



sectors. The persistent retention of resources in low productivity activities is thus a major source of the decline in Pakistan’s living standards and competitiveness. Several factors are behind this misallocation, including poor physical and human capital investment, but a core aspect is policy-induced distortions which inhibit the incentives for resources to be deployed more productively.² As seen below, taxes net of subsidies varies considerably across sectors.³



6. Agriculture provides an extreme example of government policies hindering transformation by trapping resources in low-productivity activities. The agriculture sector suffers from one of the lowest levels of labor productivity and has shown both the smallest reallocation relative to peers and the smallest improvement in labor productivity. The government’s large-scale interventions in agricultural markets have included support prices for

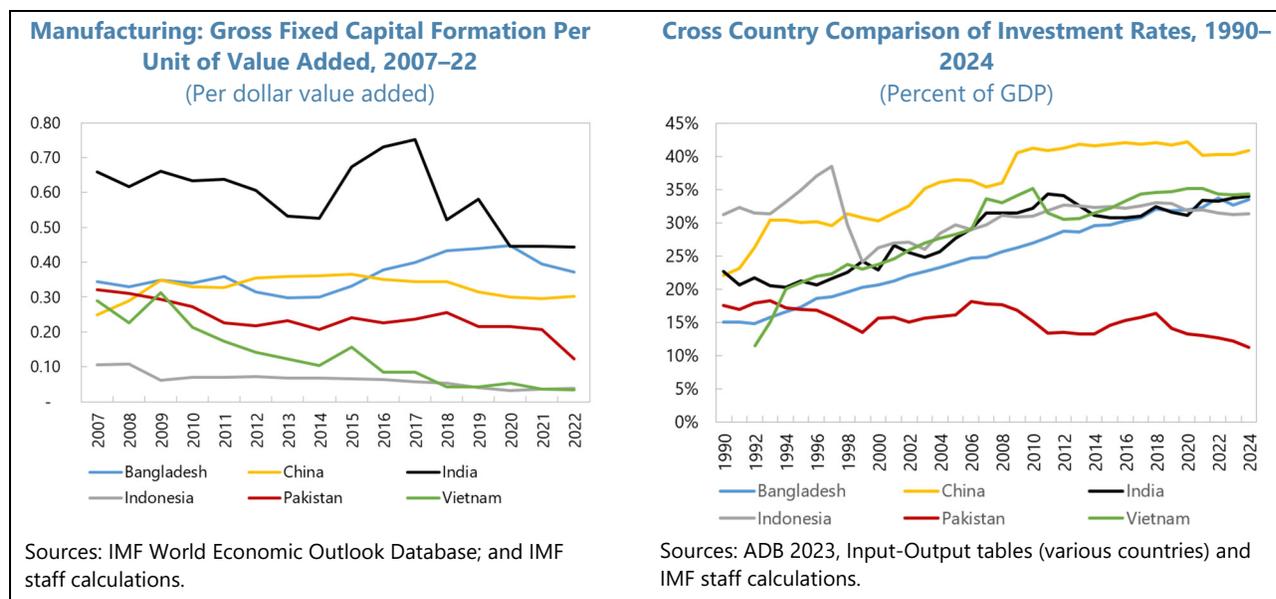


² These distortions include subsidies, favorable pricing for products, inputs, and financing, and preferential taxation treatment (tax expenditures and special regimes) as well as trade protection.

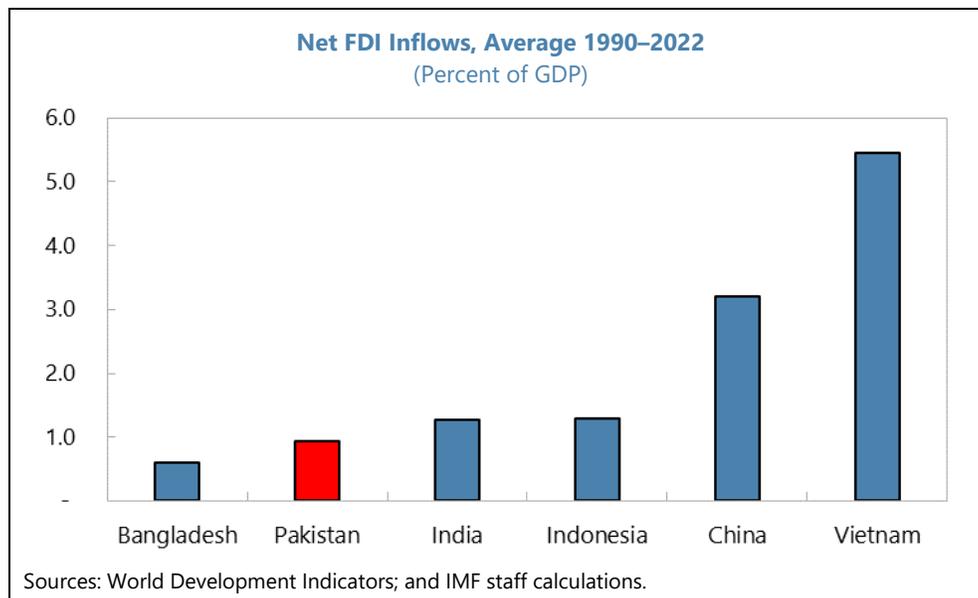
³ This disparity in net taxes is further emphasized by the high coefficient of variation of net taxes across sectors (1.76), which is the highest among its peers, indicating that Pakistan has the most pronounced sectoral inequities in tax burdens.

raw and processed goods, and significant preferential taxation treatment, for both income and inputs, has led calcification of the resources in the agricultural sector at the expense of more productive segments of the economy.

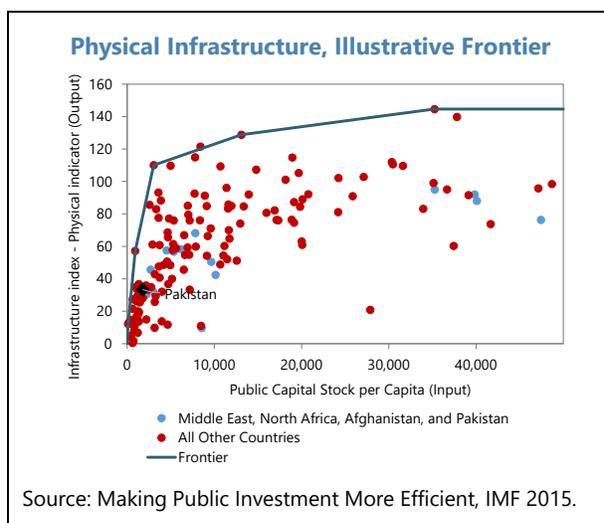
7. Despite the significant policy inducements mentioned above, misallocation and investment in physical capital has significantly underperformed peers due to Pakistan’s high level of volatility, poor regulatory environment, poor public investment management, crowding out by government financing requirements, and poor public services.



- Regulatory environment.** A cumbersome and inconsistent regulatory regime has significantly deterred domestic and foreign direct investment. Pakistan has received relatively low FDI net inflows compared to its peers (World Bank, 2024a). This has been exacerbated by a challenging business environment marked by onerous and discretionary regulatory enforcement (World Bank, 2023a). These create significant costs as firms spend resources navigating these regulatory hurdles, which could otherwise be directed towards productive activities, thus hampering investment (including FDI).



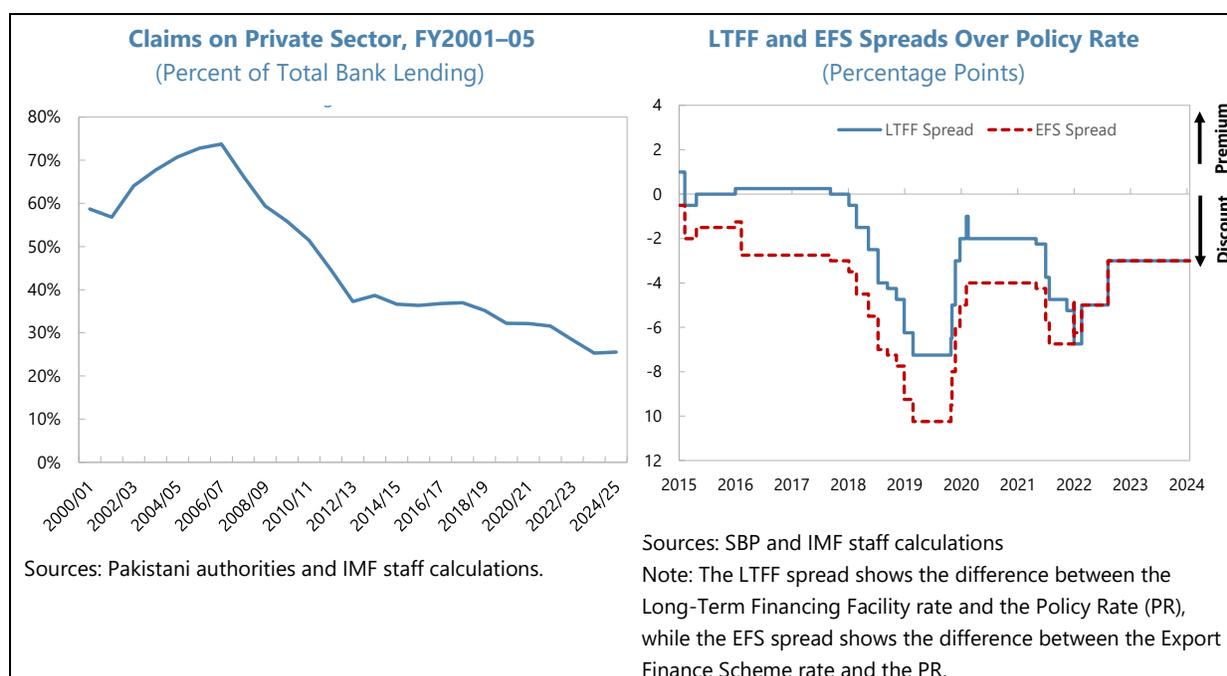
- Public investment management.** Pakistan's tight fiscal environment exacerbates challenges in public investment. Insufficient funding for quality infrastructure projects (as opposed to, for example, parliamentarian-selected projects), and inefficient management of the project pipeline (with a project “throw forward” of 14 years) has led to slow delivery and governance issues. Weak budgetary processes for expenditure planning and control, with high reliance on supplementary grants, further contribute to these inefficiencies. The development budget's unaffordability is stark, with the total cost to complete projects standing at about ten times its budget allocation in FY25. The hybrid public investment efficiency gap in Pakistan is estimated at around 38 percent, indicating substantial potential to improve infrastructure access and quality even within the current budget. This gap is slightly larger than the peer group mean. Addressing this gap requires enhancing the institutional framework for public investment management, particularly by strengthening the connections between strategic planning, appraisal, selection, implementation, and monitoring and evaluation of projects.



- Poor public services.** Pakistan's roughly 82 commercial SOEs have been, in aggregate, loss-making since 2016 and have been a large net recipient of government support (net of corporate taxes and dividends) over this period. This, combined with poor-quality services from

many of these SOEs, has been a significant source of economic inefficiencies. Moreover, as elaborated in the accompanying Staff Report (IMF, 2024), the cost of electricity is high in Pakistan, reflecting inefficiencies (including in DISCOs), theft, high guaranteed dollar returns, and diverted demand. Resolving these issues will allow for lower power prices for all electricity consumers.

- **Crowding out.** Fiscal deficits and overreliance on the banking sector for government financing have crowded out financing for the private sector (see “Sovereign-Bank Nexus in Pakistan”, Balibek, 2024) as private credit to GDP is significantly lower than peers and the regional average. This has resulted in a persistent decline in private investment, despite much of industrial private financing being subsidized with a sizable discount below the policy rate, while credit to the government reached 72 percent of total bank lending in FY23.



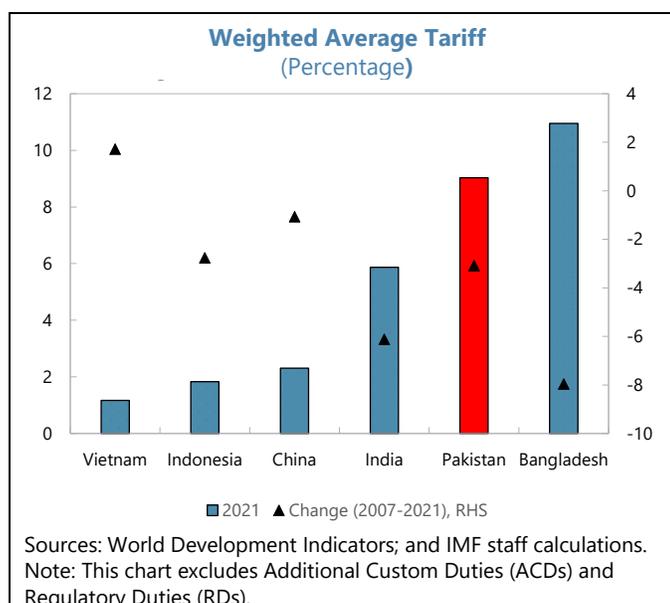
8. Health and education indicators for Pakistan have significantly lagged behind those of its regional peers, which has also undermined growth, investment, and productivity.

According to the latest data (World Bank, 2024b), Pakistan's expenditure on education as a percentage of total expenditure is lower than that of India, Bangladesh, and Nepal. Furthermore, Pakistan's adult literacy rate and the proportion of trained teachers in both primary and secondary education are among the lowest in the region, indicating significant gaps in educational quality and accessibility. Primary and secondary enrollment rates in Pakistan also trail behind those in other lower-middle-income countries, reflecting systemic challenges in ensuring widespread educational participation. Pakistan's health expenditure is a significantly lower share of GDP than that of Nepal and Sri Lanka, with this underinvestment reflected in poorer health outcomes: Pakistan has the highest infant mortality rate and one of the highest rates of stunting among children under five years of age in the region. The World Bank's Human Capital Review projects that if Pakistan can

move from its current human capital development path to invest in human capital at the level of its peers, GDP per capita could be around 15 ppts higher by 2047 (World Bank, 2023b).

9. Policies aimed at protecting domestic industries and import substitution have significantly discouraged efficiency gains and resource reallocation.

Trade policy has an embedded anti-export bias, characterized by disproportionately high import duties across several sectors. Additionally, high duties on final goods create a cascading effect, incentivizing firms to prioritize domestic sales over exports, as well as reducing the competition from imports faced by inefficient, low-productivity, domestic firms. While Pakistan's weighted average tariff has declined

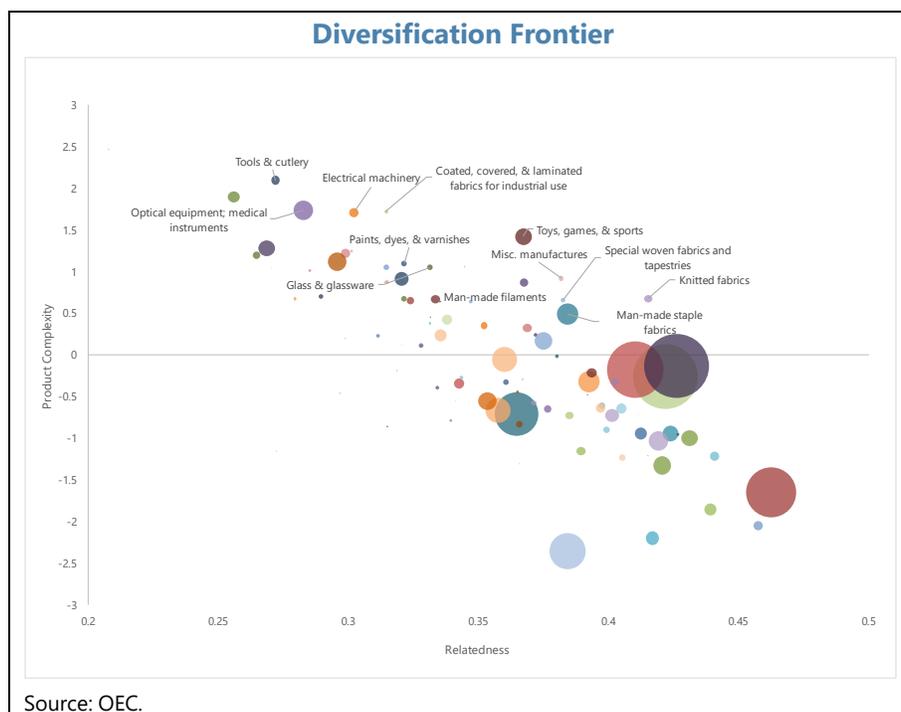


over time, it has remained the second highest among its peers (World Bank, 2024c). The imposition of Additional Custom Duties and Regulatory Duties more than offset the formal reductions in tariffs, causing average tariffs to increase from less than 15 percent in FY15 to 20 percent in FY21 (World Bank, 2021). External sector policies like import restrictions and misalignment of the exchange rate have competitiveness (¶1) and reinforced an anti-export bias.⁴

10. By removing policy-induced distortions and fostering a more competitively neutral business environment, Pakistan could develop a stronger, more competitive and technologically advanced economy.

There are a number of complex goods within likely technological proximity (i.e., are highly "related") to Pakistan's current export basket, including glassware, paints, chemicals, fabrics for industrial use, paper, cosmetics, and rubber products (The Observatory of Economic Complexity, 2024). However, to facilitate the development of such new industries the country needs a level playing field for business, avoiding targeted policies aimed at picking winners. This includes greater integration to global trade and easier access to imports, both as intermediate inputs for production and as final goods to promote domestic competition. The removal of fiscal incentives would reduce the existing misallocation of resources and promote price discovery across firms.

⁴ Pakistan's real exchange rate gap was estimated at 10-20 percent in 2017, and 7-33 percent in 2018 (IMF, 2017; IMF, 2019).



C. Concluding Remarks—Supporting Private Sector Development

11. Placing Pakistan on a new economic trajectory requires addressing many distortions as well as improving the quality and level of public investment including in human capital. Key reforms centers on removing the remnants of the old growth strategy based around protection, preferences, and concessions. This has limited competition and the incentive for innovation and investment, locking resources into low-productivity activities (including through Special Economic Zones), which only survive because their profitability is supported by the state. Removing these detrimental protections will spur competition and innovation as new players enter (including from outside Pakistan) and lead to a productivity-enhancing reallocation of resources, including labor. To create space for higher investment in physical and human capital, there is a need to reduce the government’s crowding out of private investment and raise additional revenue from undertaxed sectors by removing exemptions and other tax concessions. The modeling results in the accompanying Selected Issues Paper (Sultanov and Weiss, 2024) suggest that significant macroeconomic gains come from the implementation of such a distortion-reducing reforms agenda.

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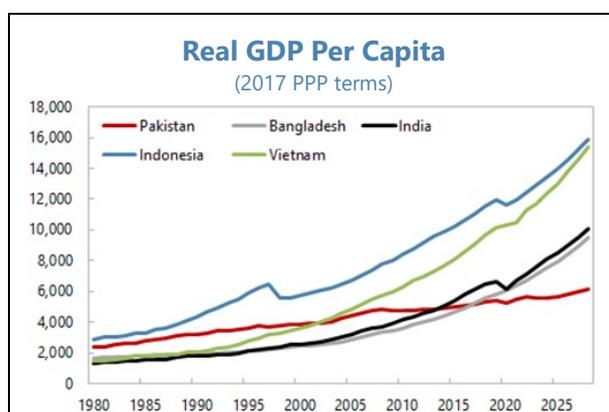
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MEASURING THE GAINS FROM STRUCTURAL REFORMS AND CLIMATE ADAPTATION INVESTMENT IN PAKISTAN¹

Structural reforms are critically needed for Pakistan to create the fiscal space, build human capital, enable the private sector, and build the resilience needed to move to a sustainable and inclusive long-term growth path which is also more climate resilient. This paper uses simulations conducted using the IMF's DIGNAR and DIGNAD models to assess the potential impacts of such reforms. It finds that the combined impact of consistent implementation of fiscal-structural, labor market, trade, and SOE reforms can increase growth by about 2 percent over a five year period while having a meaningfully positive impact on reducing inequality. It also finds that ex-ante investment in climate-adaptive infrastructure can reduce the negative growth impact of a natural disaster shock by one-third while ensuring a quicker and more complete recovery.

A. Introduction

1. Pakistan's living standards have been declining for decades. Despite a similar starting point in the early 1980s, Pakistanis' incomes have stagnated and fallen behind regional peers. At the same time, poverty rates remain elevated and social development indicators also lag peers. This reflects weak productivity and declining growth, falling capital investment, and a misallocation of resources, particularly between the agricultural and non-agricultural sectors (Pirzada and others, 2024; IMF, 2024a).



2. This has been accompanied by weak human capital outcomes, low fiscal capacity, protection for favored industries, and a large state footprint. Contributions to growth from human capital and efficiency gains are low (IMF, 2024a) and health and education indicators, while improving in recent years, still lag behind regional and lower-middle income peers and human capital spending as a share of GDP has steadily declined (IMF, 2024b). A key factor behind inadequate human capital investment is Pakistan's weak fiscal capacity and exceptionally low tax revenue outcomes (including at the provincial level), driven in part by subpar investment efficiency and tax administration capacity (IMF, 2023). Weak fiscal outcomes have also led to a crowding out of the private sector. This, along with a cumbersome regulatory regime and government policies to protect domestic industries such as textiles and agriculture, has resulted in weak exports and an overallocation of resources in the agriculture sector (IMF 2024a). Finally, the large state-owned

¹ Prepared by Azar Sultanov (RES) and Jason Weiss (MCD).

enterprise (SOE) sector, which provides poor-quality services, makes large losses, and has absorbed almost 9 percent of GDP in direct budget support cumulatively since 2016, is another source of economic inefficiencies (World Bank, 2023 and Ministry of Finance, 2023).

3. The consequences of these structural weaknesses have been exacerbated by increasingly high climate vulnerability. Pakistan's climate faces a rate of warming significantly higher than the global average (IMF 2023c). This will bring increasingly greater climate variability and extreme events, including reduced water availability, more severe and longer droughts, accelerated glacial melt, more variable and intense monsoons accompanied by floods and landslides, and sea-level rise encroaching on coastal settlements and infrastructure. The negative macroeconomic consequences of such a shift have already been felt. Climate- and weather-related disaster, which have increasingly been exacerbated by climate change, resulted in \$29.3 billion in economic losses over 1992-2021, equivalent to 11.1 percent of 2020 GDP, which slowed developmental gains (World Bank 2022). More recently, the floods of 2022 killed 1,700 people, displaced 8 million, increased the poverty rate by up to 4 percentage points, and brought economic losses equivalent to 4.8 percent of FY22 GDP, with reconstruction needs estimated at 1.6 times the budgeted national development expenditure of FY23. The disaster was exacerbated by Pakistan's weak urban planning, infrastructure, and water resource management (World Bank, 2022).

4. Using the IMF's DIGNAR and DIGNAD models, this paper measures the impacts of Pakistan's structural reform and climate resilience agenda under its EFF-supported economic program. It examines the individual and cumulative growth and distributional impact of a structural reform package that includes public investment efficiency improvement; tax collection efficiency improvement; reduced labor market frictions via reduced agriculture sector distortions and improved human capital; and product market distortion-reducing SOE governance reforms. It then looks at the impact—in terms of improved resilience and growth performance as well as potentially higher debt ratios—of ex-ante climate adaptation investments in the face of a natural disaster shock.

B. Quantitative Illustration: Macroeconomic Impact of Structural Reforms

5. We use the extended DIGNAR model to simulate the impact of structural reforms on macroeconomic and fiscal outcomes in Pakistan. The DIGNAR model is a macroeconomic model that allows the growth implications of various reforms to be analyzed jointly with the implications for fiscal sustainability. DIGNAR is a dynamic open economy general equilibrium model with traded, non-traded, and natural resource sectors. Here, the DIGNAR model is extended to simulate the impact of structural reforms on output, private investment, private consumption, and debt, along the lines of the analysis presented in past Fund work including IMF (2018) and the recent staff discussion note (SDN, IMF, 2023b). More details on the technical aspects of the model and its calibration to Pakistan are provided in Box 1.

6. This section incorporates structural reforms to address structural vulnerabilities. These vulnerabilities arise from domestic market distortions. The governance framework's empirical analysis (IMF, 2018) and the SDN (IMF, 2023b) show that reforms addressing these vulnerabilities are associated with sizable and long-lasting reductions in the debt-to-GDP ratio, mainly through higher

fiscal revenues and lower borrowing costs. In the SDN, these results are based on analyzing 62 emerging market and developing economies during 1973–2014. These effects are larger in countries with greater tax efficiency, lower informality, and higher initial debt.

7. An extended model is used to analyze the effects of structural improvements in four key areas:

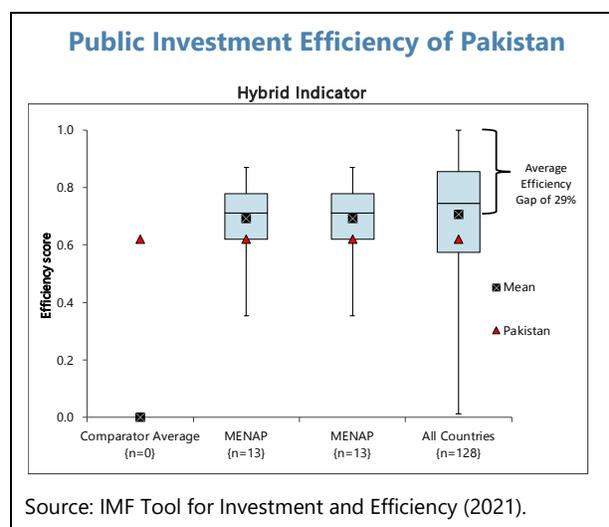
- (i) An improvement in public investment spending efficiency;
- (ii) An improvement in tax collection efficiency (C-efficiency);
- (iii) A reduction in labor market distortions; and
- (iv) A reduction in product market distortions.

These reforms are only a subset of possible reforms that Pakistan’s authorities may choose to pursue, but they reflect key reforms to address distortions which hamper stronger private sector-led growth (IMF, 2024a).

8. Two reform scenarios are calibrated to Pakistan’s data. The baseline scenario is similar to that of the Article IV macroeconomic framework, with limited reform measures. An alternative scenario captures the effect of an ambitious but realistic reform package that would move Pakistan to within the distribution of comparator emerging market (EM) countries gradually over 5 years by closing its public investment efficiency gap, improving tax collection efficiency, and reducing labor and product market distortions to reach comparator EM levels.

9. The following reforms are calibrated to represent Pakistan’s data:

- *A gradual improvement of public investment efficiency from 0.62 (hybrid indicator) to comparator EMs’ average of 0.71 (see text figure). Meaningful PFM reforms that increase the efficiency of public investment and strengthen public financial and investment management can increase the benefits gained from investing in public capital and support other structural reforms.*
- *Broadening the tax base and improving revenue collection.* Due to inefficiencies in the tax collection system, a (potentially significant) fraction of taxes due may fail to reach the government’s revenue authority, compromising the improvement in the debt-to-GDP ratio. Pakistan’s tax revenue collection remains low compared to its level of development, with



VAT and PIT collection remaining below EM averages. Pakistan has one of the lowest C-efficiency rates among EMs (where the VAT C-efficiency denotes the extent to which final consumption is taxed). In 2020, Pakistan's VAT C-efficiency was 0.23, implying that the VAT captures less than a quarter of its potential tax base. Doubling its C-efficiency would nearly double VAT collections. PIT C-efficiency is also low (16 percent). Our simulations assume that endpoints are doubled for both VAT and PIT C-efficiency, to the comparator group average, by 2028.

- *The reduction of distortions in the labor market*, including by removing incentives to remain in agriculture (and implicitly other low-productivity sectors) and improving human capital, would boost public and private sector employment and facilitate the movement of labor across tradable and non-tradable sectors. Pakistan has seen one of the lowest declines in the share of labor employed in agriculture amongst EMs since 1990 (from 47 to 37 percent in 2019), driven by the misallocation of resources between the agricultural and non-agricultural sectors and limited incentives for labor to move to more productive sectors (Pirzada et. al., 2024). Pakistan's initial level of labor market distortions is calibrated by assuming that the presence of a distortion results in a markup over a competitive wage.² We assume that reforms would fully cover this markup.
- *A reduction in distortions in the product markets*. The extent to which reforms can make the product market more competitive and affect growth and public debt depends on the size of the implied net direct revenue to the government. Market inefficiencies that arise due to excessive regulation may boost government revenues in some countries; that is, they are not purely wasteful distortions. For example, licensing of SOEs creates market barriers that hinder competition and economic growth but also supplements the government budget with licensing fees. However, this is not true for other countries, as SOEs could operate with losses for a long time and represent a heavy load to the public finances. Indeed, in Pakistan, government support to the SOE sector far outweighs tax and dividend inflows. In such countries, market liberalization will likely lead to better fiscal outcomes as losses due to inefficient SOEs are waived. Therefore, we can assess the markets for electricity and telecommunications by the degree of the government's market intervention, focusing on the presence of SOEs and access to services, independence of regulatory bodies, and other market structures (IMF SDN, 2023).

10. In addition to the above reforms, we also examine the impact of trade liberalization, which will reduce an implicit tax on exports and add competition in the domestic market. The presence of tariff and non-tariff barriers to exports and imports, and restrictions on receipts and payments for trade, creates overallocation of resources in the non-tradable sector at the expense of more productive export sectors. Pakistan's export performance lags peers, with its already low share of exports per GDP declining over the past decade, likely reflecting low tradeable sector productivity, low technical sophistication of exports, and low rates of investment in exporting sub-sectors (Pirzada and others, 2024). Our simulation considers increasing exports gradually from

² Due to scarcity of data on wage markups for Pakistan, we use the value from IMF (2023b) obtained through a Bayesian estimation of a dynamic stochastic general equilibrium (DSGE) model on Brazil's data (Costa, 2016).

the current level of about 8 percent of GDP to 9 percent (by 1 percent) over five years (a lower bound estimate that could be higher if FDI spurs greater exports).³

C. DIGNAR Results

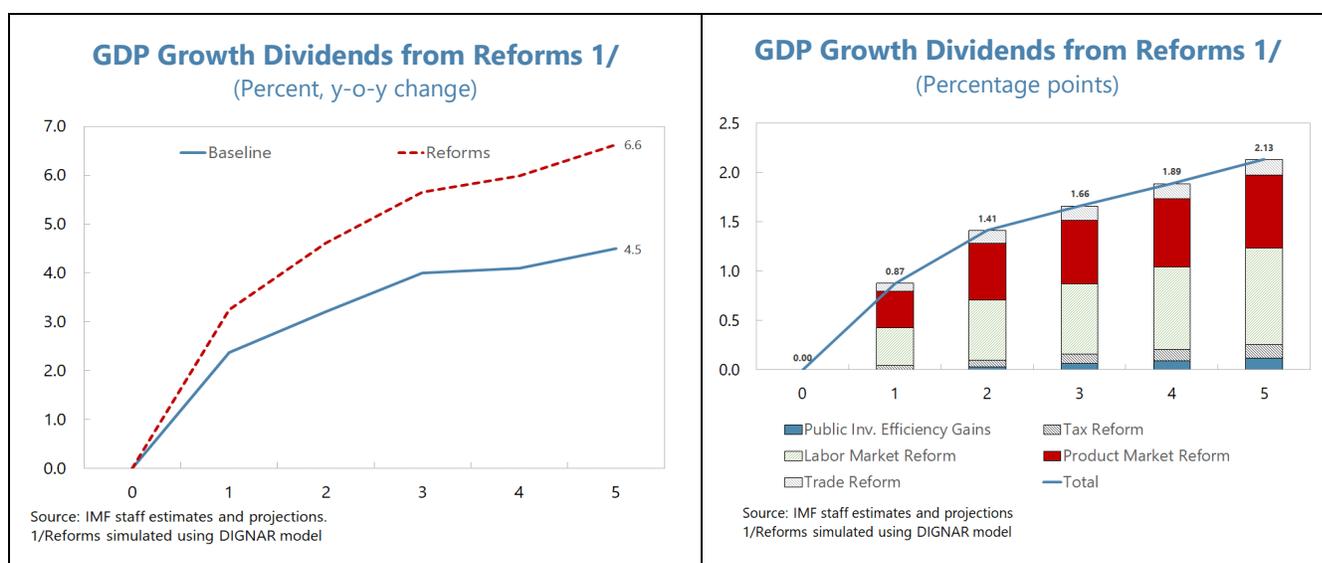
11. The simulations show that these reforms can increase the level of real output and private investment during the reforms' horizon period. Under a full reform scenario encompassing fiscal structural and market reforms as outlined above, Pakistan's output level is 7 percent higher after five years relative to the steady state, implying a crowding-in effect on private consumption and investment (Figure 1a). Structural reforms would also reduce the public debt to GDP ratio by about 6 percent over the same time period. Simulations confirm the key role of the reforms in driving additional private investment, while benefitting from positive spillovers from improvements in the labor and private markets, public investment efficiency improvements, and tax reforms.

12. The simulations also show that the reforms would have a positive distributional impact and contribute to reducing inequality. DIGNAR assumes two types of households: intertemporal optimizing households, which have access to capital and financial markets; and rule of thumb households, who are poorer and financially constrained and consume all disposable income each period. These two types of households face different dynamics in response to the structural reforms. The combined effect of the reforms can generate an aggregate decline in consumption inequality by about 2 percent over the simulation's horizon (Figures 1a and 1b).

13. We find that structural reforms can substantially raise Pakistan's growth. The combined effect of the reforms could deliver a medium-term increase in real GDP growth of 2.13 percentage points relative to baseline (text figures). Given the general equilibrium and nonlinear features of the model, the combined effects of the comprehensive reform package are somewhat greater than the sum of individual effects obtained in isolation. This is a significant result, given that coupling structural reforms with broader fiscal reforms is likely to deliver much larger growth dividends.

14. Growth dividends build over time as reform indicators improve (text figures). Labor and product market reforms account for most of the output gain in the simulation horizon, in year five accounting for 0.98 and 0.74 percent, respectively, of the total growth gain of 2.13 percentage points (or 46 and 35 percent, respectively, of the total growth gain). Dividends from tax reforms and gains from public investment efficiency boost output growth by about 0.14 and 0.12 percent (6 and 7 percent of the total growth gain), respectively, by year five, while trade reforms contribute 0.16 percent (about 8 percent of the total growth gain). These results are in line with the estimates of the 2019 WEO Chapter based on the IMF's Structural Reform Database (IMF 2019).

³ The version of DIGNAR model we used to simulate structural reforms does not explicitly model export and import decisions by firms. Therefore, we used an extended version of the model to simulate standalone trade reforms.



15. The impact on public debt is sensitive to tax collection efficiency, the reaction of the private sector, and any positive revenue inflow deriving from structural and market reforms that mitigates market distortions. At a first approximation, reforms produce growth dividends that benefit the country's debt-to-GDP ratio. However, the size of these potential gains depends, among other things, on the soundness of the tax administration system, public spending efficiency, and the impact of labor, financial, and product market distortions. By reducing market distortions and facilitating competition, reforms boost production and deliver a wider potential tax base that can be used to pay off debt. The extent to which an increase in the potential tax base is transformed into actual higher tax receipts, however, depends on the quality of the domestic revenue mobilization system. Higher tax collection efficiency implies fewer leakages and, hence, greater reduction in the debt-to-GDP ratio following the adoption of reforms. Figure 1a presents the reduction in public debt under a combination of structural and market reforms. As noted above, reforms that reduce distortions that constrain domestic labor and product markets account for the largest impact on growth. Meanwhile, combined reforms (gradually adding one reform on top of another) boost GDP and therefore widen the tax base, thus accounting for most of the reduction in the government debt-to-GDP ratio. Finally, improving revenue mobilization has a limited impact on both growth and debt given the conservative assumption applied, but is important in ensuring that activity shows up in revenue and that public investment is effective in supporting growth, development, and climate resilience (see next section).

16. The DIGNAR simulations imply significant macroeconomic gains from the implementation of the distortion-reducing structural reforms agenda. Structural reforms are found to increase growth potential by strengthening the government's capacity to perform core functions and improve the business environment, which reflects better fiscal performance (by enhancing tax collection and public investment efficiency) and more efficient resource allocation (by reducing labor market distortions and improving SOE management). Simulations show that the real growth gain ranges from 0.8 to 2 percent each year, which contributes to a reduction of Pakistan's debt and external vulnerabilities. Notably, these are static gains; gains to potential growth from structural reforms could

be more substantial and permanent than implied by the model, especially if they open up new sectors and drivers of growth. These reforms can also improve income distribution in Pakistan.

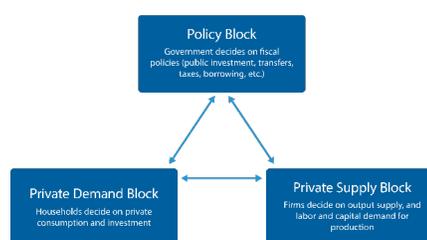
Box 1. Pakistan DIGNAR Model Specifications

The Debt, Investment, Growth and Natural Resources (DIGNAR) model of Melina and others (2014) is extended to capture reforms in the areas of governance. DIGNAR is a real, dynamic, open economy model with traded, non-traded, and natural resource sectors in which public capital enters production technologies, while public investment is subject to inefficiencies and absorptive capacity constraints. The general equilibrium nature of the DIGNAR model makes it possible to analyze the impact of reforms simultaneously on output, private investment, consumption, and fiscal outcomes. The model was previously used to analyze the effects of improvements in key aspects of governance such as public investment spending efficiency, tax collection efficiency, and financial, labor and product markets. Over the past decade, the DIG (Debt Investment Growth) and extension models DIGNAR and DIGNAD models¹ have become a workhorse model at the IMF to analyze the effects of public investment plans on growth and debt sustainability across more than 78 country applications. These applications have also provided useful insights based on qualitative and quantitative analysis of the macroeconomic effects of public investment scaling-ups and reforms.

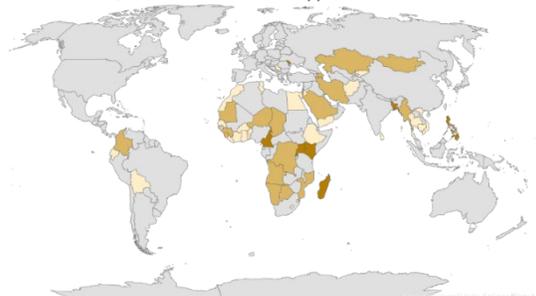
Calibration: The model is calibrated to Pakistan using recent country-specific macroeconomic indicators at an annual frequency, capturing salient features of its economy. While its steady state is aligned to historical averages (excluding the COVID-19 and 2022 flood periods), initial values of the model are based on the latest available data from the authorities or staff estimates. The model's steady state aligns the level of standard capital infrastructure investment with projected values for FY2023/24, amounting to about 3.1 percent of GDP, and its efficiency is set at 62 percent based on the FAD corruption database value (2018 PIMA). The long-run output growth rate is set at 4.4 percent. The calibration also features weak governance in the four aspects outlined above. The initial level of financial labor distortion is taken from the literature and is set to match the average wage markup, as in the SDN (2023). Tax collection efficiencies (C-efficiency) are based on recent values from the FAD corruption database. All remaining parameters are calibrated as in the SDN (2023), Melina and others (2014) and Buffie and others (2012).

The simulations assume that the country improves (gradually) in the four dimensions of governance over 5 years. The implications are traced first for reforming only one aspect of governance (PIE reform), gradually adding others reform measures; they are subsequently assessed for a comprehensive reform that tackles all the channels simultaneously.

The DIG/DIGNAR Model Structure



DIG, DIGNAR and DIGNAD Applications



¹ Both models were based on the Debt, Investment, Growth (DIG) model developed by Buffie and others (2012).

D. Climate Resilience Scenarios

17. The Dynamic Investment Growth and Natural Disasters (DIGNAD) model can be applied to offer perspectives on policy choices aimed at building resilience to climate shocks.

Pakistan's climate vulnerabilities and its 2022 flood experience highlight its large climate adaptation infrastructure needs. However, such investment is generally more expensive and entails choices about greater up-front spending and greater resilience to future climate shocks in the context of very limited fiscal space. The DIGNAD model is a dynamic general equilibrium model that can analyze the impact of public investment on growth and debt under various climate shock scenarios. Applied here, it takes into account damage to public and private capital, productivity, public investment efficiency, and debt sustainability; and considers the impact of ex-ante policies, such as adaptive infrastructure investment and improved public investment efficiency, in buffering climate shocks.

18. The model is calibrated to Pakistan's economy. The steady state is calibrated to historical averages, excluding FY2020 (COVID-19) and FY2022 (the flood). As such, public infrastructure investment is set at 3.1 percent of GDP per year and public investment efficiency gap is set at 62 percent, in line with the FAD corruption database value (2018 PIMA). The model scenario applies, after a five-year period of growth and investment, a climate shock of 5 percent of GDP, broadly in line with that of the 2022 floods, and assumes a five-year recovery process.

19. Based on this, the model looks at three illustrative scenarios (see results in Figure 2):

- **Baseline (status quo):** The baseline assumes that public investment remains at its steady state level and no adaptive infrastructure investments are made. A climate shock in year six leads to large declines in GDP, private consumption, and private investment. Large reconstruction spending needs lead to a large and sustained increase in public investment. GDP remains well below its steady state 13 years after the shock. The debt-to-GDP ratio increases sharply (by about 4 percentage points of GDP to 73 percent) following the shock and remains at that level in the long term.
- **Adaptation:** This scenario assumes that conventional public investment remains at its steady state level while an additional 1 percent of GDP per year is invested in adaptation infrastructure. About 40 percent of this additional investment is financed via concessional debt, with most of the balance financed by domestic debt, in line with Pakistan's current debt structure. Given the larger levels of investment in this scenario, and the higher return on adaptation investment (relative to conventional investment, in line with Marto and others 2018), the negative deviations of GDP, private consumption, and private investment from the steady state following the shock are between about one third one half of that in the baseline scenario, although Pakistan's GDP returns to its steady state 5 years after the shock. Given the additional five years of ex-ante investment, debt-to-GDP steadily rises before the shock and then increases to a greater degree following the shock, settling about 2 percentage points of GDP higher in the long term than under the baseline scenario.

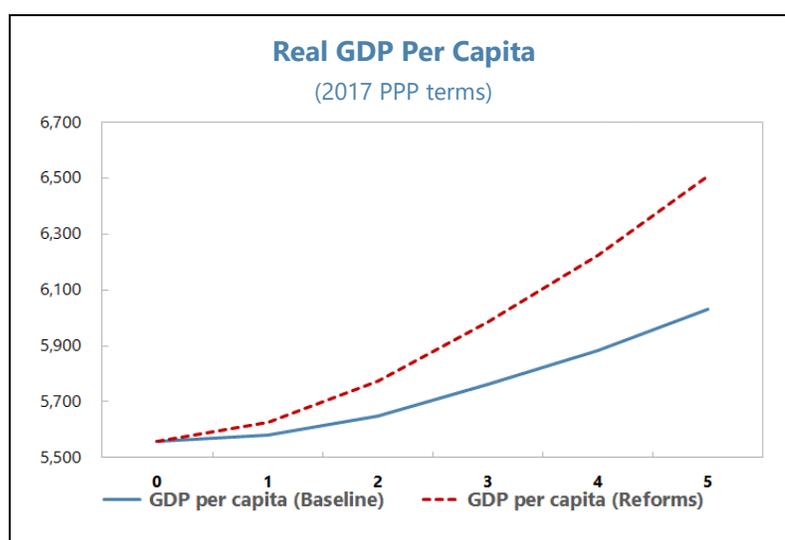
- **Adaptation + efficiency improvements.** This scenario assumes the same adaptation investment and debt financing as the previous scenario but also assumes an improvement in Pakistan’s public investment efficiency score to the global average (IMF 2021). The downturn is, in turn, moderately shallower and GDP returns to its steady state four years after the shock (a year earlier than in the previous scenario). The long-term debt path is broadly in line with that of the previous scenario.

20. The DIGNAD results illustrate how adaptation infrastructure investment would increase Pakistan’s climate resilience and buffer climate shocks. Ex-ante adaptation investments would reduce the growth impact of a natural disaster shock by about a third and return Pakistan to its previous GDP level more quickly. Enhancements in public investment efficiency in line with the C-PIMA Action Plan would further improve such resilience, particularly in the immediate aftermath of the shock. The additional investment needed to bolster resilience would lead to moderately higher debt levels. A scenario in which fiscal instruments—consumption and income taxes—responded to such a shock would put public debt on a downward path following recovery, although such a policy may not be feasible or desirable in the face of a large natural disaster. As such, further progress on fiscal consolidation and fiscal structural reforms are critical to maintaining the fiscal space that would be necessary to weather such a shock.

E. Conclusions

21. Results from the DIGNAR model illustrate the benefits of implementing Pakistan’s structural reform agenda.

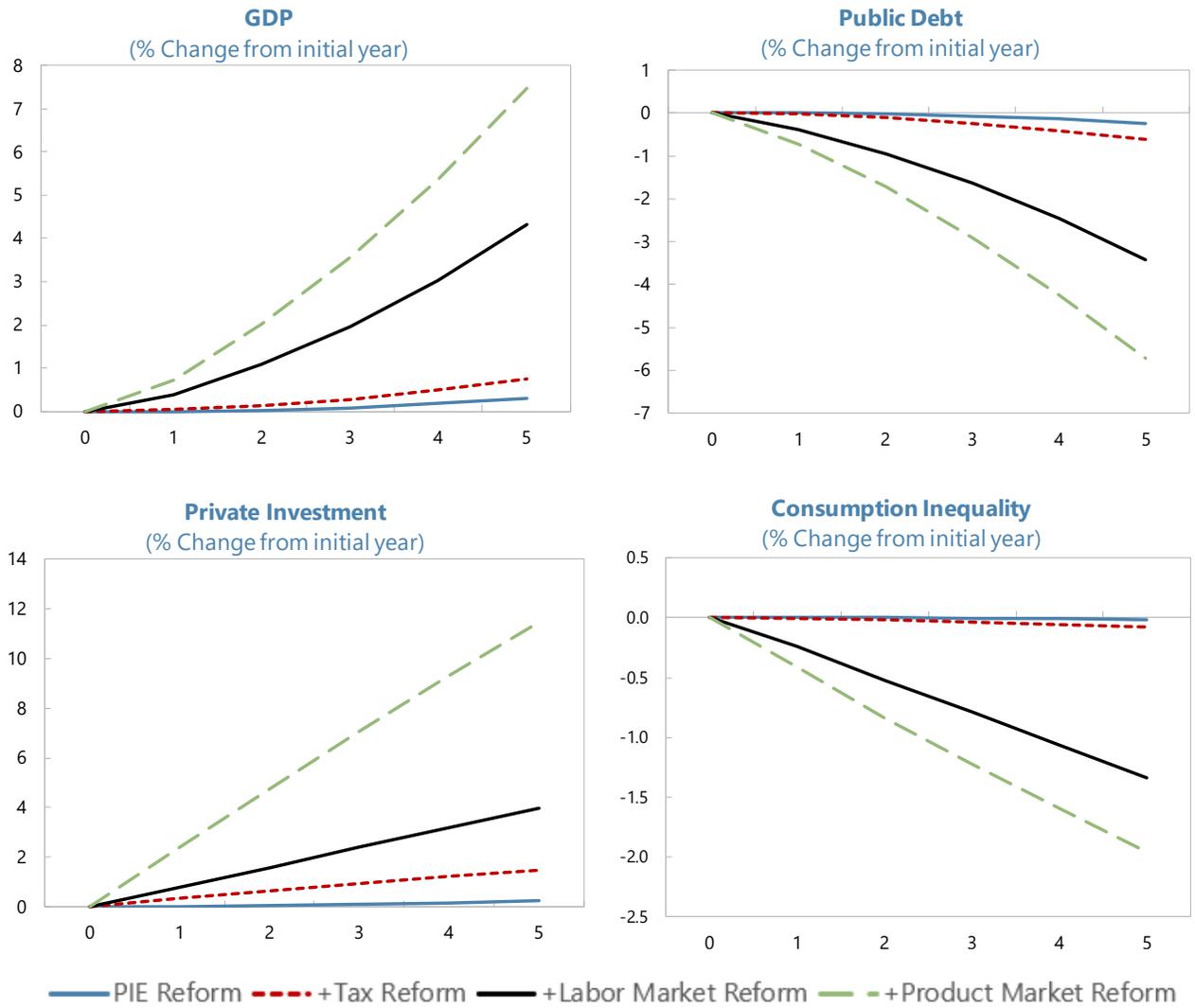
The DIGNAR model demonstrates the stronger and more inclusive growth path available to Pakistan via the consistent implementation of its structural reform agenda with regard to improving public investment and tax collection efficiency; reducing incentives which underpin activity in low-productivity sectors (including agriculture) and limit reallocation, and improving human capital to reduce labor market frictions and improve labor market mobility; reducing trade barriers; and following through on the SOE governance reform agenda to improve product market performance and reduce distortions. Pursuit of all of these reform paths is critical for Pakistan to successfully shift its development model away from a subsidy-, preference-, and protection-driven system that has not worked for decades. Sequencing of reforms will also be important. For instance, product market reforms, which would raise incomes, could precede and support more difficult labor market reforms.



22. Results from the DIGNAD model illustrate the benefit of complementing these reforms with adaptation investments to guard against climate vulnerabilities and build resilience.

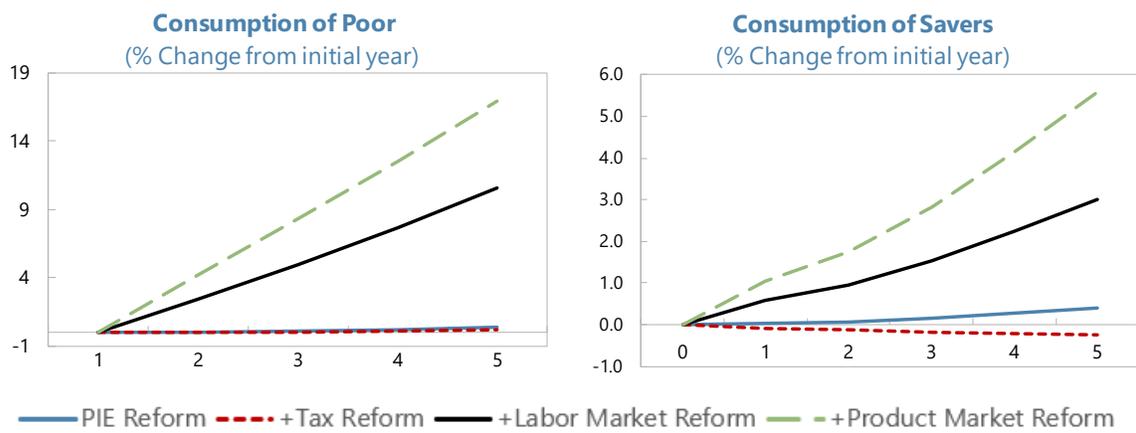
While critical to positively shifting its growth model, the success of Pakistan's structural reform agenda requires stability and resilience in the face of exceptional climate vulnerabilities. The DIGNAD model demonstrates the benefits of doing so, in particular the large buffer against natural disaster shocks and quicker post-shock recovery that greater ex-ante adaptation investment would provide. Continued implementation of the authorities' adaptation agenda, in particular further progress on the C-PIMA Action Plan to promote adaptation in a systematic manner consistent with PIMA best practices, as well as further efforts to boost climate financing, will be critical to success in this area.

Figure 1a. Macroeconomic Impacts of Structural Reforms 1/



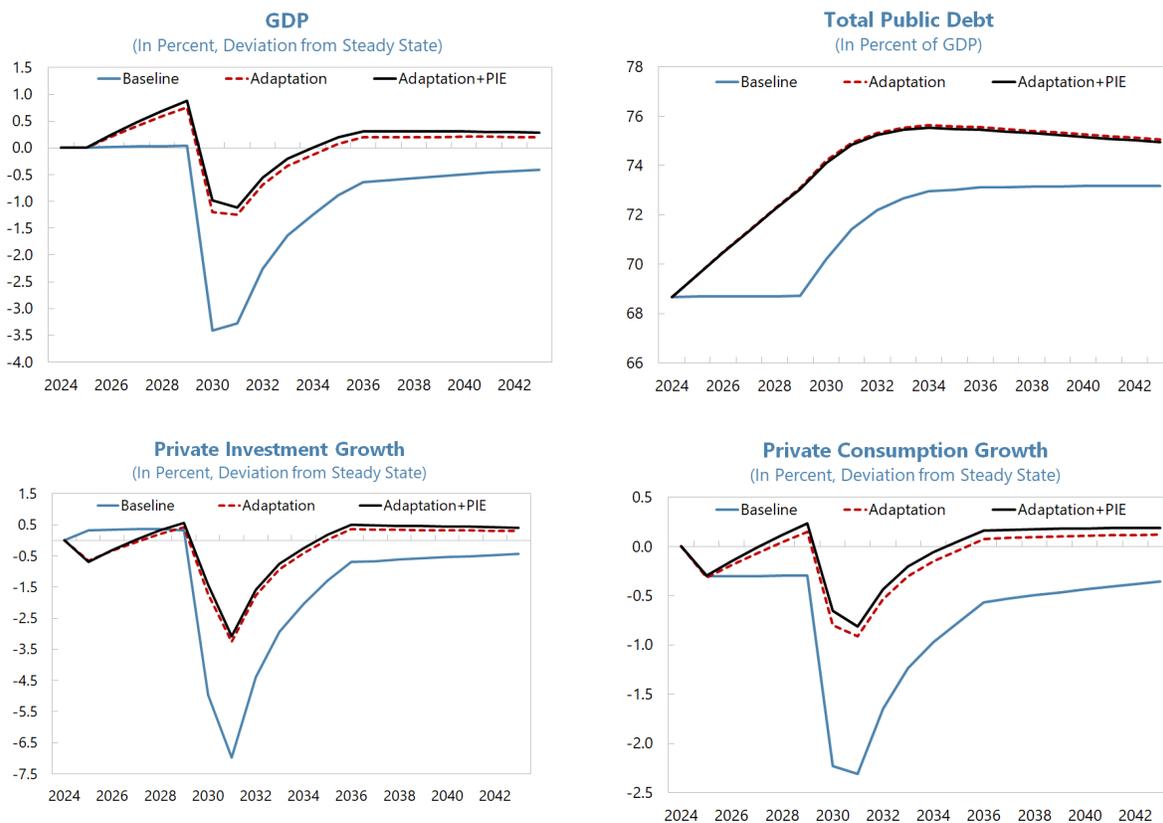
Source: IMF staff estimates and projections.
 1/ Reforms simulated using DIGNAR model.

Figure 1b. Distributional Impacts of Structural Reforms 1/



Source: IMF staff estimates and projections.
 1/ Reforms simulated using DIGNAR model.

Figure 2. DIGNAD Climate Shock Simulation Results 1/



Source: IMF staff estimates.
1/ Simulated using DIGNAD model.

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THE SOVEREIGN-BANK (-CENTRAL BANK) NEXUS IN PAKISTAN¹

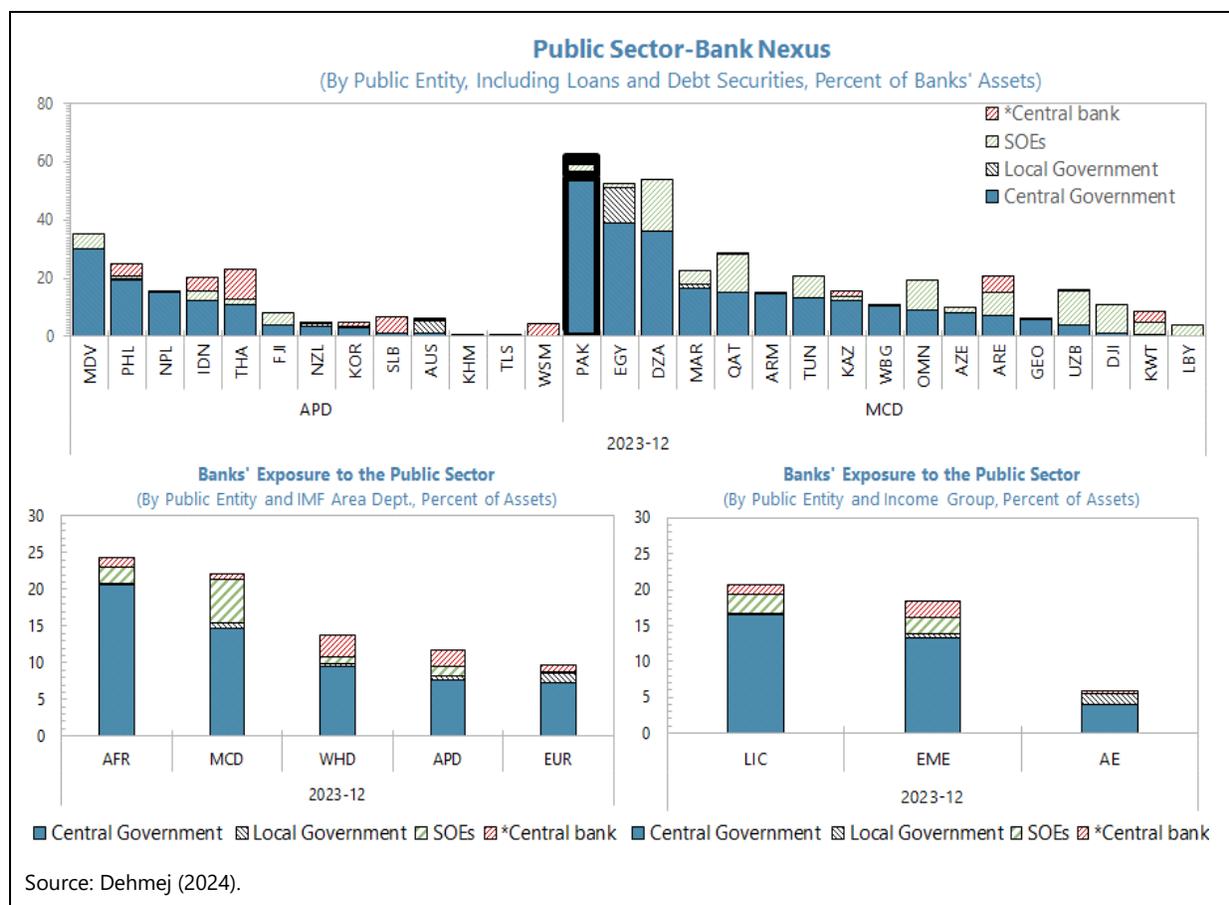
Pakistan's banking sector holds the world's largest proportion of government securities relative to its total assets. In recent years, the banks have funded a significant part of their growing securities portfolios via short-term central bank liquidity using bonds as collateral. This complex tripartite relationship means that developments or actions in one domain—fiscal, monetary, or banking—can have wide-ranging effects across the economy. This paper discusses the evolution of the interconnectedness between the government, the banks and the central bank in recent years and explores the implications and potential risks with a view to developing policy recommendations.

A. Introduction

1. Persistently high fiscal deficits, coupled with the impact of recent external shocks, has had significant implications for the sovereign-bank nexus in Pakistan. With limited access to external funding, the government has increasingly relied on the banking sector for financing and, as a result, banks' holdings of domestic government debt has surged to around 60 percent of their assets (more than thrice the average for Emerging Market Economies, EMEs). With limited growth in their depositor base, the banks have mainly financed the government's additional demand for funds through liquidity provided by the State Bank of Pakistan (SBP) via Open Market Operations (OMOs). Consequently, the balance sheets of the three parties—sovereign (government), commercial banks, and the central bank—have become increasingly interconnected.

2. The literature on the sovereign-bank nexus covers various dimensions of the relationship between banks and sovereign debt. Dell'Ariccia, et. al. (2018) and Feyen and Zuchardi (2019) discuss the mechanisms through which the health of the banking sector and the fiscal position of the sovereign are interlinked, the implications and risks of this nexus for financial stability and economic policy, as well as the policy measures that could help mitigate the risks arising from this interdependence. Bouis (2019) studies the relationship between banks' holdings of domestic sovereign securities and credit growth to the private sector in EMEs and in developing countries. IMF (2022) examines the impact of COVID-19 on the sovereign-bank nexus in EMEs and presents a set of policy options that must be tailored to country-specific circumstances to mitigate the risks. This paper focuses on the degree of interconnection in Pakistan, seen against others, in the figure below.

¹ Prepared by Emre Balibek (MCM).

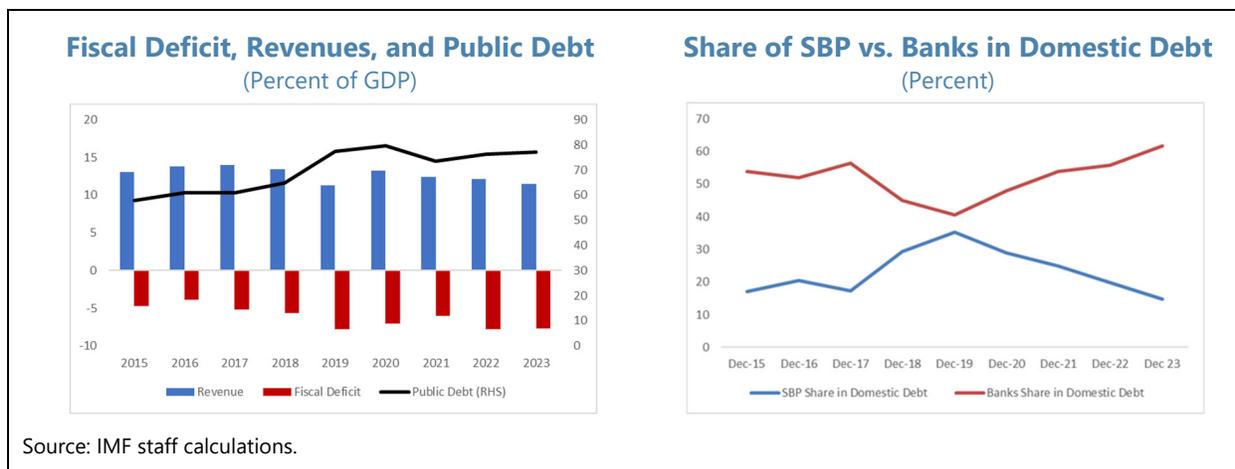


B. The Evolution of the Nexus

3. Until 2019, the government relied on direct financing by the SBP to sustain financing of its fiscal deficit. Monetary financing accelerated between 2017 and 2019, and by end-2019, the volume of government debt held by the SBP reached around 20 percent of GDP, constituting close to 40 percent of domestic debt outstanding. This fiscal dominance compromised the SBP's operational independence, jeopardizing the achievement of the inflation target.

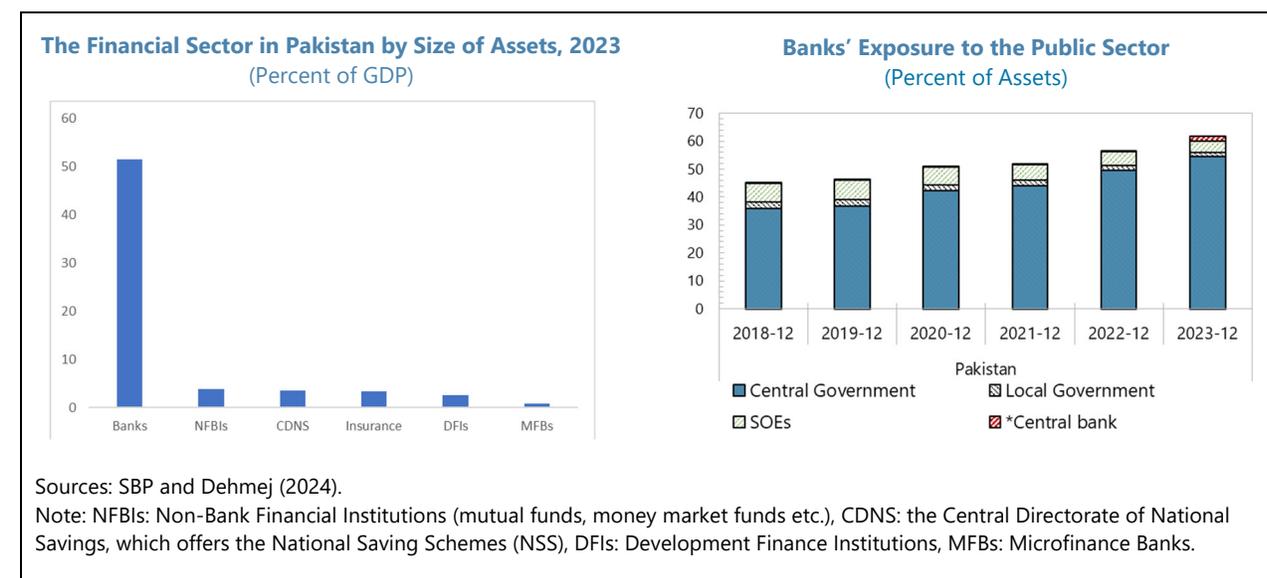
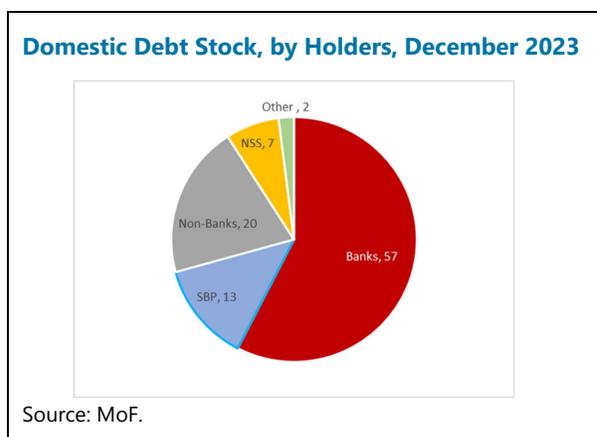
4. In mid-2019, the authorities committed to refrain from any new direct financing of the budget by the SBP and to gradually reduce government debt held in the SBP balance sheet. In 2022, this policy was institutionalized and became legally binding through amendments to the SBP Act, prohibiting any direct lending to the government and any purchases of government issued securities in the primary market. Commercial banks increasingly financed the government even as the government committed to pursue tight fiscal policies to reduce its borrowing requirement.

5. Nevertheless, a series of external shocks and policy slippages aggravated the economic challenges and fiscal deficits could not be restrained. With the impact of the pandemic, severe floods, the commodity shock from the war in Ukraine, and the tightening of external and domestic financing conditions, together with policy backsliding, fiscal deficits have reached a new plateau of over 7 percent of GDP after 2019.

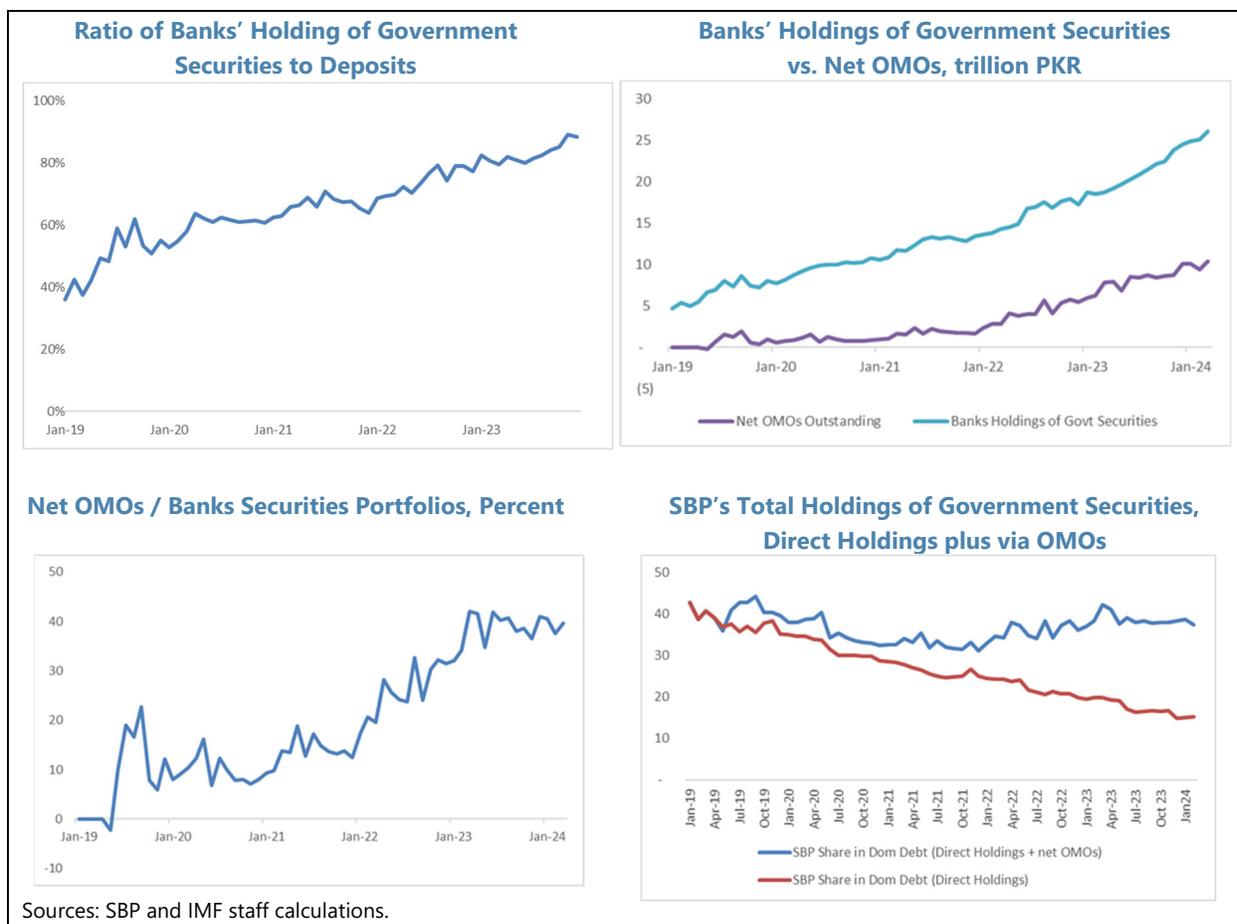


6. Continued high domestic financing needs had its impact on the balance sheet of banking sector, which constitutes around eighty percent of the financial sector assets.

Hence, without direct financing by the SBP and given an underdeveloped capital market, commercial banks bought government debt, which was now auctioned at an increasing rate. Between 2019 and 2023, banks’ exposure to the sovereign surged from 45 percent of their assets to around 60 percent. However, the banking sector’s deposit base has not kept pace with its assets; between 2019 and 2023, deposits in the banking sector doubled while the nominal volumes of bonds in their portfolios quadrupled. Consequently, the banking sector sought other sources of liquidity to match the growth in its balance sheet due to its increased holding of government paper.



7. The SBP's efforts to meet the liquidity needs of the sector indirectly increases its interconnection with both commercial banks and the government. This was mainly achieved through OMOs, accepting government securities as collateral in 7- to 28-day reverse repo transactions. A time-bound relaxation of the Leverage Ratio requirement below 3 percent for some financial institutions likely facilitated their purchase of additional government bonds with any marginal increase in banks' holdings of government debt funded via SBP's short-term liquidity provision.² As a result, the SBP's total share in outstanding government debt has been stable since 2019, when securities received as collateral from banks are considered.



C. Implications of the Nexus and Potential Risks

8. In general, the interdependent relationship between the financial health of a country's government and its banking sector works along multiple dimensions and can have profound implications for the economy:

- **Financial stability and debt sustainability.** The sovereign-bank nexus can create negative feedback loops between banks and sovereigns. When banks hold significant amounts of

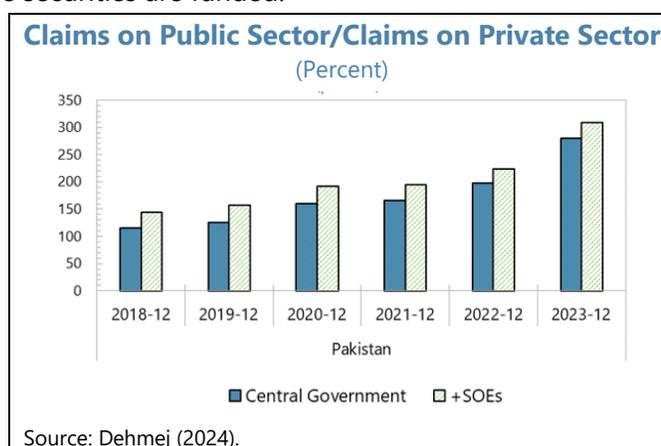
² The leverage ratio is the ratio of Tier-1 capital to exposure.

government debt, any doubt about debt sustainability or access to financing can directly affect the perceived stability of the banking sector. On the other hand, any potential concerns about the stability of the banking sector may raise questions about the government's ability to sustain financing. Where banks contribute to a high share of tax revenues, potential repricing of government securities may reduce government revenues since bank profitability would decline. Banking crises may activate government interventions or guarantees, and other costly resolution policies with negative effects on the fiscal accounts may further amplify the risk perception about debt sustainability.

- **Fiscal policy constraints.** When government borrowing is largely concentrated in banks, fiscal policy may become less effective as a macroeconomic policy tool, particularly during economic downturns as fiscal space may be limited because of funding constraints. Additional debt issuance for expansionary fiscal policies can raise concerns about financial stability and/or can lead to a rapid increase in interest rates, making fiscal stimulus distortionary and potentially reducing its scale or effectiveness. Public debt management can also be constrained by the preferences of the banks, potentially resulting in issuance of short-maturities.
- **Distortions in the intermediary role of the financial system.** When banks are primarily engaged in funding the government channeling available liquidity, their role in supplying funds to the real economy may be hampered. In the medium-long term, the combination of higher borrowing costs, reduced lending to the private sector, and potential financial instability can dampen economic growth.
- **Challenges in monetary policy.** Where domestic debt is high and mainly financed by banks, the resulting crowding out of private sector credit harms policy transmission as changes in interest rates have little impact on private activity. In addition, the central bank may come under pressure to maintain low interest rates to limit the government's interest costs. Such actions can compromise the central bank's independence and its primary objective of price stability.
- **Over the long term, the sovereign-bank nexus can thus be a significant drag on a country's economic potential.** These concerns are particularly notable for Pakistan, given the degree of the nexus compared to peers, and how the securities are funded.

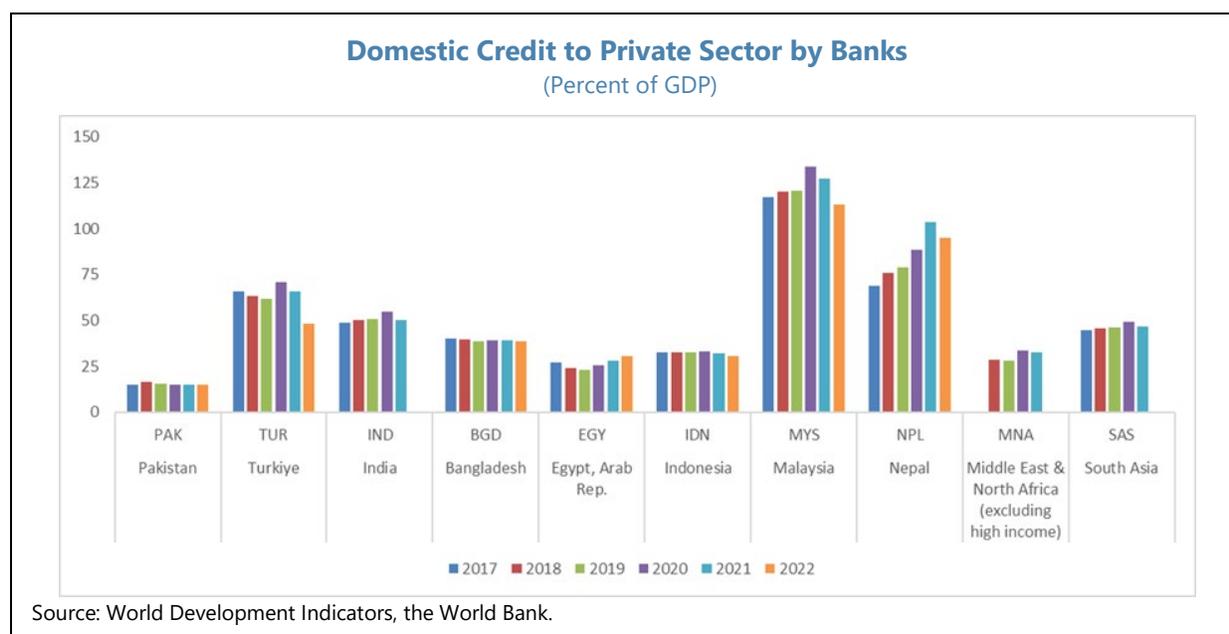
The Banking Sector

9. In recent years, the banking sector in Pakistan remained profitable by primarily focusing on financing the government's fiscal deficit. Treasury operations have emerged as profit centers within the banks and there is diminished interest in extending credit to the private sector. Holding sovereign bonds not only helps banks meet regulatory requirements



but also offers inherent funding advantages by providing collateral for OMOs, the ability to trade on the secondary market, and operational efficiencies, such as by eliminating the cost of assessing the risk of private borrowers. Under these conditions, the banks have reduced interest in lending to the private sector, although in a high interest rate environment the appetite from the private sector for funding for new investment has also been low.

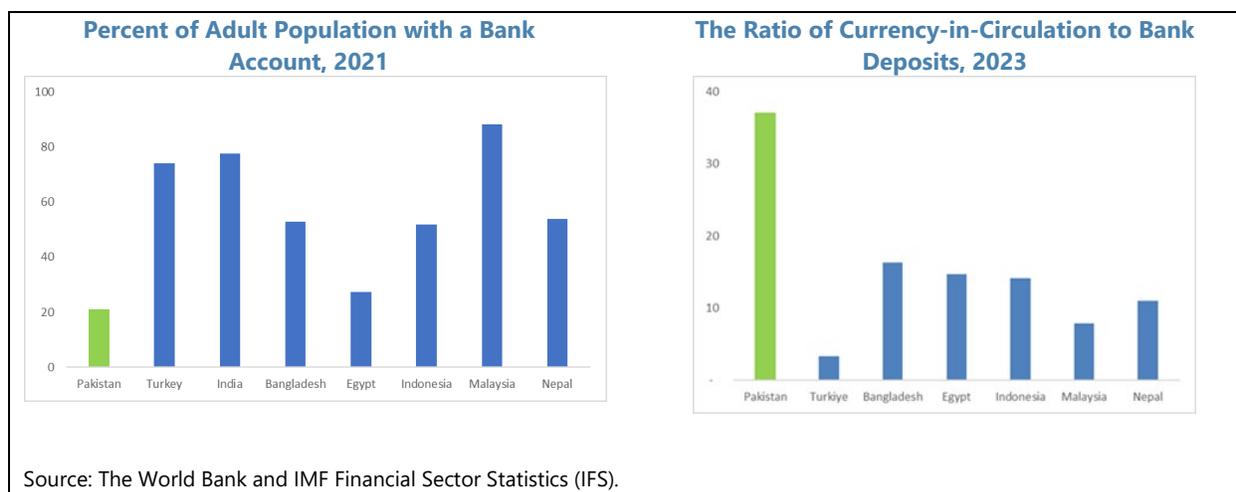
10. Even before the current period, Pakistani banks lagged significantly behind their peers in terms of lending to the private sector, with borrowing mainly put towards funding working capital. With lending to the government continuously growing in recent years, the exposure of the banks to the government is three times more than to the private sector as of end-2023.



11. Banks' balance sheets appear healthy partly due to the zero-risk weights on investments in government securities. The sector as a whole complies with capital requirements and remains very profitable and highly liquid thanks to treatment of government securities. Nevertheless, the risk is that under a stress scenario, the valuation and liquidity of these securities may rapidly deteriorate (see next section).

12. The current banking landscape in Pakistan has provided too little incentive to attract depositors. From the banks' perspective, with ample liquidity, there is little incentive to compete aggressively for deposits. The prevailing interest rates, and the regulatory framework (such as the mandatory Minimum Deposit Rate - MDR) imply that the potential returns from utilizing more deposits fall short of the costs associated with saving deposits. Some banks have strategically shifted their focus from savings accounts to current accounts or Islamic banking accounts, which are not bound by the MDR. This tendency likely discourages small savers from participating in the banking system—a system that already suffers from low penetration rates and limits the growth of bank deposits even when interest rates are high. The extent of the informal economy, extended

periods of political and economic instability, the low rate of savings and the lack of incentives for keeping savings in bank deposits has led to a high demand for physical currency, leaving funds outside the banking system and undermining the financial system of potential deposit funding.



The Sovereign (Ministry of Finance – MoF)

13. With banks as the main subscribers of domestic debt, public debt management is exposed to their investment preferences. In an effort to mitigate interest rate risk, banks exhibit a preference for shorter-duration investments, such as Treasury bills or floating-rate notes, positioning themselves towards the lower end of the yield curve. This effectively constrains designing and implementing an effective debt management strategy. While issuance in short-tenors and through floating rates has helped avoid locking in long-term costs at current high rates, this results in a more frequent need to roll over domestic debt, which increases gross financing needs and their associated risks.

14. In an environment of high fiscal deficits, the sovereign's exposure to high refinancing and interest repricing risks may add to concerns about public debt sustainability. Under a stress scenario, a vicious circle can start leading to diminished demand and capacity of banks to carry government securities, further shortening of maturities, rising interest rates, and eventually turmoil in the domestic debt market and the financial system, with complex implications for all parties involved.

The Central Bank

15. The SBP is tasked with a dual responsibility: For monetary policy purposes it has to manage liquidity in the financial system to influence the level of interest rates in line with its price stability objectives. It is also the regulatory and supervisory authority for the banking sector. While the 2022 amendments to the SBP Act have significantly improved the SBP's governance arrangements and autonomy, the current situation imposes some challenges.

16. The Sovereign-Bank nexus may cause the SBP to face potential trade-offs in fulfilling its main functions. The SBP has played a key role in providing much-needed liquidity to the banking system. While this means almost automatic growth in net domestic assets, the SBP managed to contain this growth by reducing its quasi-fiscal activities and its own bond holdings. There is now a systematic shortage of liquidity in the banking system which the SBP should carefully manage. This delicate balance poses some issues from a regulatory perspective and also for protecting the SBP's own balance sheet from credit risk and the risk of rapid repricing of government securities.

17. Banks' substantial purchases of government bonds can significantly alter the transmission of monetary policy from the financial system to the wider economy. As banks prioritize government bonds, their responsiveness to changes in interest rates, even in scenarios where rates are declining, may diminish. In a scenario where interest rates are on a declining trend, the banks may still prioritize government bonds in expectation of capital gains. As a result, reductions in policy rates may lead to decreased lending rates, thereby possibly weakening the intended impact of monetary policy on borrowing and economic activities. Moreover, a significant inclination of banks towards government bonds impacts the private sector's apprehension about the economic outlook. Overall, private sector lending will be crowded out and the effectiveness of the SBP's monetary policy may be constrained.

18. From a regulatory perspective, the high concentration of banks' assets in government securities has implications for financial stability. As discussed, any potential stress that may stem from the sovereign or from within the banking sector. The current level of financial soundness indicators, implied by the treatment of the sovereign, may prove to be misleading under a stress scenario where potential solvency and liquidity challenges may arise in the banking sector.

19. The banks' reliance on short-term funding also makes them vulnerable to interest rate risk. Even though banks have managed this risk to some extent by purchasing short-term and floating rate securities, there is still a degree of inherent duration mismatch in their balance sheets. A potential rapid rise in interest rates will very quickly pass through to the liability side of their balance sheets, while it will take longer for return on assets to adjust. The bonds portfolios of banks are also exposed to valuation losses in case of an upward shift in the yield curve, as around 90 percent of them are in held Available for Sale (AFS) and Held for Trading (HFT) categories, which are marked-to-market as of December 2023 (SBP, 2024). This high exposure of banks to short-term interest rates also complicates monetary policy transmission though the impact on banks' lending to the private sector.

20. Under a potential sovereign stress scenario, the impact on the banking sector will also pass through to the balance sheet of the SBP by the way of government bonds used as collateral in OMOs. Currently, the SBP does not have a well-developed framework for safeguarding its balance sheet from potential credit risks in OMOs. It does not apply haircuts on bonds taken as collateral, nor does it have sound counterparty eligibility conditions. The range of eligible counterparties has been expanded to include development finance institutions. Any bank that purchases government bonds can pledge them as collateral and receive full funding against their

value. Amelioration of these issues is underway as part of improving the SBP's overall risk management framework, addressing the recommendations of the 2023 Safeguards Assessment Report.

D. Conclusions

21. The authorities should take measures on multiple fronts given the magnitude of the sovereign-bank-central bank nexus in Pakistan, and its implications and risks. Addressing the fiscal imbalances is key to first containing and then starting to unwind the complicated interdependencies. Improving cash management within the government and its entities, particularly by making better use of idle cash balances, will also reduce the broader public sector's borrowing needs, also limiting the nexus. Public debt management should also play a vital role in the development of financial markets by consistently following a robust medium-term strategy, geared towards diversifying the investor base, also carefully managing the cost-risk profile of public debt, including prudent advance planning for the SBP bullet repayment in 2029. Addressing the structural impediments to financial sector development, leveling the playing field between conventional and Islamic accounts, and encouraging increased bank deposits, as well as reducing the extent of the informal economy, are also critical. Capital market development and the growth of domestic institutional investors will deepen the market for risk-free assets, leaving the banks to concentrate on financing the private sector. Successful implementation of the SBP's 2023-28 Strategy³, which prioritizes achieving greater inclusive access to financial services, including through innovative digital solutions, will also help with financial market development.

22. In the interim, it is critical for the authorities to closely monitor the health of the banking sector. Prudential measures could also be considered to address the high degree of concentration of assets of certain banks in government bonds and to mandate more robust levels and quality of bank capital to ensure that banks' capital is adequate to cover those concentration levels and potential stress events. The SBP should also progress with its plans to enhance credit risk management in OMOs to safeguard its own balance sheet.

³ <https://www.sbp.org.pk/spd/Strategic.pdf>

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