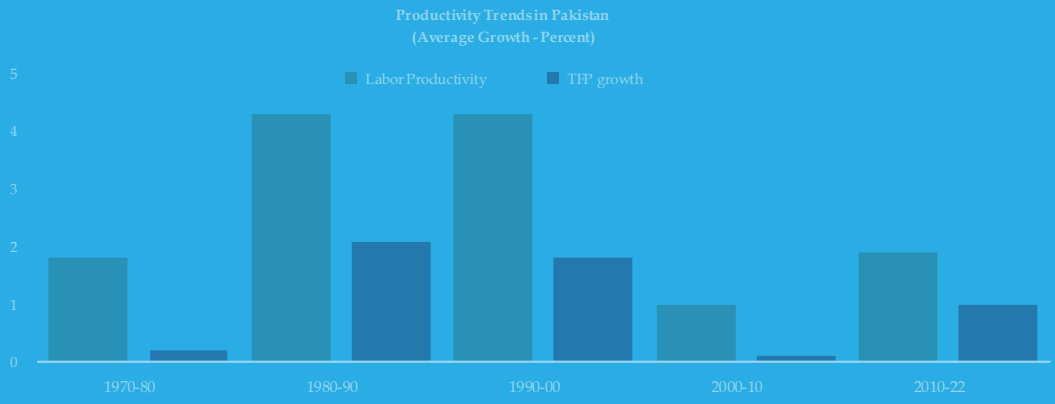
6

Pakistan's Low Competitiveness: A Case for Investing in Productivity

Productivity growth lies at the heart of achieving long-term economic competitiveness. Pakistan's persistently weak and falling productivity growth has severely constrained its ability to achieve sustained economic growth and compete in international markets. Compared to peer economies, Pakistan has been lagging behind in both headline indicators – labour productivity and total factor productivity – and sectoral indicators, such as water, agriculture and energy productivity. The country trails noticeably behind its regional and income level peers, ranking below or close to low-income countries across various measures and drivers of productivity. This chapter examines the macroeconomic constraints that have hindered Pakistan's competitiveness, including low investment, limited access to credit, distortionary tax and trade policies, and historical exchange rate misalignment. Additionally, it also explores main structural challenges to productivity growth that impedes Pakistan's ability to transition towards a more competitive economy. While some attempts have been made to boost Pakistan's competitiveness, these attempts have focused on unsustainable measures – such as reliance on subsidies and tax exemptions – and thus have been unable to deliver long-term gains. Achieving sustainable improvements in competitiveness requires a fundamental shift from an input-driven to an efficiency-driven growth model, i.e. productivity growth. This transition necessitates addressing the aforementioned macroeconomic challenges, as well as investment in human capital, strong institutions, research and development, and robust physical and digital infrastructure. Fostering an efficiency-based economy demands a strong institutional focus on productivity and a coordinated government approach to boost productivity across sectors.



6 Pakistan's Low Competitiveness: A Case for Investing in Productivity

6.1 Introduction

Pakistan's economy has been caught in boom-bust cycles for more than five decades, with recurring episodes of high inflation and external account pressures. Historically, these cycles comprised three to six years of relatively high growth followed by a crisis —particularly balance of payments crisis—that necessitated urgent stabilisation measures. These measures were often supported by relatively quick and easy access to external financing from multilateral and bilateral creditors. In recent decades, however, the frequency of boom-bust cycles has increased with the boom periods getting shorter. Moreover, access to external support has become challenging, warranting implementation of deep-rooted and long-pending structural reforms to address the underlying issues.[1]

One of the key underlying issues facing Pakistan's economy is weak competitiveness. From a macroeconomic perspective, this is reflected in consistently declining exports (as a percent of GDP), low foreign direct investment (FDI), and overall insufficient integration with global value chains (GVC). From a micro perspective, this is reflected in low quality of products, higher unit cost of production, inability to create brands in international markets, and other ancillary indicators.[2]

Whilst precise definitions, measurements and determinants of economic competitiveness remain elusive in literature,[3] it is broadly understood to be achieved through (a) low costs in international markets, and (b) productivity growth. These may be referred to as the '*low road*' and the '*high road*' to achieving competitiveness, respectively.

The main distinction between the two approaches revolves around long-term sustainability. The *low road* — achieved through subsidies on utilities, export rebates, undervalued exchange rate, and other ways of gaining cost-competitiveness—can benefit exports in the short to medium-term. However, it is productivity growth which is the biggest structural driver of competitiveness that boosts an economy's ability to continue to export competitively, attract FDI, and sustain economic growth.[4]

An important dimension to consider here is that while the *low road* offers quick gains, it is inherently unsustainable. For instance, barring some exceptions, subsidies either burden government coffers or disincentivise firms from pursuing

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[1] Lopez-Calix, J. & Touqeer, I. (2013); Pasha, H. (2023); IMF (2024a); MoF (2019); SBP (2021a); WB (2019); SBP (2024a)
[2] Pirzada et al. (2024); Siddique, O. (2022); APO (2023); Amjad, R. & Awais, N. (2016); Mustafa, G. & Hussain, S. (2023); Husain, I. (2024)
[3] Competitiveness is a complex, multidimensional, and relative concept. Literature suggests that a variety of indicators may be used to analyse competiveness, including product quality, balance of trade, technology indicators, export market share, profitability, growth rate, exchange rate, savings rate, investment rate, national culture, entrepreneurship. A common underlying theme to these is that competitiveness involves the ability to expand exports of goods and services. Source: Chaudhuri, S. & Sougata, R. (1997); Bhawsar, P. & Chattopadhyay, U. (2015); Wignaraja, G. & Joiner, D. (2004); Razafimahefa, I.F. & Hamori, S. (2007).
[4] OECD (2011).; Razafimahefa, I.F. & Hamori, S. (2007); Stenborg et al. (2021); Muellbauer, J. (1986).

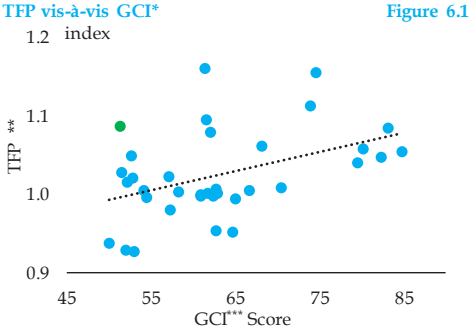
innovation and efficiency (Heuvelen, 2023). Similarly, solely relying on exchange rate undervaluation to compensate for high cost of production, lack of innovation, low product quality, etc. could be counterproductive. While exchange rate undervaluation does promote economic growth and raise export prospects in the short to medium run, its effect on growth becomes negative, with an insignificant impact on exports in the long run (Haddad & Pancaro, 2010).

Owing to these reasons, competitiveness has become synonymous with productivity and productivity growth. For instance, Krugman (1996, 2001) observes that true competitiveness is measured by productivity. Similarly, in the European Union, productivity growth is considered a major determinant and only relevant measure of national competitiveness, and hence key for guaranteeing competitiveness.[5]

Moreover, in line with endogenous growth theories, the global benchmark indices on competitiveness —such as Global Competitiveness Index (GCI)— mainly track the long-term drivers of productivity,[6] particularly total factor productivity (TFP) that reflects how efficiently production inputs (capital and labour) are employed to produce output.[7] For EMDEs —that have not yet achieved the productivity growth frontier — improvements in these drivers of productivity are positively correlated with the GCI **(Figure 6.1).**[8]

TFP vis-à-vis GCI*

Figure 6.1



*Selected Asian economies; **average (2015 to 2019); ***latest available data (2019); green dot represents Pakistan

Sources: WEF and APO Productivity Database 2024

The long-term drivers of productivity mainly include technology; human capital; market competition; economic policies; regulatory and legal systems; physical and ICT infrastructure; tax financed public investments; as well as the quality of political and economic institutions. In addition, research and development (R&D) and innovation; financial sector development; lowering of tariffs/non-tariffs barriers to cross-border trade and investment; and reduction in the size of

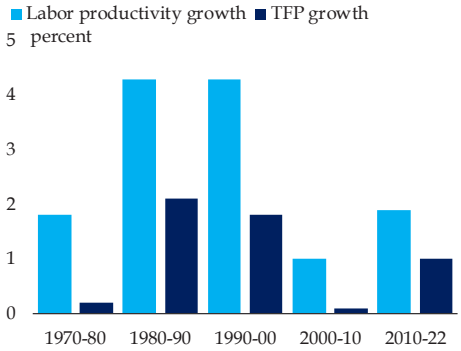
[5] Chaudhuri, S. & Sougata, R. (1997); Dresch et al. (2018); OECD (2011); Grifell-Tatje et al. (2018); Schwab, K. & Sala-i-Martin, X. (2013); European Commission (2020); Siller et al. (2021); Stenborg et al. (2021).
[6] World Economic Forum's GCI and International Institute for Management Development's World Competitiveness Rankings are most renowned indices on competiveness. Both track archetypical TFP drivers for competiveness.
[7] Endogenous growth theory explains long-term economic growth as resulting from internal economic activities that create new technical knowledge. TFP measures the combined efficiency of capital and labour, capturing the effects of technological progress, innovation, and other factors beyond input accumulation.
[8] GCI data is available up to 2019. However, it is useful for analyses because it remains the most widely used benchmark with comprehensive coverage to measure competitiveness.

informal economy also promote productivity growth.[9]

In Pakistan, several attempts have been made in the past to increase exports and attract FDI to kick start economic growth. With some exceptions, most such attempts have been based on the *low road* model discussed above, coupled with the protection of domestic industries on the premise of infant industry. However, these approaches have not delivered desirable outcomes; nor have foreign aid, grants, loans, privatisation and other windfall or external endowments sustainably driven long-term growth prospects (Khan & Kim, 1999).

A host of other countries have also followed the *low road* to achieving competitiveness in the past. But they have done so with simultaneous and prime focus on productivity growth to achieve and sustain competitiveness in the long run. These include China, Japan, South Korea, and other East Asian economies (Kapoor, 2021). By comparison, as the remaining sections of the chapter show, Pakistan has been unable to pursue and achieve high productivity growth. In fact,

Productivity Trends in Pakistan (Average Growth) **Figure 6.2**



Source: Nomura, K. & Ho, M. (2024)

the country's productivity growth has been on a declining trend **(Figure 6.2)**, even though productivity has featured in the government's broad economic policy frameworks since at least late 1990s.

The rest of the chapter is organised as follows. Using the growth accounting framework, **Section 6.2** takes a look at broad trends in Pakistan's headline productivity indicators.[10] This is followed by review of Pakistan's performance in archetypical macroeconomic determinants (**Section 6.3**), and structural challenges to productivity in Pakistan (**Section 6.4**).[11]

[9] Romer, P.M. (1986); Lucas, R.E. (1988); Mankiw, N.G. et al. (1992); Bloom, N. & Reenen, J.V. (2007); Easterly, W. & Levine, R. (2001); Barro, R. (1990); Barro, R. & Sala-i-Martin, X. (1992); Acemoglu, D. et al. (2001); Acemoglu, D. et al. (2004); Banks, G. (2015); Hsieh, C.T. (2015); OECD (2015a); OECD (2015b). This is not an exhaustive list as empirical work on productivity is vast and still growing. Some other notable factors that drive productivity and hence help grow economic competitiveness include organizational management practices, cost of doing business; and natural resource endowments. Source: Grifell-Tatje et al. (2018)

[10] Growth accounting is more about measuring technical change than its explanation, whereas productivity trends are typically analysed over long-term. Notwithstanding these limitations and academic debates over its accurate estimates, the concept of productivity, especially TFP, remains extremely important. Source: Mahadevan, R. (2004); Stiroh, K.J. (2001).

[11] The interactive nature of macroeconomic and structural factors makes clear demarcation almost impossible. Hence, some inter-related factors may be discussed more than once across the various sections/sub-sections of this chapter. E.g., given its proximate relationship with macroeconomics, investment is mainly discussed in Section 6.3. However, other sections/sub-sections, such as R&D and infrastructure, also touch upon the subject in passing where necessary.

Section 6.5 summarises key insights and offers broad recommendations.

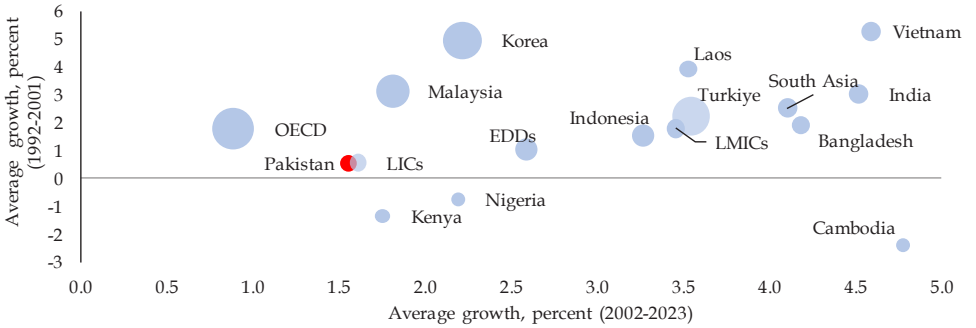
6.2 Trends in Pakistan's Productivity

Long-term productivity trends in Pakistan have been dismal, limiting the country's economic competitiveness over the last few decades. While there have been some episodes of productivity improvements, limited structural transformation, low capital deepening, and weak TFP growth have contributed to an overall productivity downtrend. This has led to increased reliance on input-driven growth model, which is expensive and inherently unsustainable (NPO, n.d). This section first takes a look at labour productivity and TFP as key measures of productivity that explain technical changes to GDP growth,[12] followed by a discussion on some sector-specific productivity indicators.

Labour Productivity

Measured as change in GDP per worker,[13] Pakistan's labour productivity (LP) growth remains one of the lowest among peer economies. Whilst average annual growth in GDP per worker in the last two decades increased by about 1.0 percentage point over the average growth in the preceding decade, it still remains low compared to peer economies by income —lower middle income countries (LMIC)—and by demography —Early Demographic Dividend (EDD). It is also lower than productivity growth in low income countries (LIC) **(Figure 6.3)**.[14]

GDP Per Worker (Constant 2021 PPP$ terms) **Figure 6.3**



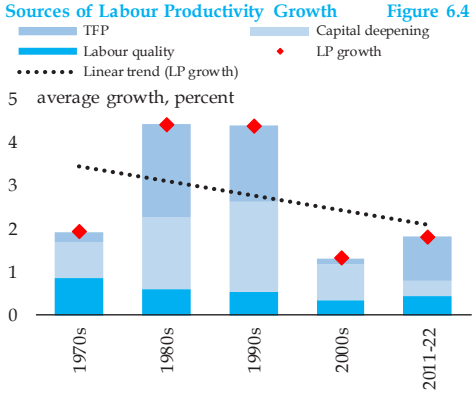
Note: Size of bubble refers to GDP/worker as of 2023; China is an outlier with 7.9% and 9.4% average annual growth in 2002-23 and 1992-2001, respectively.
Source: SBP staff calculations based on World Bank data

[12] The section primarily uses APO Productivity Database 2024 (with data up to 2022) to analyse Pakistan's productivity trends and compare them with South and East Asian economies. APO provides a comprehensive set of variables and region-specific insights that are more relevant to Pakistan than other global datasets. Additionally, the APO Productivity Report helps validate findings and benchmark results against regional averages.

[13] GDP per worker is a straightforward, standardised and widely accepted headline metric for understanding productivity. There is an extensive cross country, regional and income group data available for this variable, which makes it ideal for broad comparison.

[14] This figure is based on World Bank data, which may not necessarily exactly match labour productivity data reported by other sources such as APO or UNU-WIDER. These differences emerge from differences in methodologies.

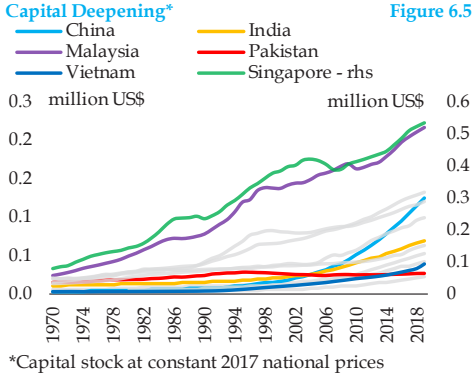
Sources of Labour Productivity Growth **Figure 6.4**



Source: APO Productivity Database 2024

Despite its recent improvement, the long-term decline in labour productivity remains concerning. The decomposition of Pakistan's long-term labour productivity growth suggests that these trends are largely attributable to weak labour quality, insufficient capital deepening— i.e. capital available per worker—and falling TFP **(Figure 6.4).** Labour quality in Pakistan accounted for 21 percent of the improvement in labour productivity during 2000-2022, compared to 61 percent in ASEAN economies.[15]

Capital Deepening* **Figure 6.5**



*Capital stock at constant 2017 national prices (in 2017 US$) per person employed

Source: Penn World Data 10.01

Moreover, growth in capital deepening accounted for 38 percent of Pakistan's labour productivity growth in the last two decades, compared to 52 percent and 59 percent in East Asia and South Asia, respectively. This reflects Pakistan's low capital accumulation **(Figure 6.5)**, which is insufficient to improve labour productivity through investment in modern machinery, infrastructure, and technology.[16]

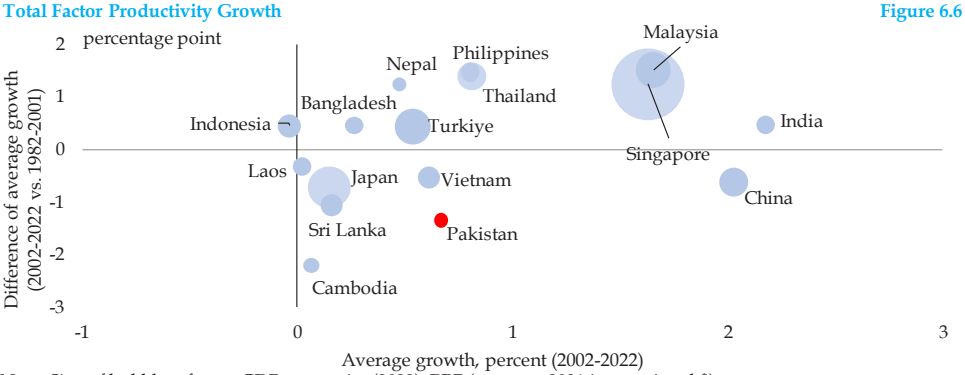
In this regard, Pakistan is similar to some other populous economies that organised production along the lines of labour intensive industries—rather than capital intensive industries —due to abundant supply of low-skilled labour. However, Pakistan's productivity has remained relatively weak even in the labour-intensive sectors such as agriculture, slowing the pace of structural transformation. This transformation—driven by productivity improvements—is fundamental to modern economies, as it improves resource allocation across the economy, both between sectors and within firms **(Box 6.1)**.[17]

Total Factor Productivity

Pakistan's highest TFP growth was during the 1980s. This was driven by the gradual reversal of nationalisation policies of the preceding decade; initiation of market-

[15] Nomura, K. & Ho, M. (2024)
[16] Nomura, K. & Ho, M. (2024); APO (2023)
[17] ibid

Total Factor Productivity Growth **Figure 6.6**



Note: Size of bubble refers to GDP per capita (2022), PPP (constant 2021 international $)
Source: SBP staff calculations based on APO Productivity Database 2024

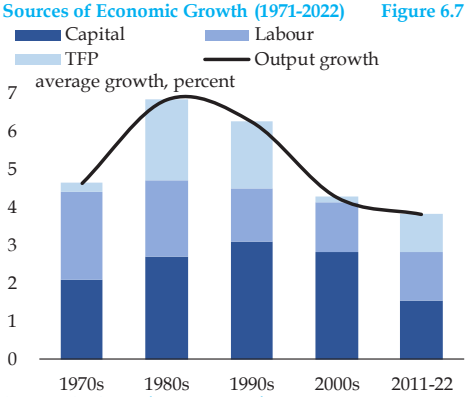
oriented reforms; and the lagged impact of the green revolution of 1960s and large public sector investments of the 1970s. However, TFP growth witnessed a decline in the subsequent two decades. During the 2010s, TFP's contribution to growth increased as a result of various institutional reforms as well as increased investment in human capital, digital and physical infrastructure introduced in the preceding decade (Anjum & Sgro, 2017; Siddique, 2022). However, TFP growth has remained volatile and on a downward trend due to slow pace of reforms amid frequent changes in government, policy inconsistencies, and governance inefficiencies (Siddique, 2022).

Pakistan's average annual TFP growth in the recent two decades (2002-2022) has been lower than several peer economies, and has also declined when compared to the average growth of preceding two decades, i.e. 1982-2001 **(Figure 6.6)**. For instance, while Pakistan's TFP growth in the recent decade is better than that of Bangladesh, the pace of TFP growth is declining in Pakistan compared to that in Bangladesh.

As a result, TFP's contribution to economic growth has been consistently low, which points to the view that Pakistan's economic growth has been input-driven rather than efficiency-driven **(Figure 6.7** and **6.8).** In particular, notwithstanding Pakistan's low level of capital deepening, major contribution to the country's economic growth has come from capital input instead of TFP. This reliance on investment in capital goods to generate economic growth without an accompanying improvement in labour quality and input efficiency is an expensive growth model.[18]

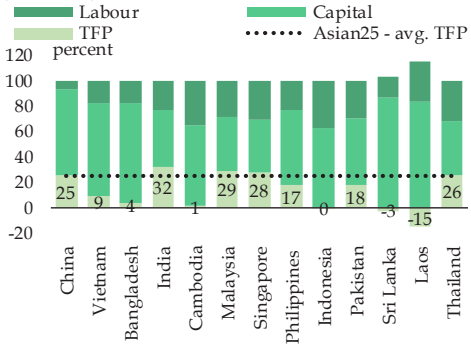
[18] High-growth countries with low initial per capita income tend to rely on capital accumulation for economic growth, especially at the early and middle stages of economic growth and development. Later, as an economy matures, the TFP and labour quality improvement play a larger role in economic growth. This transformation of moving away from capital and labour input-driven growth to TFP-driven growth has been absent in Pakistan for more than five decades. (Nomura, K. & Ho, M. (2024))

Sources of Economic Growth (1971-2022) **Figure 6.7**



Source: APO Productivity Database 2024

Contribution to Economic Growth (2000-2022) **Figure 6.8**



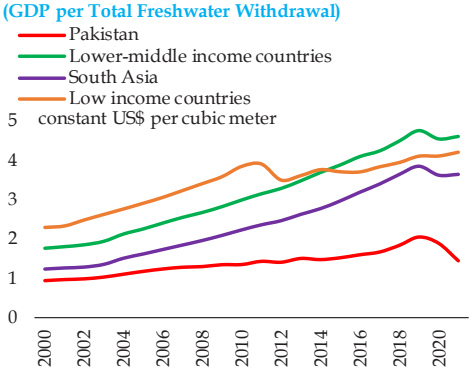
Source: APO Productivity Database 2024

Recent empirical evidence (Faraz et al, 2023) also shows that even export-oriented sectors that receive subsidies and other preferential treatments have exhibited negative or weak TFP growth over the 2010-2020 period. These sectors include textile spinning, textile weaving, leather, sports goods, sugar and pharmaceuticals. Even the textile composite sector has been found to have low TFP growth. In light of Pakistan's falling exports (in terms of GDP), these findings reiterate an important lesson: as discussed in **Section 6.1**, the *low road* of economic competitiveness alone does not drive export growth in the long run. While detailed exposition of the drivers of TFP growth will feature in **Sections 6.3** & **6.4**, literature suggests a host of factors behind these trends. Amongst these, education, institutional quality, private sector credit, and R&D show strong association with TFP in Pakistan (**Box 6.2**).

Sectoral Indicators of Productivity

The trends in Pakistan's aggregate indicators of productivity, discussed in the preceding sub-section, are also evident in various sectoral productivity indicators. For instance, Pakistan's water productivity —GDP per unit of freshwater withdrawal —has remained consistently lower than South Asian, LMIC and LIC averages, highlighting inefficient water use in agriculture and industry **(Figure 6.9)**. These trends reflect Pakistan's heavy reliance on flood irrigation, poor water conservation practices, and outdated infrastructure (Nasreen & Ashraf, 2020). It also reflects the policy of under-pricing

Water Productivity (GDP per Total Freshwater Withdrawal) **Figure 6.9**



Source: WB

Yields of Top 10 Crops and Livestock Producing Countries in 2022 **Table 6.1**

	Cotton[a]	Wheat[a]	Rice[a]	Sugarcane[a]	Milk[b]	Meat[b]
Minimum*	1.1	2.8	3	60.4	636	130
Maximum*	6	7.6	7.1	95	10,668	370
Average	3.4	4.4	4.5	76.3	3,684	245
Pakistan's yield	1.1	2.9	3.7	66.7	1,544	130
Pakistan's rank in production	5th	7th	10th	5th	3rd	10th

[a]tonnes per hectare; [b]kilograms per animal *Country with lowest/highest yield

Source: FAO

water that is preventing efficient crop allocation and hence competitive crop pricing (SBP, 2024a).

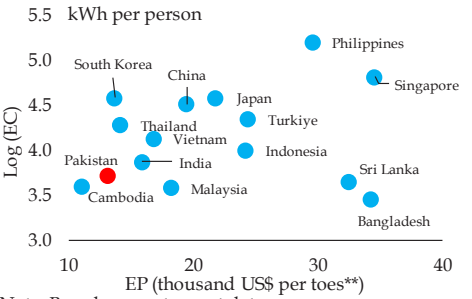
Similarly, although Pakistan is ranked among the top ten global producers of some of the world's major agriculture commodities —cotton, wheat, rice, sugarcane, milk, and meat —their yield remains well below the average of top ten producers in the world **(Table 6.1).** This indicates that Pakistan's high agriculture production volumes are primarily driven by extensive land use and herd size rather than productivity gains (Khan et al, 2021).

Likewise, Pakistan's energy productivity (EP) is among the lowest in the region **(Figure 6.10)**. Even when compared to countries with similar energy consumption per capita (EC), such as India, Malaysia, and Sri Lanka, Pakistan lags behind in EP.[19] This underperformance stems from an overall lack of policy focus on energy efficiency in generation, distribution and consumption, as well as elevated energy cost which reduces affordability. The latter is due to multiple factors, including outdated infrastructure, which manifests in high transmission and distribution losses; inefficient energy mix; and a distorted power policy.[20]

Firm-level Productivity

Low productivity levels are also visible at the firm level, across sectors and regardless of firms' age and size. For example, old

Energy Productivity (EP)* and Energy Consumption per Capita (EC) **Figure 6.10**



Note: Based on most recent data

*GDP at constant prices (using the 2017 PPP) per final energy consumption; **toes: tonnes of oil equivalent

Sources: Nomura, K. & Ho, M. (2024) and Our World in Data

[19] The difference in EC and EP can be explained by the structure of an economy and the level of energy efficiency. Countries with an advanced industrial sector relative to agriculture sector (such as South Korea, China, and Japan) tend to have high EC and low EP, relative to countries that have relatively higher share of agriculture sector (such as Bangladesh and Sri Lanka). Without improving energy efficiency, economies with large industrial base have low EP compared to economies that have high agriculture or service sectors. Source: IEA (2022)

[20] NEPRA (2024); SBP (2022); Ali, I. (2013); Pakistan's energy policy has historically prioritised power generation over demand-side management, leaving energy efficiency as low priority agenda. However, the establishment of NEECA in 2016 marked a shift, leading to National Energy Efficiency & Conservation (NEEC) Policy 2023. Source: NEECA (2023)

Pakistani firms —operating for around 40 years —are about as productive as younger firms that have existed for 10 years. By comparison, older firms in Mexico and India are up to 40 percent more productive than younger firms.[21] However, notwithstanding the various macroeconomic and structural challenges (**Section 6.3** & **6.4**) that impair productivity in Pakistan, research suggests that some domestic firms are more productive than others. Research on firms in Pakistan offers three key reasons behind varying degrees of firm productivity.

First, exporting firms are significantly more productive than non-exporting ones – this is true for all sectors and locations alike. In a sample of 'never exporters', 'latent exporters' and 'systematic exporters',[22] latent exporters were found to be around 26 percent more productive than never exporters whereas systematic exporters were up to 21 percent more productive than latent exporters (WB, 2022). Similarly, firms successfully integrated with GVCs are more productive; a 10 percent rise in GVC participation boosts firm productivity by 1.7 percent (Zeshan, 2023).

Second, firms that use technologies close to the technology frontier have been found to have higher productivity. However, such firms are mostly large exporting firms that have necessary economies of scale (Ahmed, 2023). Medium and high-tech firms have higher TFP and labour productivity, evident across several exporting sectors, including glove and denim. By comparison, smaller and less formal exporting firms are significantly less productive. Moreover, firms that adopted technologies in selected segments have relatively lower productivity compared to firms that adopted firm-wide technological changes (Firdousi, 2016; Chaudhry & Faran, 2016).

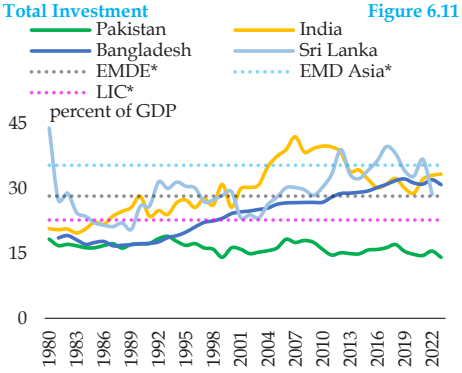
Third, differences in management practices across firms also account for differences in their productivity levels. For instance, Wadho & Chaudhry (2018) find that organizational innovation in manufacturing firms in Pakistan is the largest contributor to labour productivity growth, followed by process innovation. This echoes Choudhary et al. (2018) and Bloom et al. (2016) who find that adoption of structured management by firms[23] is limited and varies amongst plant managers, leading to differences in productivity markers.

6.3 Macroeconomic Determinants of Productivity

A review of cross-country studies reveals that investment, credit, taxation, trade and capital flows, and exchange rate policy are important macro determinants of productivity, where given their interlinkages, a misalignment, a distortion or a shortfall in one determinant impacts another. This section sheds light on the dynamics of these determinants in the

[21] Ahmed, W. (2023); WB (2021).
[22] Latent exporters are those who may start to export soon, and systematic exporters are those who always export.
[23] Structured management refers to management through pre-defined organizational policies with measurable targets, such as an employees' performance management system, or employee rotation plan. (Bloom et al, 2017).

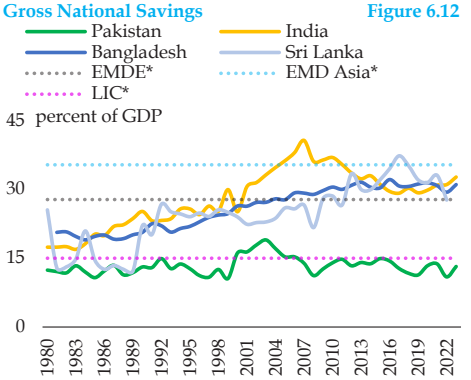
Total Investment **Figure 6.11**



*period average

Source: IMF

Gross National Savings **Figure 6.12**



*period average

Source: IMF

context of productivity growth in Pakistan, and hence competitiveness.

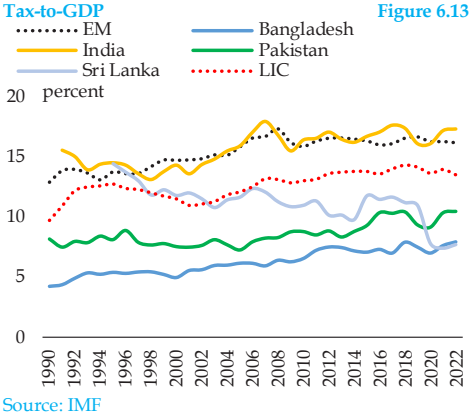
Low Investment

In much of developing Asia, countries have aggressively increased investments to 'catch-up' with more productive, rapidly growing economies. These investments, broadly include expenditures on tangible assets (such as infrastructure and manufacturing plants), education, innovation and R&D that help drive labour productivity through capital deepening, as well as TFP growth.[24]

The catch-up through high investments has been found to be driven by large increases in domestic saving rates, in poor countries in general, and East Asia in particular. However, in some of the countries with low domestic savings, foreign capital flows, such as FDI and external loans, can somewhat compensate for low domestic savings, and accelerate economic growth, which can then translate into higher savings.[25]

In Pakistan, investment has been consistently low with a decreasing trend in investment-to-GDP ratio since the early 1990s **(Figure 6.11)**. This mainly stems from an alarmingly low saving rate that has also been declining over the last two decades, amid a persistently high dependency ratio and population growth

Tax-to-GDP **Figure 6.13**

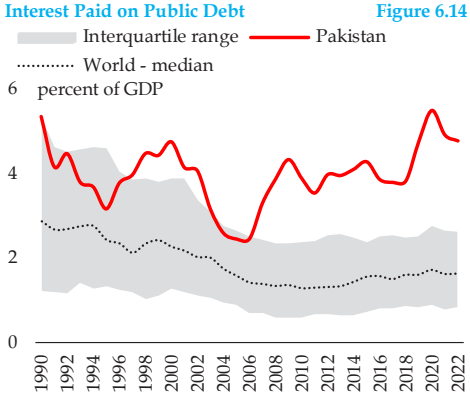


Source: IMF

[24] Isaksson, A. (2007); Dabla-Norris, et al. (2013); Stiroh, K. J. (2001); SBP (2019)

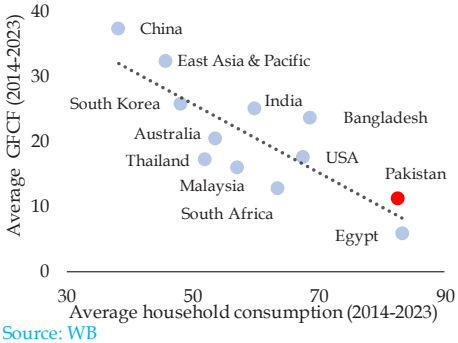
[25] Razafimahefa, I. F. & Hamori, S. (2007); Kumar, A. et al. (2020); Dabla-Norris, et al. (2013); Aghion, P. et al. (2006).

Interest Paid on Public Debt **Figure 6.14**



Source: IMF

Household Consumption and Private Sector Fixed Capital Formation (Percent of GDP) **Figure 6.15**



Source: WB

(SBP, 2022) **(Figure 6.12)**. Consequently, Pakistan is stuck in a 'low-saving-low-investment' trap,[26] which is eroding efficiency and productive capacity of the economy.

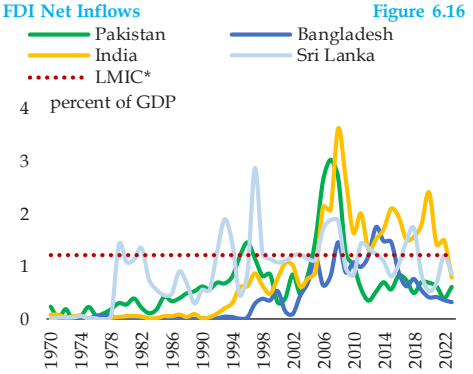
On a disaggregated level, public sector investment is constrained by low public revenue, particularly low tax collection, and rigid expenditure. The former remains much below the average of emerging markets **(Figure 6.13)**. The latter is a result of the high share of pre-committed expenditures— such as interest payments, salaries, pensions, and government operating expenditures **(Figure 6.14)** (WB, 2023a)— which leaves less room for productivity enhancing expenditure.

On the other hand, private sector investment has been affected by a host of cyclical and structural challenges. These include recurring macroeconomic imbalances and instability leading to low GDP growth, high inflation, credit constraints, poor investment environment, and infrastructure bottlenecks (SBP, 2019). The unpredictability of state policy, coupled with political instability and security concerns, has also lowered investment appetite. These challenges are reflected in Pakistan's high levels of household consumption and low private savings, resulting in low capital formation **(Figure 6.15).**[27]

Unlike the experience of some developing economies, Pakistan's low domestic savings has not been sufficiently compensated by FDI. The country's FDI remains lower than peer economies **(Figure 6.16)**, owing to a host of inhibiting factors **(Box 5.2)**. This is even after the mega investment plans under China-Pakistan Economic Corridor as part of the Chinese One Belt One Road (OBOR). Growth in total Chinese FDI inflows after the launch of OBOR in 2014 is lower in

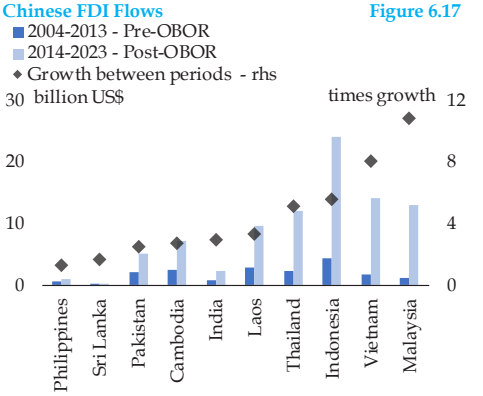
[26] The trap is vicious in the sense that a country's inability to mobilise savings to invest in higher productivity impacts economic growth prospects, which constrains household and business incomes, and, in turn, reduces savings further.
[27] SBP (2019); WB (2022a)

FDI Net Inflows **Figure 6.16**



*period average
Source: WB

Chinese FDI Flows **Figure 6.17**



Source: UNCTAD

Pakistan compared to peer economies in South and South East Asia **(Figure 6.17)**.

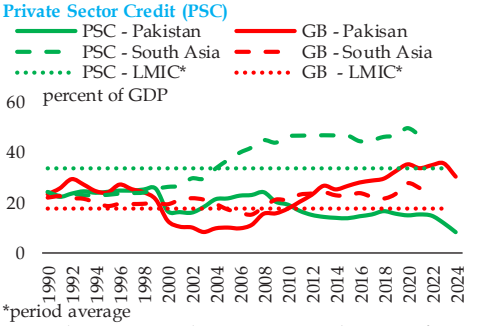
Credit Constraints

A transition to high productivity growth is not possible in the presence of credit constraints that reduce aggregate productivity through various channels. It inhibits firms' entry into the market and technology adoption decisions. It also distorts the returns on investment across sectors leading to a misallocation of capital. And it potentially creates firms' bias for tangible assets that can serve as collateral even when intangible assets may offer better returns to capital (Grifell-Tatjé, 2018).

In Pakistan, credit constraints have been ranked as the second biggest business obstacle, as per the World Bank Enterprise Survey of 2022. Despite various government schemes that offer subsidised credit to facilitate exports and investment, private sector credit remains low due to a number of structural challenges.

Historically, the government has been a dominant borrower from the local banking system **(Figure 6.18)**. This has led to the crowding out of the private sector.[28] Lending to the government also ends up being relatively less productive, as most of it is spent on current expenditures rather than developmental expenditure that can

Government Borrowing (GB) and Private Sector Credit (PSC) **Figure 6.18**



*period average
Note: Claims on central government used as proxy for GB; data for South Asia unavailable after 2021
Source: Haver Analytics

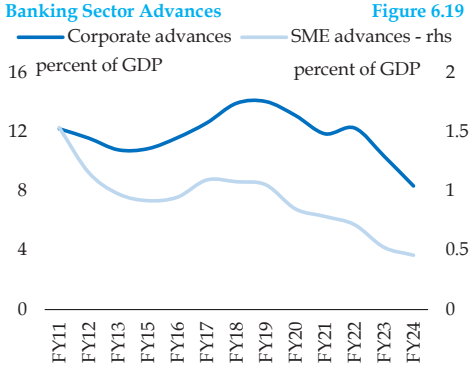
[28] IMF (2024b); Zaheer, S. et al. (2017)

enhance productivity and crowd-in private sector (Hussain, 2009).

The presence of a dominant borrower skews incentives of the banking sector. With banking profits growing easily on the back of high government borrowing, banks have little incentive to lend to the private sector beyond their existing customers. The composition of loans shows that banks mostly favour corporations that enjoy established banking relations rather than SMEs (**Figure 6.19**). Moreover, credit flow is mainly concentrated in working capital loans rather than fixed investment. This limits the prospects of productivity growth given the latter's importance for capacity expansion and new technology.[29]

Furthermore, subsidised bank credit is often extended towards 'zombie' firms.[30]

Banking Sector Advances **Figure 6.19**



Note: data for FY14 unavailable
Source: SBP

For example, the share of inefficient and often loss-making state-owned enterprises in bank lending to the non-government sector averaged 15 percent during FY14-FY23. Zombie firms also include family-owned domestic firms in specific sectors, which mainly benefit from export credit schemes to targeted sectors and relationship banking. This leads to credit misallocation to unproductive firms in the public and private sector.[31]

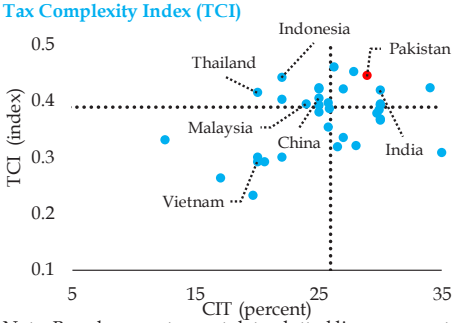
Besides the aforementioned factors, a range of challenges also constrain private sector credit. These include: (a) weak collateral, and reliance on tangible assets as collateral; (b) a history of judicial delays in banking courts; (c) information asymmetries that have made commercial banks generally averse to lending, especially to new and small borrowers; (d) low levels of financial inclusion; and (e) underdeveloped financial markets. These challenges are exacerbated by high currency in circulation and the presence of a large informal economy **(Box 3.1)**.[32]

Tax Policy Distortions

Tax policy distortions —that emanate from various sources including high tax burden, complexity of taxes, an overreliance on withholding taxes, etc.— are known to increase tax evasion and incentivise informality, which in turn impairs productivity through several channels. Tax

[29] WB (2022a); Defever, F et al. (2020)
[30] Zombie firms are firms that benefit from subsidised bank credit without which they may not be able to compete or perhaps even survive, and are thus restricted from exit while constraining the growth of more productive incumbent firms that do not have access to subsidized credit and raising barriers to entry for new firms. This reduces productivity though low investment and TFP growth. Source: Grifell-Tatjé, E. et al. (2018)
[31] SBP (2024b); WB (2022b)
[32] SBP (2015); Lopez-Calix, J. & Touqeer, I. (2013); Hyder, K. et al. (2013)

Corporate Income Tax (CIT) and Tax Complexity Index (TCI) **Figure 6.20**



Note: Based on most recent data; dotted line represents median values of a basket of 35 AEs and EMDEs
Sources: USAid and www.taxcomplexity.org

evading firms benefit from an implicit subsidy, leading to unfair competition that drives out productive firms from the market. This reduces firms' incentives for innovation and investment. As a result, firms remain stuck in a low productivity trap,[33] whereas the economy suffers from lower private sector investment.[34]

Moreover, public revenues also suffer, whereas banks remain shy of lending to informal firms, even when they try to come out of the shadow economy and invest in feasible projects. Incentives to evade taxes also create the appeal for relatively unproductive, dead capital investments.[35]

In this context, Pakistan's tax policy distortions present a major challenge to productivity growth, despite a variety of incentives for various types of greenfield investment projects. The country's overall tax rates are amongst the highest in the region, in both direct and indirect taxes. In fact, Pakistan is amongst the few countries that have both high corporate income tax rate as well as high level of tax complexity (Khalid & Nasir, 2020) **(Figure 6.20)**.[36]

Literature also shows that taxes on existing taxpayers have reached a point where raising rates will not yield more revenue due to Laffer Curve effects; further increases will likely lead to slower economic activity, tax evasion, and informality (Mehmood et al, 2022; Irfan et al, 2019). Additionally, tax compliance is extremely complex with excessive use of withholding taxes. The high use of withholding tax shifts collection responsibility and costs to collection agents, harms business climate, and can be regressive in some forms (WB, 2023a). These issues lead to higher underreporting and retards productivity.

Tax policy distortions, which in part stem from low tax revenues, create the need for ad-hoc revenue measures. A signature example of the effect of these distortions on productivity is tax policy's impact on trade. The imposition of para-tariffs —i.e. regulatory duty and additional customs duty— that were the result of short term revenue considerations have harmed long term export and productivity growth. Similarly, the growth of real estate investments in Pakistan, with largely under recorded transaction values, is another example of the effect of tax evasion

[33] Evading firms are generally less productive, with some estimates of a productivity gap of 25 to 50 percent. Source: Dabla-Norris, E. et al. (2019)
[34] Bobbio, E. (2016); Dabla-Norris, E. et al. (2019)
[35] Ibid
[36] The tax complexity index ranges from 0 (not complex) to 1 (extremely complex).

and informality (Afghan, 2023). The diversion of resources towards such sectors has heavy opportunity costs, as they take away investment from productive sectors.

Trade Policy Distortions

Trade and FDI raise productivity through several channels, including enhanced competition, knowledge transfers, and increase in effective market size. For instance, the phenomenon of "learning by exporting," whereby exporting firms learn from exposure to international markets, increases firm productivity and competitiveness. Similarly, GVC integration —that leads to greater exports and FDI —enhances productivity, and has helped the convergence of productivity of developing countries with advanced economies, where China and Vietnam serve as vivid examples.[37]

These relationships are also evident in Pakistan, where exporters have been found to be 20 percent more productive than domestic-oriented firms. Similarly, research suggests that productive firms in Pakistan have attracted FDI, whereas the acquisition by foreign buyers has led to about 12 percent increase in productivity. However, such productive exporting firms are an exception rather than the norm in Pakistan (WB, 2022).

As discussed in **Box 6.1**, Pakistan lags behind peer countries in the GVC in terms of backward linkages. The country's trade to GDP is also substantially lower than peer countries. It averaged 29 percent between 2000-2023, compared to an average of 42 percent, 50 percent, and 55 percent in South Asia, LICs, and LMICs, respectively (WB, 2023b). This can be rooted in the country's import substitution industrialisation policies (ISI) that aimed to substitute imports and favoured restrictions on trade. As global trade evolved, ISI was replaced with trade liberalisation, albeit in a stop-and-go manner.[38]

Pakistan's tariff liberalisation has yet to be fully realised as tariff reforms have been inconsistent.[39] This is evidenced by Pakistan's poor performance on metrics, such as trade openness, tariff rates and tariff complexity.[40] Pakistan's tariff policy is characterised by high, cascaded and complex tariffs, which create an anti-export bias that reinforces inward orientation (WB, 2024a).[41]

The anti-export bias functions through two channels: input and output. The input channel refers to the impact of high tariffs on input goods (e.g. intermediate and capital goods) used by firms. Along with cost implications, higher input prices shift firms' preferences away from better technology and higher quality inputs. This

[37] WB (2022b); Sahoo, K.P. et al. (2022); SBP (2020)
[38] Zeeshan, M. (2023); Husain, I. (2018)
[39] Commerce Division, Ministry of Commerce & Textile (2019)
[40] In GCI 2019, Pakistan ranked 138th out of 141 economies in trade openness, 139th in trade tariff rates, and 49th in tariff complexity.
[41] See also policy note on "Anti-export bias" in the forthcoming SBP report on "Structural Challenges to Exports".

can affect downstream firm productivity, impacting the whole supply chain. Increased upstream duties are estimated to explain 85 percent of the average productivity decline between 2012-2020.[42]

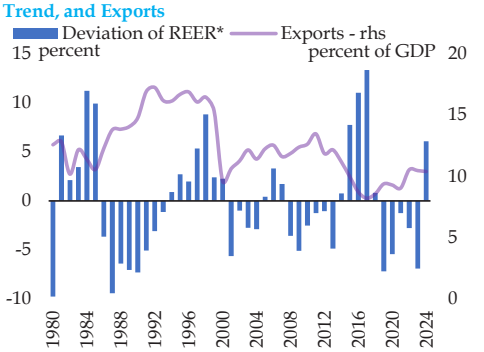
The output channel, with high tariffs on finished goods, creates abnormal profits in local markets, incentivising firms to prioritise domestic sales over exports. This protectionism dampens competition and encourages rent-seeking behaviour by firms that lobby for protectionism instead of focusing on productivity and quality. These incentives have impacted FDI as well, which has historically been concentrated in highly protected and inward-oriented sectors. For example, greater foreign presence is in the highly protected automobile sector and lowest in the export-oriented textile sector.[43]

Historical Exchange Rate Misalignment

Literature suggests that an over-valued exchange rate has two negative implications. First, it contributes to weak exports, as it increases export prices. Second, it increases the incentives to invest in unproductive non-tradable sectors that slows the pace of structural transformation (**Box 6.1**). By contrast, an undervalued real exchange rate can increase the relative profitability of the tradable sector. Undervalued exchange rate also facilitates resource allocation from unproductive sectors to more productive, tradable sectors. This is why some developing countries actively pursue a competitive exchange rate policy —i.e. an undervalued exchange rate —to boost exports through cost competiveness and economic growth whilst simultaneously addressing constraints to productivity (Haddad & Pancaro, 2010; Rodrik, 2008).

Historically, Pakistan has not even consistently pursued an under-valued exchange rate to boost exports. Instead, most years have seen an over-valued exchange rate (Jehan & Irshad, 2020) (**Figure 6.21)** that has compromised cost competitiveness and led to chronic underinvestment in productive sectors of the economy, reducing productivity growth. This exchange rate policy has been found to have undermined Pakistan's competiveness with exports falling faster after PKR appreciations as opposed to increases after depreciations (WB, 2021). However, Pakistan's recent transition to market determined exchange rate policy is favourable for competitiveness and

Deviation of REER from its Long Term Trend, and Exports **Figure 6.21**



*Values above/below 0 indicate over/under valuation
Source: SBP Staff Calculations based on IMF, SBP, PBS

[42] WB (2020); WB (2021); WB (2022b)
[43] WB (2022b); Qadir, U. (2020)

productivity when compared to a largely overvalued exchange rate in the past.

6.4 Structural Challenges to Productivity in Pakistan

As discussed in **Section 6.1**, several structural factors influence productivity growth in an economy, where human capital; institutions; innovation and R&D; and physical and digital infrastructure are of particular importance. These factors are not only fundamental drivers of long-term productivity on their own, but also play a crucial role in shaping the macroeconomic environment, enabling exports, access to credit, attracting investment, and enhancing GVC integration. This section sheds light on these structural factors, where Pakistan has faced persistent deficiencies. To explore these challenges, each of the following subsections first discusses the channels through which these factors impact productivity, followed by an assessment of their current state in Pakistan.

Human Capital

A high quality human capital base is a key pre-requisite for productivity growth. This is because it supports technology adoption; fuels innovation; augments the impact of capital deepening; helps strengthen institutions; and thereby contributes to growth in both labour productivity and TFP.[44] Whilst education is widely understood as the biggest driver of human capital growth, improvements in health conditions and female labour force participation also play an instrumental role in improving educational outcomes and overall productivity growth.

There is a consensus in literature that primary education is most important for development of human capital and increasing labour productivity. Although tertiary education is generally considered to have a large impact on an economy's innovative capabilities, primary education is needed to adopt and imitate technologies required for low to medium value added assembly line operations.[45] For instance, South Korea's efforts to fully enrol the population in primary education during 1960s was fundamental to its economic success, a model followed by several 'Asian Tigers' through state interventions in primary education.[46] Primary education is also the first step towards achieving high levels of secondary or tertiary enrolments.

Pakistan, however, has not yet successfully advanced in taking that first step towards achieving human capital accumulation. The country is substantially behind most LMICs that have progressed with improvements in gross enrolment ratio (GER)[47] of primary education. Pakistan's primary GER is also lower than the

[44] Topel, R. (1999); Sweetman, A. (2002); Wei, Z. & Hao, R. (2011).
[45] Several EMDEs have built their economies on low-medium value added assembly line production (such as China and Vietnam) before transitioning to high value added innovation-led growth. Source: Cirera et al. (2021)
[46] Colclough, C. (1982); Grifell-Tatjé et al. (2018); IMF (2024c)
[47] GER for primary school is calculated by dividing the number of students enrolled in primary education by the population of the age group that officially corresponds to primary education. GER can exceed 100 percent mainly due to the inclusion of over-aged and under-aged students (because of early or late school entrance).

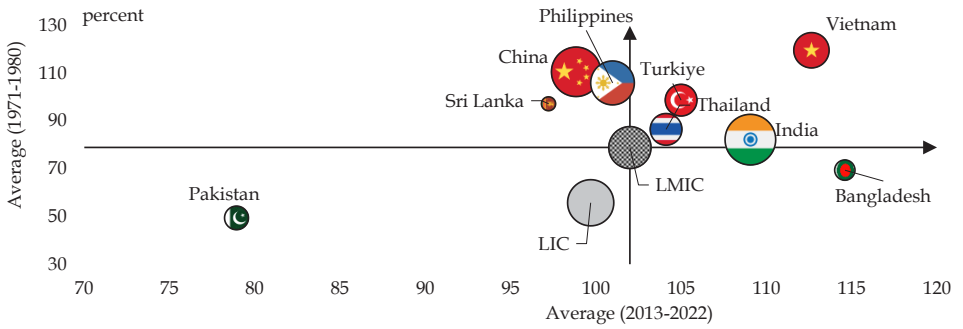
average of LICs **(Figure 6.22).** Three main reasons account for this trend. First, the governance of education system is weak that manifests in several ways, such as ghost schools and teachers, and low proportion of trained teachers. Second, Pakistan's expenditure on education, both as a percentage of total expenditure and of GDP, is lower than several peer economies (IMF, 2024a).

Third, and a major underlying reason, is that until recently universal education was not clearly spelled out as a national priority. Pakistan announced the universal right to education (RTE) as late as 2010, through a constitutional amendment. Following the devolution of education in 2010, RTE laws were passed at the provincial level 2013 onwards.[48] By comparison, India's constitution gave universal RTE in 1950, re-emphasised through universal education policy in 1986, and RTE act in 2009, whereas Bangladesh passed RTE act in 1990.[49]

Even after announcing the universal RTE, Pakistan's progress in primary enrolments has been relatively slow. For instance, Pakistan's GER rose 10 percentage points in fifteen years since the passing of RTE — from 74.5 percent in 2010 to 84 percent in 2024. In contrast, Bangladesh's GER had risen 22 percentage points in fifteen years since the RTE —from 78 percent in 1990 to 100 percent in 2005 (WB, n.d.).

In terms of secondary and tertiary education, Pakistan's position appears to be even worse, compared to peer economies. The country's secondary and tertiary enrolments in 2022 were at the level where secondary and tertiary enrolments of South Korea was in 1970s **(Figure 6.23)**.[50] This makes Pakistan

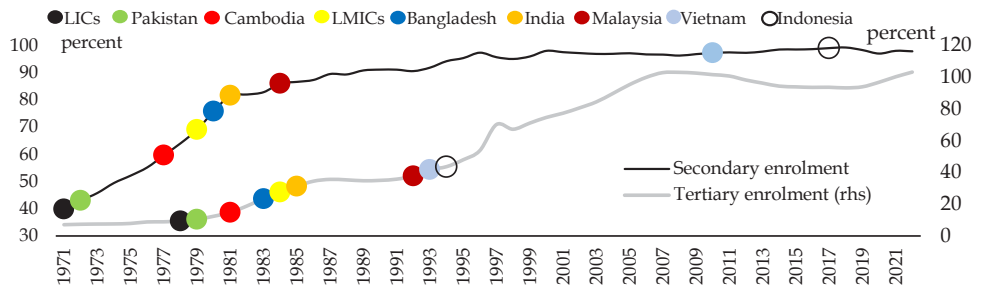
Primary Education GER of Selected Countries **Figure 6.22**



Note: size of the bubble indicates education expenditure (percent of GDP) for 2022;
Source: Haver Analytics

[48] Section 25-A of the constitution of Pakistan ensures that every citizen between the ages of five and sixteen has access to free and compulsory education.
[49] Saha, S. R. & Saha, S. (2024); UNICEF (n.d).
[50] There are a few regional high income economies that have 100 or near hundred secondary and tertiary enrolment ratios. These include Japan, Singapore and South Korea. However, South Korea has been selected here as proxy given its successful transformation, and frequent comparison with Pakistan in economic discourse.

Trends in Secondary and Tertiary Education GER in South Korea and Current Enrolment Level of Selected Asian Economies in 2022 **Figure 6.23**



Note: Circles plotted on the trend line show the year in which South Korea achieved the current level of enrolment by selected economies
Source: Haver Analytics

secondary and tertiary enrolment much closer to LICs rather than its peer economies (LMIC).

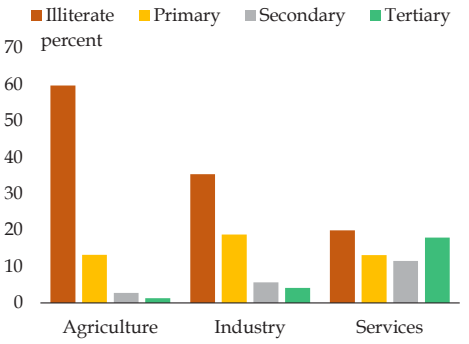
Similarly, although some studies suggest that improvements in education and employee training has had a positive impact on labour productivity in Pakistan (Gul et al, 2022; Nazli, 2004), others, such as Khan (2005) show a negative or weak relationship, which is often attributed to low quality of education. Over the past few decades, science as a subject has been ignored, whereas a majority of Pakistani youth have been found to lack fundamental critical thinking and reasoning skills, even at the university level (Lodhi, 2024).

One of the reasons behind Pakistan's poor education outcomes is the large gender gap. The primary education GER for females has averaged at 73 percent compared to 86 percent for males over the last ten years, markedly lower than LMIC and South Asian averages of 102 and 106 percent, respectively.[51] This, together with cultural barriers, gender stereotypes, lack of safe and accessible transport, and childcare facilities are major reasons behind Pakistan's low level of female labour force participation (FLFP). For instance, in 2023, Pakistan's FLFP (22.7 percent) was lower than both South Asia (28.0 percent) and LMIC (34.1 percent).[52] In light of FPLP's positive impact on productivity (Ostry et al, 2018), high gender gap in education and low FLFP remains a major constraint to Pakistan's productivity growth.

These human capital constraints are holding back Pakistan from breaking out of the low productivity trap, and transition to making high value products (Amjad et al, 2005). A majority of labour force across agriculture, industry and services sectors lack even primary education **(Figure 6.24).** Among those who are educated, most have low levels of skills, in part due to poor

[51] 10-year average taken from 2013 to 2022 (Source: WB)
[52] Female labour force as percent of the total labour force (Source: World Bank)

State of Formal Education in Pakistan's Employed Labour (2021) **Figure 6.24**



Source: PBS

education system, and under-developed vocational training systems in public and private sectors. For instance, two of Pakistan's leading export-oriented sectors, apparel and medical equipment sectors, have mostly low skilled workers, which is found to be a major constraint to the sectors' ability to produce higher value added goods and tap higher global market share.[53] In part, this is also because private sector offers limited training opportunities. According to the World Bank Enterprise Surveys 2022, only 5.9 percent firms offer formal training as against the global average of 31.2 percent.

Pakistan's health indicators also significantly lag behind its regional peers. Public spending on health is one of the lowest in the region, contributing to poor outcomes on some of the most critical health indicators, such as stunting, infant mortality, diabetes malaria, and life expectancy at birth **(Table 6.2)**. Considering that the state of a population's health impacts TFP growth and labour productivity through several channels[54]—such as education, savings, investment,

Health Indicators of Pakistan vis-à-vis Selected Regional Economies (2022) **Table 6.2**

Country	Infant mortality[a]	Life expectancy at birth[b]	Malaria* incidence[c]	Diabetes** prevalence[d***]	Stunting[e****]	Public health spending[f***]
South Korea	2.4	82.7	0.1	6.8	0.9	5.7
China	4.8	78.6	0.0	10..6	4.8	2.9
Sri Lanka	5.6	76.6	0.0	11.3	17.3	1.9
Malaysia	6.7	76.3	0.0	19.0	21.2	2.5
Thailand	7.0	79.7	0.5	9.7	12.4	3.6
Turkiye	8.3	78.5	0.0	14.5	6.0	3.6
Vietnam	16.2	74.6	0.0	6.1	19.5	2.0
Indonesia	18.1	68.3	4.2	10.6	30.8	2.2
Bangladesh	24.1	73.7	1.2	14.2	23.6	0.4
India	25.5	67.7	2.6	9.6	35.5	1.1
Pakistan	51.0	66.4	11.5	30.8	37.6	0.8
LMIC	33.7	67.2	51.3	10.7	N/A	1.4
LIC	45.7	63.0	185.1	6.8	N/A	1.2

a: per 1,000 live births; b: years; c: per 1,000 people; d: percent of population ages 20-79; e: percent of children under age 5 that are undernourished; f: percent of GDP

*taken as proxy for preventable parasitic diseases; ** taken as proxy for life-threatening chronic diseases; ***data available as of 2021; ****based on the latest available data that varies from 2016-2022; N/A: Not Available

Sources: WB and WHO

[53] Frederick et al. (2019); Hamrick, D. & Bamber, P. (2019)

[54] Tompa, E. (2002); Lenneman et al. (2011); Bloom, D. & Canning, D. (2003); Savedoff, W. D. & Schultz, T. P. (2000)

Key Governance Indicators* in Selected Transition Economies**

Table 6.3

	GE		PV		RL		RQ		GNI/capita
	2000	2023	2000	2023	2000	2023	2000	2023	Growth (x)
Pakistan	-0.49	-0.58	-1.10	-1.93	-1.00	-0.86	-0.77	-0.90	3.1
India	-0.19	0.48	-1.00	-0.64	0.35	0.19	-0.16	-0.14	5.8
Bangladesh	-0.61	-0.70	-0.73	-0.91	-0.99	-0.50	-0.94	-0.91	7.0
Vietnam	-0.39	0.13	0.41	-0.04	-0.35	-0.09	-0.64	-0.38	10.5
Cambodia	-0.90	-0.31	-0.78	0.04	-1.08	-0.82	-0.16	-0.68	8.2
Indonesia	-0.37	0.58	-2.00	-0.40	-0.70	-0.15	-0.26	0.30	8.5
Kenya	-0.62	-0.30	-1.07	-0.94	-0.92	-0.33	-0.39	-0.39	4.9
LICs	-1.13	-1.24	-1.03	-1.43	-1.13	-1.15	-1.04	-1.10	2.9
LMICs	-0.53	-0.63	-0.56	-0.50	-0.55	-0.63	-0.59	-0.66	4.4
UMICs	-0.39	-0.24	-0.29	-0.26	-0.50	-0.39	-0.34	-0.27	6.0

Note: *Productivity-relevant indicators; scores in range -2.5 (weak) to +2.5 (strong)
**Economies that have transitioned from low-income countries to low middle income

GE: Government Effectiveness
PV: Political Stability and Absence of Violence/Terrorism
RL: Rule of Law
RQ: Regulatory Quality
LICs: Low Income Countries
LMICs: Lower Middle-Income Countries
UMICs: Upper Middle-Income Countries

Colour code: Improved since 2000 | Worsened since 2000

Sources: WGI and WB

and demography[55] —Pakistan's below par health indicators constrain the prospects of high productivity growth.

Institutional Environment

Institutions play a vital role in raising labour and capital productivity, and TFP.[56] As a deep determinant of productivity, institutions enhance the growth and effectiveness of other drivers of productivity, such as capital deepening, and innovation. In this context, the weakening institutional quality in Pakistan has been found to be responsible for several productivity-reducing challenges: from ghost schools that affect human capital to unproductive public investment in infrastructure, and weak property rights that impair innovation.[57]

The country's institutional challenges are reflected in deteriorating governance indicators over the last two decades, including government effectiveness, political stability, and regulatory quality **(Table 6.3)**. As a result, Pakistan has had the slowest pace of growth in income compared to its peers. This is also reflected in the high cost of sludge —that refers to excessive regulations, such as duplicative paperwork and time spent on getting registrations, licenses, certificates, and other permits, which negatively impact the

[55] Individuals with a longer life expectancy are likely to invest more in education (given the higher return on investment); and save more for retirement, which leads to greater accumulation of physical capital. Further, improvement in the survival and health of children may provide incentives for reduced fertility and result in increased labour-force participation. (Tompa, E. (2002))

[56] Broadly conceived as formal or informal humanly devised constraints that structure political, economic and social interactions; institutions come in a wide variety, including policies, governance and rule of law, culture and informal norms. However, this section only touches upon on some of the main facets of institutions and their state in Pakistan: North, D.C. (1991); Grifell-Tatje, E. (2018).

[57] Ginarte, J.C. & Park, W.G. (1997).; Isaksson, A. (2007); WB (2024b); Grifell-Tatje, E. (2018); Husain, I. (2022); Ahmed, V. (2019).

time and cost of doing business in the country.[58]

Similarly, whilst relational contracts can help reduce frictions, excessive reliance on relational contracts in Pakistan's commerce does not encourage FDI. Literature suggests that countries with strong judicial systems have a comparative advantage in producing and exporting goods that are more 'contract intensive'.[59] However, in Pakistan where the average time for a commercial dispute settlement takes about five years,[60] foreign investors do not always have access to or desire to rely on relational contracts as recourse to contractual non-performance in the face of weak judicial system and a general lack of legal recourse. This is particularly discouraging for foreign investors that are relatively new to the country, or seeking to invest in contract intensive manufacturing as part of GVCs.[61]

Another facet of weak institution in the country is policy uncertainty. Economic policy uncertainty has been found to have significant and negative effects on productivity, given its impact on hiring and training of human capital by firms as well as investments in new projects. In light of this, policy inconsistencies and uncertainties across various sectors and cross-sectional policy matters—including agriculture, energy, taxation, and trade—does not bode well for the country's productivity. For instance, frequent changes to tax policy and uncertainty over energy tariffs and availability impairs business decisions. In addition, elevated political uncertainty in the country also has a bearing on economic policies.[62]

The absence of strong economic institutions that promote competition — critical for driving innovation and efficiency—is another major challenge in Pakistan affecting the country's productivity. Insufficient competition in the economy stems from four major sources. First, as discussed in **Section 6.3**, with high import tariffs Pakistani firms are largely protected from global competition. Second, the prevalence of Statutory Regulatory Orders (SROs) that benefits the few politically connected businesses in a non-transparent manner has also discouraged fair competition.[63]

Third, the presence of a large informal economy, marked by tax evasion and a weak quality and standardisation frameworks hurts competition. The latter constraints the prospects of achieving necessary economies of scale to produce exportable quality products at competitive prices. Fourth, firms' dependence on subsidies that are not linked to productivity growth also discourages competition. As a result of these factors,

[58] PIDE (2021-2024)
[59] The production of sophisticated, high value-added products is usually contract-intensive. This is fundamentally due to the complex production processes involved, technical product specifications, rigorous quality control, and stringent regulatory requirements.
[60] The South Asian average is around three years. Source: World Bank
[61] Choudhary, A. & Jain, A.K. (2022); Nunn, N. & Trefler, D. (2014); OICCI (2019);
[62] Li et al. (2021); Bloom, N. (2009); Gulen, H. & Ion, M. (2016); Nawaz et al. (2021).
[63] Backus, M. (2019). Holmes, T.J. & Schmitz, J.A. (2010); WB (2022b).

firms do not have an incentive to seek productivity growth to achieve their desired profits.[64]

The absence of competition checks reallocation of resources, which inhibits structural transformation. In addition to lack of incentive to seek efficiency, government interventions, market restrictive practices, and a general lack of policy direction, such as in power and transport, also hurt productivity and cost competitiveness.

One of the major underlying problems to the multifaceted challenges to Pakistan's institutional environment is the lack of institutional focus on productivity. A review of Pakistan's various sectoral and cross-sectoral policies reveals three key insights **(Appendix A** for details**)**. First, even though several policy documents broadly acknowledge the importance and need to increase productivity in the country, only a few seem to focus on all the major macroeconomic and structural challenges to productivity growth. Second, the direction for measurement of productivity is by and large wanting in these policies. This is contrary to economic phronesis that periodic measurement is necessary for tracking direction and speed of economic performance.

Third, no institution seems to be leading the agenda of productivity. Whilst there is no doubt that productivity growth requires whole-of-government approach rather than a single body, there needs to be a leading institution that anchors and drives the agenda (Garcia et al, 2023). In this regard, the drafting of the country's landmark National Productivity Masterplan by National Productivity Organization (NPO) is a positive step. However, its mandate needs to be reconsidered.

The role of the NPO – originally set up in 1961 - appears to be minimal with limited activities, such as creating awareness and conducting productivity-related training and workshops. Unlike Malaysia Productivity Corporation (MPC, 2025), the NPO does not have a central role in leading reforms across governments' productivity, regulatory/sectoral policies and practices. Similarly, unlike Australia's Productivity Commission (PC, 2025), the NPO has not been empowered to provide an independent analytical review of laws and sectoral policies from the perspective of productivity and make recommendations to federal and provincial governments. Nor does the government engage the NPO through formal public inquiries on its policy matters. Moreover, unlike international best practices, neither the NPO nor the Pakistan Bureau of Statistics measures various metrics of productivity **(Table 6.4)**.

Innovation and R&D

Innovation and R&D contributes significantly to productivity and competitiveness by fostering technological advancements, creating knowledge, enhancing skills, and improving processes.[65] In Pakistan, however, the

[64] WB (2022b); Kuehn, Z. (2007); Swann, G.M.P. (2000).
[65] Bravo-Ortega, C., & Garcia-Marin, A. (2008)

Official Productivity Measurements* **Table 6.4**

Economy	Measure	Since	Frequency	Organization
USA	LP†	1947	Quarterly, Annual	US Bureau of Labour Statistics
	TFP†	1987	Annual	
UK	LP	1960	Quarterly, Annual	Office for National Statistics
	CP†	1994	Quarterly	
		1970	Annual	
	TFP†	1994	Quarterly	
		1970	Annual	
Canada	LP†	2000	Quarterly	Statistics Canada
	CP, LP, TFP†	1961	Annual	
South Africa	CP, LP, TFP	1970	Annual	Productivity SA
Philippines	LP†	1991	Annual	Philippine Statistics Authority
Indonesia	LP†	2001	Annual	Central Bureau of Statistics
Malaysia	LP†	2017	Quarterly	Department of Statistics Malaysia
Thailand	LP†	2001	Quarterly	Bank of Thailand
		2021	Monthly	
	TFP†	2021	Annual	Office of Industrial Economics

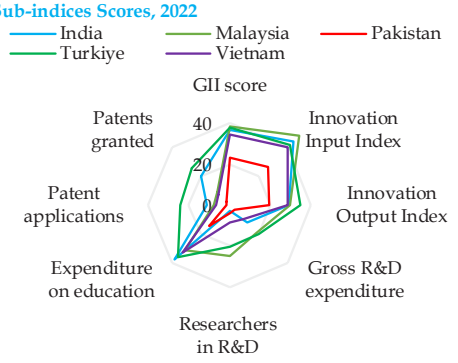
Note: LP: Labour Productivity; CP: Capital Productivity; TFP: Total Factor Productivity
*This list is not exhaustive. Many countries publish quarterly GDP statistics along with quarterly labour force surveys, which allows them to formally measure labour productivity. †Includes sectoral measures
Sources: Respective organisations' websites

potential for innovation to boost productivity remains largely untapped.

Pakistan's national innovation ecosystem is in its early stages of development compared to other countries (Haq et al, 2014). The country is ranked 91st out of 133 countries on the 2024 Global Innovation Index, and is among the lowest across various innovation metrics **(Figure 6.25).** One key factor contributing to this low ranking is Pakistan's public R&D spending, which has declined from 0.64 percent of GDP in 2007 to just 0.16 in 2021, lagging behind innovation leaders **(Figure 6.26).**

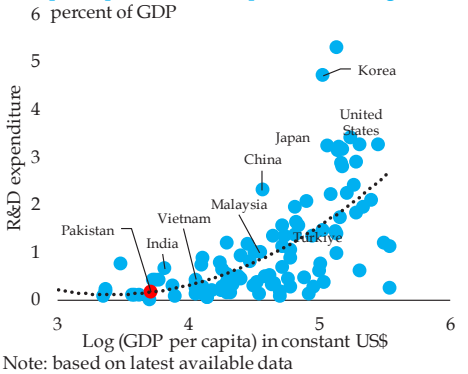
These limitations in innovation input translate into weak innovation output. For instance, in patents - a key innovation output - Pakistan's performance remains notably low, with fewer than 1,000 patents

Global Innovation Index and Sub-indices Scores, 2022 **Figure 6.25**



Source: WIPO

GDP per Capita and R&D Expenditure **Figure 6.26**



Note: based on latest available data
Source: WB

World Bank Enterprise Surveys 2022: R&D and Innovation in Firms **Table 6.5**

percent of firms

	Pakistan	South Asia Average	Global Average
That introduced a **new product/service** over last 3 years	3.3	15.4	31.8
Whose new product/service is also **new to the main market**	0	36.4	64.4
That introduced a **process innovation** over last 3 years	1.5	14.7	22.2
That **spend on R&D** in the last fiscal years	2.3	6.8	17.9
That introduced a **new product/service and process** over last 3 years, and **spent on R&D** over last fiscal year (excluding small firms)	0.1	3.5	7.7
With an internationally-recognised **quality certification**	19.6	11.8	13.5
Using **technology licensed** from foreign companies	4.9	5.2	14.5
Having their **own website**	48.8	42.3	57.7

Source: WB (2022b)

filed in 2021, compared to over 61,500 by India and more than 238,000 by South Korea (WB, n.d.).[66] These findings underscore the need for stronger investment in innovation and R&D to enhance Pakistan's competitiveness. Firm-level data also points in the same direction. Self-reported rates of innovation by Pakistani firms is notably behind regional and global benchmark **(Table 6.5).**

A host of challenges undermine Pakistan's innovation ecosystem. First, there is a widespread rent seeking which enables firms to maximise profits without pursuing innovative products and practices (Mehmood, 2014). Subsidies and protectionist policies have stifled competition, further disincentivising R&D and innovation. Firms often redirect the subsidies intended for innovation towards operational costs or non-productive activities amidst weak enforcement and monitoring mechanisms. Moreover, subsidies reduce competitive pressures, enabling firms to rely on financial support rather than investments in independent R&D efforts (Wadho & Chaudhry, 2018).

This trend is also pronounced in textile sector, which is adequately exposed to the possibility of 'learning by exporting'. The textile sector, which is the biggest recipient of industrial subsidies, primarily uses export subsidies to boost the sales of existing products in current markets as against formal R&D. Textile firms have focused mainly on the acquisition of machinery, equipment, and software, which indicates reliance on embedded technology over formal R&D. This shows a dependence on sustaining existing output rather than fostering innovation or diversifying markets, which is a more efficient utilization of R&D expenditure.[67]

Second, even the firms inclined towards innovation are discouraged due to a weak intellectual property rights regime. In the absence of strong legal protection, and a risk of imitation and intellectual theft, the potential return on R&D investment

[66] WB (n.d.). World Development Indicators, World Bank Group, Washington, D.C.
[67] Defever et al. (2020); Wadho, W. & Chaudhry, A. (2018).

remains low. This lack of protection is particularly detrimental to knowledge-intensive sectors, such as pharmaceuticals, textiles, and IT, where firms often hesitate to allocate resources toward research and product development (HEC, 2022; Aijaz, 2024).[68]

Third, while public sector R&D spending is constrained by low public revenues (**Section 6.3**), the private sector struggles with limited internal funds and external financing. At the one end, government incentives are not tied to R&D and innovation as existing fiscal incentives prioritise technology imports over domestic R&D. For instance, unlike regional peers that offer tax breaks or subsidies for R&D, Pakistan's incentives are not linked with R&D spending. At the other end, firms face credit and other funding constraints that are more pronounced for R&D projects. The financial constraints for innovation and R&D are even more severe for SMEs that have limited access to credit.[69]

Fourth, knowledge linkages in the country are weak. A lack of qualified personnel, insufficient information about new technologies, and limited market insights restrict innovation. The lack of coordination within academia results in disjointed research that fails to provide a unified direction. Moreover, academic research remains disconnected from industry needs due to weak linkages between academia and industry. Consequently, universities are unable to commercialise their research outcomes. Within academia, commercialization policies are either absent or overly restrictive, while the national bodies, mandated with commercialization efforts, such as the Science and Technology Development Corporation, also need to be strengthened.[70]

Fifth, managerial practices in Pakistan are subpar compared to global standards. For instance, Choudhary et al. (2018) find that an average firm in Pakistan scores notably lower than modern management benchmarks across key metrics, including structured management practices; data-driven performance monitoring practices; and incentive-based target setting. Similarly, there is a misalignment of incentives within firms, which slows the diffusion of technology. For example, research on Pakistan's soccer exporting firms by Atkin et al. (2017) shows that employees did not have incentives to reduce waste or adopt new technologies.

Physical and Digital Infrastructure

A well-developed physical and digital infrastructure is critical for increasing productivity at aggregate, sectoral, and firm levels. At the one end, it can reduce costs, and facilitate physical mobility of people and products, integrating an economy with the rest of the world. At the other end, it can foster technological innovation, optimal factor allocation, and

[68] HEC (2022); Aijaz, S. (2024)
[69] Aijaz, S. (2024); P@SHA (2022); FBR (n.d.); Afzal et al. (2012); Wadho, W. & Chaudhry, A. (2018)
[70] Wadho, W. & Chaudhry, A. (2018); Afzal et al. (2012); HEC (2022); Naqvi, I.B (2011).

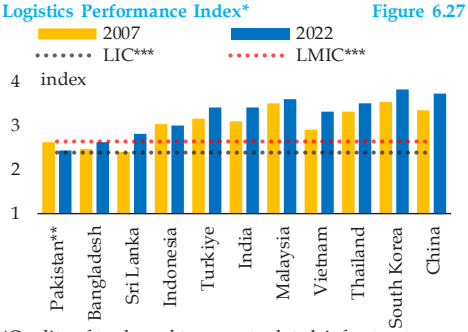
achieve economies of scale.[71] With a focus on public infrastructure,[72] this sub-section takes a look at the state of Pakistan's physical and digital infrastructure, across their key dimensions.

Physical infrastructure

The state of physical infrastructure may be analysed across three key interrelated dimensions: utilities, trade and logistics, and urban infrastructure. These have a bearing on cost of production, distribution and the overall environment needed to attract and retain quality human capital.

In terms of utilities, Pakistan faced tremendous power shortages between 2007 and 2011 (Tao et al, 2022). Recent investments in the power sector have plugged the gap in power generation infrastructure.[73] However, the cost of power has increased over the last few years owing to a host of factors, including distribution inefficiencies, expensive fuel mix and higher capacity payments, whereas power outages remain frequent due to weak transmission and distribution systems. Similarly, the country has begun facing gas shortages since 2008, which is increasingly being plugged through load management, and LNG imports for which the government has set up basic infrastructure. However, the cost of LNG imports remains high due to inadequate pricing and governance challenges (SBP, 2021b and 2024).

Logistics Performance Index* **Figure 6.27**



*Quality of trade and transport-related infrastructure (1=low to 5=high); **latest data for Pakistan was available as of 2018; ***period average
Source: WB

In terms of trade and logistics infrastructure, the country's infrastructure quality is not only lower than peer economies, but is also deteriorating over the years **(Figure 6.27).** Pakistan has an extensive railway network, yet it has struggled to fully leverage its potential as an integral part of the national transport system. This is attributed to chronic under-investment and a clear lack of policy focus. As a result, most of the bulk and container cargo across the country is moved through roads, whereas inter and intra city public transport is also heavily reliant on road transport. This creates inefficiencies in the economy, and adds unnecessary burden on urban infrastructure.

The road logistics sector in Pakistan remains fragmented as well. Most of the

[71] Arif et al. (2021); Laborda, L., & Sotelsek, D. (2019); Jacques-Arvisais, P., & Lapointe, S. (2022); Tang, J. & Zhao, X. (2023).
[72] Although private sector is increasingly involved in infrastructure development (e.g. through public private participation), the role of public sector in infrastructure remains paramount, both in terms of spending and its governance, given huge positive externalities of a reliable infrastructure. Source: WB (2005)
[73] MoF (2024)

logistics and road freight companies operate as owner-operator businesses, with poorly trained drivers. Moreover, the vehicles in use are outdated and fail to meet the required international vehicle certification standards, making them unsuitable for the demands of a modern supply chain. Similarly, in the aviation sector, airports face significant challenges in meeting global supply chain standards mainly due to protectionist policies, high taxes, elevated freight charges, and inadequate cargo facilities at airports.[74]

With regards to port infrastructure, notwithstanding the recent expansions that have reduced the average dwell time for cargo from 11 days to under 6 days, a host of challenges constraint productivity. These include delays in customs clearance; congestions and a lack of efficient rail links; and underdeveloped warehousing and cold-storage facilities, which does not only increase the costs but also result in loss of goods.[75]

Similarly, urban infrastructure – that affects productivity through efficient transportation and communication; and knowledge spillovers amid clustering of firms – has been overburdened due to both poor planning and underinvestment. Issues in accurate estimation of urban population has contributed to inadequate planning, whereas urbanisation trends are concentrated in a few major cities due to large disparities in education, health, and other basic amenities. In addition, poor cost-recovery by publicly owned utilities, including water, sanitation, and waste management, has resulted in a deteriorating urban infrastructure. Insufficient and low quality housing facilities is another constraint to attracting and retaining human capital in areas outside the few highly expensive neighbourhoods in a few major cities (ADB, 2024; Haque, 2015).

Digital infrastructure

The state has a key role in digital infrastructure because of the need to coordinate with multiple stakeholders across the country, governance of digital infrastructure, the sensitive nature of digital public infrastructure (DPI), and its role in accelerating digitalisation by virtue of being one of the largest buyer of ICT goods and services. Among these, DPI is most important since it serves as the building block for digital services, which can spur innovation, competition and productivity. The key components of DPI include: digital identity, digital payments and data sharing, with some expanded definitions including digital post and core government data registries (WB, 2024; OECD, 2024).

DPI is an enabling digital intervention which allows countries to leapfrog peers by accelerating development and productivity growth. This is because DPI reduces search costs, redundancies, and streamlines user experiences and service delivery, whilst increasing interoperability, inclusion, scalability, resilience, and

[74] MoC (2020)
[75] For instance, there is an estimated 40 percent loss of perishable goods due to largely non-existent cold-storage chains at railway stations and airports. Source: MoC (2020)

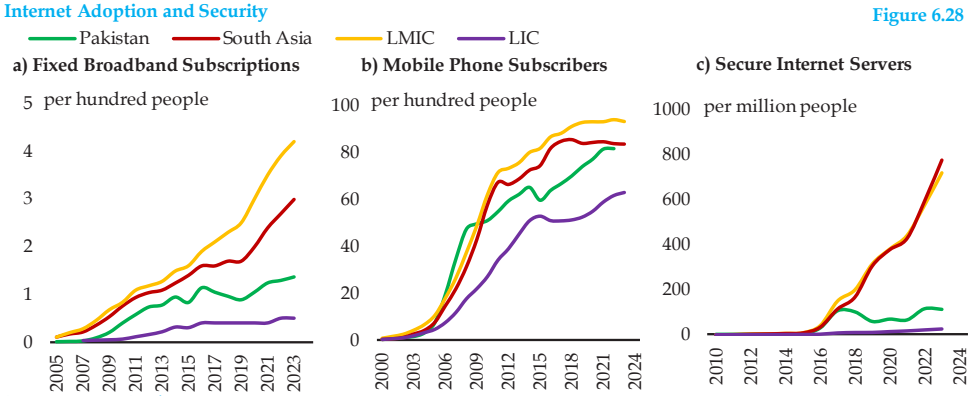
innovation (OECD, 2024). It also enhances the efficiency of the government while allowing the private sector to harness data and infrastructures associated with digital public goods (i.e. from open source DPI).

Pakistan has undertaken many important steps in creating a DPI ecosystem. This progress can be seen through the work on digital identity with biometric verification by NADRA and a digital payment platform in the shape of SBP's RAAST. The Cloud First Policy 2022 (CFP) and Digital Nation Act 2024 (DNA) are also notable developments in this regard.[76] However, it is crucial that the progress seen in digital identity and digital payment is matched in other DPI streams, such as data sharing, to make an interoperable digital environment. Therefore, implementation of CFP, DNA, along with enabling digital infrastructure is of utmost importance, especially to fully capitalise on emerging trends, such as Web 3.0.[77]

There must also be a concurrent effort to enhance digital adoption in the country. Amongst crucial factors to raise adoption are digital literacy, safety, privacy, and trust.[78] In this regard, while mobile phone subscription in Pakistan is comparable to peer economies in the region, it lags behind in terms of internet access and adoption (**Figure 6.28a and Figure 6.28b**). These disparities are worse across rural and female demographics.[79]

DPI is more than simply investing in technology, but rather necessitates building public trust and confidence in systems, especially to be able to expand IT industries. For this to be possible, governments must engage stakeholders, create stringent safeguards for privacy,

Internet Adoption and Security **Figure 6.28**



Source: Haver Analytics

[76] The CFP prioritizes cloud based infrastructure for the public sector whilst the DNA creates a "National Digital Masterplan" to drive digital transformation, with specific provisions for DPI and data exchange.
[77] Web 3.0 represents the next iteration of the World Wide Web based on emerging technology, such as: blockchain, digital currency, artificial intelligence, non-fungible tokens. Source: OICCI (2022).
[78] UNDP (2024); OECD (2024).
[79] P@SHA (2024); PTA (2024)

cybersecurity, and ensure the reliability and predictability of core digital services. Pakistan's poor performance against peer economies in secure internet servers indicates underdeveloped cybersecurity guardrails (**Figure 6.28c**). Similarly, Pakistan's low rank in Speedtest Global Index for broadband (141st out of 151 countries) and mobile internet (99th of 110 countries), amid frequent internet slowdowns and shutdowns, derail the progress on digital adoption and consequently hinders government objectives for a digital nation.

6.5 Final Remarks

Pakistan's consistently low productivity growth over the last few decades is one of the leading causes of the country's recurring boom-bust cycles; weak and unsustainable economic growth; and frequent balance of payments crises. This manifests in all the key indicators of productivity: low labour productivity and TFP growth amid slow structural transformation. It is also quite evident at sectoral level indicators, such as low water and energy productivity, sub-par agricultural yields, and weak productivity at firm level.

This is mainly because Pakistan has been focusing on the *low road* to achieving competitiveness without sufficient focus on the *high road* i.e. productivity growth. For instance, tax cuts are frequently announced to incentivise greenfield investments, yet the overall tax environment remains complex with high effective tax rates that hurts productivity growth. Similarly, there has been excessive policy focus on subsidised loans, electricity and gas without adequate focus on increasing credit penetration, or ensuring cheap and uninterrupted supply of utilities in the long run.

Moreover, compared to its peer economies, Pakistan has under-invested in human capital, innovation and R&D, and infrastructure that are critical drivers of productivity growth. In particular, Pakistan has been unable to improve its human capital due to low enrolment in primary education, which is the first step towards achieving human capital accumulation necessary for technology absorption. Human capital is also constrained by poor state of public health. In addition, the country's institutions remain weak and have in fact worsened over the last two decades. This is in the backdrop of an overall lack of adequate competition, elevated levels of informality and tax evasion, that disincentivises firms from pursuing productivity and efficiency gains, such as innovation and R&D.

As a result, unlike several of its peer countries, Pakistan has been unable to take off and catch up with more productive and rapidly growing economies around the world. In fact, as the foregoing sections show, Pakistan does not only trail behind its regional and income level peers (LMIC), but also notably behind LICs across a wide range of indicators.

To turn this situation around, Pakistan must pursue the path of productivity growth. This would entail wholesale reforms to address the challenges hindering productivity growth, including

credit allocation, taxation, and trade policy. Moreover, a favourable business environment is an essential pre-requisite, particularly for raising investment. In this context, there is a need to realise that diplomacy alone cannot attract FDI. This is evidenced by relatively lower growth in FDI to Pakistan from China between the pre- and post-OBOR periods, compared to peer economies. Productivity holds the key to attracting foreign investors, as does efficient high quality labour, and strong institutions.

With regards to labour, the under development of human capital in Pakistan warrants urgent attention since it does not only affect the country's current level of productivity and economic competitiveness, but also continues to expose it to challenges, going forward. Moreover, the advancements in machine learning and artificial intelligence is expected to lead to obsolescence of low-tech and repetitive administrative roles. These factors together with the growing brain drain in an economy already beset with low levels of graduates and professionals present a formidable challenge to human capital in Pakistan **(Box 2.2).** These challenges necessitate major and urgent investments in education and health to significantly improve the availability and quality of human capital.

Lastly, given the multi-faceted nature of the economic reform agenda that Pakistan needs to follow to ensure productivity growth, there needs to be an acknowledgement of the fact that no single body or institution can achieve the desired goal. Whilst in light of global best practices, the role of a central body, such as National Productivity Organization, is important, the task at hand involves a whole-of-government approach across the three tiers of government, and a concerted effort over a long term horizon.

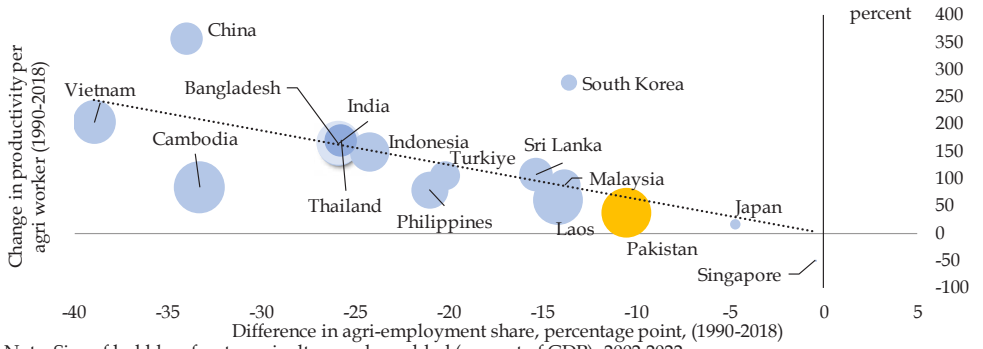
Box 6.1: Drivers of Structural Transformation (ST) in Pakistan[80]*

ST occurs through shifting of labour from agriculture to manufacturing and services, alongside a progression towards more sophisticated, high-tech exports, and advanced manufacturing processes. ST is essentially the reallocation of resources to higher value added and higher productivity uses, driving long-term economic growth. The reasons for Pakistan's sluggish transformation can be found in all three drivers of ST: productivity differentials, globalisation, and demand composition.[81]

Productivity differential: When productivity growth in agriculture—such as through improvements in crop yields—exceeds that of manufacturing and services sectors, it leads to a fall in relative demand for workers in agriculture, and as a result the labour moves towards the latter two sectors. Trends in agricultural productivity; labour migration from agriculture; and composition and nature of the sectors where labour is moving; are some of the key indicators to assess whether or not productivity differential is driving ST in an economy.[82]

[80] This box draws heavily from Sen, K. (2023), given its comprehensive framework on ST. Its insights on sectoral shifts, and productivity dynamics in structurally underdeveloped economies like Pakistan are particularly instructive.
[81] Sharma et al. (2019)
[82] Sen, K. (2023).

Key Measures of Structural Transformation **Figure 6.1.1**

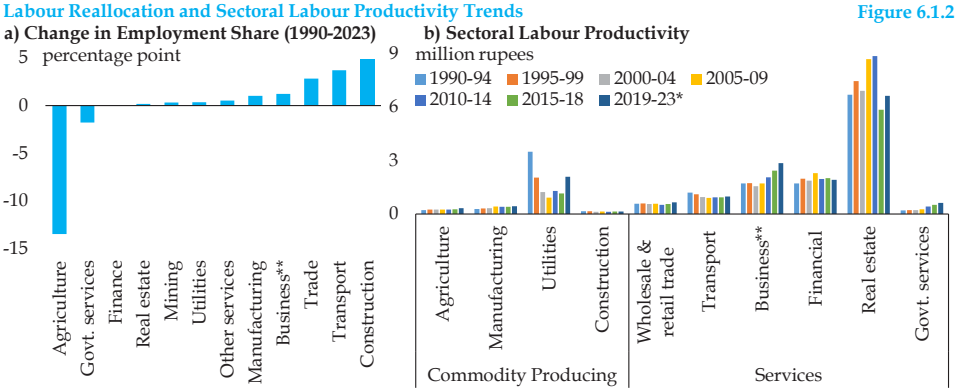


Note: Size of bubble refers to agriculture, value-added (percent of GDP), 2002-2022
Sources: SBP staff calculations based on UNU-WIDER Economic Transformation Database and WDI

In light of this, Pakistan's labour productivity growth is not only constrained due to low within-sector productivity improvements but also due to the labour being stuck in low-productivity sectors (i.e. agriculture), instead of high-growth industries (i.e. manufacturing). Although the share of agriculture in employment in Pakistan has declined since the 1990s, the reduction is modest compared to peer countries **(Figure 6.1.1)**. Agriculture still continues to employ the largest share of Pakistan's workforce. It also remains one of the least productive sector, with minimal per-worker productivity improvements relative to regional counterparts.[83]

Also, wage and productivity differences between agriculture and non-agriculture sectors are not enough to encourage a large worker migration from agriculture to industry. Geographic limitations, loss of social networks, poor social security, and high living costs in urban areas where industries are located are also preventing the migration of farm workers to productive industrial sectors.[84]

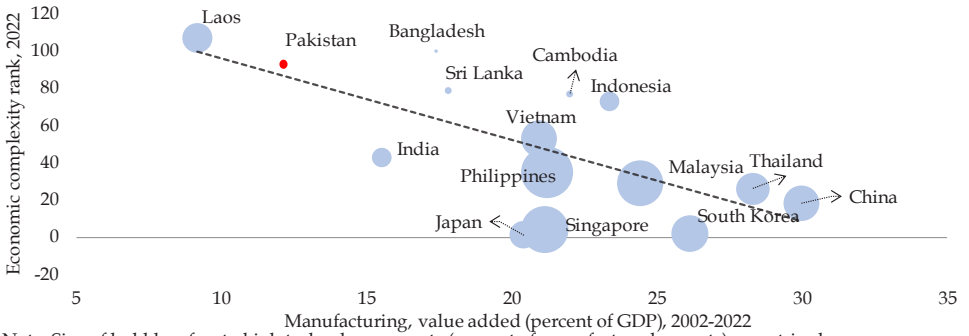
Labour Reallocation and Sectoral Labour Productivity Trends **Figure 6.1.2**



*SBP staff estimation based on value added GDP (UNdata) and sectoral employment (PBS); **Business includes: ICT, professional/scientific activities, and administrative & support activities
Sources: SBP staff calculations based on UNU-WIDER ETD, UNdata, and PBS

[83] The shift in sectoral employment shares over time serves as an indicator of an economy's ST.
[84] Pirzada et al. (2024); Kanwal et al. (2015); NPO (n.d.)

Economic Complexity Rank and Manufacturing Value-added (Percent of GDP) **Figure 6.1.3**



Note: Size of bubble refers to high-technology exports (percent of manufactured exports); countries lower on y-axis are considered more economically complex

Sources: SBP staff calculations based on Atlas of Economic Complexity, and WB

Moreover, labour reallocation between 1990-2018 has largely been directed toward relatively low-productivity sectors. Specifically, labour in Pakistan has predominantly moved toward informal, and non-tradable sectors, such as construction, real estate, transport, and wholesale & retail trade that have relatively limited potential for productivity improvements compared to manufacturing, business services, or financial services **(Figure 6.1.2 a & b)**. By contrast, East Asian economies, like Vietnam and China, have leveraged labour migration from agriculture to high-productivity manufacturing and export-oriented services to drive long term growth.[85]

Another sign of Pakistan's struggle with structural transformation is the underperformance of its manufacturing sector. This is characterised by Pakistan's comparatively low share of manufacturing in GDP, low rank in the Economic Complexity Index (ECI)—that tracks products and market diversification of exports— and negligible size of high-technology exports in manufacturing exports **(Figure 6.1.3)**.[86]

Globalization: Globalization —as analysed through trade openness, FDI and GVC participation—can facilitate the movement of workers away from agriculture to labour-intensive and technology-intensive manufacturing and tradable services. This is because manufacturing is the key tradable sector capable of large scale export expansion, followed by services.[87]

Pakistan has had a history of trade policy distortions whereas FDI inflows have remained weak **(See Section 6.3 for details)**. In addition, the country's GVC integration is limited with one of the lowest backward linkages (**Figure 6.1.4)**. While some economies experienced a decline in backward integration between 2005-2018 due to global shocks, lengthening of domestic value chains, and shift towards services-oriented exports,[88] Pakistan's backward integration has remained low during this period due to high trade

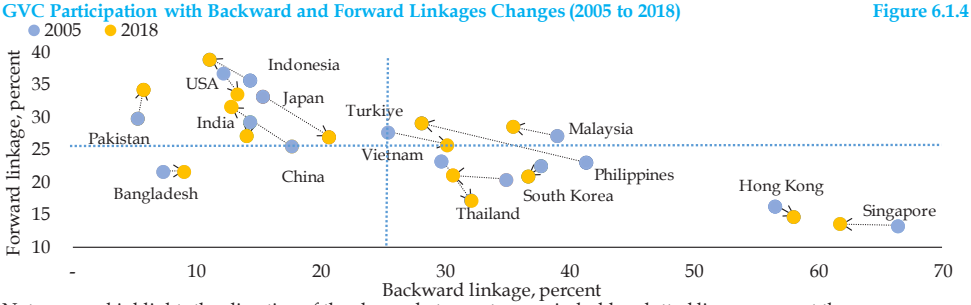
[85] Li, Y. & Xing C. (2022); Tisdell, C.A. (2011); Pirzada et al. (2024)

[86] ECI is a good predictor of economic growth. Countries like Pakistan, Sri Lanka and Laos that have lower ECI than their level of GDP/capita would suggest that their economies will grow slower. Such countries have unexploited productive capabilities that hinders their future growth prospects. (Source: Hidalgo, C. & Hausmann, R. (2009)

[87] Sen, K. (2023)

[88] Complex production lines in these economies are sensitive to global shocks, particularly the Global Financial Crises, which disrupted trade and contracted GVC activities. Additionally, the industrial and technological upgradation is changing how GVCs functions, lengthening domestic value chain, allowing more intermediate production stages to be completed within national borders rather than relying on foreign inputs. Similarly, many economies are shifting toward service exports that inherently has lower backward integration compared to manufacturing. (Li et al. (2019)

GVC Participation with Backward and Forward Linkages Changes (2005 to 2018) **Figure 6.1.4**



Note: arrow highlights the direction of the change between two periods; blue dotted lines represent the average forward and backward linkages across all countries for the year 2018. **Backward integration**: Foreign Value Added embodied in a country's exports. **Forward integration**: Domestic Value Added of a country embodied in exports of other countries

Source: SBP staff calculations based on UNCTAD-Eora Global Value Chain Database

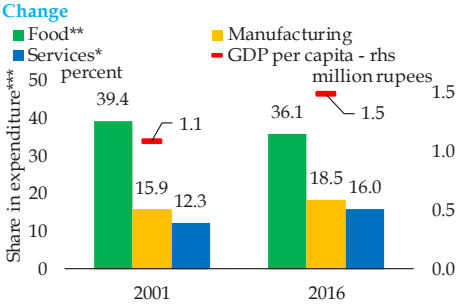
protectionism, weak industrial upgrading, low FDI, lack of export diversification, logistical inefficiencies, and macroeconomic instability.[89]

Low backward integration also indicates that Pakistan's exports mainly rely on domestically produced inputs rather than integrating with the global economy, which accompanies low technology diffusion, and limited scope for productivity gains. Similarly, the country's increasing and above average forward integration mainly reflects its largely raw material or low-value-added exports. Overall, Pakistan has not leveraged GVCs effectively to access cheap intermediate goods, upgrade its industries, and thus remain locked in low-value-added exports, restricting the pace of its ST.

Demand composition: As a driver of ST, demand composition effect rests on the theory that with increases in income there is a fall in demand for agricultural goods (mainly food) and an increase in demand for manufactured goods and services. This results in worker migration from agriculture to manufacturing and services.[90]

In light of this, **Figure 6.1.5** illustrates how expenditure shares on food, services, and manufacturing have evolved between 2001 and 2016 in Pakistan with rising GDP per capita. A key insight is that while food remains the largest expenditure component, its share has declined slightly over time, reflecting Engel's Law, which states that as income increases, the proportion of income spent on food declines. Conversely, as a share of expenditure, Pakistan's household consumption on services has increased more than

Real GDP and Demand Composition Change **Figure 6.1.5**



*services exclude housing; **food includes packaged food items, such as biscuits, and readymade food; ***Based on CPI basket.

Source: SBP staff calculations based on PBS

[89] Pirzada et al. (2024); Frederick, S. & Daly, J. (2020)
[90] Sen, K. (2023).

the increase in spending on manufacturing, which suggests a transformation towards a service-driven rather than manufacturing-led economy.

** The contribution of Abdul Jabbar is acknowledged in writing this box*

Box 6.2: Estimating Determinants of TFP in Pakistan*

Earlier studies on the determinants of TFP in Pakistan[91] have identified several macroeconomic and structural factors, such as, trade openness, infrastructure, innovation, institutions, FDI, human capital, credit to private sector, development expenditures, etc. From these factors, major macroeconomic determinants and structural factors discussed in **Section 6.3 and 6.4** were used as explanatory variables, with TFP as a dependent variable. These were estimated using a Vector Autoregression and linear regression.[92] The regressions were run solely to explore the association of identified macroeconomic determinants and structural factors with TFP. In consideration of data limitations, two regressions have been used to better capture the effects of structural factors: (a) a longer time series from 1981 to 2022 with macro-factors (Regression 1), (b) a shorter time series, from 1997 to 2021, with structural factors (Regression 2). The results are summarised in **Table 6.2.1**.

Summary of Regression Results — Table 6.2.1

Regression 1: 1981-2022	
Variable	**Coefficient**
Education expenditure to GDP (-1)***	2.33
Education expenditure to GDP (-2)**	2.69
FDI to GDP (-2)*	-3.45
Government consumption to GDP (-1) (D)**	0.70
Private sector credit to GDP (-2) (D)*	1.03
Private sector credit to GDP (-3) (D)**	0.32
REER (-1) (D)**	0.09
REER (-3) (D)*	-0.09
Trade openness (-2)*	-0.46
Trade openness (-3)*	0.47
Regression 2: 1997-2021	
Variable	**Coefficient**
Access to electricity (-2)** (D)	0.04
Primary enrolment ratio* (D)	0.34
Government effectiveness index*** (D)	5.02
R&D expenditure to GDP**	2.38

Note: *significant at 1 percent, ** significant at 5 percent, *** significant at 10 percent; (-1) and (-2) indicates lagged values; (D) indicates that the difference has been taken.
Source: SBP Staff Estimates

The results of Regression 1 illustrate the positive effects of education expenditure on TFP, which impacts TFP with lags of up to two years. Similarly, private sector credit also has a lagged positive effect on TFP. However, the estimates show a negative effect of FDI on TFP. This could be due to, as discussed in Section 6.3, inward oriented FDI mostly being market seeking rather than productivity enhancing. This could also signal the lack of absorptive capacity in local markets for FDI, along with inadequate knowledge transfer. General government consumption also has a positive impact on TFP. The real effective exchange rate has a positive effect with a one-year lag but turns negative with a three-year lag. Similarly, trade openness effects TFP negatively after two years but turns positive after three years. The cumulative impact of these two variables is positive.

Estimates from Regression 2 shows that government effectiveness and R&D expenditure have a positive effect on productivity. Greater primary enrolment, which is foundational for human capital development, is also proven to have a positive link with TFP. Finally, infrastructure, proxied through access to electricity, impacts TFP with a lag.

** The contribution of Ali Ahmed Shah is acknowledged in writing this box.*

[91] Khan, S.U. (2006); Qazi M. A. & Hyder, K. (2007); Siddique, O. (2022); Ali, L. & Akhtar, N. (2024)
[92] Details of methodology in Appendix B

Appendix A

A review of various economic policy documents was conducted to assess whether productivity growth and its key drivers are an explicit policy focus (i.e. they are a key part of the plan), and whether the policy documents offer actionable steps or an overall direction for reforms (i.e. any pathways have been identified). To this end, each of the policies under review[93] was analyzed to answer the following questions:

1. Is productivity growth the main policy goal (central objective) or otherwise a cross cutting theme?
2. Has the policy announced measurable targets for productivity (sectoral or aggregate), or announced any plan to measure productivity?
3. Does the policy identify tax distortions, tax evasion, and/or informality as a major issue and pathways to address the same?
4. Does the policy identify trade policy distortions as a major challenge, and offers a roadmap to address it?
5. Does the policy identify credit constraints as a major challenge, and offers a roadmap to address it?
6. Does the policy explicitly envision to foster competition and identifies pathway to achieve that?
7. Does the policy identify human capital as a constraint, and envisions pathway to improve the quality and supply of human capital?
8. Does the policy identify the challenge of low innovation and R&D in Pakistan, and offers a roadmap to address it?

The following table summarises key findings from the review of policies in light of the aforementioned queries, where productivity or any of its key drivers is construed to be a part of the policy objectives (✓) only if they are explicitly stated as such or if it appears to be a cross cutting theme; merely mentions as passing references is not (✗). Similarly, a policy document is seen as offering a reform plan or a pathway if it offers any specific plan or related measures. For instance, whilst Vision 2010 gives out a direction of removing tax distortions but does not spell out even a broad plan. By comparison Vision 2030, lays out broad action plan that (a) federal government will collect income and corporate taxes, and custom duties, and rest of taxes will be devolved to provincial and/or local governments, (b) documentation will be pursued, (c) tax loopholes would be plugged, and (d) tax reforms will focus on tax culture, weak enforcement of tax laws, narrow tax base, wide spread exemption, unsatisfactory settlement of tax disputes, corrupt and inefficient tax machinery, complex procedures and multiplicity of taxes. Accordingly, both Vision 2010 and Vision 2030 have green ticks (✓) for the Plan to remove tax distortion; however, in terms of Pathways, Vision 2030 has green tick (✓) whereas Vision 2010 is crossed (✗).

[93] These polices may be categorised into meta, meso and micro policies. Meta level policies refer to government documents that offer broad policy guidance across economic, social, political and legal dimensions; these include Vision 2010, Vision 2030, Framework for Economic Growth, Vision 2025 and the recent Uraan Pakistan. Meso level policies refer to cross-sectoral policies, such as trade, industrial or export policies. Micro level refers to sector-specific policies, such as mobile manufacturing policy, seed policy, automobile and so forth.

Summary of Key Policy Documents in Pakistan

Policy		Productivity as main goal or cross-cutting theme	Productivity measurement or targets	Tax distortions	Trade policy distortions	Credit constraints	Competition	Human Capital	Innovation and R&D
Meta level policies									
Vision 2010	Plan	✓	✓	✓	✓	×	✓	✓	✓
	Pathway	×	×	×	×	N/A	×	✓	✓
Vision 2030	Plan	✓	×	✓	✓	×	✓	✓	✓
	Pathway	×	N/A	✓	✓	N/A	×	✓	✓
FEG 2011	Plan	✓	✓	✓	✓	✓	✓	✓	✓
	Pathway	✓	✓	✓	✓	×	✓	✓	✓
Vision 2025	Plan	✓	✓	✓	✓	×	✓	✓	✓
	Pathway	✓	✓	✓	✓	N/A	×	✓	✓
Uraan Pakistan	Plan	✓	✓	✓	×	×	N/A	✓	✓
	Pathway	✓	×	✓	×	N/A	N/A	×	✓
Meso level policies									
STPF 2015-18	Plan	✓	×	×	×	×	×	✓	✓
	Pathway	×	N/A	N/A	N/A	N/A	N/A	✓	✓
STPF 2020-25	Plan	✓	×	✓	✓	×	×	✓	✓
	Pathway	✓	N/A	✓	✓	N/A	N/A	✓	✓
SME Policy 2007	Plan	×	×	×	×	✓	×	✓	×
	Pathway	N/A	N/A	N/A	N/A	✓	N/A	✓	N/A
SME Policy 2021	Plan	×	×	✓	✓	✓	×	✓	×
	Pathway	N/A	N/A	✓	✓	✓	N/A	✓	N/A
Punjab Agri Policy 2018	Plan	✓	×	×	×	✓	✓	×	✓
	Pathway	✓	N/A	N/A	N/A	✓	✓	N/A	✓
Sindh Agri Policy 2018-20	Plan	✓	×	×	×	✓	✓	×	✓
	Pathway	×	N/A	N/A	N/A	✓	✓	N/A	×
KP Industrial Policy 2020-30	Plan	✓	×	×	×	✓	×	✓	×
	Pathway	✓	N/A	N/A	N/A	✓	N/A	✓	N/A
Punjab Industrial Policy 2020	Plan	✓	×	✓	×	✓	×	✓	×
	Pathway	✓	N/A	✓	N/A	✓	N/A	✓	N/A
Micro policies									
National Seed Policy 2024	Plan	✓	×	×	×	×	✓	✓	✓
	Pathway	✓	N/A	N/A	N/A	N/A	×	×	✓
Textile and Apparel Policy 2020-25	Plan	✓	×	×	✓	✓	×	×	×
	Pathway	×	N/A	N/A	✓	×	N/A	N/A	N/A
Mobile Device Manufacturing Policy 2020	Plan	×	×	×	×	×	×	×	×
	Pathway	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
AIDP 2021-26	Plan	×	×	×	✓	×	✓	✓	✓
	Pathway	N/A	N/A	N/A	✓	N/A	✓	✓	✓

Appendix B

Following existing research in Pakistan,[94] the relationship of determinants and structural factors identified in the chapter were regressed against TFP growth.[95] Data for TFP growth was taken from the Asian Productivity Organisation from their APO Productivity Database.[96] Regression 1 was first estimated using Vector Autoregression (VAR) and then a parsimonious regression, using the significant lags from the VAR estimates.[97] Due to the paucity of data, Regression 2 was estimated through an ordinary least square (OLS) regression.

Some variables chosen as proxies have been used in the existing literature in Pakistan, (i.e. trade openness, FDI, education expenditure, private sector credit, government consumption and R&D expenditure) whilst other variables have been used in constructed indices for TFP determinants (such as government effectiveness and primary enrolment). The remaining variables either have been used in international literature (as is the case for REER and savings) or have a direct link to the determinant/factor being proxied (e.g. access to electricity and infrastructure).

The following equations were used for each regression:

Regression1:$TFP = TFP(-1) + TFP\ (-2) + TFP(-3) + Education\ expenditure\ (-1) + Education\ expenditure\ (-2) + Foreign\ Direct\ Investment\ (-2) + D\big(Government\ Final\ Consumption\ (-1)\big) + D\big(Private\ Sector\ Credit\ (-2)\big) + D\big(Private\ Sector\ Credit\ (-3)\big) + D\big(Real\ Effective\ Exchange\ Rate(-1)\big) + D\big(Real\ Effective\ Exchange\ Rate(-3)\big) + Trade\ Openness(-2) + Trade\ Openness\ (-3) + C$

Regression 2: $TFP = Access\ to\ Electricity\ (-2) + D(Primary\ Enrollment) + D(Government\ Effectiveness\ Index) + Research\ and\ Development\ expenditure + Dummy$

The difference was taken for variables which were stationary at the first difference.[98] Where there were missing values in datasets, linear interpolation was used. Additionally, dummy values were created to control for outlier years and data volatility.

[94] Khan, S.U. (2006), Siddique, O. (2022) and Ali, L. & Akhtar, N. (2024)
[95] The challenges of using this methodology stemmed from data unavailability of long time series, and TFP estimation errors due to its derivation from the Solow residual.
[96] Nomura, K. & Ho, M. (2024)
[97] Using the Wald test, insignificant coefficients were removed from the model.
[98] The coefficient of a differenced variable illustrates its impact on the dependent variable in terms of change i.e. the impact of one unit of change (from the previous period) on the change of the dependent variable.

Details of Variables

Name of Variable	Description	Proxy for	Data source
Trade openness	Nominal exports and imports divided by nominal GDP	Trade policy distortions	Haver Analytics, WB and PBS
FDI as a percentage of GDP	FDI as a percent of GDP	Trade policy distortions	Haver Analytics, WB
Real Effective Exchange Rate	Log values of REER	Exchange rate misalignment	Haver Analytics, WB
Government consumption to GDP	Real general government final consumption expenditure as a percentage of real GDP	Low investment	Haver Analytics, WB and PBS
Gross domestic saving to GDP	Nominal gross domestic savings as a percentage of nominal GDP	Low investment	Haver Analytics, WB
Private sector credit to GDP	Proxied from domestic credit to private sector by banks as a percentage of GDP	Credit constraints	Haver Analytics, WB
Education expenditure to GDP*	Total general government expenditure on education as a percentage of GDP	Human capital	WB
Access to electricity	Percentage of population with access to electricity	Physical and Digital Infrastructure	WB
Primary enrolment ratio*	Total enrolment in primary education, as a percentage of the population of official primary education age	Human capital	Haver Analytics, WB
Government effectiveness index*	Index values taken from Worldwide Governance Indicators	Institutional environment	WB
R&D expenditure to GDP*	Nominal research and development expenditure as a percentage of nominal GDP	Innovation and R&D	WB

* linear interpolation applied for missing data

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