

Pakistan's Crises: The Making of a Perfect Storm

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The worldwide shock inflicted by COVID-19 had the making of a “perfect crisis:” the kind that should not be wasted. Indeed, it could serve as an opportunity to initiate major reforms. Unfortunately, Pakistan, like virtually all other countries, has permitted the opportunity to go waste. Pakistan may be just as woefully unprepared for the crises to come, economic or other. But the time for remedial action is not past. Pakistan can choose to defer necessary reforms and hope that with luck and external assistance it can muddle along; or it can decide that the time has come to grasp the nettle.

There is a lot that needs to be fixed in Pakistan. The COVID-19 pandemic underscored the inadequacy of the public health system. To safeguard the public from future disease outbreaks and to improve the quality of human capital, public health system reform deserves to be prioritized along with the needed infusion of resources.¹ But there are at least six other crises, two of which have been on the radar for some time: (i) rising public indebtedness, the result of long running fiscal deficits and the inability to mobilize sufficient revenue; and (ii) sluggish growth caused by the declining share of the manufacturing sector and of exports in GDP and weakening productivity.

Four crises of the slow burning, more stubborn kind, have received less attention; however, continued neglect could bring the nation to its knees within the next two decades. These four crises are: (i) income inequality and socio-political polarization; (ii) inadequate state planning, policymaking, administrative, and mobilizational capabilities; (iii) high fertility and population growth; and (iv) the mounting threat from climate change.

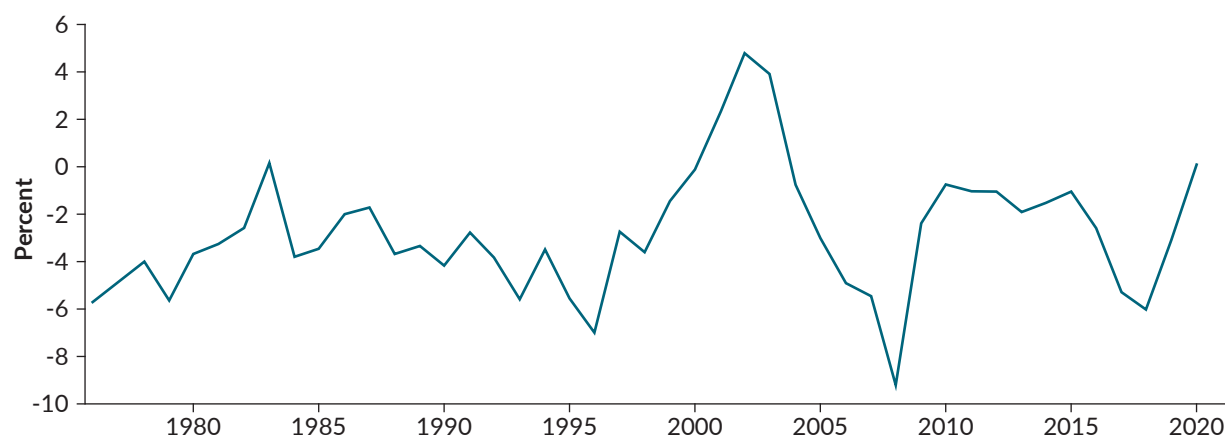
The first two have festered for years and have been managed ineffectually by short-term fixes. The others, such as demographic pressures and the effects of climate change, have been slowly worsening over time and their damaging consequences are becoming more apparent.

¹ Although the number of reported cases as of end 2021 (1.287 million, 29,000 deaths) did not reach the levels in some of the neighboring countries (35 million cases, 3.2 million deaths in India) and Europe, the threat from new variants of the virus remains. P. Jha et al. (2022) *Covid mortality in India*. <https://www.science.org/doi/10.1126/science.abm5154>

FISCAL CRISIS

The revenue shortfall that is responsible for the chronic fiscal imbalance has a long history (-7.3 percent of GDP in fiscal year (FY) 2021).² A persistently low tax/GDP ratio has constrained developmental spending, depressed domestic resource mobilization (17 percent of GDP), crowded out private investment, contributed to the long running current account deficits (Figure 1, public and publicly guaranteed external debt adds up to \$91 billion with \$24.7 billion owed to China),³ and is responsible for the rising public debt (91 percent of GDP).⁴ Taxes collected as a percentage of GDP amounted to 11 percent in FY21 (or 9.5 percent according to the rebased GDP)⁵, which is well below the global average (15 percent) and the average for South Asia (12 percent). And servicing the public debt consumes about 40 percent of the revenue collected, squeezing what is available for developmental purposes.⁶ According to one estimate,⁷ Pakistan's tax capacity (the maximum level of tax revenue a country collects) is in the region of 22 percent and its tax effort (the ratio between actual revenue and tax capacity) continues to lag comparator economies.

Figure 1. Pakistan BOP current account 1970–2020 (percent GDP)



Source: World Bank, WDI (2021) <https://data.worldbank.org/indicator/BN.CAB.XOKA.GD.ZS>

- 2 Following the rebasing of the national accounts in 2022, Pakistan's GDP increased by 11.3 percent, and this reduced the ratio of debt to GDP to 6.1 percent. <https://profit.pakistantoday.com.pk/2022/01/23/the-gdp-finally-rebased/>; India also rebased its GDP a few years ago and improved its GDP level and growth rate. Such upward adjustments can be helpful for governments confronting political challenges. To be credible they need to vetted using multiple statistical methods. Pakistan's rebasing deserves detailed scrutiny. The reestimation by the Indian authorities was challenged by the former chief economic adviser to the Indian government, Arvind Subramanian (2019) who showed that the rebased data seriously overestimated growth rates. India's GDP mis-estimation. <https://growthlab.cid.harvard.edu/files/growthlab/files/2019-06-cid-wp-354.pdf> D. Runde (2018). *An economic crisis in Pakistan again: What is different this time*. CSIS. <https://www.csis.org/analysis/economic-crisis-pakistan-again-whats-different-time>;
- 3 USIP (2021). *Pakistan's growing CPEC problem*. <https://www.usip.org/publications/2021/05/pakistans-growing-problem-its-china-economic-corridor>
- 4 V. Sharma (2021). *Pakistan debt crisis intensifies*. The Wire. <https://thewire.in/south-asia/pakistan-debt-crisis-intensifies-as-economic-mismanagement-continues-unabated>; The rebasing of GDP would bring this down to about 72 percent. <https://profit.pakistantoday.com.pk/2022/01/23/the-gdp-finally-rebased/>
- 5 World Bank (2021). *Pakistan Development Update*. <https://thedocs.worldbank.org/en/doc/4fe3cf6ba63e2d9af67a7890d018a59b-0310062021/original/PDU-Oct-2021-Final-Public.pdf>
- 6 A. Husain (2022). *Living beyond our means*. <https://www.brecorder.com/news/40153068>
- 7 Fenochoietto, R., and C. Pessino, 2013, "Understanding Countries' Tax Effort," IMF Working Paper, No. 13/244 (Washington: International Monetary Fund). <https://www.imf.org/external/pubs/ft/wp/2013/wp13244.pdf> Cevik, S. 2016. "Unlocking Pakistan's Revenue Potential." IMF Working Paper, No. 16/4 (Washington: International Monetary Fund). <https://www.imf.org/external/pubs/ft/wp/2016/wp16182.pdf>

On approving the US \$6 billion Extended Fund Facility (EFF) Arrangement in July 2019 (the 13th bail-out since 1980), the IMF urged the government to commit to “a decisive fiscal consolidation [to] reduce the large public debt and build resilience.”⁸ The Fund stated that “Achieving the fiscal objectives will require a multi-year revenue mobilization strategy to broaden the tax base and raise tax revenue in a well-balanced and equitable manner. It will also require a strong commitment by the provinces to support the consolidation effort, and effective public financial management to improve the quality and efficiency of public spending.” The latest Fund program stalled, as others have in the past, because Pakistan failed to implement reforms needed to meet the agreed targets. However, following the sixth review of the EFF in early 2022, and Pakistan’s commitment to remove “structural impediments” and measures that will raise an additional \$3.4 billion in revenues, the EFF was approved allowing Pakistan to access \$1 billion, equivalent to 106 percent of its Fund quota.⁹ The IMF has exhorted the authorities to strive after small primary surpluses to contain the public debt and lessen fiscal vulnerabilities by—as it has so often recommended in the past—broadening the tax base and pruning preferential tax treatments and exemptions.¹⁰

It is vital for Pakistan to break out of the cycle of fiscal and associated balance of payments (BOP) rises, which have been a persistent drag on economic and social development. Whether it can, depends upon the government’s resolve, its ability to survive the inevitable political opposition, and the willingness of the public to tolerate the pain imposed by policy induced austerity.¹¹ Fiscal decentralization resulting from the 18th Amendment of the Constitution by transferring more fiscal responsibilities to the provinces makes this more of an uphill battle.¹² The failure to sustain macroeconomic consolidation following earlier IMF programs¹³ does not bode well; however, changing geopolitical circumstances and the COVID-19 pandemic, which has made government poorer,¹⁴ have increased the urgency of

8 The inability of users and distributors to compensate power producers had led to the accumulation of \$13 billion in circular debt by June 2020. USIP (2021). <https://www.usip.org/publications/2021/05/pakistans-growing-problem-its-china-economic-corridor>

9 IMF (2022). <https://www.imf.org/en/News/Articles/2022/02/02/pr2221-pakistan-imf-executive-board-concludes-2021-article-iv-consultation-completes-6-review-of-eff>; Atlantic Council (2021) Experts react. <https://www.atlanticcouncil.org/blogs/southasiasource/experts-react-a-renewed-pakistan-imf-agreement/>

10 IMF (2021). *Staff Concluding Statement 2021: Article 4*. <https://www.imf.org/en/News/Articles/2021/11/19/mcs-pakistan-staff-concluding-statement-2021-art-iv-staff-level-agreement-6th-review-eff>

11 M. Ahmed (2018). *Why does Pakistan have repeated macroeconomic crises*. CGD. <https://www.cgdev.org/publication/why-does-pakistan-have-repeated-macroeconomic-crises>

12 E. Ahmed (2013). “Can the new intergovernmental structure work in Pakistan.” ARC paper. http://eprints.lse.ac.uk/57957/1/_lse.ac.uk_storage_LIBRARY_Secondary_libfile_shared_repository_Content_Asia%20Research%20Centre%20Working%20Papers_ARCWP58-Ahmad.pdf; IMF (2017) Selected Issues. <https://www.imf.org/-/media/Files/Publications/CR/2017/cr17213.ashx>

13 I. Nabi, and A. Nasim (2020). *Addressing Pakistan’s chronic fiscal deficit*. <https://cdpr.org.pk/wp-content/uploads/2018/02/Addressing-Pakistan-Chronic-Fiscal-Deficit-April-24-2020.pdf>; The fiscal decentralization, introduced by the 18th Amendment to Pakistan’s Constitution may have diminished mobilization capabilities. And could reduce long term per capita GDP growth according to M. Dincecco and G. Katz (2014). *State capacity and long-run economic performance*. <https://academic.oup.com/ej/article/126/590/189/5077805> A.G. Pasha (2011). *Fiscal implications of the 18th Amendment*. <https://openknowledge.worldbank.org/bitstream/handle/10986/18707/871010NWP0Box30180Amendment0111411.pdf?sequence=1&isAllowed=y>; M.A. Rana (2020). *Decentralization experience in Pakistan*. <https://journals.sagepub.com/doi/full/10.1177/0972820119892720>; Pakistan’s State Bank stated in its Annual Report for 2018–19—that the lack of institutional capacity among provinces has given “rise to lower revenue collection, less tax-to-GDP ratio and poor fiscal consolidation efforts.” “The provinces are also not willing to share their revenues with districts. At the level of the central government, too, the number of federal departments has not gone down as it should have. Instead, federal expenses have increased. The Federal Board of Revenue (FBR) could also neither expand the tax base nor increase the tax to GDP ratio.” A. Q. Suleri (2020). *Fiscal implications*. <https://www.thenews.com.pk/tns/detail/655880-fiscal-implications>

14 World Inequality Lab (2021). *World Inequality Report 2022*. https://wir2022.wid.world/www-site/uploads/2021/12/Summary_WorldInequalityReport2022_English.pdf

staying the course. Pakistan cannot bank on the readiness of international financial institutions (IFIs) and other donors to provide rescue packages indefinitely, and especially so as the record of partial and failed reforms lengthens.¹⁵

GROWTH, INDUSTRIAL, AND EXPORT CRISES

To lower the ratio of public debt, finance urbanization, render infrastructure climate resilient, create an adequate number of jobs, and steadily improve living standards, Pakistan must sustain high growth rates driven increasingly by gains in total factor productivity. Sluggish average growth rates over the past three decades¹⁶ sharpen the edges of all the other crises and climbing out of the growth doldrums is an imperative that tops all others (Figure 2). For example, a higher growth rate would ease the debt servicing burden assuming that the GDP growth rate is higher than the real interest rate on debt.¹⁷

Less than a decade ago, developmental success was associated with export-oriented manufacturing. It was by building an increasingly complex manufacturing system and enlarging their share of global exports that several East Asian countries entered the club of high-income countries, and it is by means of manufacturing prowess that upper middle-income countries such as China and Malaysia will cross the high-income threshold. But like agriculture, the role of manufacturing as a driver of growth has begun to fade: “it is not the growth escalator it once was” (Rodrik 2021).¹⁸ The share of manufacturing in GDP is either stagnating or declining in most countries and premature deindustrialization has become a stylized fact.¹⁹

Figure 2. Pakistan’s GDP growth: 1990–2020



Source: WDI

15 D. F. Runde (2018). op cit. <https://www.csis.org/analysis/economic-crisis-pakistan-again-whats-different-time>

16 During 1972–2019 Pakistan’s GDP grew at an average of 4.81 percent p.a. O. Siddique (2020). TFP and economic growth in Pakistan. PIDE. <https://pide.org.pk/research/total-factor-productivity-and-economic-growth-in-pakistan-a-five-decade-overview/>

17 Currently the real interest rate on domestically financed debt (about 60 percent of total) is negative and the interest on debt owed to IFIs is in the 1–2 percent range.

18 D. Rodrik (2021). *Prospects for global economic convergence under new technologies*. https://drodrik.scholar.harvard.edu/files/dani-rodrik/files/prospects_for_global_economic_convergence_under_new_technologies.pdf

19 Coined by Danny Rodrik in 2015, this sounded the retreat from the conventional growth recipe based on East Asian experience. https://drodrik.scholar.harvard.edu/files/dani-rodrik/files/premature_deindustrialization_revised2.pdf

Pakistan once had the making of a South Asian tiger economy and growth led by manufacturing was in the cards, but it failed to capitalize on early mover advantages by first consolidating its position as an exporter of light manufactures and then diversifying into more capital and technology intensive products—as Korea, Taiwan and Singapore did. Instead, Pakistan is locked in a low-tech equilibrium exporting mainly textiles, garments, leather goods, and other labor-intensive low value items.²⁰ It failed to move up the value chain into more complex products. The share of manufacturing has plummeted from a high of 15.7 percent of GDP in 1994 to 11.4 percent in 2020, half the contribution of agriculture. Over time, Pakistan’s economy has become more inward looking, the business environment has remained unpropitious, export competitiveness has diminished, trade policies are biased against exports, and productivity has stagnated. Pakistan was ranked 108 by the Doing Business Index for 2021.²¹ On the WEF’s Index of Competitiveness for 2019, Pakistan was in 110th place down three notches from 2018.²² The ratio of exports to GDP was a low 10 percent in 2020 down from 16 percent in 1994.²³ Moreover, Pakistan is exporting fewer products and the volume of exports is far below potential—\$26 billion when given its level of development and factor endowments, Pakistan could be exporting \$88 billion worth of merchandise. Moreover, Pakistan’s economic complexity ranking is below what it was in 2000.²⁴ In sum, manufacturing and exports are not poised to drive growth.²⁵

What are the alternatives? Could the growth and diversification of manufactured exports be raised by several notches with the help of a more flexible exchange rate policy. Perhaps,²⁶ but it would be slow process preceded by substantial private investment (and foreign investment) in production capacity, skills, and intangibles. Global demand would be a factor and Pakistani exporters would need to elbow their way into GVCs for higher value products. This could be a long drawn uphill slog. It is interesting to note that the South Asian “tiger,” Bangladesh, has not managed to lessen its dependence on garments despite the more favorable trade regime.

For the past decade, there has been happy talk of growth and exports propelled by services—especially IT/digital services. “Industries without smokestacks”²⁷ is the new rallying cry, and the productivity of

20 Pakistan’s major export is low skilled workers mainly to the Middle East, a lucrative source of remittances amounting to \$33 billion in 2021 that handily exceeded earnings from merchandise exports. <https://www.worldbank.org/en/news/press-release/2021/11/17/remittance-flows-register-robust-7-3-percent-growth-in-2021>

21 <https://www.doingbusiness.org/en/rankings>. This Index has now been discontinued.

22 https://www3.weforum.org/docs/WEF_TheGlobalCompetitivenessReport2019.pdf

23 “Pakistan exported USD188 per working-age person in 2020, approximately half of Bangladesh’s amount, and more than 20 times less than Vietnam’s.” World Bank (2021) *Pakistan development Update*. October. India’s export to GDP ratio in 2020 was 19 percent and that of Sri Lanka was 17 percent. <https://thedocs.worldbank.org/en/doc/4fe3cf6ba63e2d9af67a7890d018a59b-0310062021/original/PDU-Oct-2021-Final-Public.pdf>; <https://data.worldbank.org/indicator/NE.EXP.GNFS.ZS>

24 OEC (2021). <https://oec.world/en/profile/country/pak>

25 Policy options are spelled out in World Bank (2020). *Pakistan: Trade strategy development*. <https://documents1.worldbank.org/curated/en/855261578376618421/pdf/Modernizing-Trade-in-Pakistan-A-Policy-Roadmap.pdf>

26 A. Pirzada (2019) finds that exports do respond to a depreciation of the real effective exchange rate after a lag. He maintains that this explains the slowdown from 2015 to 2018. But export growth has been slowing since 1992 (when they were 17 percent of GDP). A rebound after 2000 was reversed in 2011 when the export/GDP ratio was 14 percent. It then fell steadily to 8.2 percent of GDP in 2017. A. Pirzada (2019). *Do exchange rate shocks matter for Pakistan’s export performance?* https://www.bristol.ac.uk/efm/media/workingpapers/working_papers/pdffiles/dp19711.pdf; <https://data.worldbank.org/indicator/NE.EXP.GNFS.ZS?locations=PK>

27 R. Newfarmer et al. eds. *Industries Without Smokestacks*. UNU. <https://www.wider.unu.edu/publication/industries-without-smokestacks-2>

services, their contribution to urban jobs, and their export potential have been widely touted.²⁸ Undoubtedly, services dominate GDP in Pakistan and elsewhere and generate the bulk of new jobs, but no country (not India, not the Philippines) has demonstrated that promise can be translated into actual sustained performance and on balance, productivity of most services trails that of manufacturing.²⁹ Productivity of the informal sector, a major employer and provider of services is especially meager.³⁰

The WEF (2020) has announced that digital trade is booming as costs fall and that it “has the power to transform our world for the better in the long run. It could help us build a more resilient global economy and create countless opportunities for people around the world in areas as diverse as healthcare and professional services.”³¹ It is possible as Baldwin and Forslid (2020) claim, that the automation of manufacturing could stimulate trade in digital services as could greater participation by developing countries with the requisite human capital in services global value chains (Nano and Stolzenburg 2022).³² Such claims have been making the rounds for a few years however, total factor productivity of advanced countries and China that have successfully harnessed digital technologies and are actively engaged in trade of digital services, is stuck at sub 1 percent levels with no sign of imminent recovery. Could developing countries like Pakistan extract more mileage from digitization and other technologies available to services providers than the advanced countries?

Pakistan’s IT/digital subsector currently employs some 150,000 skilled workers and exports in 2021 were close to \$2 billion.³³ Total turnover was in the region of \$3.5 billion or about 1.5 percent of GDP. Even if the share were to double during the remainder of the 2020s, IT services alone would not move the GDP needle by much or create a plenitude of jobs. For that to happen, other services and manufacturing will have to do their share.

Pakistan’s growth deficit makes it harder to reduce public sector indebtedness and the brewing crises seem even more formidable. Achieving the desirable growth acceleration in the unfolding global environment will be a struggle even with good policies. At a minimum, it will require a double digit increase

28 A new report from the World Bank (2021) asserts that the South Asia region has the opportunity to “shift gears” and proceed down a services-led growth path. *Shifting Gears: Digitization and services-led development*. <https://openknowledge.worldbank.org/handle/10986/36317> E. Ghani and H. Kharas (2010). *The service revolution*. <https://openknowledge.worldbank.org/bitstream/handle/10986/10187/545950BRI0EP140Box349423B01PUBLIC1.pdf?sequence=1&isAllowed=y>; E. Ghani et al. (2010). *Can services be the next growth escalator?* VoxEu. <https://voxeu.org/article/can-services-be-next-growth-escalator>; G. Nayyar et al. (2021). *At your service: The promise of services led development*. <https://openknowledge.worldbank.org/handle/10986/35599>

29 These include government services, education, health, construction, retail, and hospitality. All have registered low or negative gains in productivity—in developing and developed countries alike.

30 Because most of those transferring from agriculture to the urban sector are absorbed by the informal sector, this ongoing structural transformation does little to boost the growth rate. Labor productivity barely improves.

31 WEF (2020) <https://www.weforum.org/agenda/2020/06/trade-in-digital-services-is-booming-here-s-how-we-can-unleash-its-full-potential/>. This is echoed more cautiously by UNCTAD, the WTO, OECD, McKinsey, and others. <https://unctad.org/news/trade-data-2020-confirm-growing-importance-digital-technologies-during-covid-19>; https://www.wto.org/english/res_e/publications_e/wtr18_e.htm; <https://www.mckinsey.com/business-functions/mckinsey-digital/our-insights/digital-globalization-the-new-era-of-global-flows>

32 E. Nano and V. Stolzenburg (2022). *Global services value chains*. VoxEu. <https://voxeu.org/article/global-services-value-chains-new-path-development>; R. Baldwin and R. Forslid (2020). *Covid 19, globotics and development*. VoxEu. <https://voxeu.org/article/covid-19-globotics-and-development>

33 Foreign firms farm out the lowest paid, most tedious labor-intensive code writing, labelling of images for training machine learning algorithms, and other tasks to free lancers in developing countries. Kate Crawford (2021, p.67) draws attention to “Fauxtimation [which] does not directly replace human labor; rather it relocates and disperses it in space and time.” Fauxtimation workers have been mobilized all over the world thanks to the Internet, but each is entirely dispensable and can be “replaced by another crowdworker or a more automated system.” *Atlas of AI*. Yale University Press.

in domestic savings and investment, trade reform,³⁴ a major diversification of industry and exports into products with growth potential, a focus on high end tradable services, and substantial complementary investment in infrastructure and human capital.³⁵ All this will need to be telescoped into less than two decades. This is a tall order. But when a country's survival is at stake, perhaps politicians and other stakeholders can be persuaded by the enormity of the crises to take the long view, take the tough decisions, and persuade the nation to endure what could prove to be painful adjustment for many.

Redoubling efforts to resolve these twin crises is in order, but other looming crises deserve equal attention. Deferring policy action will only add to their severity.

INEQUALITY CRISIS

There is accumulating evidence that growth is negatively correlated with net income inequality.³⁶ The level of inequality is correlated with mental and physical health, education, and economic security.³⁷ Rising inequality can also cause social instability, weaken trust in liberal democratic institutions, undermine the legitimacy of the state, lead to the emergence of deep political fissures, and entrench a plutocracy.³⁸ Ostry et al. (2019; 2011) make the case that successful economies are ones that can both initiate a growth spurt but also sustain a high growth rate over several years if not decades. They maintain that the duration of growth spells is critical and income distribution is a primary determinant of duration, more important than trade openness, political institutions or FDI. This is because of high levels of income inequality results in vicious spirals identified by Sanchez-Ancochea (2020)³⁹ (Figure 3).

34 World Bank (2021). *Pakistan Development Update*. October. <https://thedocs.worldbank.org/en/doc/4fe3cf6ba63e2d9af67a7890d018a59b-0310062021/original/PDU-Oct-2021-Final-Public.pdf>

35 The quality of human capital will be far more consequential for growth than an increase in the percentage of those with some schooling. As Lant Pritchett observed, "schooling ain't learning." L. Pritchett (2013). *The Rebirth of Education; Schooling Ain't Learning*. CGD. <https://www.hks.harvard.edu/centers/cid/publications/books/the-rebirth-of-education-schooling-aint-learning>; R. Hausmann et al. (2005). *Growth accelerations*. <https://ideas.repec.org/a/kap/jecgro/v10y2005i4p303-329.html>

36 A. Berg et al. (2018). *Redistribution, inequality, and growth*. *Journal of Economic Growth*. <https://link.springer.com/article/10.1007/s10887-017-9150-2>; OECD (2014). Does income inequality hurt growth. <https://www.oecd.org/social/Focus-Inequality-and-Growth-2014.pdf>; However, the research to date is by no means conclusive and some of the findings are mixed. K. Mdingi and S-Y Ho (2021). Literature review on inequality and growth. <https://pubmed.ncbi.nlm.nih.gov/34430298/>; J. Furman (2019). *Comment on Confronting Inequality*. <https://www.piie.com/system/files/documents/furman20190131post-ppt.pdf>

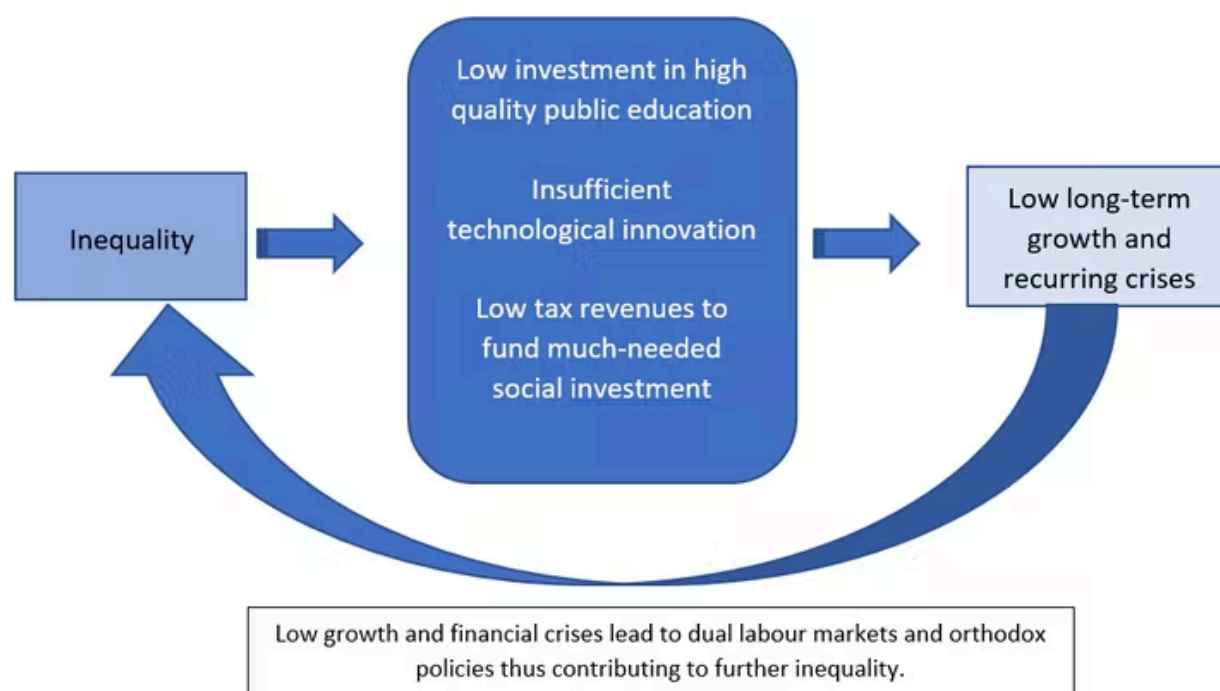
37 L. Chancel (2020). *Unsustainable Inequalities*. MIT Press.

38 Lucas Chancel (2020 p.15,17) writes that "the inability of states to guarantee social justice and to narrow if not actually eliminate economic inequality undermines their very legitimacy ... [Furthermore] with growing income inequality, the wealthiest have fewer objective reasons to support policies aimed at reducing it." L. Stoetzer (2021). Income inequality and support for populist parties. <https://blogs.lse.ac.uk/europpblog/2021/11/11/how-does-income-inequality-affect-support-for-populist-parties/>; L. Pastor and P. Veronesi (2018). *Inequality aversion, populism, and the backlash against globalization*. NBER. https://www.nber.org/system/files/working_papers/w24900/w24900.pdf. In a society marked by the spectacular inequalities of income and wealth ... there is no meaningful sense in which all citizens, rich and poor alike, can nevertheless relate to one another on an equal footing. NYT (2020). <https://www.nytimes.com/2020/07/01/opinion/economic-inequality-moral-philosophy.html>

39 "Inequality has a statistically significant negative relationship with the duration of growth spells. A one-Gini-point increase in inequality is associated with a 6-percentage point higher risk that the spell will end the next year (or, equivalently, with a decrease in expected spell length of about 7 percent)." J. Ostry, A. Berg and C. Tsangarides (2014). *Redistribution inequality and growth*. IMF. <https://www.imf.org/external/pubs/ft/sdn/2014/sdn1402.pdf>; J. Ostry, et al. (2019). *Confronting Inequality*. Columbia University Press; A. Berg and J. Ostry (2011). *Inequality and unsustainable growth*. IMF. <https://www.imf.org/external/pubs/ft/sdn/2011/sdn1108.pdf>; J. Ostry (2019). *Confronting inequality*. <https://www.piie.com/system/files/documents/ostry2019-01-31ppt.pdf>; D. Sanchez-Ancochea (2020). *The Costs of Inequality in Latin America*. I.B Tauris. In Pakistan as in Latin America, the power of business and landed elites is responsible for favoring policies biased against exports, tax reform and redistribution. T. Fairfield (2015). *Structural power in comparative political economy*. LSE Research. http://eprints.lse.ac.uk/62123/7/Fairfield_structural_power.pdf

Using the Gini coefficient as a yardstick, inequality in Pakistan is in the middling range—31.6 percent (2018)⁴⁰—but this is because income earners in upper tail of the distribution underreport their incomes. Other attempts to measure inequality suggest that the divergence in incomes is much greater. Using both national income and tax data, Ahmed (2020)⁴¹ estimated that in 2015, the income share of the top 1 percent amounted to 30.2 percent with 13.4 percent accruing to the top 0.1 percent and 5.1 percent to the top 0.01 percent. The share of the bottom 50 percent was 11.6 percent. The share of the middle 40 percent was 30 percent however, more recent estimates indicate that the Pakistani middle class is being squeezed by inflation and declining employment opportunities, much like its counterparts in the OECD countries.⁴² Income inequality is paralleled by gender and health inequality and inevitably, social mobility is low—very few from the bottom quintile can transition into higher quintiles within a generation.⁴³ In other words, inequality in Pakistan is comparable to that in the Middle East, and some of the Latin American countries.

Figure 3. The economic cost of inequality



Source: Sanchez-Ancochea (2021) <https://theconversation.com/latin-america-inequality-and-political-instability-have-lessons-for-the-rest-of-the-world-152929>

40 <https://data.worldbank.org/indicator/SI.POV.GINI?locations=PK>

41 A. Ahmed (2020). *Measuring income inequality in Pakistan*. https://www.econ.berkeley.edu/sites/default/files/Ahmed_Ali_thesis.pdf

42 M. Haider (2021). *Human Development Report 2020*. The modified Palma ratio for Pakistan comes to 4.7 i.e., the richest quintile has 4.7 times the income of the lowest quintile. <https://www.thenews.com.pk/print/816040-human-development-report-2020-massive-income-inequality-among-rich-and-poor>; OECD (2019). *Under Pressure: The Squeezed Middle Class*. <https://www.oecd.org/social/under-pressure-the-squeezed-middle-class-689afed1-en.htm>

43 Dawn (2015). *50 shades of inequality in Pakistan*. <https://www.dawn.com/news/1178703>

Although global inequality has diminished, inequality is trending upwards in many countries. Barack Obama identified income inequality as “the defining challenge of our time.” In the aftermath of the COVID-19 pandemic, there is a risk that it could rise in Pakistan as well. As Piketty (2020) and Ostry et al. (2019)⁴⁴ maintain, inequality is a political choice. It is what societies choose based on the ideology of the dominant elites and not necessarily dictated by either technology or globalization. Inequality appears to be feeding the upsurge of right-wing populism, civil unrest and political polarization in Latin America, Europe, and the United States threatening democratic institutions and trust in government. It could also undercut growth potential and the capacity to garner widespread public support for needed reforms.

The challenge for Pakistan is how to introduce a spate of reforms affecting taxes, the financial sector, tariffs, participation in global supply chains, rule of law, the environment, and the incentive for entrepreneurs to make long term, productive investments, which would foster growth, while simultaneously improving the distribution of income.⁴⁵ Some of the reforms would be supported by Pakistan’s moneyed elites; ones that ate into the rents they derive from current policies and institutions and redistributed income would be strenuously opposed. This opposition has stymied past efforts at achieving sustainable and inclusive growth. If it cannot be overcome, rising social turbulence could compound the threats from other sources. The World Bank’s Pakistan at 100 report maintains that “to achieve its ambitious target of becoming one of the top 10 economies in the world by 2047, equity should be at the center of [Pakistan’s] development process.” (Redaelli 2019).⁴⁶

STATE CAPACITY CRISIS

Developing countries that have achieved durable economic success over the past seventy years have all benefitted from state capacity. Strong states planned and orchestrated the growth process in the successful East Asian economies and in a few other nations which rapidly ascended the income ladder. Such states were not necessarily authoritarian states—though some were—they were both effective and their legitimacy was beyond question. A strong state does not guarantee economic success, but arguably state capacity of a high order is a necessary condition albeit not a sufficient one for attaining the government’s objectives. Most developing countries had to build state capacity as they began modernizing their economies.⁴⁷ In many cases this occurred once nations gained independence. States needed to establish law and order, put in place a system for extracting revenue, take steps to supply the public goods that meet the basic needs of the population, begin fostering an environment supportive of investment and business activity, which included measures to secure property rights, and create legal, administrative, regulatory, and political institutions that ideally were viewed as accountable and enjoyed the trust of the majority of the public.⁴⁸ Acquiring such capacity was and is a struggle for many countries. Progress tends to be uneven and is often not linear. A slide backward after years of solid advance across the board, is not uncommon and frequently associated with changing political circumstances.

44 J. Ostry, et al. (2019). *Confronting Inequality*. Columbia University Press. <http://cup.columbia.edu/book/confronting-inequality/9780231174695>; Piketty, T (2020). *Capital and Ideology*. Harvard University Press.

45 J. Furman (2019). *Comment on Confronting Inequality*. <https://www.piie.com/system/files/documents/furman20190131post-ppt.pdf>

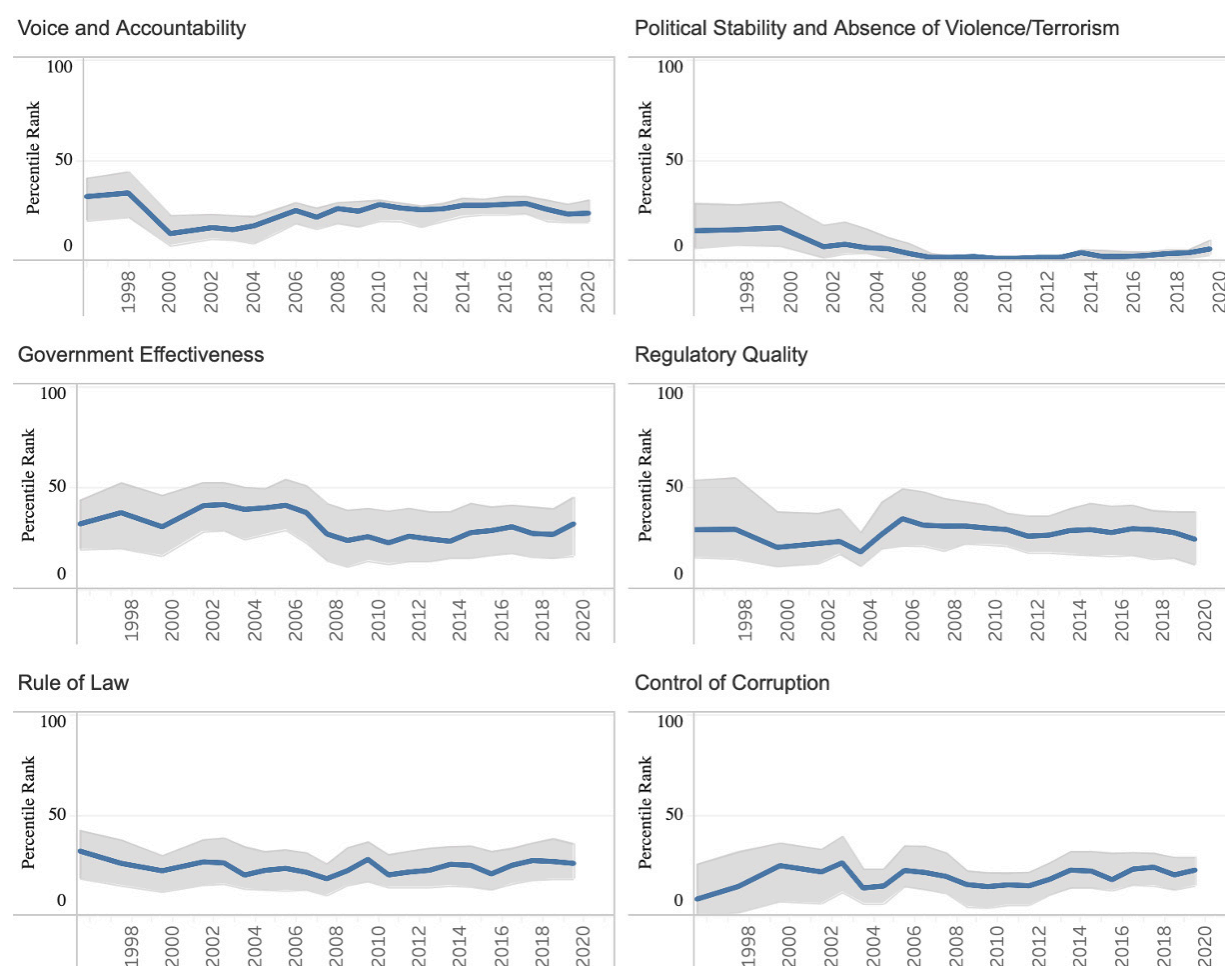
46 S. Redaelli, (2019). Pakistan @100: From poverty to equity. <https://openknowledge.worldbank.org/handle/10986/31409>

47 J. Hanson and R. Sigman (2019) argue for a focus on three main attributes: the state’s ability to protect against external threats and maintain order and enforce policy; mobilize revenue; and the administrative capacity to frame and implement policy, deliver services, and regulate activity. Leviathan’s latent dimension. https://calhoun.nps.edu/bitstream/handle/10945/64717/Hanson-Sigman_Leviathans_Latent%20Dimension.pdf?sequence=1&isAllowed=y

48 N.D. Johnson and M. Koyama (2022). *States and economic growth*. https://mason.gmu.edu/~mkoyama2/About_files/StateCapacitySurvey.pdf

In the 1960s, Pakistan was in the front ranks of developing economies. It was viewed as having acquired the state capacity to define and to realize ambitious economic goals. That was then. Barely three decades later, Pakistan was high on the list of fragile states swinging between 9th and 14th places on the Index of Fragile States. As of 2021, it was in 29th place⁴⁹ sharing a neighborhood with countries such as Myanmar, Venezuela, Mozambique, and Cote d'Ivoire. A dubious distinction. On the Corruption Perception Index for 2020, Pakistan had the 31st spot—flanked by Niger and Bolivia.⁵⁰ The governance indicators computed by the World Bank, which include government effectiveness, rule of law, regulatory quality, and absence of violence are all relatively low and show virtually no improvement between 1990 and 2020 (Figure 4). Pakistan's ranking on the Fraser Freedom Index mirrors the scores on other indices. The ranking is almost unchanged between 2000 and 2019 (Figure 5). The Global Peace Index reinforces the impression of a country where societal safety and security is fairly tenuous. In 2021, Pakistan was just ahead of North Korea in the 150th slot where it has languished since 2017.⁵¹

Figure 4. Pakistan governance indicators



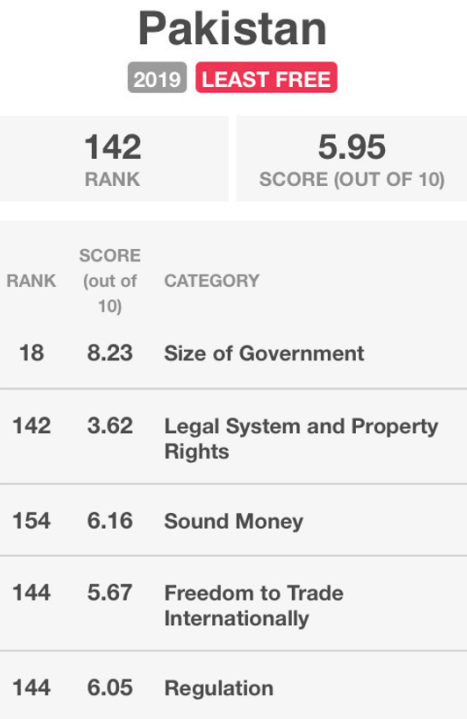
Source: Worldwide Governance Indicators (2021) <https://info.worldbank.org/governance/wgi/Home/Reports>

49 <https://fragilestatesindex.org>

50 <https://www.transparency.org/en/cpi/2020/index/nzl>

51 2021 Global Peace Index. <https://reliefweb.int/sites/reliefweb.int/files/resources/GPI-2021-web.pdf>

Figure 5. Economic Freedom Index Ranking



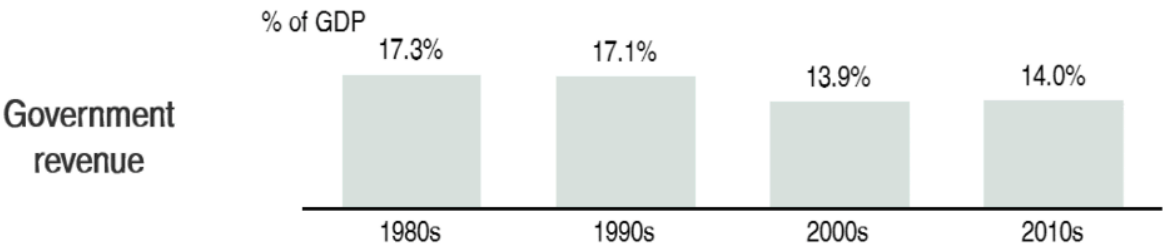
Source: Fraser Freedom Index 2019. <https://www.fraserinstitute.org/economic-freedom/map?geo-zone=world&page=map&year=2019&countries=PAK>

Mobilizing resources is central to the state’s capacity. Hanson and Sigman (2019)⁵² are emphatic on this score. “Raising revenue is not only a critical function of the state, but it also encompasses a particular set of capacities that are foundational to state power... States must have the wherewithal to reach their populations, collect and manage information, possess trustworthy agents to manage the revenue, and ensure popular compliance with tax policy.”

The Pakistani state’s capacity falls short on this score as noted earlier. Revenue collections have declined since the 1980s from an average of 17.3 percent of GDP in the 1980s to 14 percent of GDP in the 2010s. (Figure 6). This is well below the global average of 26.6 percent and 19.6 percent for middle income countries.

An assessment of instability and violence in Pakistan relative to other Asian countries by the Asia Foundation suggests that the state is struggling to hold the country together, instill a sense of nationhood, to provide security, contain terrorism,⁵³ and to protect property rights (Figure 7). Although violence has subsided somewhat since 2019, the prevailing equilibrium is a precarious and turbulence lurks beneath the surface. Pakistan was 7th ranked by the Global Terrorism Index (2020), one point below Yemen.⁵⁴

Figure 6. Pakistan revenue collection



Source: <https://macropakistani.com/taxes-in-pakistan/>

52 https://calhoun.nps.edu/bitstream/handle/10945/64717/Hanson-Sigman_Leviathans_Latent%20Dimension.pdf?sequence=1&isAllowed=y

53 As many as 40 terrorist organizations are believed to operate in and from Pakistan. Asia Foundation (2017). *Pakistan*. <https://asiafoundation.org/wp-content/uploads/2017/10/Pakistan-StateofConflictandViolence.pdf>

54 Global Terrorism Index (2020). <https://visionofhumanity.org/wp-content/uploads/2020/11/GTI-2020-web-1.pdf>

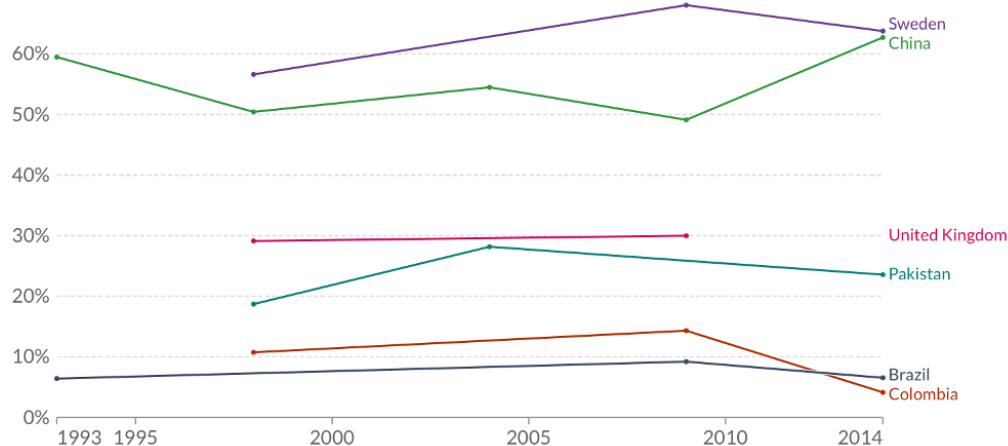
Figure 7. Pakistan: Socio-political temperature



Source: Asia Foundation: Pakistan. <https://asiafoundation.org/wp-content/uploads/2017/10/Pakistan-StateofConflictandViolence.pdf>

The composite picture of state capacity that emerges from these indicators is far from positive. There has been a definite deterioration since the 1960s, when Pakistan was riding high. After some ups and downs in the interim, state capacity appears weak and not up to the political, economic, and environmental challenges the country faces. Moreover, the public's trust in the organs of the state and others outside their extended family or kin network is weak and has declined since 2005 (Figure 8). Trust, according to Fukuyama (2020), "is the single most important commodity that will determine the fate of a society Citizens have to believe that [those at the helm of affairs] know what they are doing."⁵⁵ Absent sustained improvement in capacity, the prognosis for Pakistan is dire.

Figure 8. Trust in others



Source: Our World in Data <https://ourworldindata.org/trust>

⁵⁵ F. Fukuyama (2020). The thing that determines a country's resistance to Corona virus. <https://www.theatlantic.com/ideas/archive/2020/03/thing-determines-how-well-countries-respond-coronavirus/609025/>; Regrettably, trust already low in governments and in most societal leaders, seems to be fading in all but a few countries. Almost no institution is believed to be both competent and ethical. Interestingly, inequality affects trust more than economic growth. Edelman Trust Barometer (2020). <https://cdn2.hubspot.net/hubfs/440941/Trust%20Barometer%202020/2020%20Edelman%20Trust%20Barometer%20Global%20Report-1.pdf>

Rebuilding state capacity and trust can be a slow process. It needs to be taken up in earnest as the hour is late.

DEMOGRAPHIC (AND URBANIZATION) CRISIS

In 1971, the global population was increasing by 2.13 percent per annum. By 2020, steady decline had reduced the rate to 1.01 percent per annum. During the same period, the total fertility rate (TFR) fell from 4.67 to 2.40. By comparison, Pakistan's population continues growing at 2.0 percent in 2020 and its TFR was a high 3.5 in 2019.⁵⁶ Its population had risen from 60 million in 1971 to 221 million 2020⁵⁷ with a median age of 23 years. By 2050, the UN projects that the population will reach 380 million.⁵⁸ The current population is already straining the country's resources.⁵⁹ Although Pakistan's population is the world's fifth highest, the land area is only 0.59 percent of the global total and of this, about 40 percent is arable land down from 43 percent in 1982.⁶⁰ Close to 60 percent of the population copes with food insecurity and this is one reason why 40 percent of young children are stunted, and 5 percent suffer from wasting.⁶¹

Approximately 45 percent of Pakistanis live in urban areas, or about 100 million people.⁶² Assuming that urbanization continues its steep ascent (Figure 9), as many as 75 percent of the population could be living in cities by 2050,⁶³ which would be the norm for an upper middle-income country.⁶⁴ If so, cities would need to absorb another 185 million people requiring massive investment in housing and infrastructure on top of what is needed to upgrade and render resilient the existing infrastructure.

56 <https://data.worldbank.org/indicator/SP.DYN.TFRT.IN>; <https://data.worldbank.org/indicator/SP.POP.GROW>

57 Possibly an underestimate. Numbers of 230 million and more have been aired. Refugees from Afghanistan, Bangladesh, and India number several million and the exodus from Afghanistan could add even more.

58 <https://data.worldbank.org/indicator/SP.POP.TOTL?locations=PK>

59 U. Jamal (2017). *Pakistan's big new threat*. <https://thediplomat.com/2017/09/pakistans-new-big-threat-a-bulging-population/>; https://www.business-standard.com/article/international/pak-may-not-be-able-to-meet-needs-of-rapidly-increasing-population-experts-121071300063_1.html; https://www.washingtonpost.com/world/asia_pacific/a-disaster-in-the-making-pakistan-population-has-more-than-doubled-in-20-years/2017/09/08/4f434c58-926b-11e7-8482-8dc9a7af29f9_story.html

60 <https://data.worldbank.org/indicator/AG.LND.ARBL.ZS?locations=PK>

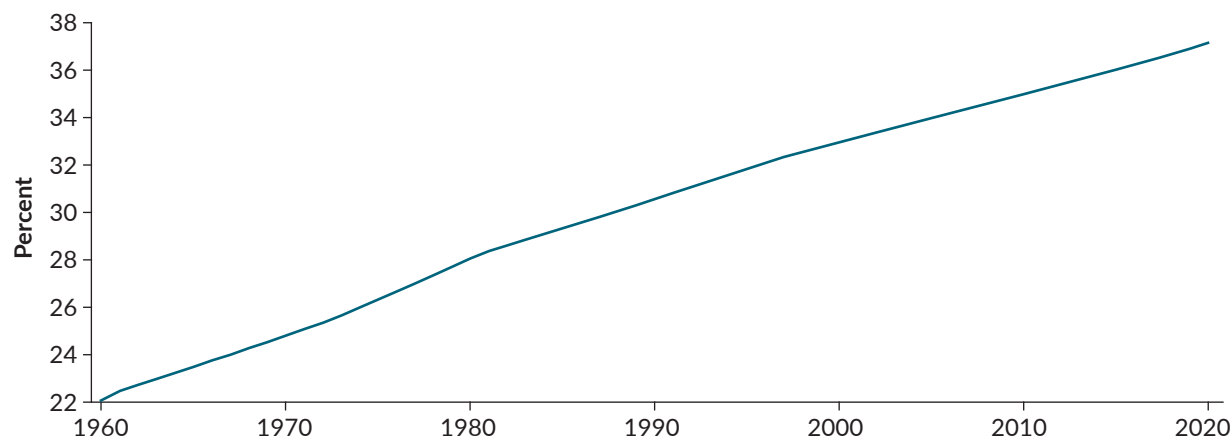
61 <https://www.borgenmagazine.com/top-10-facts-about-overpopulation-in-pakistan/>; T. Mahmood et al. (2020) *Why under five children are stunted*. <https://bmcpublihealth.biomedcentral.com/articles/10.1186/s12889-020-09110-9>; A. Ali (2021). *Current status of malnutrition*. <https://pubmed.ncbi.nlm.nih.gov/32275484/>

62 According to the World Development Indicators (accessed 2021), the urbanization rate in 2020 was 37.1 percent but casual empiricism suggests that it is higher. M. Kugelman ed. (2014). *Pakistan's runaway urbanization*. Wilson Center. https://www.wilsoncenter.org/sites/default/files/media/documents/publication/ASIA_140502_Pakistan%27s%20Runaway%20Urbanization%20rpt_0530.pdf; The use of nightlights to assess the spread of urbanization and economic activity can improve the accuracy of urbanization rates. It has helped uncover the hidden (messy, informal) urbanization in Pakistan. World Bank (2015). *Leveraging Urbanization in South Asia*. <https://openknowledge.worldbank.org/handle/10986/22549> <https://news.climate.columbia.edu/2013/11/11/night-time-lights-illuminate-trends-in-urbanization/>; and Y. Liu et al. (2020) *Urban growth sustainability of Islamabad*. <https://link.springer.com/article/10.1007/s10708-020-10172-w>

63 The numbers would be swelled by climate refugees. <https://www.climate-refugees.org/spotlight/2021/7/30/pakistan>

64 The average for upper middle-income countries in 2020 was 68 percent. <https://data.worldbank.org/indicator/SP.URB.TOTL.IN.ZS?locations=PK>

Figure 9. Pakistan urbanizing



Source: WDI <https://data.worldbank.org/indicator/SP.URB.TOTL.IN.ZS?locations=PK>

A rapidly increasing and youthful population would also be in search of jobs. Currently, Pakistan is adding almost two million new workers each year. Although literacy rates of new entrants are on the rise, 43 percent of the working age population as of 2017 lacked formal education, less than 10 percent had secondary education, and as noted above, the quality of human capital overall is low.⁶⁵ This factor together with the low overall elasticity of employment to GDP (0.2 between 2000 and 2018),⁶⁶ means that additions to the workforce cannot be absorbed by an economy that averages a 4–5 percent per annum growth rate. The potential and actual growth rate would need to rise into the high single digit range for new entrants and the overhang from the past to be gainfully employed. With investment as a percent of GDP and growth of factor productivity trending downwards, such rates are moving beyond reach—the crisis discussed earlier (Figure 10). Should such trends persist, there is no demographic dividend in the offing only an expanding, increasingly disaffected and poverty ridden underclass.⁶⁷

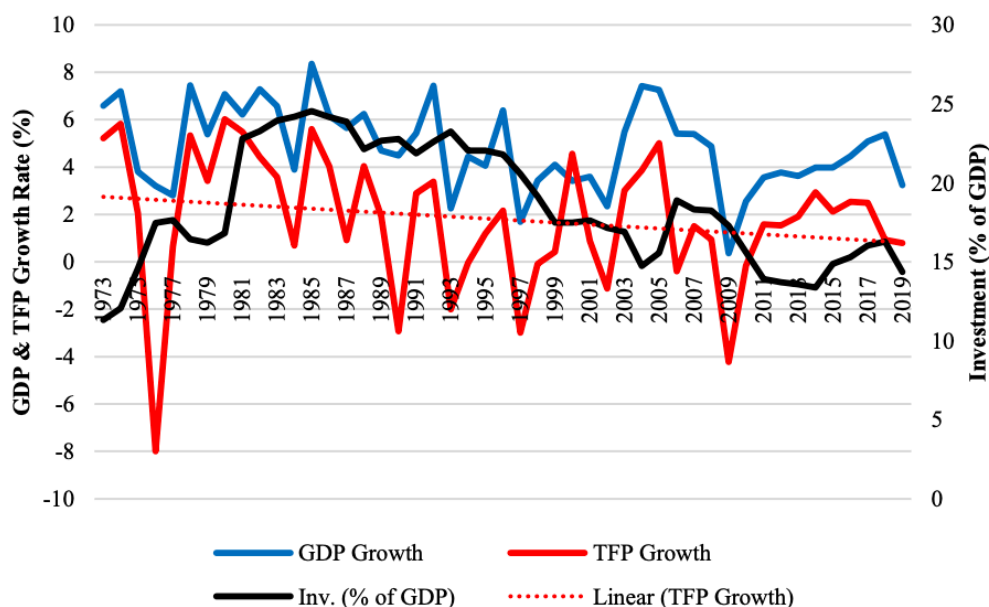
India, Bangladesh, and several of the Southeast Asian countries have managed to check population growth bringing it down to 1.0 percent per annum or less (Thailand 0.3; Bangladesh 1.0 in 2020). Fertility management should clearly be a priority to head off an increase in unemployment, ease the burden on public services, contain the outlay on urban infrastructure, and to prepare for climate change, which is the great brewing crisis of the century.

⁶⁵ A Pakistani child can expect to complete just 4.8 years of learning adjusted schooling. Y. Cho and Z. Majoke (2020). *Jobs diagnostic: Pakistan*. World Bank. <https://openknowledge.worldbank.org/bitstream/handle/10986/33317/145951.pdf?sequence=4>

⁶⁶ J. Ahmed and G. Samad (2019). *Employment in Pakistan*. PIDE Research Brief. <https://www.pide.org.pk/pdf/PIDE-Research-Brief-02-2019.pdf>

⁶⁷ Z.A. Sathar et al. eds. (2017). *Capturing the Demographic Dividend in Pakistan*. <https://pakistan.unfpa.org/en/publications/capturing-demographic-dividend-pakistan>. The contributors suggest how Pakistan could accelerate its demographic transition.

Figure 10. GDP, and TFP growth rates, and investment as percent of GDP: 1972–2019



Source: O. Siddique (2020). <https://pide.org.pk/research/total-factor-productivity-and-economic-growth-in-pakistan-a-five-decade-over-view/>

CLIMATE CHANGE CRISIS

Pakistan is in the eye of the storm.⁶⁸ It is the fifth most vulnerable country.⁶⁹ Within the next three to four decades the habitable niche⁷⁰ will shrink because of rising temperatures, inundation of coastal areas, salinization of the groundwater, bouts of severe weather leading to floods,⁷¹ droughts and heat waves, and water scarcity, which is acute in some areas could worsen and become more widespread by 2025.⁷² Already, a city in Pakistan has (Jacobabad) registered the highest temperatures experienced

68 M. Hussain et al. (2019). *A comprehensive review of climate change impacts in Pakistan*. <https://link.springer.com/article/10.1007/s10661-019-7956-4>; The costs could range from between \$7 billion and \$14 billion per annum. A joint study by the ADB and the World Bank pegged the annual losses at close to \$4 billion. Climate Risk Country Profile (2021). <https://openknowledge.worldbank.org/bitstream/handle/10986/36372/Pakistan-Climate-Risk-Country-Profile.pdf?sequence=1&isAllowed=y>

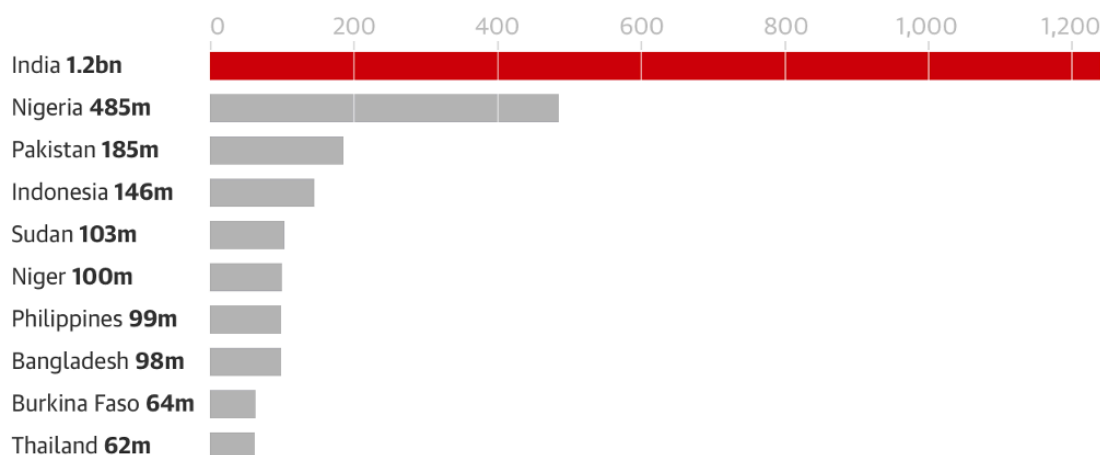
69 Pakistan was 8th ranked by the Global Climate Risk Index in 2019. https://germanwatch.org/sites/default/files/Global%20Climate%20Risk%20Index%202021_1.pdf; <https://www.nytimes.com/2020/09/27/opinion/pakistan-climate-change.html>

70 Chi Xu et al. (2020). *Future of the climate niche*. <https://www.pnas.org/content/117/21/11350>. “The majority of people have lived within areas where the annual average temperature ranges from 52–59 degrees Fahrenheit (11–15 degrees Celsius), while fewer have inhabited lands with temperatures ranging from 68–77 degrees F (20–25 degrees C). For comparison, the Sahara Desert, one of the hottest regions around the world, has an annual average temperature of 86 degrees F (or 30°C). Large areas of the Sahara are considered *uninhabitable* because of the hot and dry conditions. The area of Earth’s land surface occupied by inhospitably hot temperatures greater than 84 degrees F (29°C) on average can be expected to rise from a current level of 0.8% today to 19% in 2070.” By 2070, as many as 3 billion people could be exposed to temperatures comparable to those prevailing in the hottest parts of the Sahara. <https://earthsky.org/earth/global-warming-areas-of-earth-too-hot-for-people/>; <https://www.ft.com/content/072b5c87-7330-459b-a947-be6767a1099d>

71 “People affected by flooding is projected, with a likely increase of around 5 million people exposed to extreme river floods by 2035–2044, and a potential increase of around 1 million annually exposed to coastal flooding by 2070–2100.” World Bank/ADB (2021) <https://openknowledge.worldbank.org/bitstream/handle/10986/36372/Pakistan-Climate-Risk-Country-Profile.pdf?sequence=1&isAllowed=y>

72 <https://www.dawn.com/news/1593187>; Water availability per capita is 1,017 cubic meters per capita almost at the scarcity threshold which is 1,000 cu meters. <https://www.thenews.com.pk/magazine/you/632412-making-every-drop-count>

Figure 11. Numbers affected by high heat within 50 years



Source: <https://www.theguardian.com/environment/2020/may/05/one-billion-people-will-live-in-insufferable-heat-within-50-years-study>

anywhere.⁷³ Such temperatures could begin affecting larger areas of the country. Once wet bulb temperatures exceed 35°C, survival is a losing battle—the body cannot cool itself. Countries lying in the tropical belt and Pakistan in particular, could experience average temperatures that are higher than the global average with a 4.9°C increase above the 1986–2005 baseline within the realm of possibility by the end of the century.⁷⁴ Figure 11 presents forecasts of how many people could be affected by unbearable heat in India and elsewhere.

Pakistan faces increased risk of both meteorological (precipitation deficit) drought and hydrological (surface and sub-surface flows of water). And this risk is magnified because it can store only 10 percent of its annual river flow, well below the 40 percent global average. Already the annual losses from drought, floods, and poor-quality water and sanitation amount to at least \$12 billion annually (World Bank 2019).⁷⁵ Were conditions to worsen, agriculture, which currently uses over 90 percent of fresh water—although it contributes just 23 percent of GDP—would be the hardest hit. Shortages would also adversely affect manufacturing, power generation, and urban consumers.⁷⁶ When all key sectors are hobbled by water scarcity and assailed by severe weather events, potential GDP growth will be reduced further.

Better water management, investment in storage and greater use of measures to minimize evaporation, changing the mix of agriculture crops to reduce water consumption,⁷⁷ effective use of pricing, recycling, and reuse of wastewater,⁷⁸ attention to urban design, and upgrading the urban water

⁷³ <https://www.telegraph.co.uk/global-health/climate-and-people/hotter-human-body-can-handle-pakistan-city-broils-worlds-highest/>

⁷⁴ World Bank/ADB (2020). <https://openknowledge.worldbank.org/bitstream/handle/10986/36372/Pakistan-Climate-Risk-Country-Profile.pdf?sequence=1&isAllowed=y>

⁷⁵ World Bank (2019). *Pakistan: Getting more from water*. <https://openknowledge.worldbank.org/handle/10986/31160>

⁷⁶ A. Salman (2021). *Pakistan's looming water crisis*. <https://www.eastasiaforum.org/2021/11/13/pakistans-looming-water-crisis/>

⁷⁷ Pakistan exports virtual water through its overseas sales of rice, wheat, and fruit. <https://oec.world/en/profile/country/pak>

⁷⁸ China is attempting to reuse more of the 75 billion cubic meters of urban wastewater discharged annually by increasing investment in water management and treatment facilities, but the cost is high. Reclaiming and reusing water in rural areas is only just beginning. With water quality deteriorating, reclamation will become essential and not just in China. <https://www.science.org/doi/10.1126/science.abm6738>

infrastructure are some of the measures that could help survive the climate change induced pressures to come.⁷⁹ This is well trodden ground, but implementation has run into numerous obstacles and has languished like so many other policies.

The managed withdrawal of cities and concentration of populations to areas less exposed to severe climatic conditions will also become unavoidable. This will be an enormous challenge because as noted earlier, the urban population could be almost three times its current size. Greater use of energy frugal active and passive cooling technologies⁸⁰ could make summer months less unbearable and Pakistan could join other nations in scaling back carbon emissions.⁸¹ But COP 26 was a warning to countries like Pakistan:⁸² hope that leading emitters of GHGs will somehow live up to their promises and halve emissions by 2030,⁸³ but prepare for the worst.

Any one of these crises is cause for serious concern. Together they have the making of a perfect storm.

79 W. Yu et al. (2013). *The Indus Basin of Pakistan: The impact of climate risks on water and agriculture*. <https://openknowledge.worldbank.org/bitstream/handle/10986/13834/770220PUB0REPL0te040180130EPI019874.pdf?sequence=1&isAllowed=y>

80 S. Yusuf (2021). *Staying cool as the climate warms*. <https://www.cgdev.org/publication/staying-cool-climate-warms>; R. Khosla et al. (2021). "Cooling for sustainable development." *Nature Sustainability*. <https://www.nature.com/articles/s41893-020-00627-w>; IEA (2018) Future of cooling. <https://www.iea.org/reports/the-future-of-cooling>

81 M. Sugathan and G. Varela (2021). *Pakistan's policy options to make trade work for environmental sustainability*. "[By] encouraging Pakistani firms (as well as government entities and households) [to] access to EGS at world prices to achieve environmental benefits, and make sure that firms that use EGS to 'green' their production process can show it to the world through efficient accreditation services. Secondly, it needs to promote competitive production and exports of some EGS themselves. The two objectives require different policy instruments." <https://blogs.worldbank.org/endpovertyinsouthasia/pakistans-policy-options-make-trade-work-environmental-sustainability>

82 <https://thehill.com/opinion/energy-environment/582110-cop26-was-a-cop-out-heres-why-it-gets-a-failing-grade>

83 K. Levin et al (2019). <https://www.wri.org/insights/net-zero-ghg-emissions-questions-answered>; <https://www.bbc.com/future/article/20211028-why-not-all-net-zero-emissions-targets-are-equal>; IPCC (2018) <https://www.ipcc.ch/sr15/chapter/spm/> spm-c/spm3a/