

Papua New Guinea Economic Update



BENEFITING FROM
HIGH COMMODITY
PRICES

September 2022

PAPUA NEW GUINEA ECONOMIC UPDATE
Benefiting From High Commodity Prices

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Preface and Acknowledgments

This publication is the eighth in the current series of Papua New Guinea Economic Updates (*PNG EU*). It has two principal aims. First, it analyzes the key recent developments in Papua New Guinea's economy and places these in a longer-term and global context. Based on these developments and recent policy changes, the *PNG EU* updates the outlook for the country's economy and the welfare of its citizens. Second, the *PNG EU* provides an in-depth examination of a selected development issue and evaluates the implications of recent trends and policy reforms in terms of the government's stated development objectives. It is intended for a broad audience, including policy makers, business leaders, and the community of analysts and professionals engaged in Papua New Guinea's evolving economy.

The *PNG EU* was prepared by the Macroeconomics, Trade and Investment Global Practice, under the guidance of Stephen N. Ndegwa (Country Director), Lars Christian Moller (Practice Manager) and Stefano Mocci (Country Manager). The core economic team comprises Ruslan Piontkivsky, Rashad Hasanov, and Rubayat Chowdhury, with contributions from John Grinyer. The special focus section was prepared by Ruslan Piontkivsky, Ruth Nikijuluw, Virginia Horscroft, David Craig, Ildrim Valley, Blair Lapres, Christopher Miller, Lars Sondergaard, Rochelle Eng, with contributions provided by Son Thanh Vo, Allan Oliver, Emily Schmidt, Miok Kasek Komolong, Sharon Inone, Matthew Dornan, Ning Fu, Mitsunori Motohashi, Katsuyuki Fukui, Gerard Fae, Pedro Antmann, Ximing Peng, Wilfred Lus, Robert Van der Gest, Trang Thu Tran, Alina Antoci, William Gain, Katia D'Hulster, Xavier Vincent, Nina Doetinchem, Giorgia Demarchi, Dimitria Gavalyugova, Uzma Quresh, Alice Calder, Tessa Walsh, Kari Hurt, Changqing Sun, Undral Batmunkh and Aneesa Arur. Michelle Lee and Rachel Leka provided administrative support. Chris Stewart edited the text. Dissemination is organized by Tom Perry and Ruth Moiam.

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Table of Contents

| | |
|---|------------|
| PREFACE AND ACKNOWLEDGMENTS | III |
| TABLE OF CONTENTS | IV |
| ABBREVIATIONS AND ACRONYMS | X |
| 1. Recent Economic Developments | 2 |
| 1.1. Economic growth | 2 |
| 1.2. Fiscal developments | 5 |
| 1.3. Monetary policy and price developments..... | 10 |
| 1.4. External sector..... | 19 |
| 2. Outlook and risks..... | 25 |
| 2.1. Global economic outlook and risks..... | 25 |
| 2.2. Papua New Guinea’s economic outlook and risks..... | 26 |
| 3. Why should economic growth become the focus for policy makers? | 32 |
| 3.1. Modest headline growth masks low per capita growth..... | 32 |
| 3.2. Per capita income is not converging..... | 34 |
| 4. Excessive macroeconomic volatility | 35 |
| 5. Low productivity growth..... | 38 |
| 5.1. Trends in the reallocation of labor and capital across sectors | 39 |
| 5.2. Trends in labor force participation..... | 41 |
| 5.3. Trends in within-firm productivity..... | 43 |
| 6. Over-reliance on natural wealth, “underutilization” of people and institutions..... | 45 |
| 6.1. Natural capital had dominated the nation’s wealth | 45 |
| 6.2. Governance and institutions are weak and deteriorating..... | 47 |
| 6.3. Human capital advances are limited despite the growing young population..... | 50 |
| 7. Summing Up | 54 |
| ANNEX 1. SELECTED ECONOMIC AND SOCIAL INDICATORS..... | 56 |
| ANNEX 2: SELECTION OF COMPARATORS | 57 |
| REFERENCES..... | 60 |

LIST OF FIGURES

| | |
|---|----|
| Figure 1: Diverging Growth in EAP | 3 |
| Figure 2: PNG: Real GDP Growth (2017–21)..... | 3 |
| Figure 3: Volume of Extractive Sector Exports | 4 |
| Figure 4: Volume of Agricultural Exports..... | 4 |
| Figure 5: Revenue and Expenditure | 6 |
| Figure 6: Primary Balance and Non-resource Primary Balance | 6 |
| Figure 7: Total Revenue Collection | 6 |
| Figure 8: Annual Growth in Revenue Items in 2021 (Annual growth, percent)..... | 6 |
| Figure 9: Expenditure by Economic Classification..... | 7 |
| Figure 10: Central Government Debt-to-GDP Ratio | 8 |
| Figure 11: Interest Payments | 8 |
| Figure 12: Headline and Underlying Inflation (Percent) | 11 |
| Figure 13: Sectoral Contributions to Headline Inflation..... | 11 |
| Figure 14: Inflation Rate Amongst Major Import Partners..... | 11 |
| Figure 15: Global Food and Energy Prices | 11 |
| Figure 16: BPNG maintained a stable policy rate compared to other commodity exporting countriesOF | 12 |
| Figure 17: Policy rate hikes were in response to rising inflation | 12 |
| Figure 18: Interest Rate Spread Between Deposit and Lending Rates | 13 |
| Figure 19: Commercial Banks’ Holding of Liquid Assets | 13 |
| Figure 20: Accommodative Monetary Policy Led to a Further Expansion in Money Supply | 14 |
| Figure 21: BPNG’s Forecasts of Money Supply Growth Improved While Continuing to Diverge From Actuals..... | 14 |
| Figure 22: Commercial Credit Lending..... | 16 |
| Figure 23: Commercial Bank Lending..... | 16 |
| Figure 24: NPLs Rose to a New High Level..... | 17 |
| Figure 25: Banking Sector Profitability Declined in Q4 2021 | 17 |
| Figure 26: 2021 witnessed the highest ever surplus in the current account..... | 20 |
| Figure 27: Current account surplus was driven by a higher trade surplus..... | 20 |
| Figure 28: Exports recovered in 2021 (Millions of US\$ and growth rate)..... | 21 |
| Figure 29: As exports of most commodities improved during the year | 21 |
| Figure 30: Export volume was led by the non-extractive sector..... | 21 |
| Figure 31: Export price and volume indices | 21 |
| Figure 32: Imports declined in 2020 and 2021 (Import composition, Millions of US\$)..... | 22 |
| Figure 33: ... Driven mostly by lower manufacturing imports..... | 22 |
| Figure 34: Kina remained stable against the US dollar while the real exchange rate increased | 23 |
| Figure 35: Commodity Exporting Countries’ Exchange Rates Against the US\$ (Jan-2019=100)..... | 23 |
| Figure 36: Net Foreign Assets of Commercial Banks | 25 |
| Figure 37: International Reserves Remain Above the IMF Requirement | 25 |
| Figure 38: Stringency Index vs Facebook Mobility Index | 27 |
| Figure 39: Visitors to Different Places..... | 27 |
| Figure 40: Share of People Fully Vaccinated..... | 28 |
| Figure 41: Cumulative Excess Deaths..... | 28 |
| Figure 42: Global prices of PNG’s major export commodities are likely to normalize in 2023..... | 29 |
| Figure 43: PNG enjoyed some years of extremely high economic growth | 33 |
| Figure 44: ... yet due to significant volatility, the average growth has not been as strong as in the EAP | 33 |
| Figure 45: Growth of GDP per capita has not been robust..... | 33 |
| Figure 46: Income growth in PNG lags its structural peers | 34 |
| Figure 47: ... and it is not converging to its peers in the region..... | 34 |
| Figure 48: Production Possibility Frontier (PPF) Framework | 35 |
| Figure 49: Economic volatility in PNG has been significant during 1981-2021 | 36 |

| | |
|---|----|
| Figure 50: ... however the 1990s were the most turbulent years for PNG | 36 |
| Figure 51: Value added in extractive sector drove GDP volatility in PNG | 37 |
| Figure 52: Budget expenditure has also been volatile | 37 |
| Figure 53: Government debt in PNG has been increasing sharply over the last decade..... | 38 |
| Figure 54: Government debt in PNG and peer countries | 38 |
| Figure 55: Aggregate decomposition of per capita VA, 2008-2019..... | 39 |
| Figure 56: PNG's Growth Decomposition and Labor Productivity..... | 39 |
| Figure 57: Share of the Agri-Food System in GDP (Selected Countries) in 201811F | 40 |
| Figure 58: Productivity levels of major staple food and cash crops in Papua New Guinea..... | 41 |
| Figure 59: LFP by Gender (2019)..... | 42 |
| Figure 60: Market Organization Score | 43 |
| Figure 61: Digital adoption lags among people relative to businesses and government..... | 44 |
| Figure 62: Infrastructure and Electricity constraints burden businesses (LHS) and households (RHS)..... | 45 |
| Figure 63: Wealth per capita and its Composition (PNG and peers)..... | 46 |
| Figure 64: Human Capital Proportion of PNG and Peers | 46 |
| Figure 65: Contribution of Natural Capital Across Time and Updates Version..... | 47 |
| Figure 66: Government Effectiveness | 48 |
| Figure 67: Control of Corruption | 48 |
| Figure 68: PNG and Comparators CPIA (2005-20) | 48 |
| Figure 69: Gross Revenue and Tax Revenue (% of GDP) (2018-19)..... | 49 |
| Figure 70: PNG Revenue as % of GDP (1983-2020) | 49 |
| Figure 71: Human Capital Index..... | 51 |
| Figure 72: Expected Years of Schooling | 51 |
| Figure 73: Net Enrolment Rates | 51 |
| Figure 74: Stunting Rate in EAP Region and Comparator Countries..... | 52 |
| Figure 75: Changes in Fraction of Children Under-five Not Stunted..... | 52 |
| Figure 76: Gender Parity Across Educational Levels in PNG and Peers..... | 53 |
| Figure 77: Youth not in Education, Employment, or Training | 53 |

LIST OF TABLES

| | |
|---|------|
| Table 1: Key Macro-Fiscal Indicators (2017–24) | VIII |
| Table 2: Main Fiscal Indicators (2017–21) | 8 |
| Table 3: Selected Monetary and Price Indicators | 16 |
| Table 4: Selected External Sector Indicators..... | 24 |
| Table 5: Gender Employment Gap Index (GEGI) | 43 |

LIST OF BOXES

| | |
|--|----|
| Box 1: Little Additional Revenue From Soaring LNG Prices..... | 9 |
| Box 2: Fiscal Dominance, Excess Liquidity, and Implications for Monetary Policy..... | 14 |
| Box 3: Financial Soundness Indicators are Now Publicly Available at the BPNG Website..... | 18 |
| Box 4: PNG's Agriculture sector characterized by low value addition and high potential for increasing yields | 40 |
| Box 5: Volatility of PNG Natural Capital Estimates | 47 |



EXECUTIVE SUMMARY

**Economic Update
and Special Focus**

A. Economic Update: *Benefiting From High Commodity Prices*

The economy is back to growth. Following a sharp contraction in 2020, the economy is estimated to have recorded a 1 percent growth rate in 2021. Economic activity was mostly supported by a strong performance of the non-extractive sector. Agriculture was among the key contributors to economic recovery. More than one-half of respondents in the 2022 PNG 100 CEO Survey indicated that firm-level profitability exceeded their expectations in 2021, while only 17 percent reported that profits were lower than expected. Positive dynamics in 2021 have also translated into an optimistic growth outlook by business executives in 2022. Meanwhile, the extractive sector continued its weak performance in 2021 driven by disruptions to mining operations. Ongoing shutdown in the Porgera gold mine was a key driver along with disruptions to production in the OK Tedi copper mine and Lihir and Simberi gold mines.

The fiscal trajectory has improved. The fiscal deficit in 2021 at 6.8 percent of GDP was smaller than 2020 and smaller than budgeted but was still substantial by historical standards. Total revenue increased modestly in 2021, supported by a sharp increase in grants. Following a sharp growth in expenditure in 2020, the government was able to contain expenditure in 2021 despite prevailing inflation. Public debt continued to grow, albeit at a slower pace, and exceeded 50 percent of GDP in 2021. Available data for the first half of 2022 suggests that revenue collections are strongly outperforming forecasts built into the 2022 budget.

Table 1: Key Macro-Fiscal Indicators (2017–24)

| Indicator | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|--|------|------|------|------|------|-------------|------|------|
| | | | | | Est. | Projections | | |
| GDP growth (percent) | 3.5 | -0.3 | 4.5 | -3.5 | 1.0 | 4.0 | 4.2 | 3.0 |
| Extractive sector | 8.1 | -9.2 | 11.3 | -8.4 | -6.2 | 5.3 | 6.2 | 3.8 |
| Non-extractive economy | 0.5 | 4.1 | 1.4 | -1.1 | 4.2 | 3.5 | 3.3 | 2.7 |
| Overall fiscal deficit (percent of GDP) | -2.5 | -2.6 | -5.0 | -8.8 | -6.8 | -5.4 | -4.6 | -3.7 |
| Public debt, net (percent of GDP) | 32.5 | 36.7 | 39.7 | 48.4 | 52.3 | 50.3 | 50.8 | 50.6 |
| Current account balance (percent of GDP) | 23.5 | 22.9 | 21.9 | 21.0 | 22.0 | 23.7 | 21.9 | 20.9 |

Source: PNG National Statistical Office; World Bank staff estimates and projections.

Note: The share of extractive sector in gross value added was 29.7 percent in 2019.

Higher commodity prices contributed to higher inflation and stronger external balances. Headline inflation has been on the rise since Q3 2021 and reached 6.9 percent in Q1 2022 as the core inflation edged up to 5.4 percent. The Bank of PNG raised the policy rate by 25 basis points to 3.25 percent in July 2022 for the first time since the pandemic started. Driven by a recovery of commodity prices, the current account surplus reversed the declining trend observed over the preceding five years.

The outlook for 2022 is underpinned by recovery in the extractive sector, elevated commodity prices and gradual recovery in economic activity. Despite low vaccination rates, the pandemic-related policy stringency index has gone down, leading to more activity across the country. Nonetheless, slower than expected economic growth could materialize mostly via lower demand for exports and a sharp reduction in commodity prices. The lowest COVID-19 vaccination rates in the region (below 4 percent) also weigh on the growth outlook. High food and energy prices prevailing in the international markets and inflationary pressures in the major trading partners imply that headline inflation will remain elevated in 2022 before settling down in 2023.

While the 2021 fiscal results were better than expected, achieving the government’s ambitious fiscal targets over the medium term requires addressing current structural challenges. These include enhancing revenue mobilization and containing the government sector wage bill. Following general elections, the new government is supported by a solid majority and has an 18-month grace period. This suggests good prospects of continued fiscal consolidation.

B. Special Focus: *Boosting Economic Growth*

The Special Focus for this issue is on long-term growth, emphasizing the challenges PNG is facing. The chapter identifies the underlying challenges of low and volatile growth in the country and aims at starting a public discussion to better understand the problems and, thus, contribute to finding solutions.

The modest headline economic growth in PNG has translated in meagre per capita income growth in the past four decades. While the economy expanded by 3.2 percent on average during 1980-2021, per capita GDP recorded an average annual growth rate of only 0.9 percent. The gap of per capita income level compared to peer countries has typically widened. Despite being at a similar level of development in the 1970s and some progress gained in the early 1990s, PNG's income level is diverging away from the EAP region.

This calls for a renewed policy focus on boosting economic growth. A new growth strategy would need to address the three interrelated growth challenges that the economy is facing: (i) excessive macroeconomic volatility; (ii) low productivity growth; and (iii) excessive reliance on natural capital and not enough on human and institutional capital.

Economic growth in PNG has been volatile and among the highest globally. PNG displayed the largest economic growth volatility in the World since the 1980s, except for a few structural peers characterized by heavy dependence on natural resources. The extractive sector has been the most volatile, followed by construction, which was heavily linked to the development of resource project infrastructure. Heightened macroeconomic volatility has been accompanied by government budget expenditure volatility. For some expenditure categories—such as use of goods and services and public investments – the interannual swings are even more pronounced. This heightened volatility of budget spending is negatively affecting service delivery. Public debt had been increasing over the last decade, well before the COVID pandemic began, increasing challenges for macroeconomic stability. The debt situation could negatively affect capital accumulation and economic growth through elevated interest rates and lower investors' confidence.

PNG has struggled to channel its considerable natural resources into delivering broad-based and sustained productivity growth. PNG stands out relative to peers in several ways. First, the productivity boost from structural change that is associated with capital and labor moving from sectors of lower productivity to sectors of higher productivity is relatively small. Second, the declining labor force participation is sharply reducing growth. There is a significant gender gap in employment. GDP per capita could be 20 percent higher in the long run if women's employment rate was to match that of men. Third, productivity improvement within firms in the same sector is contributing to overall productivity growth, but not as strongly as in some peers.

With a growing young population, PNG's future growth and quality of life hinge on improving human capital. While country's wealth has been dominated by natural capital, over the decades PNG has shown limited progress in improving human capital. Governance and institutional capability are important enablers for investments in human capital, but PNG is experiencing a declining trend over time. With a tax revenue to GDP ratio below 15 percent, PNG's ability to support public services is also constrained, and it is further compounded by weaknesses in the management of public resources. The overall education level of the adult population is low, and the quality of education provided during the limited years of schooling remains a challenge. The stunting rate is at an alarming level (4th worst globally), with detrimental implications that might affect children's ability to learn. Moreover, the gender gap in enrolments further exacerbates the challenges in using education as the pathway to better employment. Transitioning from school to the workforce is difficult for many as they find that they are unprepared or unqualified for jobs.

Abbreviations and Acronyms

| | |
|-------|---|
| BPNG | Bank of Papua New Guinea |
| BSP | Bank of South Pacific |
| CBBs | Central Bank Bills |
| CPIA | Country Policy and Institutional Assessment |
| CRR | Cash Reserve Requirement |
| DSIP | District Services Improvement Program |
| EAP | East Asia and Pacific |
| FRA | Fiscal Responsibility Act |
| GEGI | Gender Employment Gap Index |
| HCI | Human Capital Index |
| IMF | International Monetary Fund |
| KFR | Kina Facility Rate |
| LNG | Liquefied Natural Gas |
| MMBtu | Million Metric British thermal unit |
| MPS | Monetary Policy Statement |
| MTFS | Medium-term Fiscal Strategy |
| NFA | Net Foreign Asset |
| NPL | Non-performing Loan |
| NRPB | Non-resource Primary Balance |
| NSO | National Statistical Office |
| PFM | Public Financial Management |
| PIM | Public Investment Management |
| PNG | Papua New Guinea |
| PNGX | Papua New Guinea Stock Exchange |
| PPF | Production Possibility Frontier |
| REER | Real Effective Exchange Rate |
| SDR | Special Drawing Rights |
| SoE | State-owned Enterprise |
| TAF | Temporary Advance Facility |



A. ECONOMIC UPDATE: Benefiting From High Commodity Prices

Part A



The economy of Papua New Guinea has returned to growth. (Hamish Wyatt/World Bank)

1. Recent Economic Developments

1.1. Economic growth

1. **Following a strong recovery in 2021, the pace of global economic growth is decelerating in 2022.** In 2021, despite continuous disruptions to supply chains driven by worsening pandemic conditions, both advanced and emerging market economies recorded a solid growth rate—5.2 and 6.8 percent respectively. Accommodative monetary and fiscal policy, rollout of vaccines, and the gradual easing of containment measures underpinned a strong rebound in economic activity. Prior to the Russia’s invasion of Ukraine, the world economy was on track for another strong performance. The war has, however, had substantial global effects with further disruptions to supply chains and rising commodity prices—in particular, those of agricultural commodities.

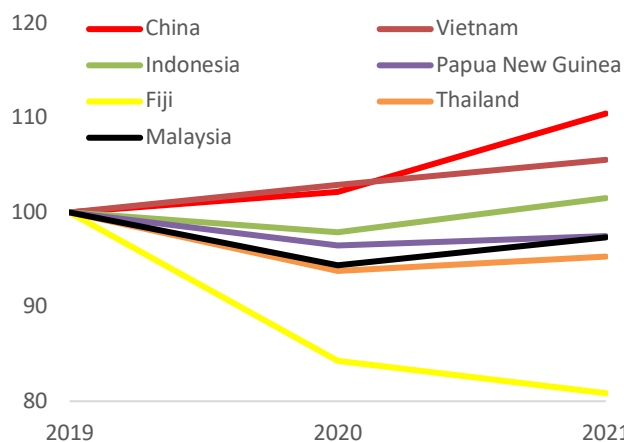
2. **According to provisional estimates for the first quarter of 2022, GDP rose by a mere 0.1 percent in OECD countries, a sharp slowdown compared with the 1.2 percent increase in the fourth quarter of 2021.** Similarly, the estimate provided by the International Labour Organization suggests that the global inflation rate in March 2022 was more than twice the rate of 3.7 percent recorded in March 2021. As a consequence, the latest edition of Global Economic Prospects by the World Bank revised the 2022 global growth rate downwards, while inflation has been revised up due to rising food and energy prices.

3. **These global factors are causing growth to slow in East Asia and the Pacific (EAP).** The growth rate has differed among countries—with China’s economy surpassing pre-pandemic levels—while in other countries recovery was more gradual. Even in China, growth lost momentum amid recurrent COVID-19 outbreaks and resulting strict lockdowns. Its government has responded by easing monetary and fiscal policies to boost investment and prevent further contraction in the real estate sector.

4. **Pacific countries are among the worst affected and slowest to recover.** In particular, countries which were most tourism-dependent saw the highest declines in GDP growth due to the ongoing impact of the pandemic. Economic activity has also been impacted by natural disasters in the region, including the

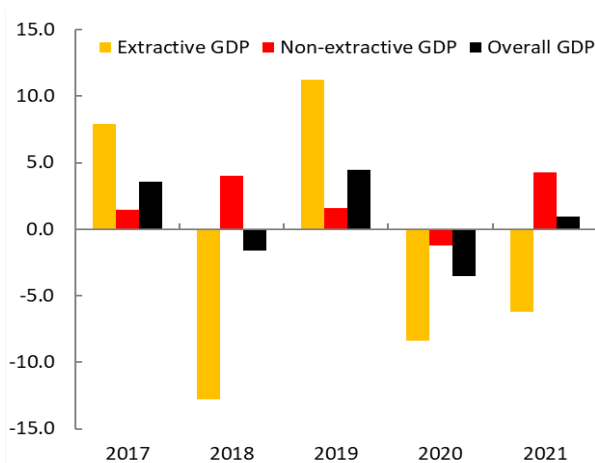
volcanic eruption in Tonga in January 2022. On the other hand, Pacific countries continue to experience the negative impact of the war in Ukraine via high energy and food prices that have negatively impacted livelihoods.

Figure 1: Diverging Growth in EAP
(2019=100)



Source: World Bank 2022.

Figure 2: PNG: Real GDP Growth (2017–21)
(Annual percent change)



Source: PNG National Statistical Office (NSO); World Bank staff estimates.

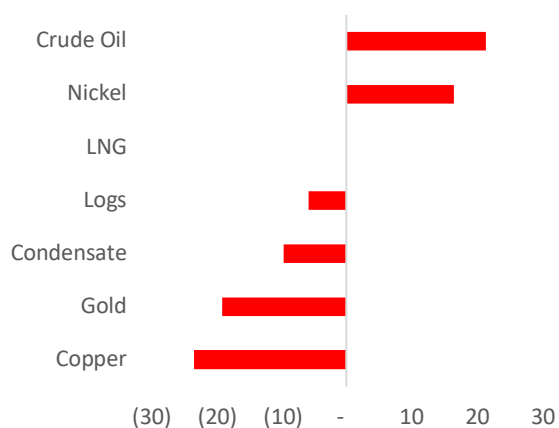
5. **Following a sharp contraction in 2020, the PNG economy is estimated to have recorded a modest growth rate in 2021 (Figure 2).** Nevertheless, it underperformed relative to the government's initial projection (3.5 percent in the 2021 budget). The downgrade mostly reflects operational delays in major resource projects. Despite the turnaround in economic activity, the real GDP remained below its pre-pandemic level.

6. **Economic activity was mostly supported by strong performance of the non-extractive sector in 2021.** Higher demand and prices for PNG's major commodity exports had a positive impact on economic activity. According to the external sector statistics provided by the Bank of Papua New Guinea (BPNG), export volumes of agricultural commodities (tea, palm oil, copra) edged higher (+11.5 percent) against the backdrop of rising commodity prices. Despite the ongoing pandemic, gradual easing of containment measures led to a modest expansion in the wholesale and retail sector. In addition, expansionary fiscal policy to combat the pandemic, and accommodative monetary policy by BPNG helped economic recovery.

7. **A business sentiment survey of senior PNG executives suggests that, despite the lingering impact of the pandemic, profit results outperformed expectations.** Over one-half of respondents to the 2022 PNG 100 CEO Survey (Smirk 2022) suggested that profitability exceeded their expectations in 2021, while only 17 percent of respondents reported that profits were lower than expected. Similarly, indicators related to investment and employment have also shown improvements relative to the previous survey, although readings remain below their 2019 levels. Positive dynamics in 2021 have also translated into an optimistic growth outlook by business executives in 2022 (discussed below).

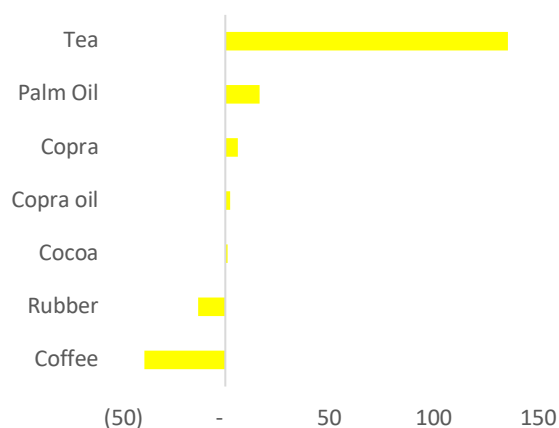
8. **Agriculture was among the key contributors to the economic recovery.** Strong results were particularly driven by higher export volumes of tea, palm oil, and copra (Figure 4). This led to a solid growth in agricultural export receipts (+50 percent y-o-y)—in particular receipts from the export of palm oil doubled over the year. Disruptions to supply chains, higher shipping costs, as well as the rising importance of palm oil as an alternative fuel led to an increase in both volumes (+16 percent y-o-y) and export prices (+60 percent y-o-y).

Figure 3: Volume of Extractive Sector Exports
(Annual growth rate, 2021, percent)



Source: BPNG.

Figure 4: Volume of Agricultural Exports
(Annual growth rate, 2021, percent)



Source: BPNG.

9. The government provided temporary support for the agricultural sector amid the pandemic and rising food prices. Since the beginning of the pandemic, the Government of PNG has introduced two agricultural programs for selected commodities—price support and a freight subsidy. The price support program was initiated to support commodity prices with the ultimate goal of increasing both production and exports. The government allocated K 50 million in 2021, followed by an additional K 150 million in 2022. The freight subsidy scheme, on the other hand, allows farmers to ship their fresh produce from rural areas for a subsidized price. The government allocated K 3 million to a shipping company to facilitate the program. The sector plays a critical role in ensuring food security. Given elevated food prices, providing ongoing support to the agricultural sector to support livelihoods is commendable, however, the effectiveness, sustainability, and management of these schemes have not yet been evaluated.

10. Meanwhile, the extractive sector continued weak performance in 2021 driven by disruptions to mining operations (Figure 3). The ongoing shutdown of the Porgera mine was a key driver of this result, along with disruptions to production in the Lihir, OK Tedi, and Simberi mines. During the course of the year, these mines were negatively impacted by factors such as COVID-19 and disruptions to production due to technical failure. As a result, the mining and quarrying sector contracted in real terms. On the other hand, while production volumes of LNG remained largely flat, export prices of LNG rose sharply – resulting in an annual growth rate of more than 24 percent in LNG export receipts.

11. The disruptions to the extractive sector had a knock-on impact on the other macroeconomic indicators of the sector, including employment and credit. Export receipts from minerals sector were 9 percent below its pre-pandemic reading. In particular, gold exports were down by almost a quarter compared to 2019—largely due to disruptions at the Porgera and Lihir mines. Combined production of these two mines accounted for nearly 70 percent of the country’s gold production in 2019 (total gold exports in 2019 were nearly 18 percent of GDP). Since the start of the pandemic, employment in the minerals sector has declined by over 20 percent, although the trend has started reversing since the second quarter of 2021. Credit to the mining and quarrying sector also contracted by 50 percent in 2021.

12. Formal employment in PNG in 2021 remained below its pre-pandemic level. According to the BPNG data, employment in the fourth quarter of 2021 was 4 percent below the fourth quarter of 2019. Employment in the construction sector continued to deteriorate (-40 percent compared to the pre-pandemic

level). Similarly, employment in the wholesale, extractive, and financial sectors remained well below their pre-pandemic levels. On the other hand, retail, manufacturing, and transport employment recovered, which could be explained by the easing of containment measures.

13. Credit expansion mimicked the growth performance of the respective sector in 2021. Despite ample liquidity in the banking sector, total credit in the economy edged lower in 2021, with credit to businesses falling by nearly 7 percent. Most sectors of the economy recorded a decline in credit, with agriculture being the major exception (+20 percent y-o-y). A fall in business credit was partially offset by credit to personal and government borrowing. Both mortgage lending and personal loans recorded moderate increases (+6.6 and +3.7 percent respectively). On the other hand, high liquidity in the banking sector was partially absorbed by the government sector, pointing at limited lending opportunities for commercial banks.

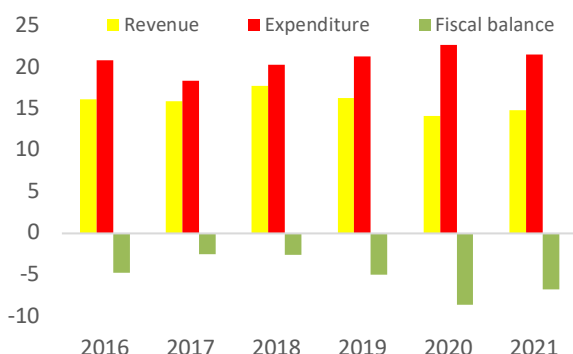


The fiscal trajectory for Papua New Guinea has improved.
(Conor Ashleigh/World Bank).

1.2. Fiscal developments

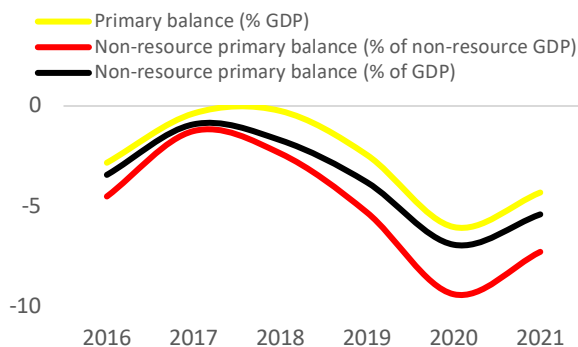
14. The fiscal deficit was smaller in 2021 than 2020 at 6.8 percent of GDP, and smaller than budgeted, although still large by historical standards (Figure 5). Government revenues, at K 11.8 billion (excluding grants) were higher than the K 10.7 billion in 2020, but still below the K 11.9 billion collected in 2019. The deficit was 0.4 percentage points of GDP smaller than the estimates built into the 2021 budget. While the expenditure outturn in 2021 was in line with budget parameters, revenue over-performed compared to a very conservative revenue forecast. Total revenues of K 13.9 billion—an increase of 14.6 percent in 2021—were helped by donor grants increasing by K 0.5 billion to a record high K 2.0 billion in total, while total spending increased by only 3.8 percent to K 20.1 billion.

Figure 5: Revenue and Expenditure
(Share of GDP)



Source: PNG Treasury, Final Budget Outcome, 2021.

Figure 6: Primary Balance and Non-resource Primary Balance
(Share of GDP and Non-resource GDP)

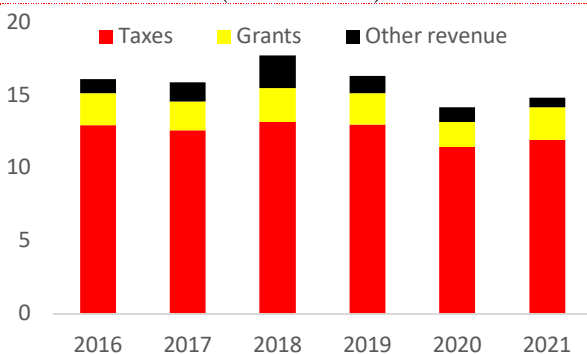


Source: PNG Treasury, Final Budget Outcome, 2021.

15. Similarly, the non-resource primary deficit narrowed in 2021 (Figure 6). The non-resource primary balance (NRPB) is stated as the principal anchor in the government’s Medium-term Fiscal Strategy (MTFS). After widening significantly in 2020 due to the pandemic, the primary deficit narrowed in 2021 mainly reflecting the recovery of non-resource revenues. NRPB as a share of non-resource GDP was -7.3 percent in 2021, 0.9 percentage point lower than the 2021 Supplementary Budget estimates but still below the 2019 levels.

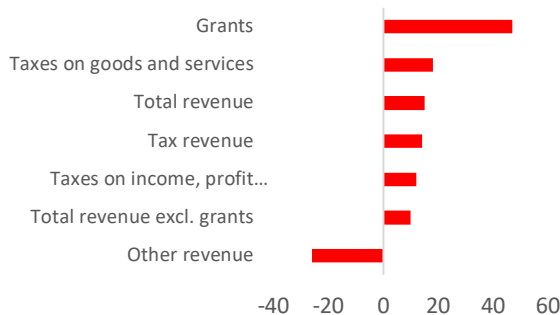
16. Total revenue increased modestly in 2021, supported by a sharp increase in grants. Domestic revenue grew by 0.4 percentage points of GDP, while donor grants increased by 0.6 percentage points of GDP (from 1.7 percent of GDP to 2.3 percent in 2021). The increase in grants was underpinned by donor support to ongoing infrastructure projects and the fight against the COVID-19 pandemic. Supported by the economic recovery and increasing commodity prices, total tax revenue grew by 13.5 percent in 2021, however, expressed as a share of GDP, it is still below the 2019 level (12 percent of GDP in 2021 vs 13 percent in 2019) (Figure 7). Higher tax revenue was mainly due to the increases in Mining and Petroleum Tax (+247 percent y-o-y), Goods and Services Tax (+18 percent y-o-y), and Company Tax (+9 percent y-o-y) more than offsetting the decline in Personal Income Tax (a 1.4 percent decline y-o-y). A sharp increase in the mining and petroleum taxes can be attributed to high commodity prices, while growth in GST can be explained by gradual economic recovery and improved compliance. Other revenues declined by 26 percent in 2021, mainly reflecting lower dividend payments and non-payment of dividends by Kumul Consolidated Holdings and Motor Vehicle Insurance Limited.

Figure 7: Total Revenue Collection
(Share of GDP)



Sources: PNG Treasury, Final Budget Outcome, 2021.

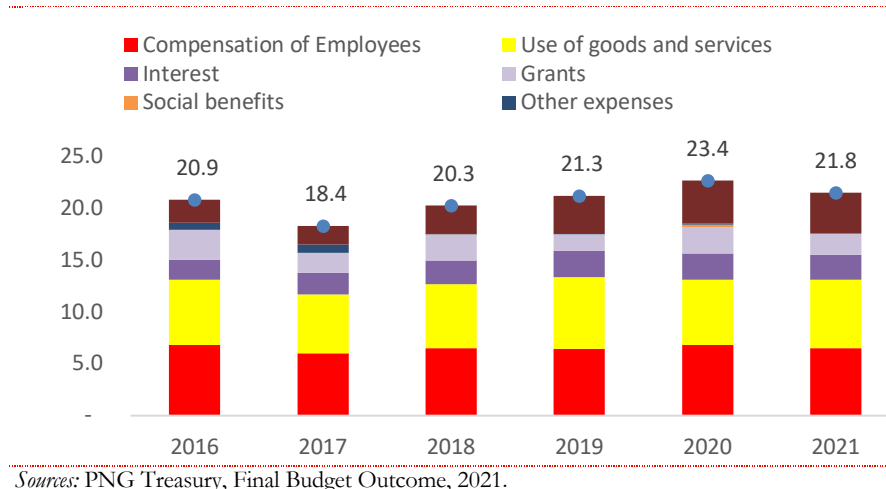
Figure 8: Annual Growth in Revenue Items in 2021
(Annual growth, percent)



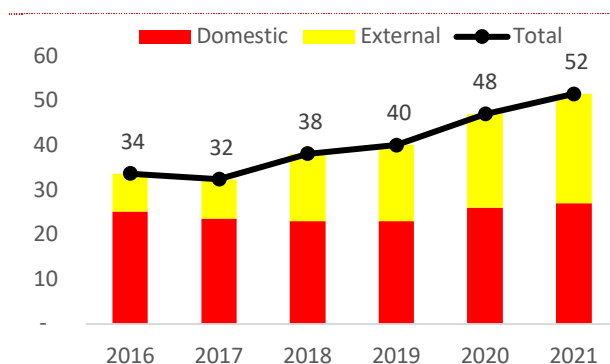
Sources: PNG Treasury, Final Budget Outcome, 2021.

17. Following a sharp growth in expenditure in 2020, the government was able to contain expenditure in 2021 amid prevailing elevated inflation. Expenditure increased by 3.8 percent compared to 2020, largely reflecting the government's strong response to the second and third wave of the COVID-19 pandemic. Spending on goods and services, and the compensation of employees were the main contributors to the growth in nominal expenditure, while a 12.5 percent decrease in grants to other government units partially offset this increase. Capital expenditure recorded a modest annual growth rate (+4 percent). This reflected funding allocated to Provincial and District Support Improvement Programs, and projects funded as part of the government's Connect PNG initiative. In addition, concessional loan drawdowns were used to fund critical infrastructure projects such as PNG National Submarine Fibre Cable Network, PNG National Power Grid, Nadzab Airport Redevelopment Project and the Road Maintenance and Rehabilitation Project. Although an overall increase in nominal GDP pushed down expenditure expressed as share of GDP by 1.6 percentage points—from 23.4 percent in 2020 to 21.8 percent in 2021 (Figure 9) – expenditure-to-GDP in 2021 was still high relative to historical readings. Expenditure averaged 20.6 percent of GDP for the five years leading up to the pandemic.

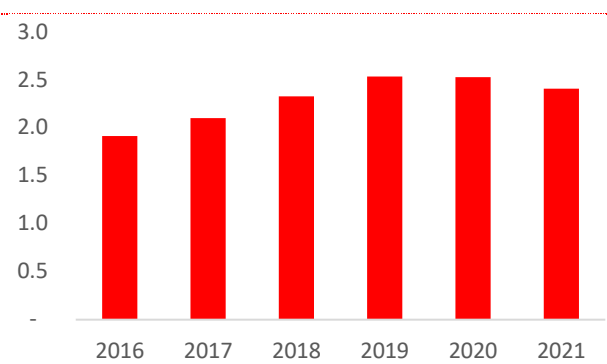
Figure 9: Expenditure by Economic Classification
(Share of GDP)



18. Public debt continued an upward trajectory, exceeding 50 percent of GDP in 2021 (Figure 10). This includes over-financing equivalent to 1.8 percent of GDP driven by the need to prepare for the possibility of late payment of donor support. Both domestic and external debt saw a sharp increase in 2020, against the backdrop of the pandemic. Domestic debt grew by 15 percent, while growth of external debt grew by one-quarter. The latter reflects an increase in borrowings from multilateral and bilateral partners for financing capital projects and pandemic-related expenditure. Public debt continued growing in 2021, reflecting continuation of higher social expenditures. Overall, net government debt as a share of GDP almost doubled between 2012 and 2021. Consequently, interest payments as share of GDP had gone up until 2019, flattened in 2020, and then gone down in 2021, reflecting pro-active debt management by the Treasury (Figure 11). According to the latest World Bank–IMF DSA (IMF 2022a), the country remains at high risk of debt distress although, conditional on the implementation of the authorities plans for further fiscal consolidation and conservative financing strategies, PNG's external and overall debt is judged as sustainable. The current Fiscal Responsibility Act (FRA) stipulates bringing the debt-to-GDP ratio below 40 percent by 2030.

Figure 10: Central Government Debt-to-GDP Ratio
(Share of GDP)

Source: PNG Treasury, Final Budget Outcome, 2021.

Figure 11: Interest Payments
(Share of GDP)

Source: PNG Treasury, Final Budget Outcome, 2021.

Table 2: Main Fiscal Indicators (2017–21)

| (Percent of GDP) | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|--|------|------|------|------|------|------|
| Total revenue | 16,1 | 15,9 | 17,7 | 16,3 | 14,6 | 15,0 |
| Tax revenue | 12,9 | 12,6 | 13,2 | 13,0 | 11,9 | 12,0 |
| Taxes on Income, Profits and Capital Gains | 8,1 | 7,3 | 7,7 | 7,2 | 6,9 | 6,8 |
| Taxes on Goods and Services | 4,0 | 4,5 | 4,5 | 4,7 | 4,1 | 4,3 |
| Taxes on International Trade and Transactions | 0,8 | 0,8 | 1,0 | 1,1 | 0,9 | 0,8 |
| Grants | 2,2 | 2,0 | 2,3 | 2,1 | 1,7 | 2,3 |
| Other revenue | 1,0 | 1,3 | 2,2 | 1,2 | 1,0 | 0,7 |
| Total expenditure | 20,8 | 18,4 | 20,3 | 21,3 | 23,4 | 21,8 |
| Expenses | 18,7 | 16,6 | 17,7 | 17,7 | 19,1 | 17,9 |
| Compensation of Employees | 6,9 | 6,0 | 6,5 | 6,5 | 6,7 | 6,6 |
| Use of goods and services | 6,3 | 5,7 | 6,1 | 6,9 | 6,8 | 6,7 |
| Interest payments | 1,9 | 2,1 | 2,3 | 2,5 | 2,6 | 2,4 |
| Grants | 2,9 | 1,9 | 2,5 | 1,6 | 2,6 | 2,1 |
| Social Benefits | 0,0 | 0,0 | 0,0 | 0,0 | 0,3 | 0,0 |
| Other expenses | 0,7 | 0,8 | 0,1 | 0,1 | 0,1 | 0,1 |
| Net Acquisition of Nonfinancial assets | 2,2 | 1,8 | 2,7 | 3,6 | 4,1 | 3,9 |
| Fiscal balance | -4,7 | -2,5 | -2,6 | -5,0 | -8,8 | -6,8 |
| Primary balance | -2,8 | -0,4 | -0,2 | -2,4 | -6,2 | -4,4 |
| Non-resource primary balance (percent of non-resource GDP) | -4,5 | -1,2 | -2,4 | -5,3 | -9,4 | -7,3 |

19. Available Internal Revenue Commission data for the first half of 2022 suggests that revenue collections are strongly outperforming forecasts built into the 2022 budget. Total revenue collections stood at nearly K 6 billion, 21 percent above the projections. This also represents nearly 40 percent growth in Internal Revenue Commission collections compared to the same period of 2021. While most tax lines recorded gains during the first six months of the year, the favorable outcome was largely driven by high commodity prices. Mining and Petroleum Taxes recorded a 42 percent growth during the first half of the year on the back of higher fuel prices compared to what was projected in the budget. Additional revenue from the mining sector compared to the forecast was over K 1 billion, which accounted for nearly 80 percent of the upside in total revenue collections (see also Box 1). The supplementary budget, approved in September 2022, allocated the additional revenue generated by the resource sector to finance both operational and capital expenditure. In

particular, the amendments extended temporary exemption of excise duties and GST on diesel, petroleum and zoom products until end of 2022 to mitigate the effect of higher fuel prices.

Box 1: Little Additional Revenue From Soaring LNG Prices

LNG prices are at record highs, but only little additional revenue might reach the government budget.

Realized LNG prices were above US\$14.00 per mmBtu (millions of metric British thermal units) in Q2 2022—their highest ever level—which surpasses the US\$11.00 per mmBtu achieved at the end of 2018. Spot prices are even higher—reaching US\$16.44 per mmBtu in July 2022. Kumul Petroleum Holdings Limited (KPHL) is a commercial enterprise that holds the government’s 16.8 percent share of the PNG LNG project. KPHL shares are held for and on behalf of the state by the Kumul Petroleum Trustee, who is the person who holds of the office of Prime Minister. KPHL received around US\$339 million from PNG LNG in 2021, and we estimate they will receive over US\$890 million in 2022 (Table B1). These funds come via GloCo (PNG LNG Global Company LLC) operated on behalf of all PNG LNG partners by ExxonMobil PNG Ltd. The dividend that the government received from Kumul Petroleum in 2021 however, amounted to only US\$85 million, and Kumul Petroleum is budgeted to transfer only US\$113 million in 2022. The funds retained by Kumul Petroleum would be equivalent to 1.0 percent of GDP in 2021 and 2.7 percent of GDP in 2022. Neither GloCo nor KPHL publish their annual reports or financial statements, and the absence of this information is the largest gap in understanding the finances of the PNG LNG project.

Table B1.1: PNG LNG revenues to Kumul Petroleum and subsequent dividend payments to the government

| US\$, millions | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022* |
|---|--------------|--------------|-------------|-------------|--------------|-------------|-------------|-------------|--------------|
| Total PNG LNG revenues minus costs | 3,192 | 2,134 | 927 | 1,849 | 2,164 | 1,793 | 485 | 2,018 | 5,326 |
| Kumul Share (16.8% shareholding) | 536 | 358 | 156 | 311 | 364 | 301 | 81 | 339 | 895 |
| Kumul dividend paid to GoPNG (US\$ millions, Kina millions) | 168 (414) | 103 (286) | 64 (200) | 94 (300) | 137 (452) | 74 (250) | 87 (300) | 85 (300) | 113 (400) |
| Difference | -368 | -255 | -92 | -217 | -226 | -227 | 5 | -254 | -782 |
| Difference (% GDP) | -1.6 | -1.2 | -0.4 | -1.0 | -0.9 | -0.9 | 0.0 | -1.0 | -2.7 |

* Estimated based on six-month performance



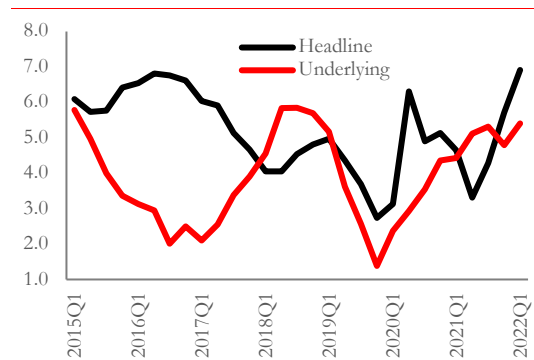
Higher food, betel nut, and transport prices were the major drivers of consumer inflation.
(Conor Ashleigh/World Bank).

1.3. Monetary policy and price developments

20. Headline inflation has been on the rise since the third quarter of 2021. While annual headline inflation declined in the first half of 2021, it rose to 5.7 percent in Q4 2021 and further to 6.9 percent in Q1 2022 (Figure 12). Each quarter since mid-2021 has witnessed a more than one percentage point rise in inflation, year-on-year. The underlying or core inflation, which excludes seasonal food, energy, and volatile items, also increased by 0.6 percentage points in Q1 2022 following a decline of 0.5 percentage points in the previous quarter. The domestic recovery from the COVID-19 pandemic, the rise in global commodity prices, and elevated inflation in the major import partners contributed to the recent inflationary pressure.

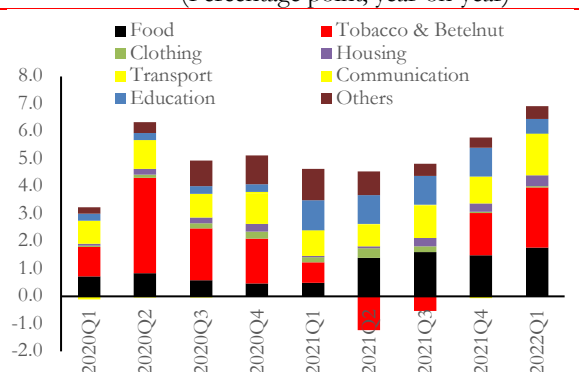
21. Higher food, betel nut, and transport prices were the major drivers of consumer inflation. Food, tobacco, and betel nut accounted for more than one-half of overall inflation over the last two quarters (Figure 13). Food inflation was mainly driven by higher cereal, fruit, and vegetable prices. While fruit and vegetable prices moderated due to improved domestic supply, cereal prices have increased consistently in recent quarters. Higher betel nut prices contributed to about one-third of the overall inflation rate in Q1 2022. Transport prices went up by 11.7 percent in the same quarter, mainly due to higher imported fuel prices and transport fares.

Figure 12: Headline and Underlying Inflation
(Percent)



Source: National Statistical Office (NSO).

Figure 13: Sectoral Contributions to Headline Inflation
(Percentage point, year-on-year)

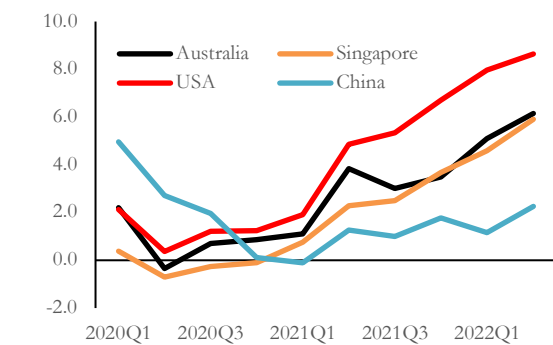


Source: NSO.

22. Inflation has recently soared in the major import partners. PNG’s three major import partners—Australia, Singapore, and the United States (US) which account for around 70 percent of total imports—have been experiencing higher inflation since the second half of 2021. Despite a series of cash rate hikes and tightened monetary policy, inflation is on the rise in the partner countries. In the June quarter of 2022, the year-on-year consumer price inflation was 6.1 percent in Australia, 5.9 percent in Singapore, and 8.6 percent in the US (Figure 14). Although it remains at a moderate rate and below the pre-pandemic level, China’s inflation rate rose to 2.3 percent, year-on-year, in Q2 2022 from 1.2 percent in the previous quarter.

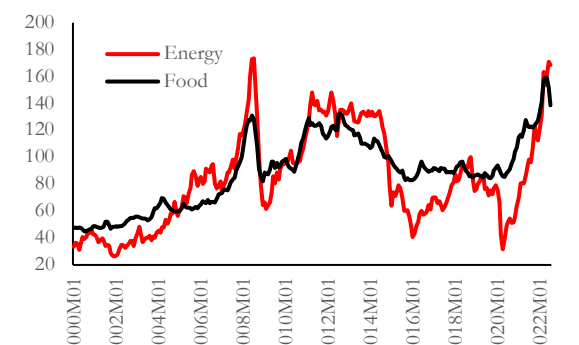
23. Following significant disruptions in the global supply chains triggered by the Russia-Ukraine war, food and energy prices have climbed to a new record level (Figure 15). The energy price in the first half of 2022 was 83 percent higher than in 2021, surpassing the World Bank forecast of 50.5 percent for 2022 (World Bank 2022a). Over the same period, food prices rose by 25.6 percent. Notably, both energy and food prices have declined by 1.3 percent and 8.5 percent respectively in July 2022 from the previous month. Food and energy have relatively low shares in PNG’s overall imports, averaging around 12 percent and 10 percent respectively, over the period 2015-19. Prolonged global tensions could, however, elevate import prices and contribute to higher inflation in forthcoming quarters. A relatively stable Kina exchange rate against its anchor currency, the US\$, and appreciation against the Australian dollar (due to its weakening against the US\$) would offset some share of the imported inflation.

Figure 14: Inflation Rate Amongst Major Import Partners
(year-on-year, percent)



Source: International Financial Statistics, IMF (August 2022).

Figure 15: Global Food and Energy Prices
(Index, 2010=100)
(January 2000-July 2022)

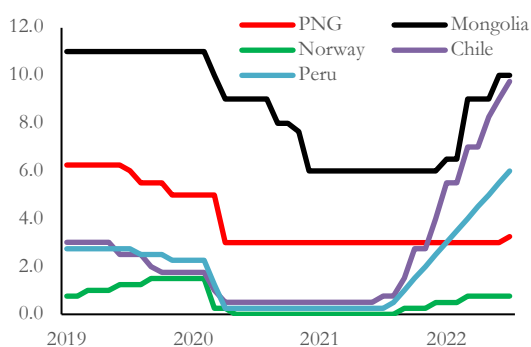


Source: World Bank “Pink Sheet” (August 2022).

24. The BPNG raised the Kina Facility Rate (KFR), by 25 basis points to 3.25 percent in July 2022 for the first time since the outbreak of the pandemic in early 2020 (Figure 16). Following a long period (2013-18) with a static KFR of 6.75 percent, the central bank reduced the KFR four times in 2019 by a total of 125 basis points to align its policy rate with the market interest rates and by a further 200 basis points in April 2020 in response to the global pandemic. The cash reserve requirement (CRR) was also kept unchanged at 7.0 percent over the last two years. While the BPNG previously intended (2022) to maintain the expansionary stance until September 2022, it tightened the monetary policy in July 2022 by raising the KFR to 3.25 percent along with an increase in the CRR by 100 basis points to 8.0 percent to counter recent inflationary pressure. Many commodity exporting countries, however, responded to the increasing trend in inflation by raising policy rates more than a year ago (Figure 17).

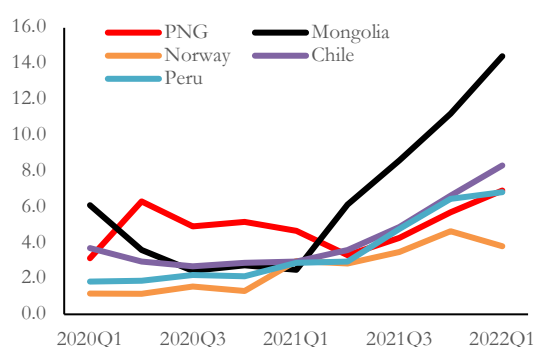
Figure 16: BPNG maintained a stable policy rate compared to other commodity exporting countries¹

(Central bank policy rates, percent)



Source: Central banks of respective countries.

Figure 17: Policy rate hikes were in response to rising inflation
(Inflation, year-on-year)



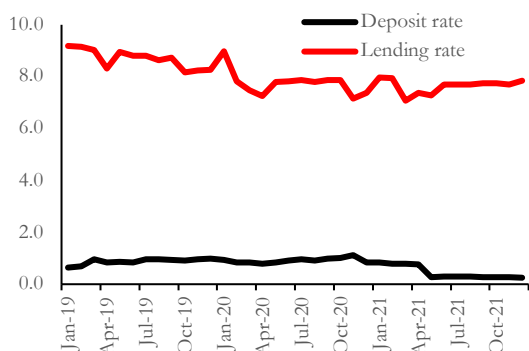
Source: International Financial Statistics, IMF (August 2022).

25. The policy rate cut since the second half of 2019 had little impact on commercial lending and the interest rate rather attracted investment in risk-free securities. Expansionary monetary policy of the BPNG since July 2019 aimed at ensuring banking sector liquidity, increasing private sector lending and reducing the lending rate. A lower policy rate accompanied by the quantitative easing program of the BPNG added K 1.4 billion (~US\$400 million) to an already liquid banking system. The perception of credit risk associated with lending to the private sector and relatively weak domestic demand caused commercial banks to prefer investing additional funds in risk-free government securities and central bank bills (Box 2). Furthermore, the liquidity boost led to a gradual decline in the weighted average deposit rate from 0.85 percent in January 2021 to 0.25 percent in December 2021 (Figure 18). Meanwhile, the average lending rate increased to 7.85 percent at the end of 2021. As a result, the interest rate spread widened further. Given the rising trend in inflation, it was a prudent, albeit possibly belated, decision of the BPNG to move away from a long spell of expansionary monetary policy.

¹ The comparable countries were chosen based on two characteristics- (i) commodity exposure (the share of commodity exports in the total exports is more than 60 percent for all countries); and (ii) one of their top three commodities (in terms of its share in the total exports) matches with the PNG's (LNG, gold and copper). The top three export commodities were identified from the UN Comtrade database which is available at, <https://comtrade.un.org/data>.

Figure 18: Interest Rate Spread Between Deposit and Lending Rates

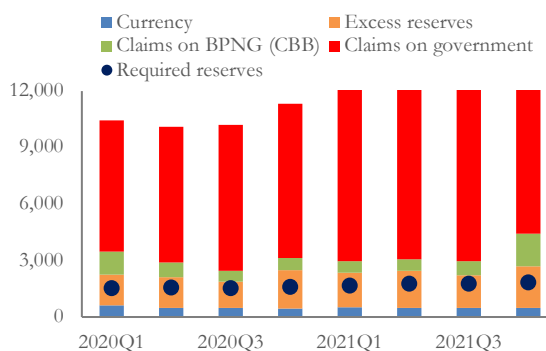
(Weighted average rates, percent)



Source: Bank of Papua New Guinea.

Figure 19: Commercial Banks' Holding of Liquid Assets

(Millions of Kina)

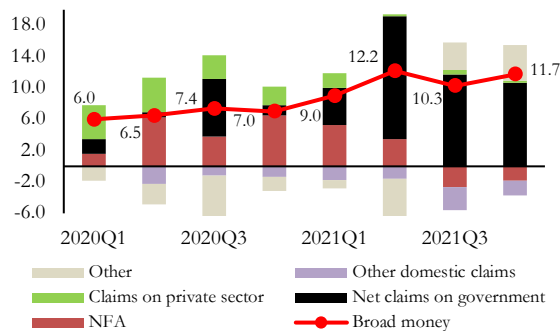


Source: Bank of Papua New Guinea.

26. Money supply continued to expand—led by an accommodative monetary policy. Broad money supply grew by 11.7 percent, year-on-year in 2021, compared to 7.0 percent in 2020 (Figure 20). Increases in both net foreign assets (NFAs) (by 8.7 percent, year-on-year) and net domestic assets (by 13.5 percent, year-on-year) contributed to the growth. Higher proceeds from external borrowing for the 2021 national budget along with a rise in the commercial banks' foreign assets led to a higher overall level of NFAs. There has been a consistent rise in the money supply over the last two years, driven by the fiscal stimulus package and quantitative easing program of the central bank. A 22.2 percent rise in the commercial banks' net claims on the central government contributed mostly to the higher growth of money supply in 2021 (Figure 21). The BPNG injected US\$663.8 million in forex liquidity in 2021 as part of its intervention strategy. The monetary base increased by 10.8 percent, driven by both higher circulation of currency and commercial banks' deposits at the central bank.

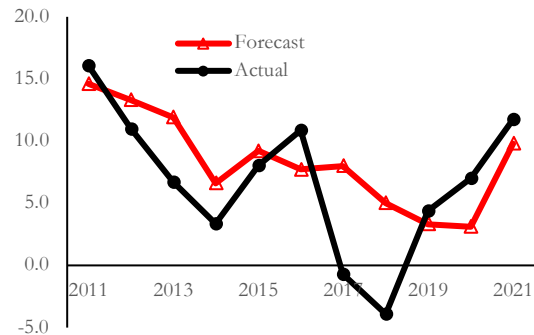
27. The BPNG has raised concerns about greater fiscal dominance over monetary policy in its latest monetary policy statement (MPS). The Central Banking Act (CBA 2000) was amended by the parliament in 2021. The revised act introduces a dual mandate for the BPNG to maintain price stability while supporting economic growth and allows central bank financing of the budget deficit. In BPNG's view, the changes should improve accountability and governance, but would make monetary policy operations challenging as its purchase of government securities would now involve financing of the fiscal deficit in addition to liquidity management (BPNG 2022).

Figure 20: Accommodative Monetary Policy Led to a Further Expansion in Money Supply
(year-on-year growth and sectoral contributions, percent)



Source: Bank of Papua New Guinea.

Figure 21: BPNG’s Forecasts of Money Supply Growth Improved While Continuing to Diverge From Actuals
(year-on-year, percent)



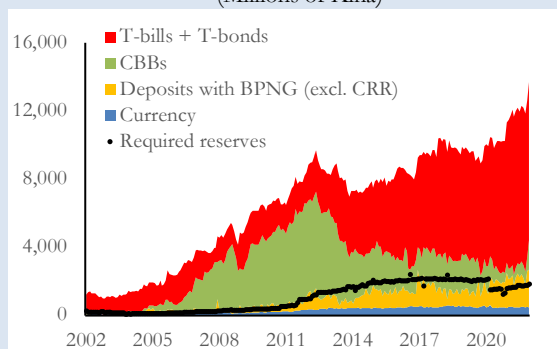
Source: Bank of Papua New Guinea.

Box 2: Fiscal Dominance, Excess Liquidity, and Implications for Monetary Policy

The parliament of Papua New Guinea amended the Central Banking Act (CBA 2000) in December 2021. Notably, the revised Act broadens the central bank’s objectives by including employment and economic growth in addition to price stability, changes in BPNG’s governance structure, and sets limits on central bank financing of government. The new arrangement caps the central bank advances to the government under the Temporary Advance Facility (TAF) at 12 percent of the fiscal revenue (including foreign grants and loans), averaged over the previous three years. Furthermore, BPNG’s holding of government securities (excluding outstanding advances under the TAF) should not exceed 25 percent of the past three-year average government revenue (which may go up to 40 percent during declared national emergencies). While the reforms are intended to improve transparency and accountability, it also raises BPNG’s concerns about fiscal dominance over monetary policy as its purchase of government securities would no longer be solely for the purpose of monetary policy (BPNG Monetary Policy Statement, March 2022).

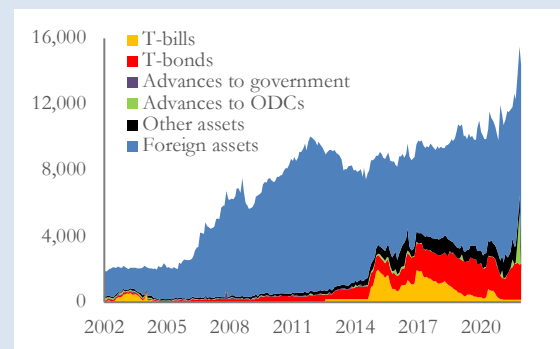
A persistent fiscal deficit, whether being financed domestically or externally, has implications for overall banking system liquidity. When the public debt is financed externally, it initially raises the central bank’s net foreign assets but later adds to the liquidity when funds are converted into the local currency. Conversely, when the government raises funds domestically by issuing treasury bills and bonds, it diffuses some of the liquidity in the first round but may inject liquidity in the second round if a significant portion of the unspent funds is held with the commercial banks. Consequently, the central bank has the task to absorb excess liquidity through its instruments such as raising policy interest rates and selling its own Central Bank Bills (CBBs) and government bills/bonds.

Figure B2.1: Liquid Asset Holding of Commercial Banks
(Millions of Kina)



Source: Bank of Papua New Guinea.

Figure B2.2: Composition of BPNG Assets
(Millions of Kina)



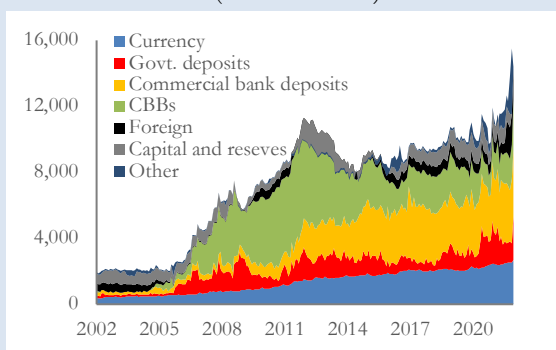
Source: Bank of Papua New Guinea.

The banking sector of PNG has been awash with liquidity for more than a decade (Figure B2.1). The BPNG had to abandon the requirement of a 25 percent minimum liquid asset ratio in 2010 when commercial banks' holding of liquid assets exceeded 50 percent of the deposits. While CBBs contributed to most of the liquidity during 2006-12, the liquidity composition has changed markedly since 2013 with a dominance of government securities. This partly explains commercial banks' appetite for risk-free government securities in a low deposit rate environment. For example, over the period 2013-20, a commercial bank could earn an average nominal return of 4.3 percent by investing in a 182-day T-bill against offering an average interest rate of 1.5 percent on a 180-day term deposit. While the BPNG had the role of absorbing excess liquidity to maintain the transmission of monetary policy, it also ended up stockpiling government securities to help finance fiscal deficit under the 'slack' (central bank purchases of government securities when auctions are undersubscribed) arrangement (Figure B2.2). For example, the stock of government securities under the 'slack' arrangement stood at K 1.6 billion in 2017, around 17 percent of BPNG's total assets.

The BPNG absorbed part of the excess liquidity by issuing CBBs and on-selling government securities to the public under the 'Tap' facility (a short-term debt instrument of the government to meet the revenue shortfall), however, the net issuance of CBBs started to fall in 2012 and the stock has remained mostly flat since 2015 (Figure B2.3). Concern about the high cost of liquidity absorption was repeatedly reported by the BPNG in its various monetary policy statements. Furthermore, sustained government deposits at the trust accounts prompted commercial banks to place extra funds in their exchange settlement accounts with the BPNG, well above the cash reserve requirements.

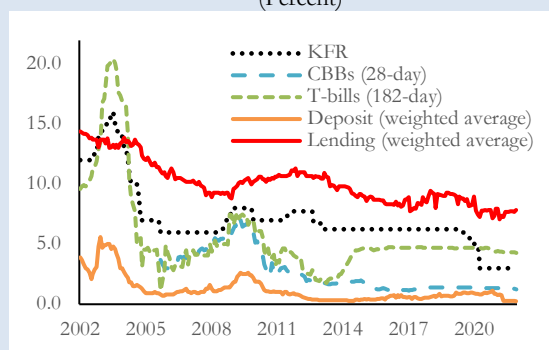
A highly liquid banking sector has made monetary policy less effective over time by weakening the transmission of the policy rate to the market interest rates (BPNG Monetary Policy Statement, September 2019). Over the period 2013-18, BPNG kept its policy rate—the KFR—flat at 6.75 percent. Although the KFR was reduced by 125 basis points in 2019 and by a further 200 basis points in 2020 (in response to COVID-19), it had little impact on the commercial lending rates and private sector lending (Figure B2.4). In fact, commercial credit to the overall business sector has been declining since the second quarter of 2020, year-on-year.

Figure B2.3: Composition of BPNG Liabilities
(Millions of Kina)



Source: Bank of Papua New Guinea.

Figure B2.4: Interest Rates
(Percent)



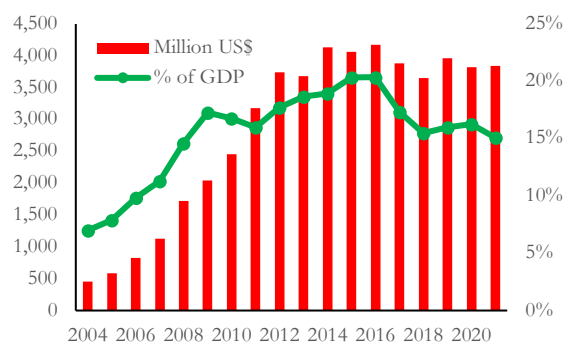
Source: Bank of Papua New Guinea.

Fiscal operations of the government highly influence overall banking sector liquidity and hence, the monetary policy operations of BPNG. Effective transmission of monetary policy requires greater control over liquidity which has become exogenous to BPNG over time. Higher government expenditure, policy rate cuts, and the quantitative easing program of the BPNG have likely added more liquidity to the financial sector without significantly improving bank lending to the household and business sectors. In addition, the added liquidity may lead to higher inflation, amplified further by rising commodity prices in the global markets. This calls for greater coordination between the fiscal and monetary authorities for a better control of liquidity in the economy.

28. The government was the major recipient of credit growth. The overall lending by the commercial banks increased marginally by 0.7 percent in 2021 from negative growth in 2020 (Figure 22). The growth was driven mostly by a four-fold rise in lending to the government. Lending to all business sectors fell in 2021, in particular to the mining (by 50.4 percent), finance (by 27.4 percent) and construction sectors (by 15.2 percent) while personal loans increased by 10.4 percent. As a result, positive contributions of the personal and

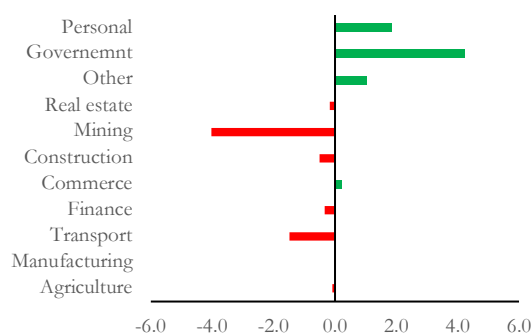
government lending to the overall lending were offset by the negative contributions of the business sector lending (Figure 23). There are, however, some signs of recovery in the agriculture, manufacturing, and commerce sector credit from Q3 2021. In relation to GDP, commercial credit has remained stagnant since 2018 (hovering between 15 and 16 percent of GDP), reflecting a weak domestic demand.

Figure 22: Commercial Credit Lending
(Outstanding Commercial Banks' Advances)



Source: Bank of Papua New Guinea.

Figure 23: Commercial Bank Lending
(Sectoral Contributions to 2021 Credit Growth, percentage points)



Source: Bank of Papua New Guinea.

29. The banking sector maintained adequate capital while non-performing loans (NPLs) rose during the pandemic. Since the beginning of the pandemic, the share of NPLs in gross loans edged up from 4.2 percent in Q1 2020 to 6.1 percent in Q1 2021 (Figure 24). While NPLs fell in the following two quarters, it jumped to a new high level of 6.2 percent in Q4 2021, the highest since 2010. In response, the BPNG strengthened its supervision, including the requirement of monthly reporting by the commercial banks on their financial condition. Meanwhile, the banking sector remained well capitalized with the risk-weighted capital adequacy ratio exceeding 40 percent in Q4 2021 (Figure 25).

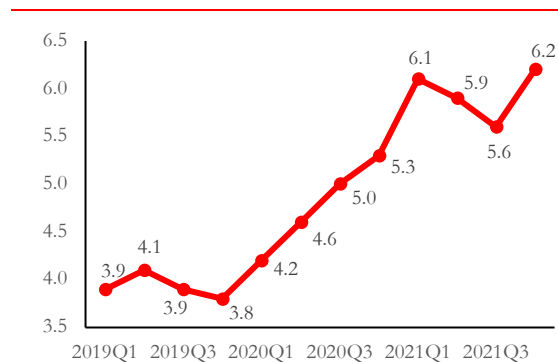
Table 3: Selected Monetary and Price Indicators

| Indicator | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|--|------|-------|------|------|------|------|
| <i>(In percent, unless otherwise indicated)</i> | | | | | | |
| Broad money growth | 10.9 | -0.7 | -3.9 | 4.4 | 7.0 | 11.7 |
| Reserve money growth | 24.4 | -16.6 | -1.9 | 12.4 | 2.2 | 10.8 |
| Domestic credit growth | 24.6 | 0.1 | -6.8 | 5.1 | 2.3 | 9.3 |
| Growth of credit to the private sector | 7.2 | -3.6 | 7.1 | 4.0 | 4.3 | 0.4 |
| Inflation, period-average | 6.7 | 5.4 | 4.4 | 3.9 | 4.9 | 4.5 |
| Inflation, end-of-period | 6.6 | 4.7 | 4.8 | 2.7 | 5.1 | 5.7 |
| Kina facility rate, period average | 6.25 | 6.25 | 6.25 | 5.90 | 3.50 | 3.00 |
| Interest rate on 180-day CBB, period average | 2.2 | 1.2 | 1.5 | 1.5 | 1.4 | 0.9 |
| Interest rate on 182-day T-bills, period average | 4.7 | 4.7 | 4.7 | 4.7 | 4.6 | 4.3 |
| Deposit rate, weighted average, period average | 0.6 | 0.5 | 0.7 | 0.9 | 0.9 | 0.5 |
| Lending rate, weighted average, period average | 8.4 | 8.4 | 9.1 | 8.7 | 7.8 | 7.6 |

Source: Official historical data.

30. Despite a sharp decline in their return on assets and equity in the last quarter of 2021, banking sector profitability was higher in 2021 relative to 2020 (Figure 25). The Bank of South Pacific (BSP)—the largest commercial bank in PNG—reported a net profit of US\$306 million in 2021 which was 33 percent higher than in 2020. Another commercial bank, the Kina Bank, also reported 27 percent growth in net profit for 2021. Higher revenue from foreign exchange transactions and a rise in the overall transaction volume were the key contributors to profitability.

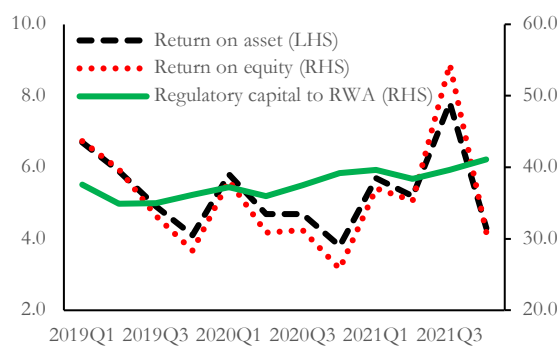
Figure 24: NPLs Rose to a New High Level
(percent)



Source: Bank of Papua New Guinea.

Figure 25: Banking Sector Profitability Declined in Q4 2021

(Capital adequacy, return on assets and equity, percent)



Source: Bank of Papua New Guinea.

Box 3: Financial Soundness Indicators are Now Publicly Available at the BPNG Website

The BPNG started publishing the key Financial Soundness Indicators in July 2022.² Annual and quarterly data on a range of indicators such as financial sector profitability, income, expenses, capital adequacy, NPLs, liquidity, foreign exchange position, exposure limit, capital-to-asset ratio, deposit-to-advance ratio are available from 2010.

Figure B3.1: Banking Sector Remains Well Capitalized
(Regulatory capital to risk-weighted assets, percent)

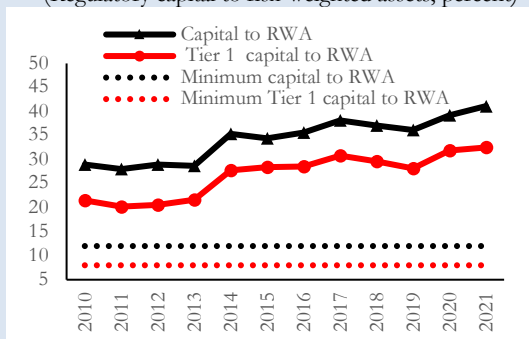


Figure B3.2: NPLs Have Been Rising Since 2017
(NPL, percent)

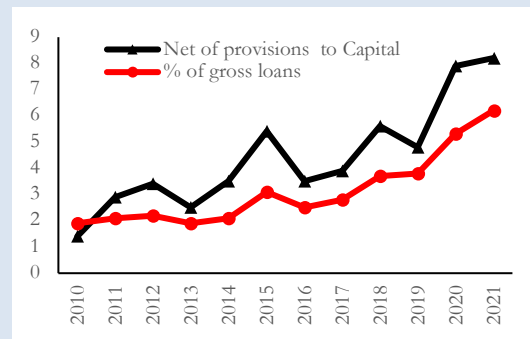


Figure B3.3: Profitability Has Increased in Recent Years Following a Sharp Decline in 2014
(Return on assets and equity, percent)

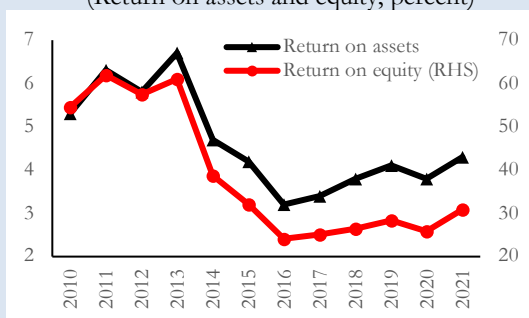
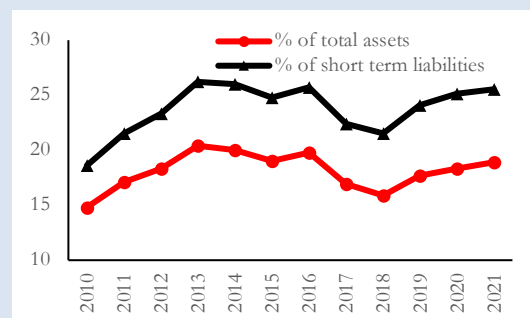


Figure B3.4: Banking Sector Liquidity Has Been Rising Since 2019
(Liquid assets, percent)



Source: Bank of Papua New Guinea.

² Available from <https://www.bankpng.gov.pg/statistics/quarterly-economic-bulletin-statistical-tables/>.



A large trade surplus resulted both from the higher commodity price-driven exports and from a slowdown in imports. (Joeri Kalwij/World Bank).

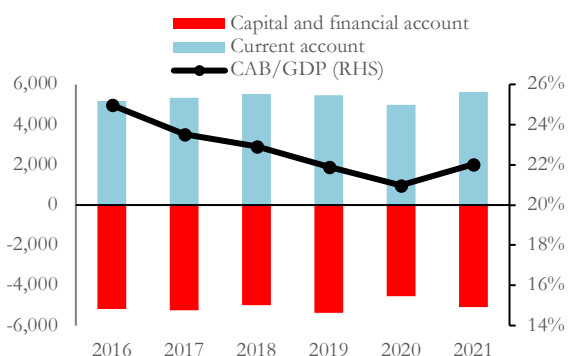
1.4. External sector

31. Following a sharp decline in 2020, the current account rebounded strongly and posted a record surplus of US\$5.6 billion in 2021 (Figure 26). The current account surplus reversed the declining trend observed over the preceding five years and reached 22 percent of GDP. The improvement in the current account was driven mostly by a higher surplus in the trade balance. The balance of trade in goods and services was 26 percent higher in 2021 than in 2020, driven by a recovery of commodity prices in the international market (Figure 27). There has been a steady growth in the goods balance since the second quarter of 2021 which is likely to have continued in the first half of 2022 due to a higher global prices of PNG's major export commodities.

32. The current account surplus continued to be offset by a deficit in the capital and financial account (Figure 26). Net foreign direct investment (FDI) was in a higher deficit of US\$1.3 billion in 2021 compared to a deficit of US\$0.8 billion in 2020. The larger deficit resulted from a US\$380 million higher investment abroad by PNG residents and a decline of US\$153 million in investment by foreign residents. The 'other investment' category, which constitutes more than 70 percent of the financial account, went up by US\$94.7 million and stood at US\$3.8 billion in 2021. This reflects an increase in external debt repayments by the government and investors in the extractive industry. The balance of payments was in a surplus of US\$550 million, US\$100 million higher than in 2020.

Figure 26: 2021 witnessed the highest ever surplus in the current account

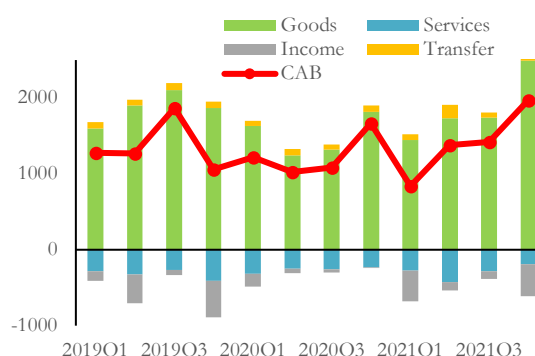
(Balance of payments, Millions of US\$; CAB in percent of GDP)



Source: Bank of Papua New Guinea.

Figure 27: Current account surplus was driven by a higher trade surplus

(Current account balance and composition, Millions of US\$)

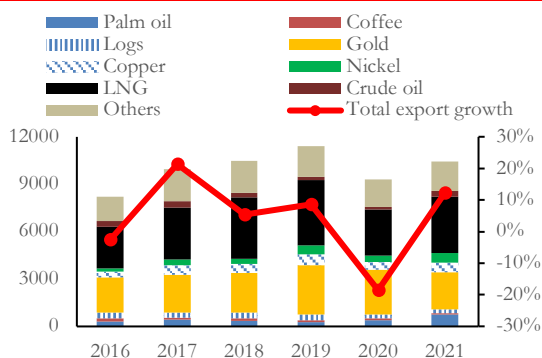


Source: Bank of Papua New Guinea.

33. A large trade surplus resulted both from the higher commodity price-driven exports and from a slowdown in imports. Overall exports stood at US\$10.4 billion in 2021, US\$1.1 billion higher than in the previous year. Higher global prices of PNG's major export commodities resulted in a 12.2 percent growth in export value in 2021 following a decline of 18.6 percent in 2020 (Figure 28). The values of extractive and non-extractive exports increased by US\$946 million (by 12.6 percent) and US\$189 million (by 10.5 percent) respectively in 2021. Except for gold which declined by 15.6 percent, the export value of all extractive sector commodities recorded buoyant growth. Disruptions to gold production—particularly due to the temporary shutdown of the Porgera gold mine in April 2020—contributed to the slowdown over the last two years. LNG exports, which constitute more than one-third of all exports, recovered with a 22 percent year-on-year growth. Agricultural exports performed well in 2021 with an annual growth of 51.2 percent, while palm oil exports more than doubled and offset a decline in coffee exports during the period.

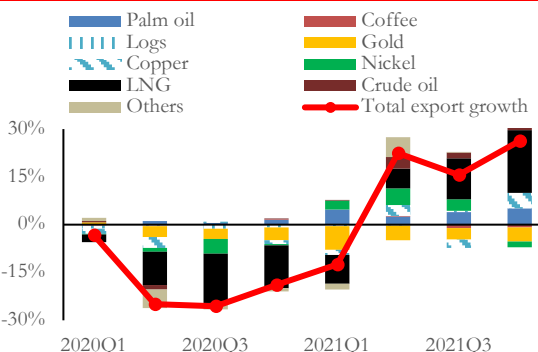
34. Overall, there is a strong sign of recovery reflected in the quarterly export dynamics. Following contractions in each quarter of 2020, overall exports have moved to a positive growth trajectory since the second quarter of 2021—from -18.9 percent in Q4 2020 to +26.2 percent in Q4 2021, year-on-year (Figure 29). The average growth rate over the last three quarters of 2021 was 21.4 percent which is likely to have continued in the first half of 2022 due to sustained export prices. Except for gold and coffee, all export commodities, particularly LNG and palm oil, have contributed to this strong growth.

Figure 28: Exports recovered in 2021
(Millions of US\$ and growth rate)



Source: Bank of Papua New Guinea.

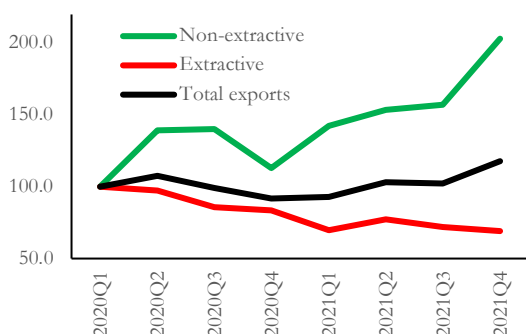
Figure 29: As exports of most commodities improved during the year
(Quarterly export growth and contribution, year-on-year)



Source: Bank of Papua New Guinea.

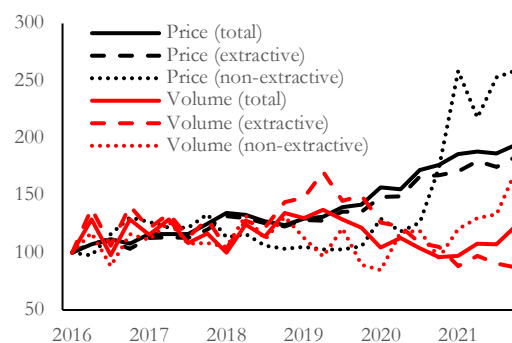
35. Overall export prices were driven by the extractive sector while the non-extractive sector was the major driver of export volume throughout 2021 (Figure 30). All agricultural export volumes (except coffee) had modest growth in 2021 and contributed to a 33 percent rise in the non-extractive export volume index. Export volume of the extractive sector, which generates more than 80 percent of export revenue, declined by 22 percent, however, particularly due to a slowdown in gold production. The global prices of PNG’s major export commodities, particularly LNG and palm oil, rose sharply in 2021 and remained at a higher level during the first half of 2022. The average LNG price was 80 percent higher in the first half of 2022 relative to 2021 while palm oil prices rose by more than 50 percent during the same period.

Figure 30: Export volume was led by the non-extractive sector
(Index, Q1 2019=100)



Source: Bank of Papua New Guinea.

Figure 31: Export price and volume indices
(Q1 2016=100)



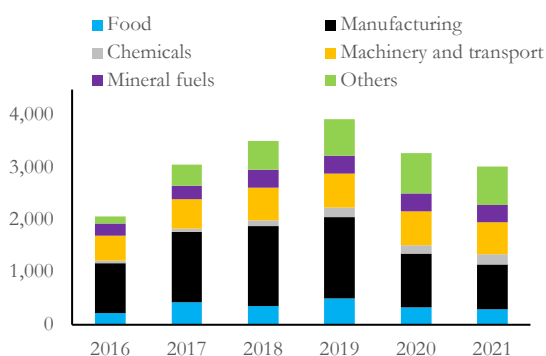
Source: Bank of Papua New Guinea.

36. Import contraction continued with some signs of stabilization. The overall imports stood at US\$3 billion in 2021, 7.9 percent lower than in 2020. The fall in imports was smaller than the previous year when import growth was -16.5 percent. All import categories except chemicals contributed to the import contraction. Food imports fell by 9.3 percent while imports of the largest two categories—manufacturing, and machinery and transport—were respectively 17.2 percent and 5.9 percent lower than in 2020. Lower manufacturing imports was the major contributor to the import slowdown since the beginning of the pandemic. The share of food imports in the total imports has been declining gradually, from 13 percent in 2019 to 10 percent in 2021, reflecting an improvement in the domestic supply (the agriculture sector contributed substantially to the economic growth in 2021). The share of manufacturing imports declined, however, from 38 percent in 2019 to

28 percent in 2021 while the share fuel imports increased from 8.5 percent to 11 percent during the same period.

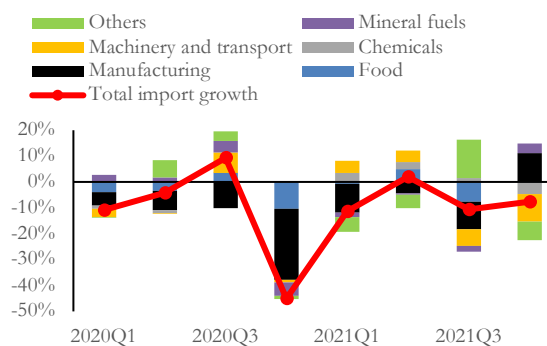
37. The pace of import recovery slowed down in the second half of 2021, reflecting a new wave of the COVID-19 pandemic and a lower investment by the mining industry. While imports recovered during the first half of 2021, they fell back to the negative growth trajectory during the second half of the year (Figure 32). Several mining companies reported a lower level of year-on-year capital expenditure in the third quarter of 2021 (BPNG 2021). Lower manufacturing imports continued to drag down the total imports during the first three quarters of 2021, albeit contributing positively in the last quarter—for the first time since the economy was hit by the pandemic (Figure 33). Fuel imports also rose in Q4 2021. Overall, there are signs of improvement but at a slow pace.

Figure 32: Imports declined in 2020 and 2021
(Import composition, Millions of US\$)



Source: Bank of Papua New Guinea.

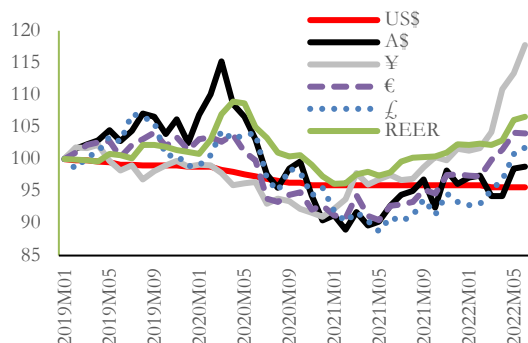
Figure 33: ...Driven mostly by lower manufacturing imports
(Quarterly import growth and contributions, y-o-y)



Source: Bank of Papua New Guinea.

38. The exchange rate of the Kina remained flat against the US dollar while showing an appreciating trend during 2021 against the other major currencies (Figure 34). The BPNG kept the exchange rate of Kina against the US dollar unchanged at Kina 3.51 per US\$1.00 throughout 2021 (Table 4) while there was a slight depreciation of 0.3 percent in February 2022. Meanwhile, the Kina appreciated against other major currencies, particularly due to the cross-currency movements—that is, the weakening of those currencies against the US dollar. For example, the Kina appreciated by 6.6 percent, on average, against the Australian dollar during the first six months of 2022. The real effective exchange rate (REER), therefore, increased by 6.6 percent during this period, reflecting a fall in PNG's export competitiveness in the global market.

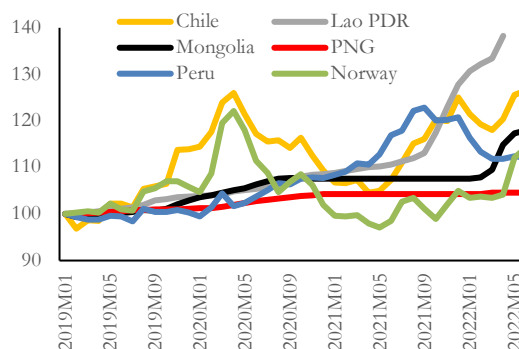
Figure 34: Kina remained stable against the US dollar while the real exchange rate increased (Jan-2019=100)



Source: Bank of Papua New Guinea and International Financial Statistics, IMF (August 2022).

Note: An increase reflects an appreciation of the Kina.

Figure 35: Commodity Exporting Countries' Exchange Rates Against the US\$ (Jan-2019=100)



Source: International Financial Statistics, IMF (August 2022).

Note: An increase reflects a currency depreciation against the US\$.

39. The rigidity of the Kina is in sharp contrast to the exchange rate movements in other commodity exporters (Figure 35). The annual average rate of depreciation of Kina against the US dollar was only 2.3 percent over the last five years, a period of sustained excess demand for foreign exchange. Like the other exporters of primary commodities, the Kina is empirically viewed as a ‘commodity currency’ whose exchange rate would primarily be driven by commodity price movements in the international market (Sampson and Kauzi 2009; Aipi 2012), however, is has rarely followed this path in recent years, but was kept stable and relatively resilient to global commodity shocks.

40. The consensus is that the Kina is overvalued, although there is a debate on the extent of overvaluation. Davies and Schröder (2022) argue that the Kina is overvalued by 14-26 percent while the IMF (2022a) estimates the overvaluation at around 6 percent. The BPNG has been defending its position arguing that a sharp depreciation would only lead to higher inflation without inducing a significant supply-side response from the non-resource sector (BPNG 2021a). While a stable exchange rate can contain part of the imported inflation, an overvalued currency raises uncertainty about its future path and have implications for the effectiveness of monetary policy and the overall economy. Indeed, it is quite difficult to retain control over the money supply while maintaining a stable exchange rate, without placing restrictions on capital mobility.

Table 4: Selected External Sector Indicators

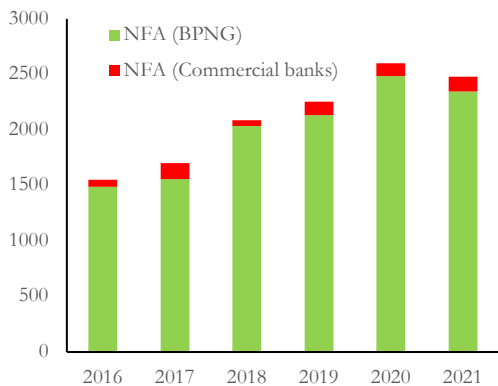
| Indicator | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|---|--|-------|--------|--------|-------|--------|
| | <i>(In millions of U.S. dollars, unless otherwise indicated)</i> | | | | | |
| Exports, f.o.b., of which: | 8,204 | 9,953 | 10,495 | 11,401 | 9,285 | 10,420 |
| Extractive sector | 6,455 | 7,960 | 8,498 | 9,595 | 7,489 | 8,434 |
| Imports, c.i.f. | 2,070 | 3,060 | 3,512 | 3,933 | 3,284 | 3,024 |
| Current account | 5,183 | 5,347 | 5,528 | 5,468 | 4,987 | 5,609 |
| (in percent of GDP) | 25.0 | 23.5 | 22.9 | 21.9 | 21.0 | 22.0 |
| Overall balance of payments | 10 | 110 | 561 | 125 | 450 | 550 |
| Gross official reserves | 1,656 | 1,736 | 2,215 | 2,313 | 2,677 | 2,878 |
| (in months of goods and services imports) | 4.3 | 4.0 | 4.7 | 6.2 | 7.4 | 7.3 |
| (in months of non-extractive imports) | 10.1 | 8.2 | 8.9 | 7.3 | 11.8 | 15.9 |
| Nominal exchange rate (Kina/US\$), period average | 3.13 | 3.19 | 3.29 | 3.39 | 3.46 | 3.51 |
| Nominal exchange rate (Kina/US\$), end of period | 3.17 | 3.23 | 3.37 | 3.41 | 3.51 | 3.51 |

41. The IMF reclassified PNG's exchange rate regime six times between 2012 and 2020, which hovered mainly between 'crawl-like' and 'stabilized' arrangements. The BPNG reinstated the requirements of repatriation and surrender of export proceeds in 2016 while embracing several capital control measures to keep the exchange rate stable—such as: (i) introduction of an exchange rate trading band in 2014; (ii) the requirement of a tax clearing certificate in 2015; (iii) forex rationing; and (iv) multiple currency practices in 2016. The lack of Kina convertibility entails substantial costs, both to the BPNG and to authorized foreign exchange dealers, while hurting business confidence and undermining growth in the non-extractive sector.

42. The forex inflows improved in 2021 yet remain a major concern of the local businesses. The shortage of foreign currency has dropped from the list of top five impediments to doing business in PNG in a recent survey conducted of PNG businesses (Smirk 2022). As reported by the BPNG in its latest MPS in March 2022, the outstanding orders of foreign currency totalled US\$303 million in 2021—about 5 percent of the total forex orders. The foreign exchange intervention of the BPNG helped clear the outstanding orders and reduce the clearing time to less than three months. BSP reported a 20 percent higher year-on-year foreign exchange turnover in the second quarter of 2022 (BSP 2022). Higher forex inflows led to a 10 percent increase in the commercial banks' NFAs while the NFAs of the BPNG fell by 5.4 percent in 2021, leading to a decline in the overall NFAs of the depository corporations (Figure 36).

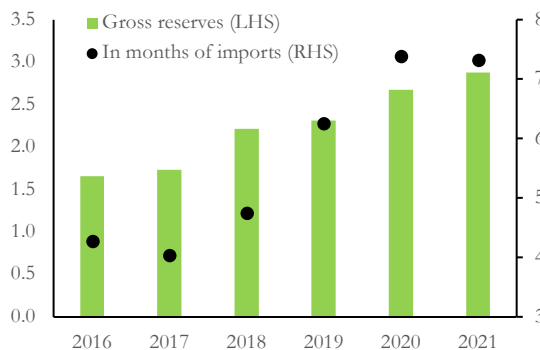
43. Gross international reserves increased to US\$2.9 billion at the end of 2021 (Figure 37), mainly due to the IMF disbursement of the special drawing rights (SDRs) and bilateral and multilateral external loans. As part of the IMF's effort to improve forex liquidity in member countries in the wake of the COVID-19 pandemic, PNG received SDRs of 252.3 million in August 2021. A loan agreement of \$AUD 650 million (~US\$465 million) was signed between the governments of Australia and Papua New Guinea in December 2021 to help finance PNG's budget deficit. Higher SDR allocations, bilateral and multilateral external loans, and an increase in resources revenue from mining and petroleum taxes led to higher forex reserves, however, the BPNG infused US\$663.8 million in 2021 as part of its foreign exchange provision to authorized dealers. The reserves are sufficient to cover 7.3 months of imports of goods and services and remain above the IMF metric.

Figure 36: Net Foreign Assets of Commercial Banks
(Depository corporations' NFAs, Millions of US\$)



Source: Bank of Papua New Guinea.

Figure 37: International Reserves Remain Above the IMF Requirement
(Gross reserves, Billions of US\$, and in months of imports)



Source: Bank of Papua New Guinea and World Bank staff estimate.



A reduction in commodity prices, and a lower demand for exports from the decelerating global economy are significant risks, and might result in slower than expected economic growth for Papua New Guinea (Kalolaine Fainu/World Bank)

2. Outlook and risks

2.1. Global economic outlook and risks

44. Following more than two years of the pandemic, spillovers from the Russian Federation’s invasion of Ukraine are set to sharply hasten the deceleration of global economic activity. The war in Ukraine is leading to high commodity prices, adding to supply disruptions, increasing food insecurity and poverty, exacerbating inflation, contributing to tighter financial conditions, magnifying financial vulnerability,

and heightening policy uncertainty. Growth in emerging market and developing economies this year has been downgraded as negative spillovers from the invasion of Ukraine more than offset any near-term boost to some commodity exporters from higher energy prices. Despite the negative shock to global activity in 2022, there is no rebound projected next year. Moreover, the outlook is subject to various downside risks, including intensifying geopolitical tensions, growing stagflationary headwinds, rising financial instability, continuing supply strains, and worsening food insecurity.

45. Growth in the EAP region is also projected to decelerate in 2022. Slowing activity in China would more than offset a rebound in the rest of the region where the relaxation of pandemic-related restrictions boosts domestic demand. Downside risks to the baseline growth forecast for the region predominate and include a lingering pandemic and resulting mobility restrictions, larger-than-expected spillovers from Russia's invasion of Ukraine, and financial stress triggered by global financial tightening.

2.2. Papua New Guinea's economic outlook and risks

46. The outlook for 2022 is underpinned by recovery in the extractive sector, elevated commodity prices and gradual recovery in economic activity. Despite low vaccination rates, the pandemic-related policy stringency index has gone down, leading to more activity across the country. This is reflected in available high frequency data (see, for example, the Google Mobility Report below). Furthermore, activity in the extractive sector is expected to expand from a relatively low base. Data from the Internal Revenue Commission on revenue collections during the first six months of 2022 also point at recovery in economic activity, although most of the unanticipated revenue came from the mining and petroleum sectors amid record high prices. In addition, the economy is expected to benefit from high election-related spending. The 2022 budget pledged K 600 million (0.6 percent of GDP) for the national elections.

47. As a net commodity exporter, PNG will benefit from elevated prices. PNG's key commodity items have seen large price increases in 2022. According to the World Bank's latest Commodity Markets Outlook (2022c), prices are expected to remain high in 2022 and over the medium term. For example, prices of agricultural commodities are forecast to edge higher by 18 percent in 2022, while the price of LNG is expected to grow by 75 percent. With production and prices edging higher, mining exports are likely to support economic recovery and provide the government with additional revenue.

48. The outlook for the extractive sector assumes a resumption of operations in resource projects. It looks increasingly likely, however, that part of the expected economic benefits from resource projects, including Wafi-Golpu and Porgera, are not going to materialize in 2022. The government's growth projection for 2022 attributes nearly one-third to the reopening of the Porgera gold mine (1.7 percentage point contribution to a total growth rate of 5.4 percent).³ Despite a binding framework agreement signed between the government and operator, however, the stakeholder sign-off process is delayed. Furthermore, tribal conflict and violence broke out in July 2022 near the mine, adding to an already challenging reopening process. In addition, the Mineral Resources Authority had put negotiations related to Wafi-Golpu on hold, waiting for formation of a new government. Given these developments and experience with resource negotiation processes in PNG, the economic benefits of the Porgera and Wafi-Golpu projects are likely to materialize beyond 2022. This may push growth prospects for 2023 upwards.

49. Suspension of operations in these mines not only delays direct economic benefits to PNG, but also costs the country in terms of maintenance costs, employment, and revenue. The Porgera mine, for example, is into the third year of its care and maintenance, which continues to have a negative impact on growth, employment, and revenue for the government. In addition, the cost of maintenance is high. According to Barrick Gold, the operator of the mine, over US\$338 million (about K 1.18 billion) has already been spent

³ Papua New Guinea, Department of Treasury, 2022 National Budget, Volume 1, Economic and Development Policies.

to maintain the mine. The maintenance cost could reach up to \$US580 million if the reopening is delayed to January 2023.

50. A gradual pickup in domestic demand despite a slow vaccine rollout is expected to support growth in the non-extractive sector. Available data suggests that businesses are optimistic about the outlook. The 2022 PNG 100 CEO Survey shows that businesses are cautiously optimistic about the outlook, with 44 percent of respondents expecting somewhat higher profits than 2021, although just over 8 percent of respondents expect slightly or substantially lower profits in 2022 compared to 2021. According to the survey, 50 percent of respondents claimed that they will invest either substantially or slightly more than they did in 2021. Similarly, the Pacific Business Monitor, a regular survey commissioned by the PTI Network to understand the ongoing effects of COVID-19 on the Pacific's private sector, suggests that despite 84 per cent of SMEs in the Pacific facing negative impacts of the pandemic in the first quarter of 2022, 47 per cent of businesses are expecting revenue to improve in the second quarter of the year. With PNG's pandemic-related stringency measures softer compared to other countries of the region (Figure 38), Google visitor numbers in the country to all measured categories of location (for example, grocery stores; parks; train stations) have grown since the start of the year (Figure 39).

Figure 38: Stringency Index vs Facebook Mobility Index

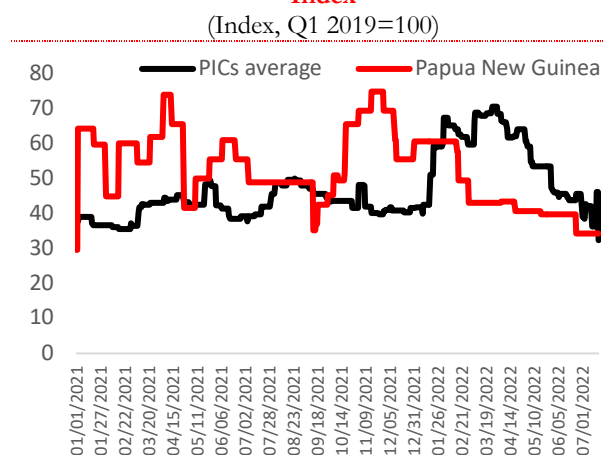


Figure 39: Visitors to Different Places
(Change relative to baseline of February 2020)



51. There are both upside and downside risks to the economic outlook, although the balance is skewed towards downside risks. Globally, normalization of monetary policy in response to high inflation and ongoing geopolitical uncertainties have fueled worries about stagflation. Slower than expected economic growth would impact PNG, mostly via lower demand for its exports and sharp reduction in commodity prices. While most baseline scenarios⁴ incorporate ongoing threats to global economic conditions, such as the war in Ukraine, tightening of global financial conditions and rise in inflation, there are further downside risks to the outlook. The latest edition of the World Bank Global Economic Prospects (June 2022) cites intensifying geopolitical tensions, shortages of vital inputs to production related to sanctions on Russia, and renewed outbreaks of COVID-19 among the factors that can hinder global growth.

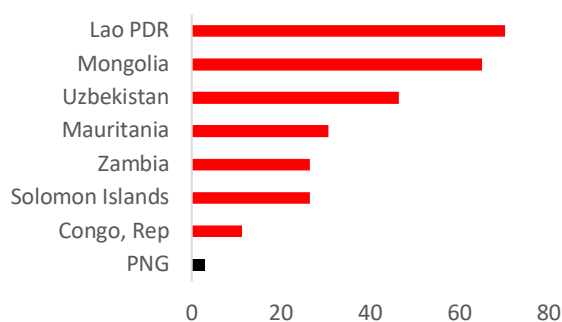
52. Apart from global risks, regional risks, such as structural slowdown in China and rising food prices, are likely to impact PNG directly and indirectly. Trade is the direct impact channel reducing export

⁴ For example, the June 2022 edition of the World Bank's Global Economic Prospects (World Bank 2022) has revised the global growth forecasts from 4.1 percent in January to 2.9 percent.

receipts. High energy and food prices are likely to have an impact on businesses and constrain private consumption. On the upside, elevated commodity prices are likely to increase PNG's exports.

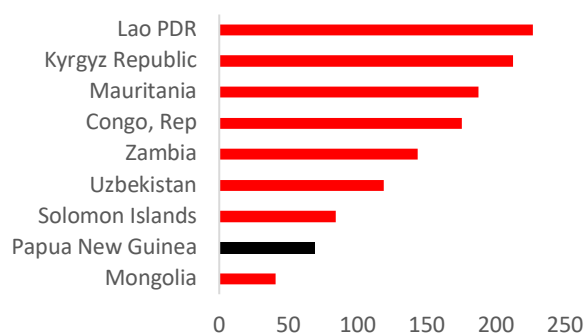
53. Low vaccination rates weigh on the growth outlook. PNG's vaccination rate remains the lowest in the EAP region and one of the lowest in the world (Figure 40). As of early-August 2022, less than 3 percent of the adult population were fully vaccinated. While the number of cases and deaths per million are significantly lower compared to structural peers, the limited number of tests masks the true extent of the disease prevalence (Figure 41). According to The Economist (2021) excess deaths tracker, the death toll (proxied by excess mortality) from the pandemic may be understated by six-fold. Low vaccination rates make PNG extremely vulnerable to another wave of pandemic if it materializes.

Figure 40: Share of People Fully Vaccinated
(Share of adult population, percent)



Source: Johns Hopkins University (2022).

Figure 41: Cumulative Excess Deaths
(Per 100,000 population, July 2022)



Source: The Economist (2022).

54. The authorities project further improvement in fiscal outcomes in 2022. The deficit is expected to narrow to 5.9 percent of GDP, underpinned by stronger revenue collection and contained expenditure. Tax revenues are expected to edge higher driven by a pickup in economic activity and resumption of growth in the resources sector. In addition, introduction of new levies (bank levy and telecommunication tax, among others) and compliance measures, and introduction of the Non-tax Revenue Administration Bill are likely to support higher revenue collections. On the expenditure side, despite a 10 percent increase in nominal terms, the expenditure-to-GDP ratio is expected to record a modest 0.2 percentage point increase. One-off elections-related expenditure, as well as an increase in expenditure due to higher inflation are contributing factors to higher expenditure. The fiscal deficit is projected to be below 6 percent of GDP. The government is planning to finance over 60 percent of borrowing requirements from external sources.

55. While the 2021 fiscal results were better than expected, achieving the government's ambitious fiscal targets over the medium term requires addressing current structural challenges. Based on the MTFS, the government targets a zero NRPB by 2025. This is an ambitious target, given structural challenges PNG is facing with revenue collection and containing expenditure. This requires greater fiscal discipline, and carefully planning the composition of public expenditure, however, experience shows that achieving fiscal consolidation is a challenging task in PNG. A steady increase in public debt levels over the last 10 years has prompted the amendment of the FRA three times to allow for a higher debt limit. The debt-to-GDP ceiling stands at 60 percent now, compared with 30 percent when the FRA was adopted in 2006. The current FRA also stipulates increasing the share of concessional financing and reducing the government's reliance on short-term domestic borrowing. The authorities have been relatively successful in achieving this policy goal, although not all external debt is concessional. The share of external debt was almost on par with domestic borrowing.

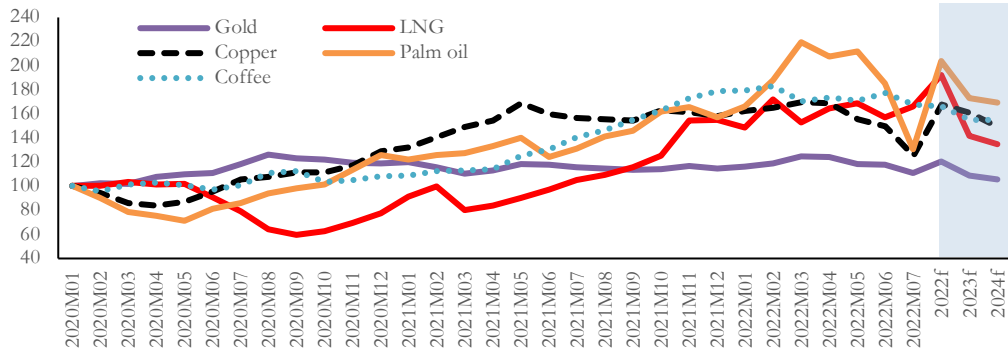
56. Controlling the growth in expenditure and increasing revenue mobilization are vital for debt sustainability. Tax revenue as a share of GDP was 11.8 percent in 2021—below its pre-pandemic level (13 percent). With substantially lower tax revenue collection compared to its structural peers, PNG faces challenges related to adequate public service delivery. On the other hand, the government has been more successful in containing growing payroll expenditure. The average growth rate of the public sector wage bill was 5.4 percent over the 2019-21 period, which is nearly one-half of the average growth rate of the 2016-19 period.

57. Risks to the fiscal outlook are balanced. On the upside, elevated commodity prices, and the resumption of operations in key mining projects may provide a boost to revenue collections from the extractive sector. With potential upside to the LNG prices for the rest of 2022, the revenue collections may increase further. On the other hand, there are several downside risks to the fiscal outlook stemming from lower growth projects of the economy amid global slowdown in growth. This, in its turn, may lead to lower domestic demand and lower receipts. Furthermore, another wave of the COVID-19 pandemic and delays in resumption of operations in major resource projects add to the list of downside risks.

58. Headline inflation will remain elevated in 2022 before settling down in 2023. Higher food and energy prices prevailing in the international markets and inflationary pressures in the major trading partners imply that headline inflation will remain elevated in 2022 before settling down in 2023. The fiscal measures to mitigate the impact of higher fuel prices on domestic inflation, introduced by the 2022 budget amendments, are likely reducing the inflationary trajectory in 2022. The BPNG should closely monitor external developments and adjust its stance of monetary policy accordingly. Although PNG is likely to be a net beneficiary of higher international commodity prices, expectations of rapid US Federal Reserve rate hikes and a slower recovery of emerging markets would put pressure on the exchange rate and inflation. Credit to the business sector should improve with recovery of the domestic economy, particularly in the extractive sector, from the COVID-19 pandemic. Although it remains resilient, the banking sector is at risk from rising NPLs. The BPNG should, therefore, remain vigilant and closely monitor the banking sector's performance. Excess liquidity remains a major impediment to the effectiveness of monetary policy of the BPNG. The hike in the CRR would diffuse part of the excess liquidity in the financial system.

59. The surplus in the current account in 2022 is likely to be supported by sustained export growth, driven by favourable global prices of major export commodities. The resumption of the Porgera gold mine would accelerate growth further by taking advantage of higher prices. The surge in global prices has, however, slowed down recently—implying that the gains from higher prices will not last long (Figure 42). More efforts are, therefore, needed to improve export volume, particularly in the extractive sector. Adequate efforts should be made to bring the major extractive sector projects back in operation and to accelerate negotiations of the resource projects in the pipeline. Slowdown in machinery and transport imports implies lower investment activity in the economy and, therefore, poses significant risks to the growth outlook. Domestic economic recovery from COVID-19 would lead to a gradual increase in import demand in forthcoming quarters. The stability of the exchange rate of Kina against the US dollar and appreciation against the currencies of major trading partners (due to cross-currency movements) could lead to a further rise in the real exchange rate and affect export competitiveness in the global market.

Figure 42: Global prices of PNG's major export commodities are likely to normalize in 2023
(Index, January 2020=100)



Source: World Bank “Pink Sheet” (actuals); World Bank 2022b (forecasts).



B. SPECIAL FOCUS: Boosting Economic Growth

Part B



A renewed policy focus on economic growth is needed, not only on the short-term factors affecting the outlook for the next year, but also on the longer-term drivers of the growth and welfare of the people.
(Conor Ashleigh/World Bank)

s

3. Why should economic growth become the focus for policy makers?

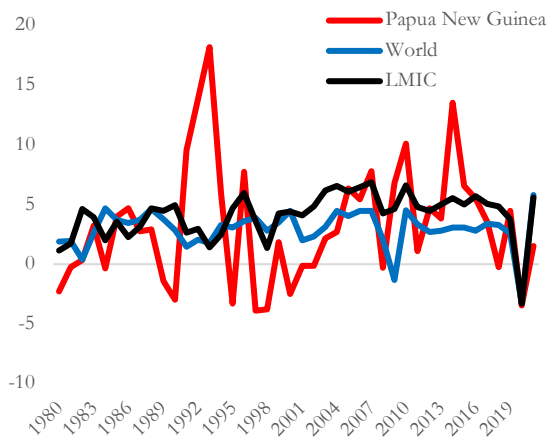
60. The Special Focus for this issue is on the long-term growth, emphasizing the challenges. The analysis has been done in the context of the ongoing preparation of the PNG Country Economic Memorandum (CEM), one of the World Bank's core analytical products. The CEM tries to identify and address binding constraints for economic growth. By design, the study is zooming in on potential areas for improvements. We hope to start a public discussion to better understand the underlying problems and, thus, contribute to finding solutions.

3.1. Modest headline growth masks low per capita growth

61. PNG is a richly diverse country endowed with abundant geographic and natural resources. With more than 800 different languages spoken and more than 1,000 ethnic clans among a population of 9 million people, PNG is the most heterogeneous country in the world. Tropical rainforests cover around 75 percent of the country's surface, and its exclusive maritime economic zone is the source of over 10 percent of the global tuna harvest. PNG is also a significant global producer of gold, LNG, and agricultural products such as coffee, cocoa, coconut (copra), and palm oil. Since independence in 1975, PNG has developed many institutions and aspires to become an upper-middle-income country by 2030. PNG also achieved a notable improvement in its human development—evidenced by a 60 percent increase in its human development index during 1985-2019. As this report argues below, however, the country continues to fall short of its potential against the backdrop of enormous natural wealth and a young and diverse population.

Figure 43: PNG enjoyed some years of extremely high economic growth ...

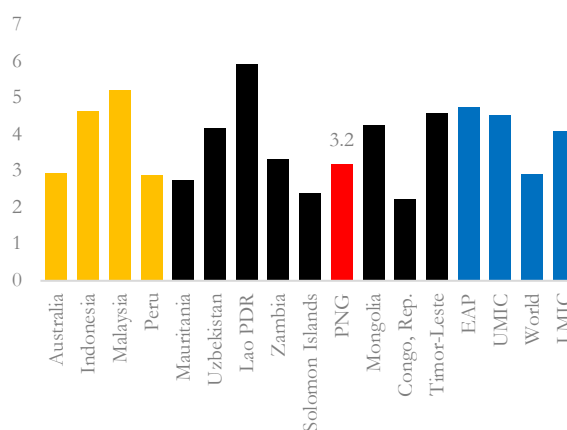
(Annual GDP growth, 1980-2021)



Source: WDI.

Figure 44: ... yet due to significant volatility, the average growth has not been as strong as in the EAP

(Average annual GDP growth, 1980-2021)

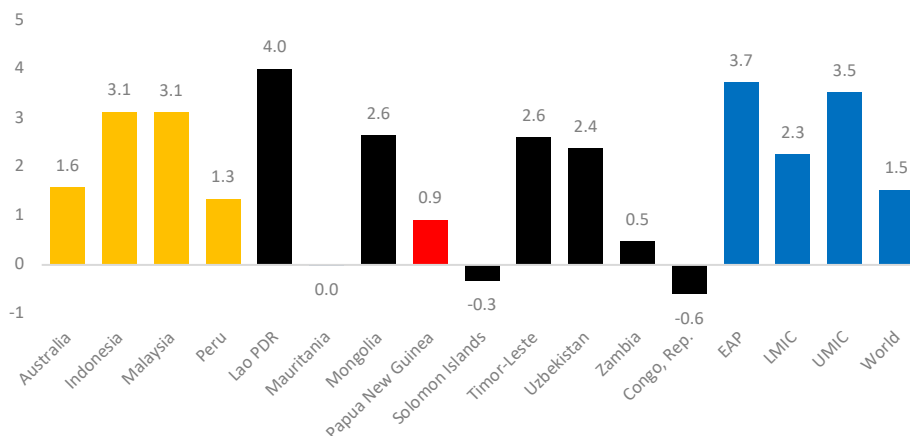


Source: WDI.

Note: Data starts in 1984 for Lao PDR, 1981 for Mongolia, 2000 for Timor-Leste, and 1987 for Uzbekistan.

62. The modest headline economic growth in PNG has translated into meagre per capita income growth. PNG enjoyed several years of extremely high growth, but it was highly volatile, primarily reflecting changes in the production of resources and commodity prices' fluctuations (Figure 43). While the PNG economy expanded by 3.2 percent on average during 1980-2021 (Figure 44), per capita GDP recorded an average annual growth rate of only 0.9 percent (Figure 45)—reflecting a 2.3 percent growth rate in population. As a result, the GDP per capita in constant 2015 US\$ increased from US\$1,822 in 1980 to US\$2,655 in 2021 (Figure 45). Meanwhile, the group of upper-middle-income countries that started at a similar income level (US\$2,373) in 1980 achieved an average annual growth of 3.5 percent, reaching US\$10,055 by 2021. Moreover, structural peers⁵ that were at lower income levels, including Mongolia and Uzbekistan (US\$1,433 in 1981 and US\$1,480 in 1987, respectively) surpassed PNG with 2.6 percent and 2.4 percent average annual growth, respectively.

Figure 45: Growth of GDP per capita has not been robust
(Average annual growth of GDP per capita (constant 2015 US\$) (1980-2021))



Source: WDI.

⁵ Annex 2 discusses selection of comparators for this section, including structural peers and aspirational peers.

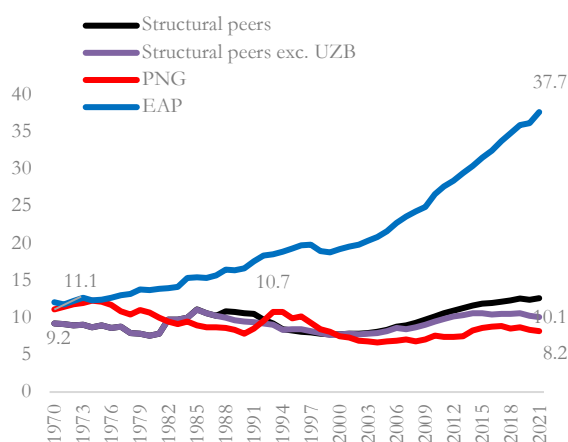
Note: Data starts in 1984 for Lao PDR, 1981 for Mongolia, 2000 for Timor-Leste, and 1987 for Uzbekistan. Data for EAP, LMIC, UMIC, and World are estimates based on growth rates.

3.2. Per capita income is not converging

63. Even more importantly, the gap of per capita income level to important peers either has not converged or has widened. Due to the weaker growth of per capita income in PNG, gaps in income levels are widening compared to the structural, aspirational, and regional peers. While the per capita income level in PNG was equivalent to over 11 percent of the income level in Australia in 1970, it declined to 8.2 percent as of 2021 (Figure 46). Meanwhile, the income level in its structural peers improved from 9.2 percent to 10.1 percent during the same period—surpassing PNG. Furthermore, the EAP region, the fastest growing region in the world, on average is catching up to Australia at a much faster pace. Despite being at a similar level in the early 1970s and some progress gained in the early 1990s, the income level in PNG is now diverging away from the income levels in the EAP region (Figure 47). PNG now has to catch up to not only its structural peers, but also its regional peers in the EAP, including Indonesia which had a per capita income level of only US\$672.00 in 1970.

Figure 46: Income growth in PNG lags its structural peers ...

(GDP per capita relative to Australia's GDP per capita)

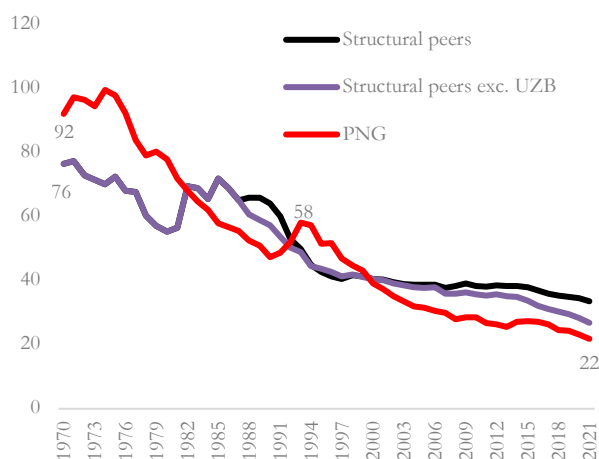


Source: WDI.

Note: Structural and aspirational are average GDP per capita weighted by population. Data for UZB starts in 1987. The jump in structural peers in 1982 is associated with a 20 percent growth in the Republic of Congo's per capita income growth.

Figure 47: ... and it is not converging to its peers in the region

(GDP per capita relative to EAP's average)



Source: WDI.

Note: Structural and aspirational are average GDP per capita weighted by population. Data for UZB starts in 1987. The jump in structural peers in 1982 is associated with a 20 percent growth in the Republic of Congo's per capita income growth.

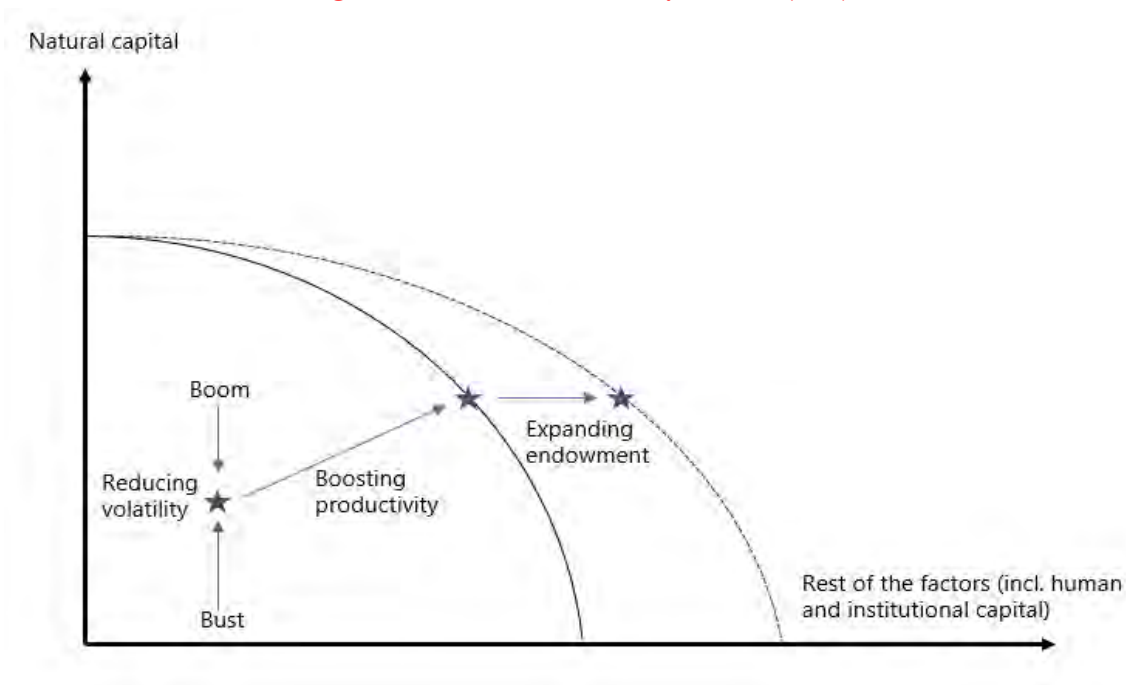
64. This calls for a renewed policy focus on economic growth. The economy of PNG suffers from three interrelated challenges: (i) excessive macroeconomic volatility; (ii) low productivity growth; and (iii) excessive reliance on natural capital and not enough on human and institutional capital.⁶ Each of these challenges implies a certain welfare loss and, therefore, scope for improvement:

⁶ This report follows an organizing framework of the Mongolia Country Economic Memorandum (2020). Mongolia is one of the structural peers for PNG and faces some similar challenges.

- **Reducing volatility** would lower uncertainty and encourage firms and households to invest more, make long-term plans, and enter long-term contracts, which would be positive for investment, productivity, and growth⁷.
- **Boosting productivity** would imply moving from inside to the edge of the production possibility frontier (PPF), and hence would translate to higher levels of income in the future.
- **Expanding and making better use of underutilized human and institutional capital** in the production process would mean pushing the PPF outward (Figure 48).

Together, pursuing these three key levers would also support deeper linkages between the extractive and non-extractive sectors leading to a more equitable distribution of income and growth. The sections that follow will look at each of those in detail.

Figure 48: Production Possibility Frontier (PPF) Framework

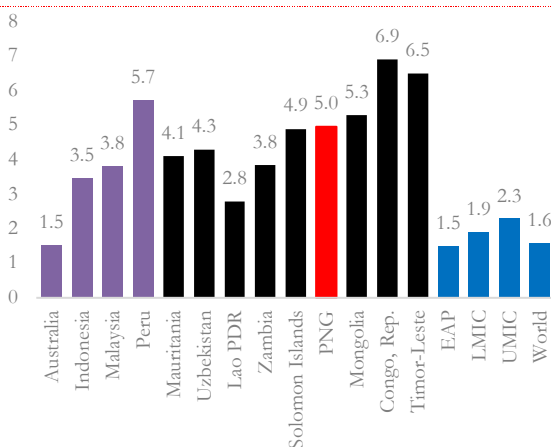


4. Excessive macroeconomic volatility

65. Economic growth in PNG has been volatile. Except for a few structural peers characterized by heavy dependence on natural resources, PNG displayed the largest economic growth volatility since the 1980s (Figure 49). In particular, the staggering economic growth observed in the early 1990s was followed by intermittent recessions and, therefore, underscores the economic volatility of PNG in the 1990s relative to its peers (Figure 50). In the following decade, however, economic volatility declined significantly: except for the Global Financial Crisis of 2008, PNG enjoyed years of robust economic growth. Volatility rose again in the most recent decade as the economy was hit hard by the impacts of the earthquake in 2018 and the COVID-19 pandemic.

⁷ The inverse association between the level and volatility of per capita growth is documented, in particular, in Ramey and Ramey (1995), Hnatkovska and Loayza (2005), and Loayza et al. (2007).

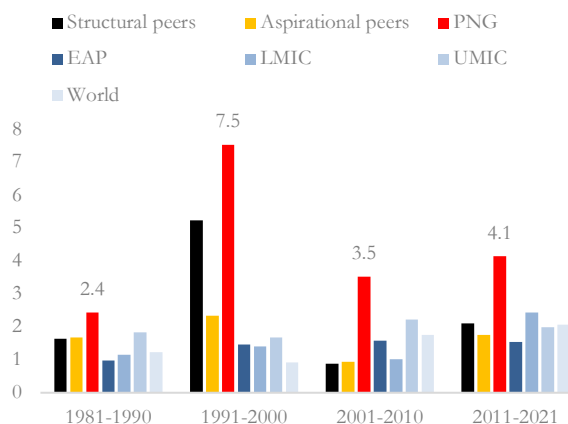
Figure 49: Economic volatility in PNG has been significant during 1981-2021 ...
(Standard deviation of annual growth, 1980-2021)



Source: WDI.

Note: Aspirational peers are depicted in yellow, structural peers in black and other global groups in blue.

Figure 50: ... however the 1990s were the most turbulent years for PNG
(Standard deviation of annual growth, by decades)



Source: WDI.

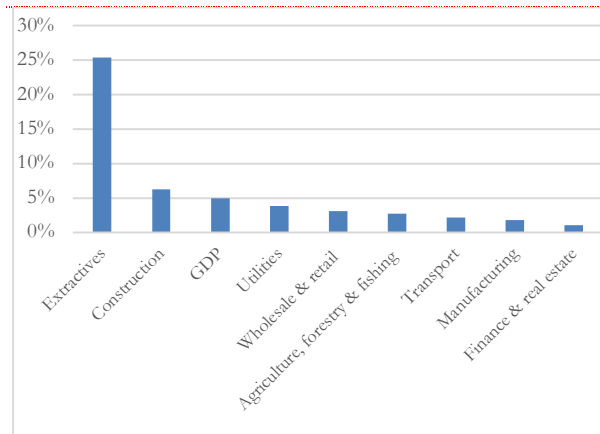
66. The extractive sector has been the most volatile. Value added in extraction of resources has been subject to the project development cycle of several key projects and exhibited the highest volatility compared to other sectors. Over the 1983-2020⁸ period, the standard deviation of the extractive sector was 25 percent—far exceeding the volatility of other sectors (Figure 51). It was followed by construction, which was in turn heavily linked to the development of resource projects’ infrastructure. On the contrary, agriculture, a very volatile sector in other countries, demonstrated a lower level of volatility in PNG. This is likely linked to the diverse production bundle of agriculture and its geographic diversity.

67. Heightened macroeconomic volatility has been accompanied by government budget expenditure volatility. High volatility makes the task of government budget planning and execution more challenging. Together with other weaknesses in public financial management, this contributes to the high level of variance between approved and actual spending in the composition of expenditure. As a result, public spending is excessively volatile. For some expenditure categories, such as use of goods and services and public investments (net acquisition of non-financial assets) the interannual swings are even more pronounced, with double-digit changes become more of rule rather than exception (Figure 52). This heightened volatility of budget spending is negatively affecting service delivery.

⁸ The first year of available data with GDP disaggregation by value added is 1983.

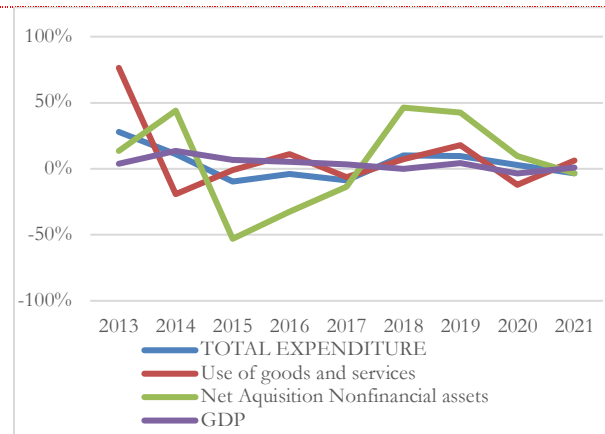
Figure 51: Value added in extractive sector drove GDP volatility in PNG

(Standard deviation of growth in 1983-2020, percent)



Source: NSO, Bank of Papua New Guinea, and World Bank staff calculations.

Figure 52: Budget expenditure has also been volatile (Percent real change)



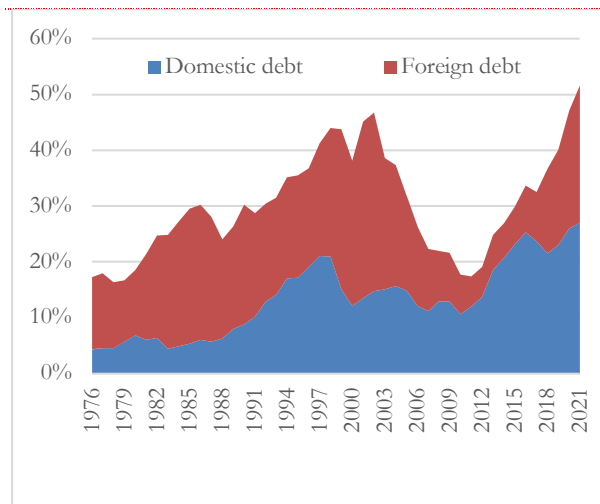
Source: Bank of Papua New Guinea and World Bank staff calculations.

68. A high risk of debt distress increases the challenges for macroeconomic stability. Public debt in PNG had been increasing over the last decade, well before the COVID-19 pandemic began, and reached 50 percent of GDP in 2021 (Figure 53). Since June 2020, the Joint IMF-World Bank DSA has assessed PNG’s risk of debt distress as high⁹ (IMF 2022). The debt remains sustainable, if authorities continue to implement plans for further fiscal consolidation. The DSA suggests that PNG is susceptible to exports and other shocks, signalling downside risks to the debt outlook in a global environment of high uncertainty. While PNG’s debt-to-GDP ratio is not the highest among its structural peers (Figure 54), many comparators face serious debt challenges. In mid-2022, Congo was in debt distress, while Lao PDR, the Solomon Islands, Mongolia, and Zambia were at high risk of debt distress.¹⁰ High risk of debt distress could negatively affect capital accumulation and economic growth in the country via elevated long-term interest rates and lower investor confidence.

⁹ Conditional on the implementation of the authorities plans for further fiscal consolidation and conservative financing strategies, PNG’s external and overall debt is judged as sustainable.

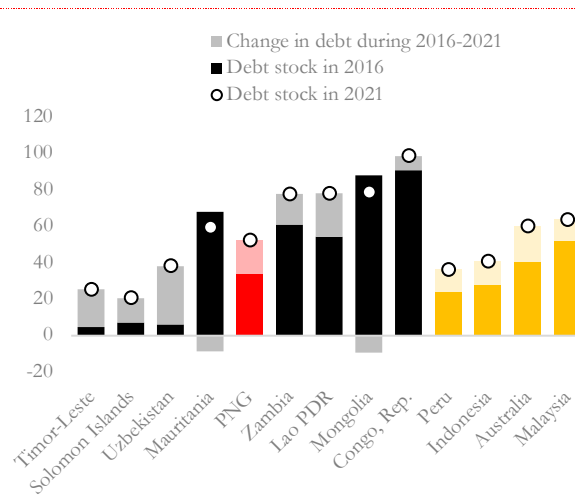
¹⁰ <https://www.imf.org/external/Pubs/ft/dsa/DSAList.pdf>

Figure 53: Government debt in PNG has been increasing sharply over the last decade
(Percent of GDP)



Source: NSO, Bank of Papua New Guinea, and World Bank staff calculations.

Figure 54: Government debt in PNG and peer countries
(General government debt-to-GDP ratio)



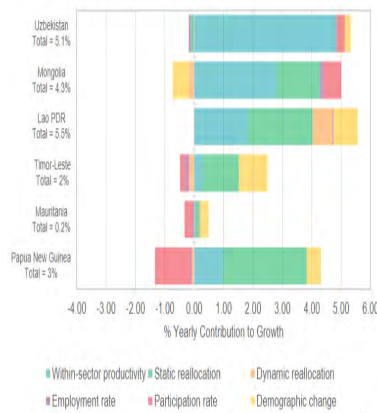
Source: World Bank 2022d.

5. Low productivity growth

69. PNG has struggled to channel its considerable natural resources into delivering broad-based and sustained growth over the past twenty years. PNG has been slowly undergoing a transition from agriculture into higher productivity sectors that can increase the country's potential growth trajectory. The transition has been largely influenced by the exploitation of its natural resource base (including minerals and hydrocarbons). Nevertheless, there have been limited prospects for spillover into broad-based growth. These outcomes are being observed in tandem with declining labor force participation (LFP) and low investment in produced and human capital, both of which undermine productivity growth.

70. Data constraints limit the scope of analysis on productivity and subsequently the evidence base for policymakers. There is no official GDP data disaggregated by expenditure since 2007, and the firm-level data is scarce. Therefore, our analysis begins with the aggregate decomposition of per capita value addition which shows what factors are driving productivity growth in PNG relative to some structural peers. The analysis shows that PNG stands out in several ways. First, the productivity boost that is associated with capital and labor moving from sectors of lower productivity to higher productivity is weak. Second, the declining labor force participation is sharply reducing productivity growth in PNG. Finally, productivity improvement within firms in the same sector is contributing to overall productivity growth, but not at the same level as structural peers like Uzbekistan and Mongolia. The following section looks at these three factors – reallocation across sectors, labor force participation, and within-sector upgrading – in more detail.

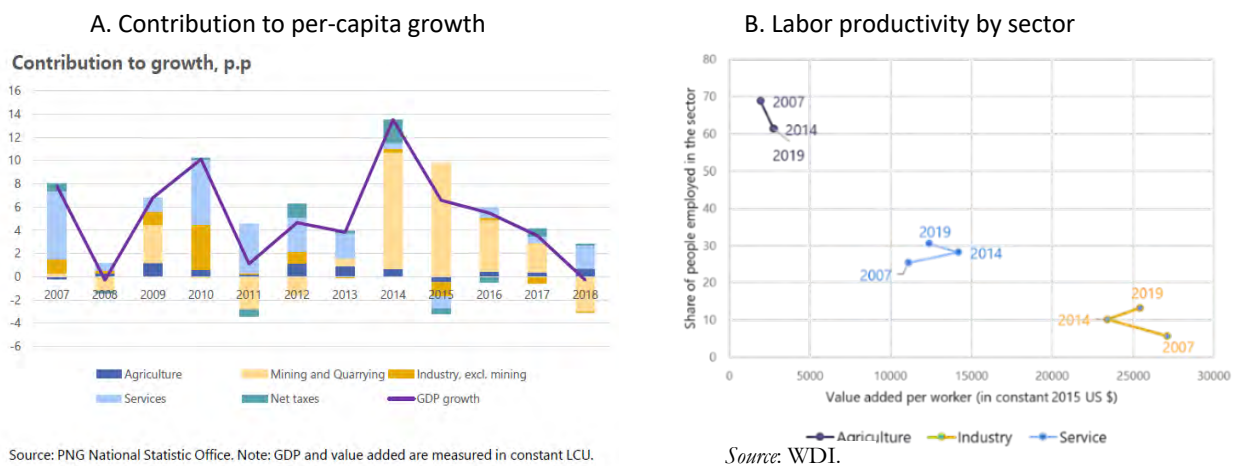
Figure 55: Aggregate decomposition of per capita VA, 2008-2019



5.1. Trends in the reallocation of labor and capital across sectors

71. Data from 2007-19 show a slow but steady shift in the labor force away from agriculture and toward the higher value-added sectors of services and industry. The industrial sector (including manufacturing and extractives) had the highest value-added per worker during this period and, like services, accounted for an increased share of employment. Notably, however, value added per worker declined in industry between 2007 and 2014, but increased in the period from 2014 to 2019, while the opposite trend was observed in services during these same time periods. While labor had been transitioning steadily into both services (1.81 percent Compounded Annual Growth Rate (CAGR)) and industry (6.6 percent CAGR) over the 2007-19 period, output was more variable across years due to the investment cycle of the large LNG investments.¹¹ During this same period, the share of people employed in agriculture fell with a slight increase in value addition during this time.

Figure 56: PNG's Growth Decomposition and Labor Productivity



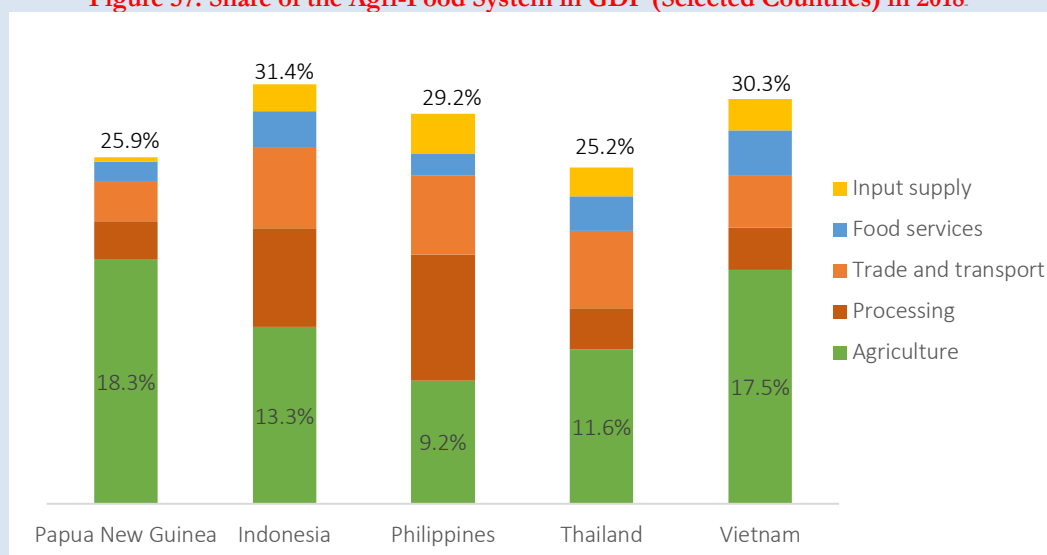
¹¹ Between 2007 and 2014 output in services was growing faster than employment, due to the ongoing capital-intensive construction of LNG plants during this period. Once these projects came online in 2014, service sector labor productivity had hit its peak. At this point, however, capital-intensive investments ceased to flow through the local services economy and so, by 2019, labor productivity had fallen again to eliminate about one-half of the productivity gains it had realized since 2007. Similarly, while output in industry was muted up until 2014 as a result of the investment cycle, by 2019 labor productivity had increased when the LNG plants were at full capacity.

72. While extractive investments dominate local headlines, services have come to be an important channel for delivering the benefits of this investment into PNG’s domestic economy. Growth in the services sector has been closely linked to FDI in extractives. As such, it is characterized by growth in firms providing non-tradable services—particularly construction/real estate, and administrative or financial services – for these large FDI projects. This economic structure is similar to that of other resource-driven economies where high-earning extractives companies and their employees drive local demand for non-tradable services. As Figure 56.A demonstrates, however, FDI-linked growth in services tends to be cyclical: following the completion of LNG plants in 2014, growth in construction and related administrative/financial services slowed and productivity across the sector decreased.

Box 4: PNG’s Agriculture sector characterized by low value addition and high potential for increasing yields

Agriculture—defined as the raising of crops or livestock, forestry, and fishing—accounted for 18.3 percent of PNG’s GDP in 2018 (Figure 57). At present, agricultural production is based around roots and tubers, largely for own consumption. The sector can, however, be considered to include the contributions of different economic activities within the broader agricultural food system (including processing, trade and transport, food services, and input supply): doing so presents a fuller picture of the sector’s contribution to the economy of PNG. These ancillary services and activities are significant, amounting to 7.6 percent of GDP. Except for Thailand, the sector total of 25.9 percent is still below that of lower- and middle-income regional peers.

Figure 57: Share of the Agri-Food System in GDP (Selected Countries) in 2018.¹²



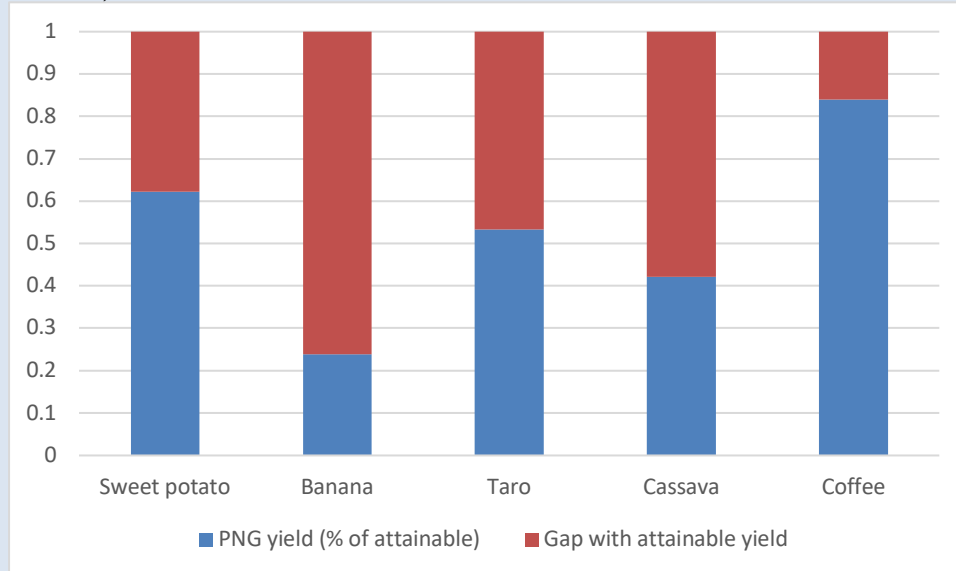
The ratio of value added in the total agri-food system in PNG lags global averages. Globally, the GDP share of agriculture (traditionally defined) in 2020 was 26.4 percent for low-income countries and 16.9 percent for lower-middle-income countries like PNG. Among both income groups, the ratio of the value added by the total agri-food system to the value added by agriculture is significantly higher than in PNG (1.63 and 1.75, respectively, compared to 1.42 in PNG). Within Southeast Asia, Indonesia and the Philippines have agri-food systems that are 2.9 and 3.2 times the size of their agriculture sectors. PNG’s low concentration of non-agriculture activities in the overall agri-food system reflects broader constraints to trade and investment in non-primary activities.

Higher agricultural productivity levels are indeed achievable. Figure 58 shows the gap between the yields farmers commonly obtain in PNG and what they might obtain with optimal crop management and the use of high-yielding crop varieties. Sweet potato yields in PNG are between one-quarter to one-third less than the attainable yield. Yields for taro, Chinese taro, cassava, and yam are 40 to 60 percent less than what they might attain with improved planting materials and excellent crop management practices. The data on actual versus attainable yields for banana shows the largest yield

¹² This figure uses regional comparators, where data are available and soil and climatic conditions are similar.

gap: PNG growers are obtaining only about one-quarter of the productivity levels they might achieve with more intensive cultivation of the crop. Coffee producers are generally harvesting about one-half of what they might harvest if they used improved coffee production practices. While low yields in staple and current cash crops are indicative of underperformance in the sector, diversification into higher value-added crops and the development of services and downstream processing are also needed.

Figure 58: Productivity levels of major staple food and cash crops in Papua New Guinea
(Average actual yield as a percent of yields attainable on farm with optimal management, most recent estimates)



Source: Benny et al. (2022); 1: Bourke et al. (2009); 2: Allen and Bourke (2009); 3 Acland (1971); 4 Allen, Bourke, and McGregor (2009).

5.2. Trends in labor force participation

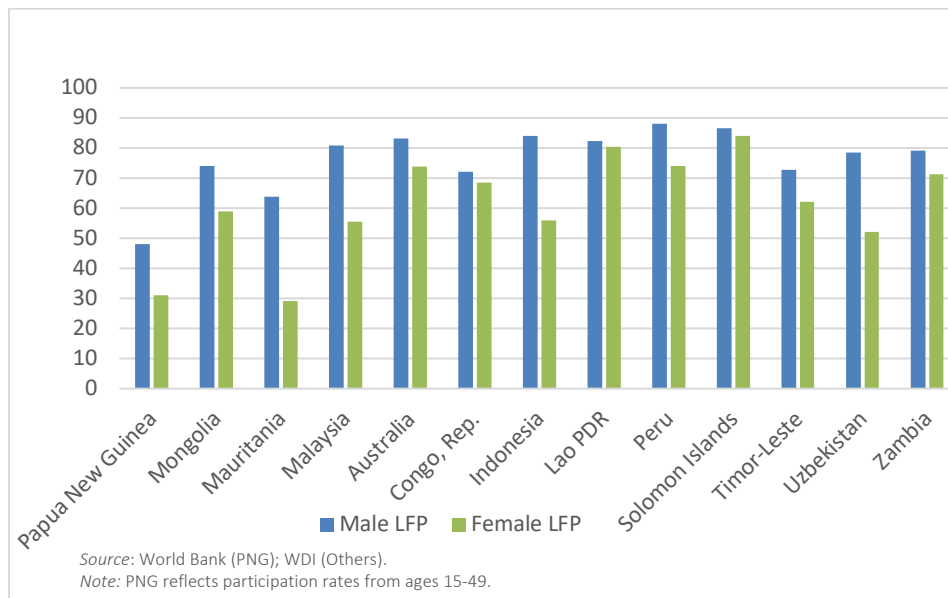
73. **While labor has been the most consistent factor contributing to growth, labor productivity—defined as value add per worker—is low compared to structural benchmarks.** Increased labor productivity is driven mainly by positive static reallocation of labor from lower to higher productivity work, which is consistent with employment data that shows PNG slowly moving away from low productivity subsistence agriculture into services. In fact, agricultural employment has dropped from 73 percent in 2000 to about 56 percent in 2019, while services and industry have grown to 30 percent and 13 percent respectively over the same timeline. While labor productivity increases are driven by this positive static reallocation, gains are muted by negative dynamic reallocation and declining Labor Force Participation (LFP). Negative dynamic reallocation in receiving sectors (primarily services) reflects the short-lived growth of the service sector following the decline in extractives related FDI. More worrisome is the 25 percentage point decline in LFP from 2000, which is driven primarily by female participation. Such facets prevent PNG from reaching the labor productivity benchmarks of structural comparators like Mongolia or Lao PDR.

74. **While demographic changes in PNG have contributed positively to growth, the labor participation rate has declined.** The net impact of this has been a negative contribution to growth in value added per capita. A modelled ILO estimate shows that the country's employment-to-population ratio declined from 70 percent in 2000 to 49.8 percent in 2010 and 46 percent in 2020. The continued slide during the ensuing

decade maybe due to a combination of factors, namely: distortionary minimum wage rates, general increases in informality, and the cyclic nature of FDI-driven employment.

75. PNG also exhibits a significant gender gap in employment and a low level of engagement in the labor market by both women and men (Figure 59). Of women aged 15 to 49, only 31 percent are in the labor force, compared to 48 percent of men (Demographic and Health Survey 2016-2018). This gap in LFP is exacerbated by women’s limited access to paid employment—with only 45 percent of employed women working for pay, compared to 51 percent of employed men. Female LFP in PNG falls below that of structural peers such as Timor-Leste (62 percent), Lao PDR (75 percent), and the Solomon Islands (84 percent) (World Bank 2022). Moreover, women are not only less likely to work for pay but are also more likely than men to engage in highly vulnerable and informal employment when they do work. In PNG, 84 percent of working women are engaged in vulnerable forms of employment, meaning they are working either as own-account workers or as contributing family workers, compared to 64 percent of men (World Bank 2022).

Figure 59: LFP by Gender (2019)



76. Progress towards gender equality in accessing economic opportunity would bring significant economic gain. Using the DHS 2016-2018 data and adopting a methodology similar to that of Pennings (2022), it is possible to estimate the potential long-term GDP per-capita gains from closing gender employment gaps in PNG. The Basic Gender Employment Gap Index (GEGI) indicates that PNG GDP per capita could be 18.4 percent higher in the long run if women’s employment rate was to match that of men. Accounting further for the gender gap in terms of job quality (captured by the Full GEGI), gains to long-run GDP per capita could be as high as 20.8 percent (see Table 5) were equality achieved in this domain.¹³

¹³ This measure involves weighting the employment gaps of what is termed ‘better employment’ such as jobs that pay in cash rather than in-kind, and managerial roles, and ‘other employment’.

Table 5: Gender Employment Gap Index (GEGI)

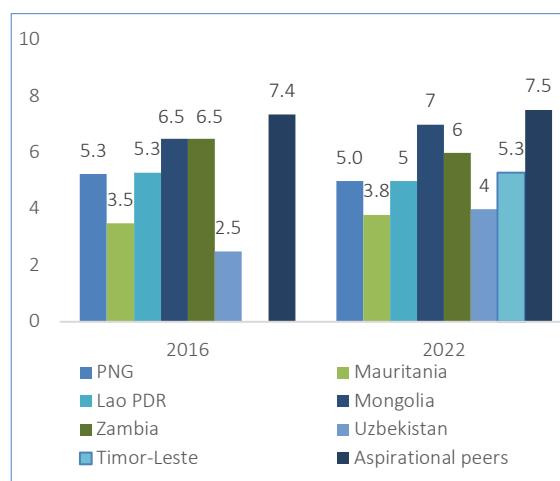
| Employment-Population Ratio | | Basic GEGI (%) | Better Employment Ratio | | Better Employment Gap | Other Employment Ratio | | Other Employment Gap | Full GEGI (%) |
|-----------------------------|--------|----------------|-------------------------|--------|-----------------------|------------------------|--------|----------------------|---------------|
| Male | Female | | Male | Female | | Male | Female | | |
| 0.45 | 0.31 | 18.39 | 0.23 | 0.14 | 25.33 | 0.22 | 0.18 | 0.12 | 20.81 |

Source: Data from NSO (2019) with calculations based on Pennings (2022).¹⁴

5.3. Trends in within-firm productivity

77. Informality and unequal competition in several markets discourages productive investments by firms. While new firm registration has increased since 2015, estimates suggest that 90 percent of firms (employing 2.5 million workers) are informal, and thus characterized by low productivity. Therefore, while the latest Business Survey (Smirk, 2022) presents a picture of return to optimism, it is important to note that future private sector activity and growth will be hindered by this high informality. This also contributes to lack of productive linkages between the extractive and non-extractive sectors. PNG’s business registrations are mostly in non-tradeable service sectors, many of which are protected from foreign competition by PNG’s restrictive FDI regulations. Barriers to competition also include permitting and licensing restrictions. For example, certain domestic shipping routes are granted on a non-competitive basis, a factor which increases shipping costs, limits service quality, and inhibits export competitiveness (especially for perishable agricultural goods). These factors are reflected in PNG’s relatively low Market Organization score—a measure of institutions and policies that support free markets—as compared to its more aspirational peers (Figure 60). These challenges ultimately end up reducing productivity and growth.

Figure 60: Market Organization Score



Source: Bertelsmann Transformation Index.

Note: Market Organization is a measure of institutions and policies that support free markets including competition, trade, and financial sector indicators. Timor Leste not covered prior to 2020.

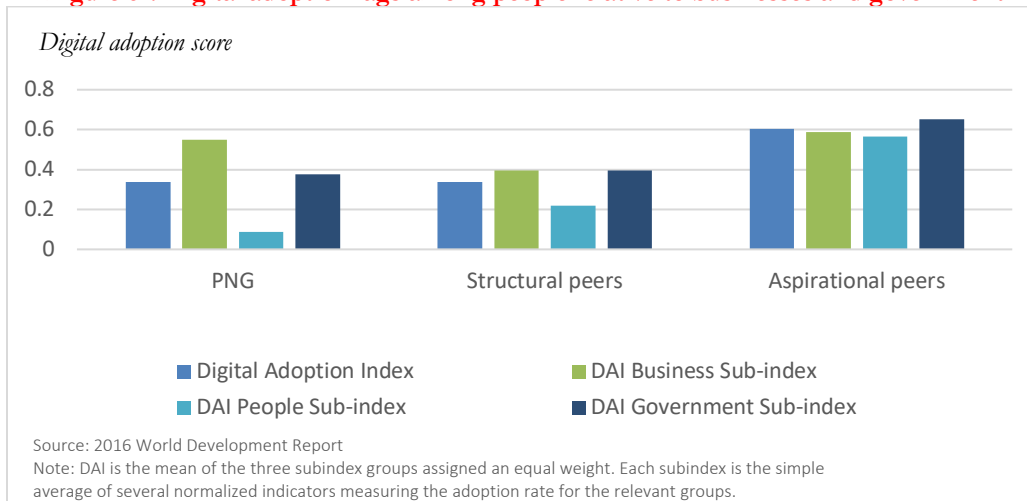
78. In terms of productivity, international and domestic-owned firms exhibit diverging performance. The former are typically larger and are concentrated in resource-based industries, particularly extractives. While there are relatively few of these firms, they are inherently formal and exhibit high levels of

¹⁴ Penning’s (2022) GEGI methodology gives a useful insight into economic gains from reducing gender gaps in economic opportunities, and it is particularly well-suited for countries where more sophisticated measures are limited by data paucity. His paper describes the advantages and limitations of the approach and compares it to other approaches for countries where available data allows.

output per person employed. Domestic firms, by contrast, are generally characterized by lower productivity, a higher probability of operating informally and lower export activity.

79. Low levels of digital technology adoption reflect weak firm capacity and can constrain TFP. Mobile telecommunications have improved since the introduction of competition reforms and the entry of Digicel in 2005-06, and PNG performs on par with its structural peers in the World Bank Digital Adoption Index (DAI) (see Figure 61). This figure may, however, over-represent digital performance in the economy because of the high levels of informality and self-employment in PNG. As such, the digital capacity of the 90 percent of informal firms/employees may instead be better reflected in the DAI People sub-index.

Figure 61: Digital adoption lags among people relative to businesses and government

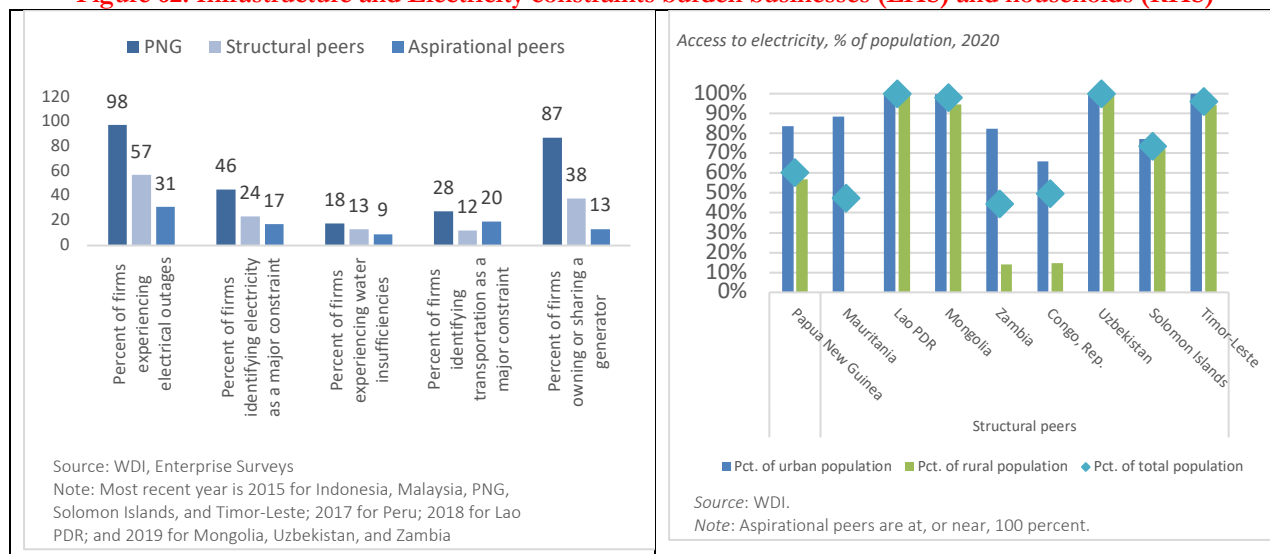


80. Firm growth and productivity are constrained by infrastructure gaps. An indexed benchmarking of transportation and telecommunications infrastructure and public utilities shows that—with few exceptions—PNG lags other peer countries (Mtonya et al. 2021).¹⁵ Businesses in PNG also generally rate infrastructure performance as a major constraint—citing a lack of reliable access to electricity (45.5 percent), transportation (27.7 percent), and water (17.9 percent) (see Figure 62). Access to on-grid electricity in PNG remains below 15 percent—among the lowest in the world—and is especially poor in rural areas. When off-grid power is also included, just over 60 percent of people have access to electricity, roughly in the middle of the structural peer group. However, off-grid power is mostly diesel generated making it a costly and environmentally harmful option. In addition, while internet penetration in PNG has been growing steadily over the past decade, just 11 percent of households have access—in part due to poor service affordability.¹⁶ Here PNG most dramatically underperforms other Pacific Island Countries.

¹⁵ Peer countries were selected amongst a set of lower-middle-income countries that also have significant endowments of mineral or petroleum resources, including Bolivia, Ghana, Lao PDR, Mauritania, Mongolia, Nigeria, Uzbekistan, and Zambia.

¹⁶ Investments in undersea fiberoptic cables are improving access to the internet. The Australian Department of Foreign Affairs and Trade is currently funding the new Coral Sea Cable system, which will connect Australia to Papua New Guinea and the Solomon Islands.

Figure 62: Infrastructure and Electricity constraints burden businesses (LHS) and households (RHS)



81. Capital markets in PNG are also underdeveloped. They do not sufficiently leverage domestic capital or provide credit to PNG’s private sector, particularly for longer term, fixed capital investments. Although the government’s bond portfolio is large, other parts of the capital markets in PNG are relatively undeveloped. At present, there is also no active corporate bond market.¹⁷ As a result, the banking sector dominates the financial sector and accounted for 60 percent of total financial sector assets in 2020. While the banking sector in PNG is generally liquid, well-capitalized, and somewhat stable, there are some important vulnerabilities and risks for financial sector stability.¹⁸ Equity market capitalization is also low. In 2011, companies listed on the PNGX had a combined market capitalization equal to 70 percent of GDP; a figure that had fallen to just 7.4 percent in 2017. There are currently 12 listed companies (PNGX 2022), many of which are only compliance-related listings.¹⁹

6. Over-reliance on natural wealth, “underutilization” of people and institutions

6.1. Natural capital had dominated the nation’s wealth

82. Wealth in PNG has been dominated by natural capital, and total wealth has stagnated compared to peers. Using the framework and data from the 2021 updates of the Wealth Accounts database,²⁰ between 2005 and 2010, natural capital accounts for more than one-half of total wealth (Figure 63). This figure has gradually decreased in the last decade, as the human capital proportion of total wealth improved, however, the share of human capital to total wealth is still lower compared to some peers. For instance, in 2018 (the latest data

¹⁷ The IFC is currently assisting the Papua New Guinea Stock Exchange (PNGX) and the Securities Commission to develop a simplified wholesale corporate bond market structure to create long-term financing alternatives to bank lending or money markets.

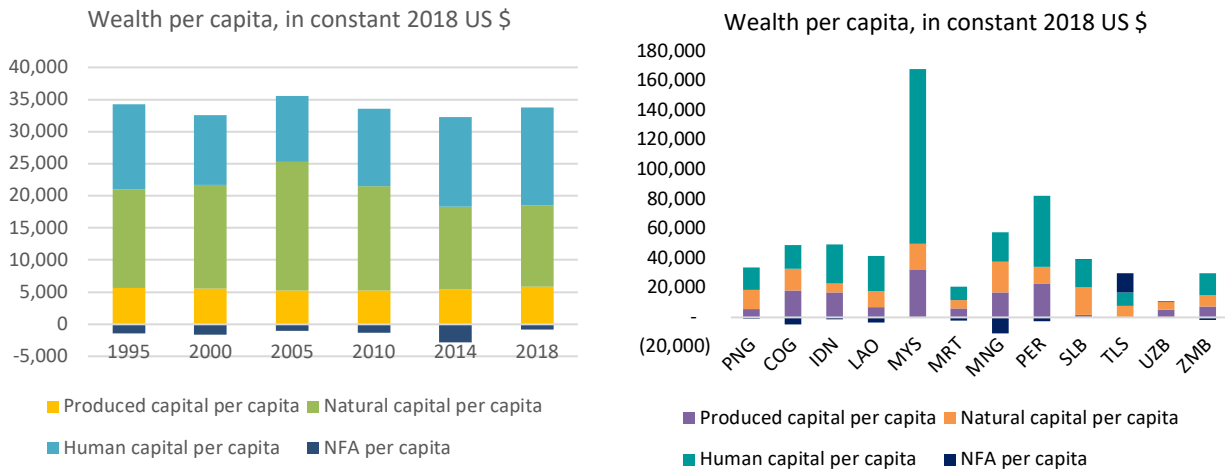
¹⁸ The most recent Financial Soundness Indicators show a Tier 1 to Risk Weighted Assets ratio of 30.7 percent and a total capital ratio amounting to 37.5 percent. NPLs stand at 5 percent and the provisions cover more than 100 percent of the NPLs. That said, there are some important vulnerabilities and risks. The most recent IMF Article IV raises concerns about the vulnerability of the banking system to State-owned Enterprises (SoEs). The largest SoEs are borrowers of the banks and several SoEs are essentially bankrupt. Banks will also need to be adequately provisioned to deal with insolvencies. BPNG has also moved towards greater exchange rate flexibility and recent stress testing confirms that banks’ balance sheet can manage significant exchange rate adjustment.

¹⁹ Many of the listed companies are SoEs and financial institutions with several dual listings in other exchanges (for example, ASX (Australia), Singapore Exchange).

²⁰ According to Lange et al., total wealth is calculated by summing up estimates of each component of wealth: produced capital, natural capital, human capital, and NFA. Natural capital includes the valuation of fossil fuel energy (oil, gas, hard and soft coal) and minerals (bauxite, copper, gold, iron ore, lead, nickel, phosphate, silver, tin, and zinc), agricultural land (cropland and pastureland), forests (timber and some nontimber forest products), and protected areas. Human capital is computed as the present value of future earnings for the working population over their lifetimes.

available), 46 percent of total wealth came from human capital, which was below Lao PDR (62 percent) and Zambia (52 percent). The total value of PNG's wealth per capita across years also remains relatively constant. On average, PNG's total wealth per capita only grew 0.1 percent annually between 1995 and 2018, with the 2018 figure only 0.7 percent higher than the 1995 figure. These growth figures are the lowest among its peers.²¹ Although continuous population growth might partly explain this stagnated increase, it also indicates that PNG has not been able to utilize the available natural resources to improve investment in other types of capital.

Figure 63: Wealth per capita and its Composition (PNG and peers)

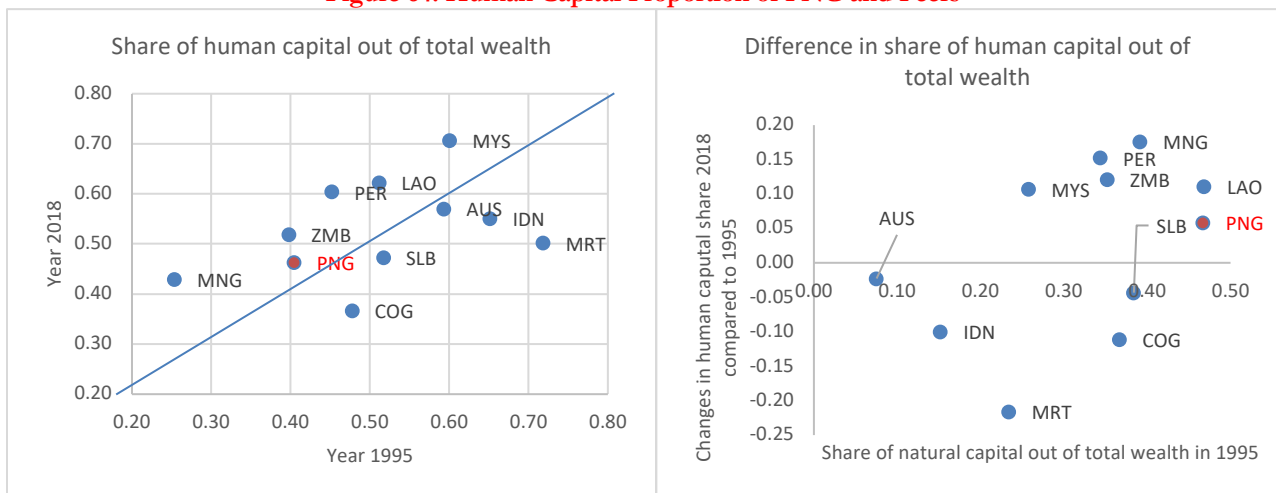


Source: Changing Wealth of Nations (CWON) database

Source: CWON database

83. Over decades, PNG has shown limited progress in improving the contribution and size of human capital. Although some peers experienced a fall in the proportion of human capital to total wealth, of those countries that show improvement in the human capital share, PNG has the lowest increment. In 1995, 40 percent of the wealth was human capital, while in 2018, human capital accounted for 46 percent of the total wealth (Figure 64). Some aspirational peers, such as Peru and Malaysia, have increased the proportion of human capital by more than ten percentage points in the last two decades. This limited progress also appears when contrasting the changes in human capital share with the dominance of natural capital in the earliest year. Although PNG had the highest share of natural capital in 1995, it has generated only a limited improvement in human capital compared to other peers such as Lao PDR, Zambia, and Mongolia, and its aspirational peers. On average, between 1995 and 2018, human capital per capita in PNG only grew 0.8 percent annually.

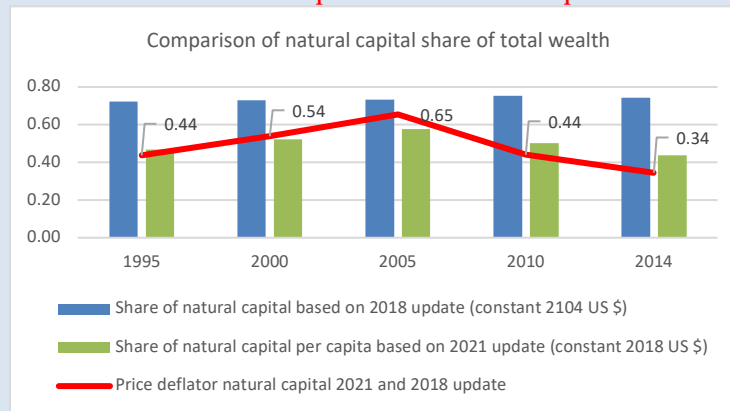
Figure 64: Human Capital Proportion of PNG and Peers



Box 5: Volatility of PNG Natural Capital Estimates

As a resource-dependent country, PNG is exposed to the volatility of wealth estimates, mostly reflected in the natural capital account. The wealth account estimates the valuation of each type of natural capital measured at market exchange rates in a certain base year. The volatility of the world resource price and exchange rate may, therefore, influence not only the size of natural capital and wealth per capita but also the contribution of each component to total wealth. Figure 65 compares the two most recent updates of the wealth account estimates, the 2018 update based on the 2014 prices and the 2021 update based on 2018 prices. The contribution of natural capital in the 2021 update is significantly lower than in the previous version. The price volatility is also shown by the varied price ratio between the two versions across years. For instance, in 2005, the value of natural capital in 2018 prices was 35 percent lower compared to the value in 2014 prices, but in 2014, this ratio dropped to more than 65 percent lower. This variation emphasizes the importance of managing volatility in PNG.

Figure 65: Contribution of Natural Capital Across Time and Updates Version



84. Utilizing natural capital while integrating climate change adaptation and consideration is crucial for sustainable natural resource management in PNG. PNG, as a resource-rich country, could start addressing the climate challenge by better managing untapped renewable natural resources. Based on the latest data from the Wealth Accounts database, more than 70 percent of the natural capital in PNG is for renewable assets, including agricultural land, forests, mangroves, and fisheries. The value of these renewable natural assets per capita has declined, however, over the last two decades—with the value in 2018 being 17 percent lower than the 1995 figure. Besides the weak utilization, this declining level indicates room for improvement to apply effective and greener management of renewable resources.

6.2. Governance and institutions are weak and deteriorating

85. An important enabler for investments in human capital, governance and institutional capability in PNG is roughly in line with its income level. On average, countries with lower income levels have weaker governance and institutional capability. PNG tends to be close to the global trend line for most global indicators of governance and institutional capability, meaning that its capability is weak in absolute terms, but about average for its income level. Figures 66 and 67 show Worldwide Governance Indicators (WGI) for government effectiveness and control of corruption for PNG relative to the global trend lines, with structural peers and other comparators highlighted. These indicate that government effectiveness and control of corruption in PNG are both weak (at about -0.8 and -0.6 respectively, on a scale from -2.5 to +2.5) but close to the expected level for PNG's income.

Figure 66: Government Effectiveness

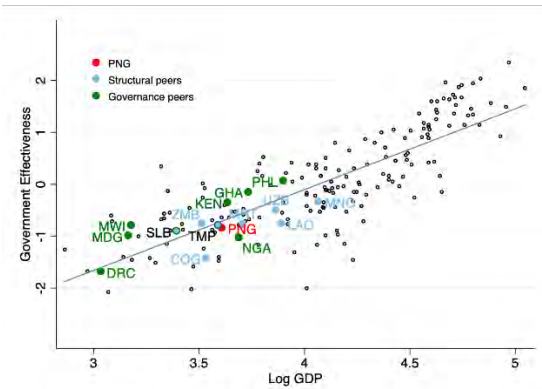
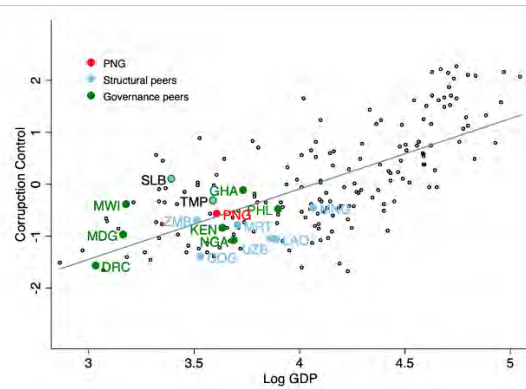


Figure 67: Control of Corruption



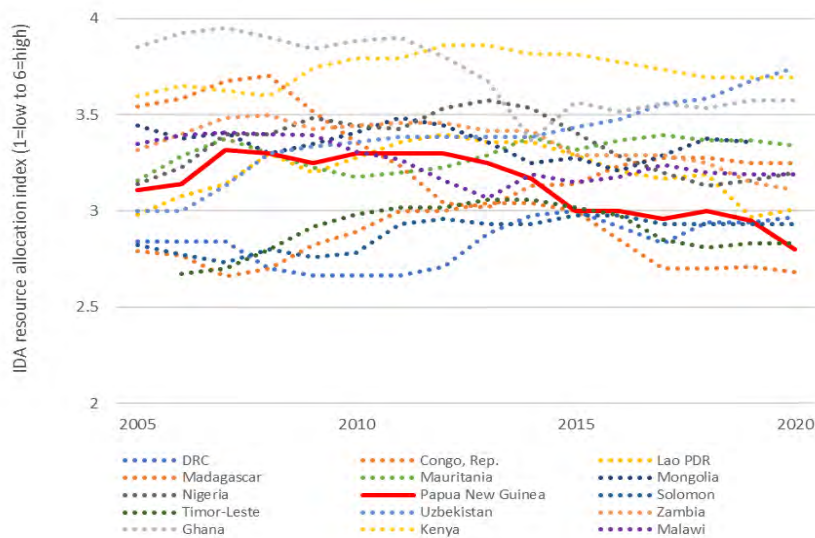
Source: WGI (2020), WDI (2020).

Note: GDP per capita, PPP International US\$ 2017. Structural peers: Congo Rep. (COG), Lao PDR (LAO), Mauritania (MRT), Mongolia (MNG), Uzbekistan (UZB), Zambia (ZMB), Solomon Islands (SLB), and Timor-Leste (TMP). Governance peers: Congo, Dem. Rep. (DRC), Ghana (GHA), Kenya (KEN), Madagascar (MDG), Malawi (MWI), Nigeria (NGA), Philippines (PHL), Solomon Islands (SLB), and Timor-Leste (TMP).

86. Concerningly, PNG’s governance and institutional capability appears to be declining over time.

It is difficult to measure this trajectory for PNG, because the global datasets that are suitable for tracking changes in governance and institutional capability over time do not usually contain time series data for PNG. One dataset that is suitable for this and includes PNG is the Country Policy and Institutional Assessment (CPIA). It shows that PNG’s overall policy and institutional strength has been declining over the decade from 2010, after an earlier rise (Figure 68). Importantly, from the perspective of enabling growth, this overall decline has been driven by the decline of scores in Cluster A (quality of economic management). The declines of scores in Cluster D (quality of public sector management and institutions) has also contributed to the overall trajectory.

Figure 68: PNG and Comparators CPIA (2005-20)

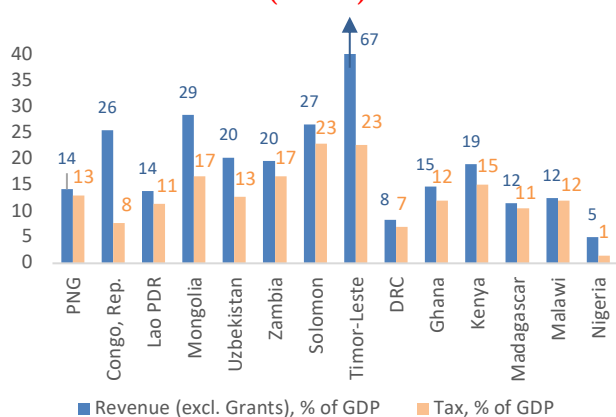


Source: World Bank 2022e.

Note: No CPIA data for Philippines.

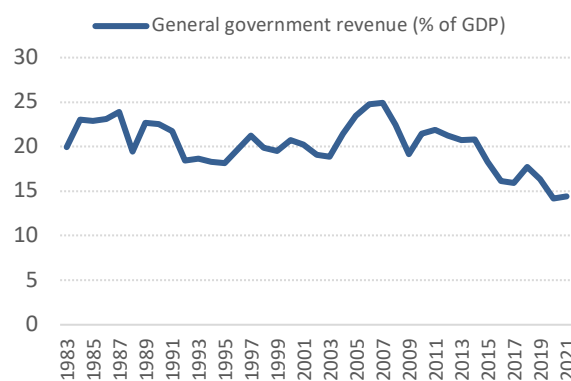
87. **An indicator of state capability that is both important and easy to track over time is the state's capability to tax its population and the economic activities in its territory.** Tax revenue is, of course, critical to fiscal capacity and to the potential of the state to deliver services that expand human capital and infrastructure. From the perspective of governance and institutions, however, the development of the capability to tax a broad share of the population and economic activity is particularly critical to state-building and an important indicator of the nature of the relationship between the state and society.²² PNG's tax revenue to GDP ratio is now below 15 percent. This puts PNG in the category of low tax capability countries. Figure 69 shows PNG's tax and total revenue (excluding grants) as shares of GDP against its structural peers and other comparators. Its tax share of GDP is below the average for its structural peers and its revenue share of GDP is below that for all of its structural peers. PNG's tax and revenue capabilities are more in line with the other comparators. Significantly, PNG's ability to raise revenue has been on a declining trend for the last decade (Figure 70). This has been driven by declining receipts of personal and company taxes.

Figure 69: Gross Revenue and Tax Revenue (% of GDP) (2018-19)



Source: WDI, IMF, and World Bank staff estimates.
 Note: Nigeria 2013 estimate; no data for Mauritania.

Figure 70: PNG Revenue as % of GDP (1983-2020)



Source: WEO.

88. **PNG's weak governance and institutional capability is evident in the management of public resources.** The budget is not an accurate indicator of the government's spending intentions, as evidenced by the high level of variance between approved and actual spending in the composition of expenditure.²³ This high level of variance occurs both across departments and across economic classifications (with recurrent spending typically significantly higher than budgeted, and the development budget typically under-executed). As a further indication of the limits of the budget as an allocator of public resources, the budget includes trust accounts that can be used to by-pass the yearly appropriation process.²⁴ Non-compliance with formal public financial management (PFM) requirements indicates a general lack of accountability for the effective management of public resources.²⁵ For example, many PFM requirements are not strictly enforced by the central agencies, audited financial statements are often only available several years after the fiscal year they cover, and there is little evidence that the findings and recommendations of reports by the Auditor-General or Public Accounts Committee are followed up. Against this context of critical weaknesses in PFM, PNG has undertaken major PFM reforms over the last half decade—

²² See Moore (2004) and Besley and Persson (2011).

²³ See PEFA indicator PI-2 in IMF (2015: 27-30). The weak credibility of the budget for expenditure composition has not improved subsequently (see, for example, World Bank (2021d)).

²⁴ There is a tendency for departments to transfer lapsing funds into trust accounts at the end of the fiscal year. In addition, there are a large number of extra-budgetary operations for which little information is available (see IMF 2015).

²⁵ See, for example, PEFA indicators PI-1, PI-6, PI-10, PI-12, and PI-23-27 in IMF (2015). Non-compliance with formal PFM requirements does not appear to have improved subsequently (see, for example, World Bank (2021d)).

including to the legal framework for PFM and procurement and to the integrated financial management system—but in general this is yet to translate into marked improvements in these key weaknesses.

89. In the specific area of public investment management (PIM), there is also significant scope for improvement. Good PIM is an important mechanism for translating public revenues from natural resources into public investment in human and physical capital to support the growth of the non-resource economy. In PNG, few departments undertake economic analysis of proposed public investment projects, limiting the extent to which projects can be prioritized on the basis of their contribution to welfare. Budget submissions do not always consider the full operational and maintenance costs associated with new proposals, limiting the extent to which project prioritization can account for their full costs and making it less likely that the requisite maintenance budgets will be provided in future. Once selected, investment projects are often subject to significant variation, with 30 percent of budgeted projects dropped each year before any spending occurs and others that were not included in the budget added (World Bank 2021d). In addition, development expenditure through Service Improvement Programs (SIP), which account for around one-quarter of the development budget, are the subject of criticism. For example, in reviewing 2012 and 2013 expenditure through the District Services Improvement Program (DSIP), the Auditor General raised significant concerns about the effectiveness of spending and identified a number of non-compliance issues.²⁶ There is little indication that these issues have been addressed since.²⁷

6.3. Human capital advances are limited despite the growing young population

90. With a growing young population, PNG’s future growth and quality of life hinge on improving human capital. The Wealth Accounts framework estimates that human capital accounts for over two-thirds of the total global wealth. Furthermore, 10-30 percent of the cross-country differences in GDP per capita can be linked to disparities in human capital attainment (World Bank 2018a), however, the rapid population growth also presents a contextual challenge in improving human capital. Over the last decades, PNG’s population aged 5-14 grew by more than 40 percent—with 35 percent of the population under 15 years of age. Advancing human capital will generate considerable economic payoffs, given that a better skilled and knowledgeable workforce could better seize business opportunities and take on better-paid jobs. For instance, for both men and women, pursuing higher levels of education significantly increases the likelihood of being employed. Eighty-four percent of men and 81 percent of women aged 25-49, who have some higher education, are employed—compared to 44 percent of men and 25 percent of women with no education (NSO 2019). On the other hand, limited progress in human capital may have a detrimental impact on the future labor force. For instance, child stunting and malnutrition may cause losses in future productivity due to reduced numbers in the labor force, poor physical status, and reduced cognitive function.²⁸

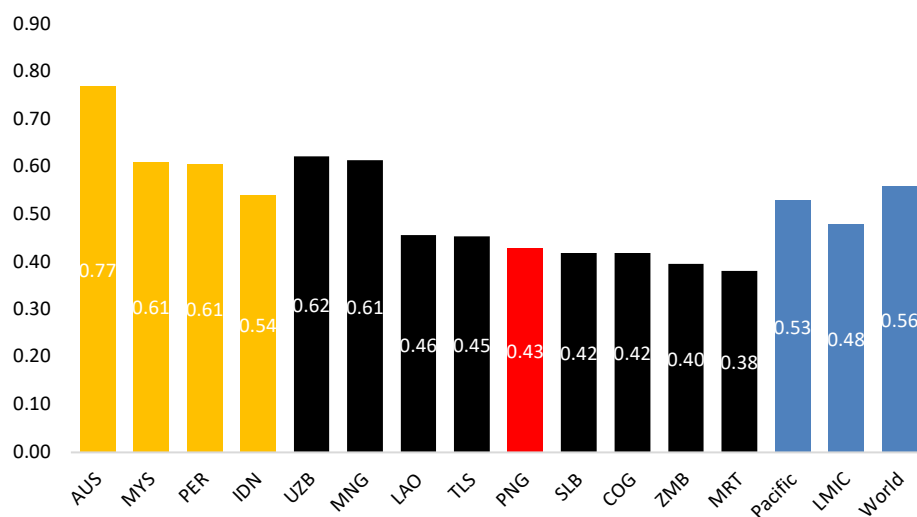
91. PNG is lagging peers in human capital development. The World Bank Human Capital Project (2020) estimates the human capital score for PNG is 0.43. This indicates that a child born today in PNG will only be able to achieve less than one-half (43 percent) of the productivity potential they could if they enjoyed complete education and full health. This score is slightly below the average of LMIC (0.48) and far below the average of EAP countries (0.59). The relatively low score also means that the improvements in human capital have been slower than expected for PNG’s GDP level. Structural peers with similar or even lower income levels, such as Timor-Leste and Lao PDR, achieve higher Human Capital Index (HCI) scores (0.45 and 0.46 respectively) (Figure 71).

²⁶ Auditor-General’s Office of Papua New Guinea (2014) *District Services Improvement Program*.

²⁷ The Auditor-General’s Office released a more recent review of SIPs in 2019, but it did not examine the management of funds at provincial, district, or local level; it was instead focused on the central coordinating agencies.

²⁸ A report by Save the Children (2017) estimates that the cost of child stunting and undernutrition can be more than 2 percent of GDP per year for PNG.

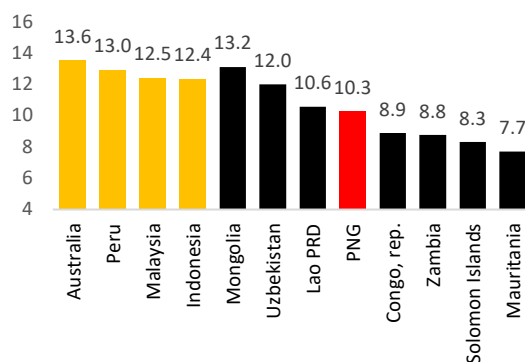
Figure 71: Human Capital Index



Source: Human Capital Index.

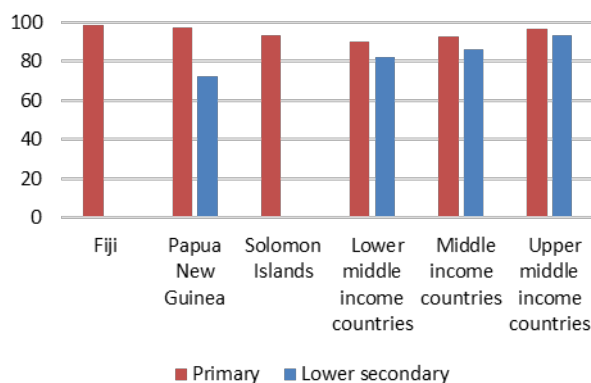
92. The overall education level of the adult population is low and the quality of education provided during the limited years of schooling remains a challenge. Based on the PNG Demographic and Health Survey (DHS) in 2016–18, most males aged 35 and above have either no or only some primary education. The schooling figure is even lower for women, with most women aged 25 and above having either no or only a few years in primary school. This expected number of schooling years has risen in recent years and, while a child born today in PNG can now expect to complete around 10 years of education, this is still well below the expected years of schooling in peer countries (Figure 72). The net primary enrolment rate is above 90 percent, but this enrolment drops significantly at the secondary level, where the rate is below peer countries. Another challenge is the quality of the education, as shown by the assessment of foundational skills essential for further learning. Results from PILNA 2018’s review show that almost one-half of the students (48 percent) struggle to reach the minimum proficiency level in reading after six years of primary education. While performance is better in numeracy skills (74 percent of students achieve the minimum proficiency level), this level is still below the regional averages for the Pacific countries (83 percent). Inadequate foundational skills in early grades will put students at high risk of dropout and repetition and, therefore, low completion rates in later grades.

Figure 72: Expected Years of Schooling ...
(Years)



Source: World Bank 2020 HCI database.

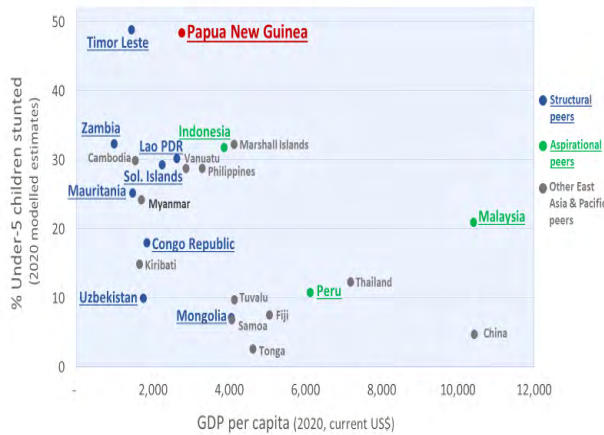
Figure 73: Net Enrolment Rates
(percent, 2020 or most recent data)



Source: UIS data.

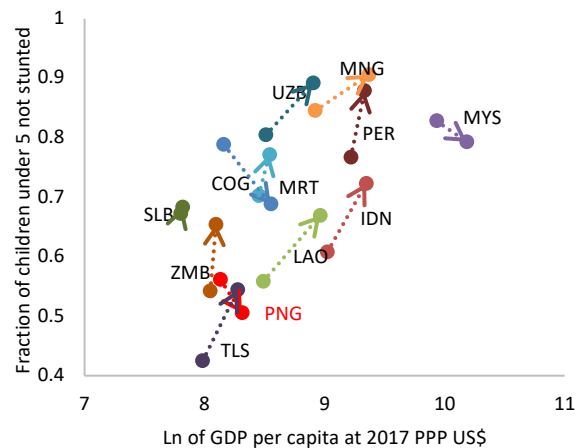
93. **The stunting rate shows an alarming level with detrimental implications that might affect children’s ability to learn.** PNG has the fourth highest child stunting rate in the world and the second highest prevalence of stunting in the EAP region. The rate is double that of countries with comparable levels of income per capita and significantly above its peers (Figure 74). Nearly one-half of the children of PNG are stunted (45 percent) and around 28 percent of the children in the country are underweight. While the majority of countries that are part of the HCI measurement have reduced the fraction of their stunting rate among under-five children between 2010-20, PNG shows no significant improvement (Figure 75). This burden of stunting is highest amongst the poorest quintile (55 percent), although the level is still persistent in the richest quintile (36 percent). Stunting indicates low nutrition intake which may be related to a later reduction in cognitive and academic achievement and which, therefore, causes children to be poorly prepared learners in school.

Figure 74: Stunting Rate in EAP Region and Comparator Countries
(Most recent estimates)



Source: WDI (based on modelled estimates by WHO/UNICEF/World Bank).

Figure 75: Changes in Fraction of Children Under-five Not Stunted
(circa 2010 vs. circa 2020)



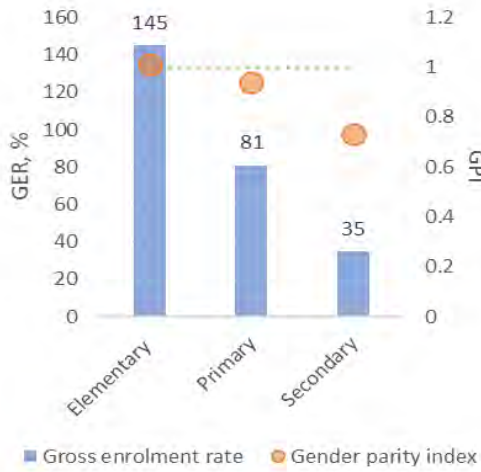
Source: Adopted from the HCI 2020 updates..

94. **The gender gap in enrolments further exacerbates the challenges in using education as a pathway to better employment.** While PNG has achieved gender parity in elementary enrolments,²⁹ gaps increase from primary to secondary level (Figure 76). A sizeable gap remains in both net and gross secondary enrolment rates, with girls more likely to drop out of school at key transition points. In 2018, there were seven girls for every 10 boys enrolled in secondary school. Girls are also less likely to reach the end of primary schooling with only 45 percent of girls who start elementary school staying until the end of primary (compared to 48 percent of boys). Survival rates to the end of secondary school are also strikingly low: about 16 percent of boys and 12 percent of girls who enter elementary school remain until the last year of secondary education. While some progress has, therefore, been made at the primary education level, PNG still lags its regional peers in attaining gender equality in secondary education.

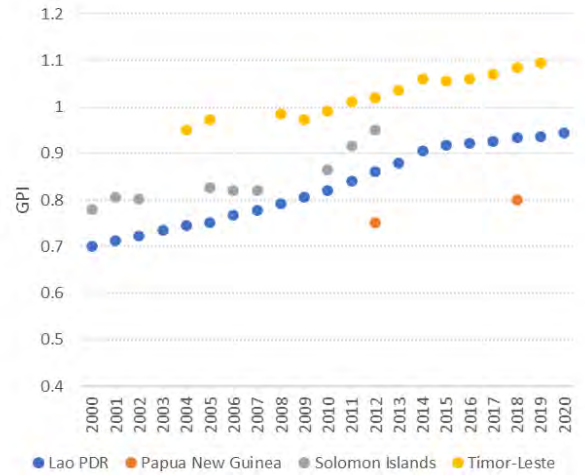
²⁹ Elementary education includes grades 1 and 2, primary education includes grades 2 to 8, and secondary education includes grades 9 to 12.

Figure 76: Gender Parity Across Educational Levels in PNG and Peers

Gross enrolment rates (GER) and gender parity across educational levels in PNG



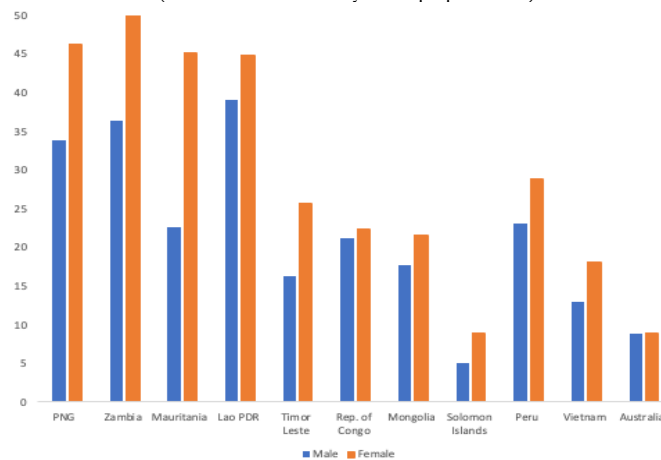
GER in Secondary Education – Gender Parity Indices (GPI) for PNG and regional comparators over time



Source: 2018 EMIS data from DOE (LHS), and UNESCO Institute for Statistics (RHS).

95. Transitioning from school to the workforce is difficult for many as they find that they are unprepared or unqualified for jobs. Low levels of educational completion mean that those entering the labor market are unlikely to have the required certificates that many formal employment opportunities require. In addition, low levels of literacy and numeracy, and proficiency in English also serve as further exclusions. Almost 35 percent of male youth (aged 15-24 years old) in PNG do not participate in education, employment, or training, while the rate is higher for female youth with almost 50 percent (Figure 77). This rate is in the higher range compared to the peers. There are signs that firms are struggling to find the skills they need in the industry, as shown by the large number of foreign workers that are employed in the economy. While it is reasonable to rely on foreign labor for highly skilled positions, reliance on foreign workers for semi-skilled and low-skilled jobs reflects the inadequate domestic supply of skilled labor. It also presents an important economic loss for PNG given the country’s large and growing pool of young labor.

Figure 77: Youth not in Education, Employment, or Training
(%of male/female youth population)



Source: PNG: Own analysis using data from PNG DHS-2016-2018. Other Countries: World Bank databank, latest available year.

7. Summing Up

96. PNG's economy can and should grow faster. Whilst the economy has more than tripled in size since independence in 1975, real GDP per capita has increased by only 0.9 percent per year – a low growth rate in comparison to peers. Economic growth has been and continues to be subject to significant upward and downward swings. The inclusivity of recent growth performance has been limited by the relatively low productivity of the non-resource sector, and insufficient investment in the human capital, underpinned by weak governance. At the same time, PNG can leverage some of its comparative advantages, notably its large stock of renewable assets and relatively young population. This calls for a renewed policy focus on economic growth, not only on the short-term factors affecting the outlook for the next year, but also on the longer-term drivers of the growth and welfare of the people. These long-term drivers of growth will also be influenced by some of the significant global trends such as accelerated digitalization and increasing shift to climate change action that will govern flows of goods, services and capital.

97. The World Bank team continues preparation of the PNG CEM. It will expand the analysis presented in this Special Focus and will include growth challenges, their likely causes, and potential policy solutions. We are looking forward to a public discussion to better understand the underlying problems and, thus, contribute to identifying policies that would lead to a higher growth trajectory in PNG.



ANNEXES

Annex 1. Selected Economic and Social Indicators

| | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|-------|-------|--------|--------|-------|--------|-------------|--------|
| | | | | | | Est. | Projections | |
| National income and prices <i>(In percent, unless otherwise indicated)</i> | | | | | | | | |
| Nominal GDP (US\$ billions) | 20.8 | 22.7 | 24.1 | 24.8 | 24.0 | 26.3 | 30.4 | 31.5 |
| Real GDP growth | 5.5 | 3.5 | -0.3 | 4.5 | -3.5 | 1.0 | 4.0 | 4.2 |
| Resource sector | 15.3 | 8.1 | -9.2 | 11.3 | -8.4 | -6.2 | 5.3 | 6.2 |
| Non-resource economy | 2.4 | 0.5 | 4.1 | 1.4 | -1.1 | 4.2 | 3.5 | 3.3 |
| Consumer price inflation, period average | 6.7 | 5.4 | 4.6 | 3.7 | 4.9 | 5.1 | 7.3 | 5.3 |
| GDP deflator | 2.5 | 7.7 | 9.8 | 1.1 | 2.6 | 9.9 | 12.9 | 2.4 |
| Real exchange rate change, US\$/PGK* | -6.9 | 1.4 | -1.1 | -1 | 1.7 | 0.7 | ... | ... |
| Fiscal accounts <i>(In percent of GDP, unless otherwise indicated)</i> | | | | | | | | |
| Revenue and grants | 16.1 | 15.9 | 17.7 | 16.3 | 14.6 | 15.0 | 15.5 | 15.8 |
| Non-resource tax revenue | 12.9 | 12.6 | 13.2 | 13 | 11.9 | 12 | 11.9 | 12.3 |
| Resource revenue | 2.2 | 2 | 2.3 | 2.1 | 1.7 | 2.3 | 2.1 | 1.7 |
| Grants and other revenue | 1 | 1.3 | 2.2 | 1.2 | 1.0 | 0.7 | 1.5 | 1.8 |
| Expenditure and net lending | 20.8 | 18.4 | 20.3 | 21.3 | 23.4 | 21.8 | 20.9 | 20.4 |
| Primary expenditure | 18.9 | 16.3 | 18.0 | 18.8 | 20.8 | 19.4 | 18.5 | 18.0 |
| Interest payments | 1.9 | 2.1 | 2.3 | 2.5 | 2.6 | 2.4 | 2.4 | 2.4 |
| Overall fiscal balance | -4.7 | -2.5 | -2.6 | -5.0 | -8.8 | -6.8 | -5.4 | -4.6 |
| Non-resource primary balance (% non-extractive GDP) | -4.5 | -1.2 | -2.4 | -5.3 | -9.4 | -7.3 | -5.9 | -5.1 |
| Net public debt | 33.7 | 32.5 | 36.7 | 39.7 | 48.4 | 52.3 | 50.3 | 50.8 |
| Gross government debt and guarantees | 33.7 | 32.5 | 38.2 | 40.2 | 48.4 | 52.3 | 50.3 | 50.8 |
| Gross government savings | 0 | 0 | 1.5 | 0.5 | 0 | 0 | 0 | 0 |
| External accounts <i>(In millions of U.S. dollars, unless otherwise indicated)</i> | | | | | | | | |
| Exports, f.o.b., of which: | 8,204 | 9,953 | 10,495 | 11,401 | 9,285 | 10,420 | 12,320 | 12,231 |
| Extractive sector | 6,455 | 7,960 | 8,498 | 9,595 | 7,489 | 8,434 | 10,226 | 9,907 |
| Imports, c.i.f. | 2,070 | 3,060 | 3,512 | 3,933 | 3,284 | 3,024 | 3,313 | 3,526 |
| Current account | 5,183 | 5,347 | 5,528 | 5,468 | 4,987 | 5,609 | 7,202 | 6,883 |
| (in percent of GDP) | 25.0 | 23.5 | 22.9 | 21.9 | 21.0 | 22.0 | 23.7 | 21.9 |
| Overall balance of payments | 10 | 110 | 561 | 125 | 450 | 550 | 689 | 125 |
| Gross official reserves | 1,656 | 1,736 | 2,215 | 2,313 | 2,677 | 2,878 | 3,058 | 2,871 |
| (in months of goods and services imports) | 4.3 | 4.0 | 4.7 | 6.2 | 7.4 | 7.3 | 7.3 | 6.5 |
| (in months of non-extractive imports) | 10.1 | 8.2 | 8.9 | 7.3 | 11.8 | 15.9 | 15.5 | 15.3 |
| Money and credit <i>(In percent, unless otherwise indicated)</i> | | | | | | | | |
| Broad money growth | 10.9 | -0.7 | -3.9 | 4.4 | 7.0 | 11.7 | 9.5 | 9.8 |
| Domestic credit growth | 24.6 | 0.1 | -6.8 | 5.1 | 2.3 | 9.3 | 8.7 | 8.4 |
| Growth of credit to the private sector | 7.2 | -3.6 | 7.1 | 4.0 | 4.3 | 0.4 | 5.2 | 4.2 |
| Interest rate of 182-day T-bills, period average | 4.7 | 4.7 | 4.7 | 4.7 | 4.6 | 4.3 | 4.5 | 4.6 |
| Social indicators | | | | | | | | |
| Population, total (millions) | 8.3 | 8.4 | 8.6 | 8.8 | 8.9 | 9.1 | 9.3 | 9.5 |
| Population growth (percent) | 2 | 2 | 2 | 2 | 2 | 1.9 | 1.9 | 1.9 |
| Life expectancy at birth (years) | 63.7 | 64 | 64.3 | 64.4 | .. | .. | .. | .. |

Sources: Official historical data; World Bank staff estimates and projections.

Note: * An increase represents appreciation and a decrease is depreciation.

Annex 2: Selection of Comparators

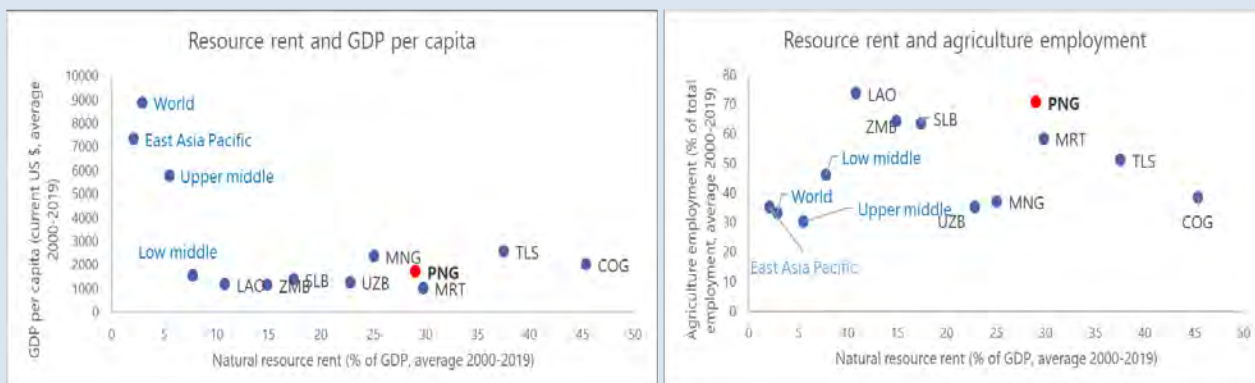
To gain insights into the comparative performance of PNG, it is essential to choose an appropriate set of comparator countries. What constitutes ‘appropriate’ depends on the focus of the comparison. Since this study is focused on growth performance, for most of the study the appropriate comparators are countries with similar structural economic characteristics. This study uses two such groups of countries—termed structural peers and aspirational peers—and some standard aggregates (EAP, Lower-middle-income, Upper-middle-income, and World).

PNG’s structural peers are those that share the economic characteristics of a high resource rent share of GDP, diversified bundle of resources, high agricultural share of employment, and lower-middle-income level. The group consists of Republic of Congo, Lao PDR, Mauritania, Mongolia, the Solomon Islands, Timor-Leste, Uzbekistan, and Zambia. More specifically, these countries are:

- Resource rich countries, with a ratio of resource rents to GDP equal to or greater than 10 percent on average between 2000-19 (PNG averaged 29 percent).
- Countries with agricultural employment of more than 30 percent of total employment on average between 2000-19 (PNG averaged 70 percent).
- Countries with a bundle of diverse resources.
- Classified as lower-middle-income with GNI per capita in 2019 between US\$1,026-US\$3,995.

Figure A2.1 shows PNG’s income level, resource-dependence and agricultural employment share relative to these structural peers and the standard aggregates.

Figure A2.1: PNG and Structural Peers



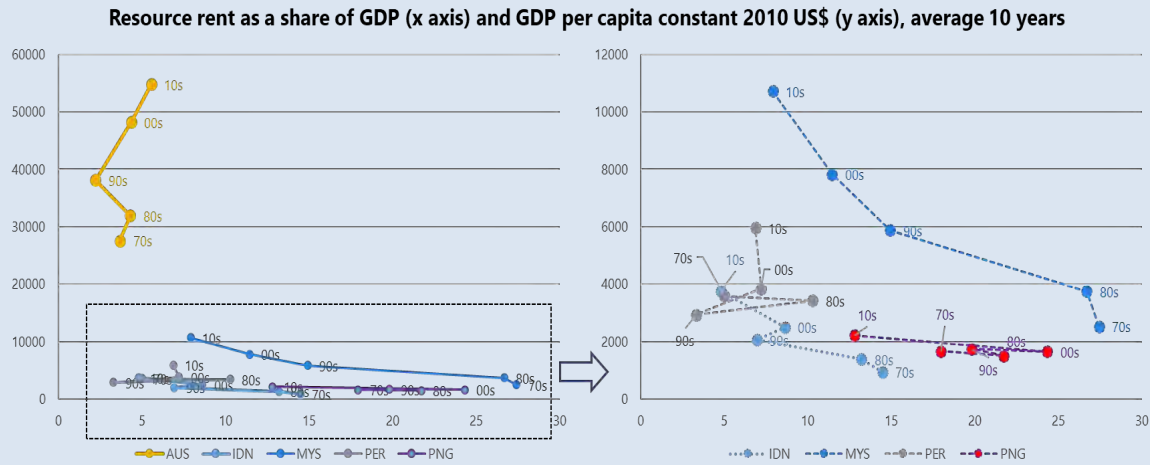
Note. Data source for peer countries is Country Scan tool, while aggregate numbers (World, low middle, upper middle, and EAP) are from World Development Indicators database.

PNG’s aspirational peers are those that previously had a high resource rent share of GDP and are now classified as upper-middle-income. The exception here is Australia, a high-income country, which has been chosen as a long-term aspirational peer given its success in managing a resource-dependent economy and could be considered as a technology frontier. The group consists of Australia, Indonesia, Malaysia, and Peru. More specifically, these countries:

- Had resource rents to GDP equal to or greater than 10 percent on average between 1980-1990.
- Were classified as upper-middle-income in 2019 (except Australia).

Figure A2.2 shows that each aspirational peer has shown distinct progress on per capita income over the last five decades. Malaysia managed to improve its per capita income level while reducing its dependence on resources—as shown by the declining rent share. Meanwhile, Indonesia started with a lower per capita level than PNG but managed to grow faster than PNG and now has a higher per capita income.

Figure A2.2: PNG and Aspirational Peers



In the parts of this study focused on PNG’s governance and institutional performance, a different set of comparators is appropriate. For those comparisons, the comparators need to be countries with structural governance and institutional characteristics similar to PNG. These are a set of countries that share PNG’s classification as a ‘competitive clientelist’ state (Barma et al. 2012). These comparators are Nigeria, Madagascar, the Solomon Islands, Philippines, Democratic Republic of Congo (DRC), Kenya, Ghana, Malawi, and Timor-Leste. We refer to these countries as ‘governance peers’. Two of these governance peers—the Solomon Islands and Timor-Leste—are also in the set of structural peers.



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