Papua New Guinea Economic Update:
Invest in Your Children

May 2024

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SUMMARY

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A. Economic Update: Moderate Growth and Better Macroeconomic Policies

The economy has recovered to pre-COVID level but remains below its pre-COVID trajectory. The COVID-19 crisis led to an economic contraction in 2020-21 before recovering by 5.2 percent in 2022. The recovery in the extractive sector was driven by significant improvement in international prices of key export commodities, although the shutdown of the Porgera gold mine limited the rebound. Growth is estimated to have slowed down to 2.7 percent in 2023, primarily attributed to reduced global demand and domestic supply constraints stemming from scheduled maintenance in extractive facilities.

The government has continued implementing its plan of fiscal consolidation to safeguard macroeconomic stability. The pandemic exacerbated underlying fiscal weaknesses in PNG. As the economy recovered to pre-pandemic level, the government reduced the fiscal deficit from 8.8 percent of GDP in 2020 to an estimated 4.4 percent of GDP in 2023. Most of the improvement came from resource revenue. The public debt has stabilized. However, according to the latest World Bank–IMF DSA, the country remains at high risk of debt distress. Conditional on the implementation of the authorities' plans for further fiscal consolidation and conservative financing strategies, external and overall public debt is sustainable.

Inflation bottomed, while Bank of PNG moved to greater exchange rate flexibility. Headline inflation fell from 6.3 percent in 2022Q3 to 1.4 percent in 2023Q2, year-on-year, before increasing to 3.9 percent in 2023Q4. Since September 2023, the Bank of PNG reduced the policy rate three times, by cumulative 150 basis points, to 2 percent. Supported by an IMF-funded program, BPNG took steps towards greater exchange rate flexibility and allowed, since May 2023, gradual and moderate depreciation of kina to USD to help resolve the forex rationing issue. From January 2024, BPNG implemented a crawl-like exchange rate arrangement.

Table 1: Key Macro-Fiscal Indicators (2018–25)

Indicator	2018	2019	2020	2021	2022	2023	2024	2025
						Est.	Projections	
GDP growth (percent)	-0.3	4.5	-3.2	-0.8	5.2	2.7	4.8	3.1
Extractive sector	-9.2	11.3	-9.2	-11.0	5.7	-2.2	6.3	0.1
Non-extractive economy	4.1	1.6	-0.4	4.8	4.6	4.5	4.4	4.1
Consumer price inflation (percent, period average)	4.6	3.7	4.9	4.5	5.3	2.2	4	4.8
Overall fiscal deficit (percent of GDP)	-2.6	-5.0	-8.8	-6.8	-5.3	-4.4	-3.9	-2.5
Public debt, net (percent of GDP)	36.7	40.2	48.7	52.2	48.4	52.4	52.2	52.7
Current account balance (percent of GDP)	22.6	22.1	14.1	13.2	22.8	18.6	16.3	16.7

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.

Growth is projected to accelerate in 2024, mostly due to reopening of the Porgera gold mine. The mine restarted operations in 2024Q1 and is expected to reach its normal levels of production by mid-year. Meanwhile, growth could have been even faster, but brief violence and looting in January 2024 put a toll on the economy. According to the Business Council, the loss to the economy was not only from physical losses of assets and property, but also in forgone business revenue, which could lower tax collections and reduce the appetite to invest. In addition, the dispute between authorities and main fuel importer led to disruptions in fuel provision to businesses and households, further slowing down economic activity. The medium-term growth is expected to settle at 3 percent.

There are both upside and downside risks to the outlook. The baseline projection does not account for potential new resource mega-projects, like Papua LNG. Thus, the final investment decision and the initiation of construction present an upside risk to the outlook. Meanwhile, slower-than-expected economic growth could materialize through lower demand for PNG's exports, a more pronounced decline in commodity prices, and the impact of droughts and other climate-related events. Keeping up with the strengthened macroeconomic framework will help mitigate these risks.

B. Special Focus: Invest in Your Children: PNG's Most Sustainable Resource are its People

Proving a quality education for all is key from an economic perspective (World Bank 2018). The global evidence is clear: education—and the skills it creates—contributes to higher economic growth. In particular, cross-country analysis reveals a robust relationship between the skills created in schools, training institutions, colleges and universities, and economic growth. Education increases people's incomes and employability, improves economic mobility, and enables families to escape poverty. It increases individuals' and families' resilience to shocks. In economies with large informal sectors, education is associated with greater access to full-time, formal sector jobs. It also facilitates greater productivity, technology adoption, and innovation.[1]

More investments in human capital would provide PNG's economy with another engine of growth, freeing it from its dependence on the natural resource sector. While PNG's wealth has been dominated by natural capital, at the heart of PNG's weak economic performance is an underutilization of potential human capital. Specifically, human capital accounts for only 46 percent of total wealth, below virtually all of PNG's peers, and PNG has posted very little growth since 1995. The outsize role of natural capital in the national wealth is also experienced by PNG's structural peers that are heavily dependent on extractive industries. However, human capital growth has been found to be the driving factor in the peers with the highest per capita growth in wealth (since 1995).

PNG's weak human development outcomes present missed opportunities for faster economic growth as PNG is lagging in several dimensions. The symptoms of this underutilization are visible across the board: PNG has one of the highest rates of stunting in the world, and, while more children are now enrolling and completing a primary education, an estimated 72 percent of 10-year-olds are still not learning to read and understand an age-appropriate text. Without this ability to read, and with a low level of secondary enrolment among its peers, PNG has nearly 2 million individuals who are not in training, not in education, and not in employment. Transitioning from school to the workforce is difficult for many as they find that they are unprepared or unqualified for the jobs that are available.

The human capital crisis is caused by a combination of factors. First, stunting rates are high, implying that some children are developmentally behind already in the early years of life. Second, too many children start school late and are unprepared to learn. Third, once in school, for a variety of factors, they are not learning some key foundational skills. Fourth, with students not having acquired the basic foundational skills, there are few students capable of advancing to secondary and tertiary education.

To turn its young population into an engine of growth, PNG needs more action on several fronts, addressing the underlying causes of the crisis. In a society with a high degree of violence and crime, having a 'youth bulge' population, without the stabilizing anchor of participating in training, in education, or in employment, would put future development at risk. The government has taken several promising steps in this direction, with good reform plans, but a lot more focus is needed, as summarized in the table below:

A summary of recommendations from this report can be found in the table below.

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[1]During the green revolution in Asia, farmers with basic education made more efficient allocation decisions in the face of technological changes (Foster & Rosenzweig, 1996). In manufacturing firms operating in more human capital-intensive industries across China, increases in employee education resulted in greater total-factor productivity (TFP) growth, technology adoption, and R&D investment (Che and Zhang 2017). Similar results are seen among firms in OECD countries (Criscuolo, Gal, Leidecker, Losma, & Nicoletti, 2021).

Underlying problems to be addressed	Recommendation to government
Too many children are stunted, affecting their brain development.	1. Invest more resources in reducing stunting by promoting primary health care service delivery access and availability of maternal health services which promotes healthy children that can thrive as well as sexual reproductive health services. 2. Prioritize resources and political commitment to ensure every child is fully immunized against childhood illnesses, which are preventable.
Children are not adequately prepared for school nor are they starting at the right age.	3. Facilitate expansion, coverage, and quality of ECE by allocating appropriate funding, providing technical support, and promoting collaboration among donors and other stakeholders. 4. Incentivise sub-national governments, provide subsidies to existing church education agency centres. 5. Provide subsidies to enable the most disadvantaged children to access ECE first. 6. Allocate resources to mobilise national campaigns to increase the awareness of the right age to start school.
Schools lack basic inputs – materials and infrastructure, and children are too hungry to learn.	7. Procure and deliver sufficient quantities of materials (i.e. textbooks, reading books, teacher guides, etc.) and infrastructure (i.e. toilets) to schools.
More and better teachers are needed–quantity and quality (poor mastery of content knowledge, weak teaching practices, and widespread absenteeism)	8. Expand teachers' access to structured lessons plans and adequately resource training programs on how to use them. 9. Provide training to teachers to equip them to provide targeted instruction to students, with students grouped by their current levels of learning. 10. Adopt educational technology to support classroom teaching, including with the dual teacher model.

The management of the education system is weak – under-resourced quality assurance systems, lack of core data, cumbersome teacher management systems, and inadequate and inequitably distributed funds	11. Strengthen the school inspections system through the design, implementation, and adequate resourcing of a comprehensive, systematic, and sustained strategy focused on clear and stable roles, rules, and resources. 12. Drastically reform the education management information system to improve access, timeliness, reliability, and utilisation of data on students, teachers and schools. 13. Update legislation, policy, systems, and practices of teacher administration to increase automation, digitisation, and coordination across the Ministry to better support teachers. 14. Improve responsiveness of education system by making available key data that will help inform policy planning and decision-making. For example, dashboards with school-level data and results of early grade student assessments can be used to measure effectiveness and efficiency of spending and identify areas for course correction sooner. 15. Put forth a pitch for additional budgetary resources targeting cost-effective interventions such as a large-scale program on structured pedagogy. 16. Simplify the formula determining each school's entitlement under the Government Tuition Fee Subsidy (GTFS) to increase transparency, accountability, and equity.
The multiple challenges facing the sector, the overall weak management and lack of resources	17. Given existing financial and capacity constraints, a phased approach will be needed to deliver on the vision by 2050, with an initial focus on the children born today. 18. The scale of the transformation needed require sustained and aligned efforts across a range of stakeholders: head of government, the minister of education, the Treasurer, departments involved in reducing stunting rates, teachers, and parents.

Abbreviations and Acronyms

ACT	Additional Company Tax
AGO	Auditor General's Office
ASER	Annual Status of Education Report
ASC	Annual School Census
BCFW	Business Coalition for Women
BPNG	Bank of Papua New Guinea
BSP	Bank of South Pacific
CA	Current Account
CBBs	Central Bank Bills
CDF	Constituency Development Funds
CPIA	Country Policy and Institutional Assessment
CEDAW	Convention on the Elimination of All Forms of Discrimination Against Women
CRR	Cash Reserve Requirement
DHS	Demographic and Health Survey
DSA	Debt Sustainability Analysis
DSIP	District Services Improvement Program
EAP	East Asia and Pacific
E	MDEs Emerging Market and Developing Economies
ECE	Early Childhood Education
EMIS	Education Management Information System
FPA	Family Protection Act
FRA	Fiscal Responsibility Act
FSC	Family Support Center
FSV	Family and Sexual Violence
FSVU	Family and Sexual Violence Unit
GBV	Gender-Based Violence
GDP	Gross Domestic Product
GEGI	Gender Employment Gap Index
GESI	Gender Equality and Social Inclusion
GTFS	Government Tuition Fee Subsidy
HCI	Human Capital Index
ID	Identification
IFMS	Integrated Financial Management System
ILR	Indicator Lending Rate

IMF	International Monetary Fund	
IPV	Intimate Partner Violence	
KFR	Kina Facility Rate	
LNG	Liquefied Natural Gas	
MMBtu	Million Metric British thermal unit	
MP	Member of Parliament	
MPS	Monetary Policy Statement	
MTFS	Medium-term Fiscal Strategy	
NCDC	National Capital District Commission	
NEET	Not in Employment, Education or Training	
NFA	Net Foreign Asset	
NGO	Non-Government Organization	
NPL	Non-performing Loan	
NPS	National Public Service	
NPV	Non-Partner Sexual Violence	
NRPB	Non-resource Primary Balance	
NSO	National Statistical Office	
PFM	Public Financial Management	
PILNA	Pacific Islands Literacy and Numeracy Assessment	
PIM	Public Investment Management	
PNG	Papua New Guinea	
PNGX	Papua New Guinea Stock Exchange	
PPF	Production Possibility Frontier	
PSIP	Provincial Services Improvement Program	
REER	Real Effective Exchange Rate	
RODSS	Resumption of Duties Summary Sheet	
RPNGC	Royal Papua New Guinea Constabulary	
SARV	Sorcery-Accusation-Related Violence	
SDG	Sustainable Development Goals	
SDR	Special Drawing Rights	
SME	mall and Medium Enterprises	
SoE	State-owned Enterprise	
TARL	Teaching at the Right Level	
TAF	Temporary Advance Facility	
TVET	Technical and Vocational Education and Training	
USDA	United States Department of Agriculture	
UYEP	Urban Youth Unemployment Project	
VAW	Violence Against Women	
WHO	World Health Organization	

Economic
Update:

Moderate Growth and
Better Macroeconomic Policies

1. Recent economic developments

1.1. Economic growth

1. **Worldwide economic activity remains weak due to the impact of stringent monetary policies, restrictive financial conditions, and a weak global trade.** In January 2024, the World Bank estimated that global growth weakened to 2.6 percent in 2023. This slowdown is attributed to softening labor markets, diminished savings buffers, a decline in pent-up demand for services, the delayed impacts of monetary tightening, and fiscal consolidation. The recent Middle East conflict has increased geopolitical risks, introducing uncertainty into commodity markets, with potential adverse effects on global growth. All this occurs as the world economy continues to grapple with the lingering consequences of the overlapping shocks of the past four years, encompassing the COVID-19 pandemic, the Russian Federation's invasion of Ukraine, and the surge in inflation followed by a sharp tightening of global monetary conditions. With this background, excluding China, East Asia Pacific (EAP) growth eased to 4.4 percent in 2023, still below its pre-pandemic growth. Meanwhile growth in most Pacific Island Countries rebounded, yet non-uniformly, particularly for economies that heavily rely on tourism (Figure 1).

2. **Global headline and core inflation continued to decline since the last peak in 2022.** Some contributing factors included the moderation of energy and food price inflation, a decrease in consumer demand for goods, and the recovery of global supply chains. Despite this, inflation remains above target in most advanced economies and approximately half of inflation-targeting emerging market and developing economies (EMDEs). Projections indicate that global inflation will decline further beyond 2024 yet will persist above its 2015-19 average. Although monetary tightening in advanced economies is concluding, real policy interest rates are expected to remain elevated for some time as inflation gradually returns to target. This will maintain a restrictive stance in advanced-economy monetary policies in the near term, following the most substantial and fastest increase in U.S. real policy rates since the early 1980s.

Figure 1. Pacific Island economic output is estimated to have finally exceeded pre-pandemic levels, while EAP growth eased. *(percent, annual growth)*
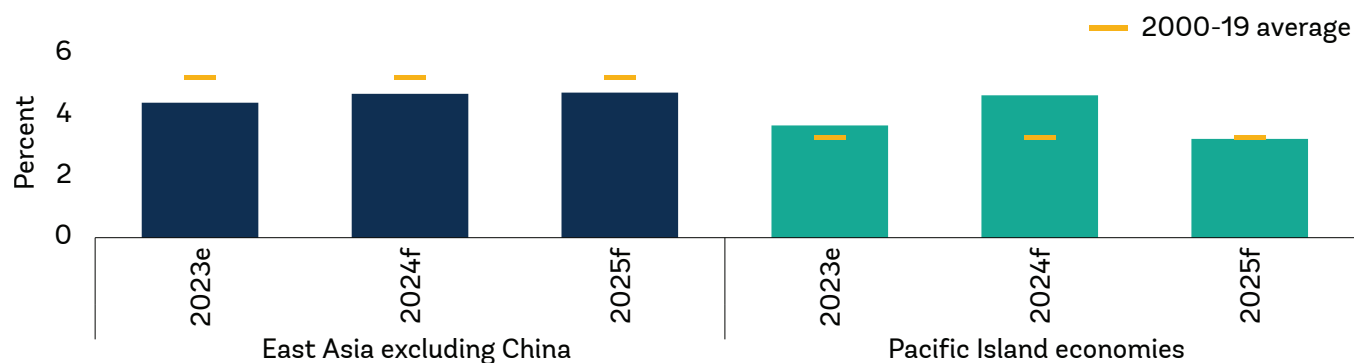
Source: World Bank Global Economic Prospects, January 2024 and EAP Economic Update, April 2024

Figure 2. Global goods trade is estimated to contract in 2023, mirroring the slowdown in industrial production. *(percent, year-on-year)*
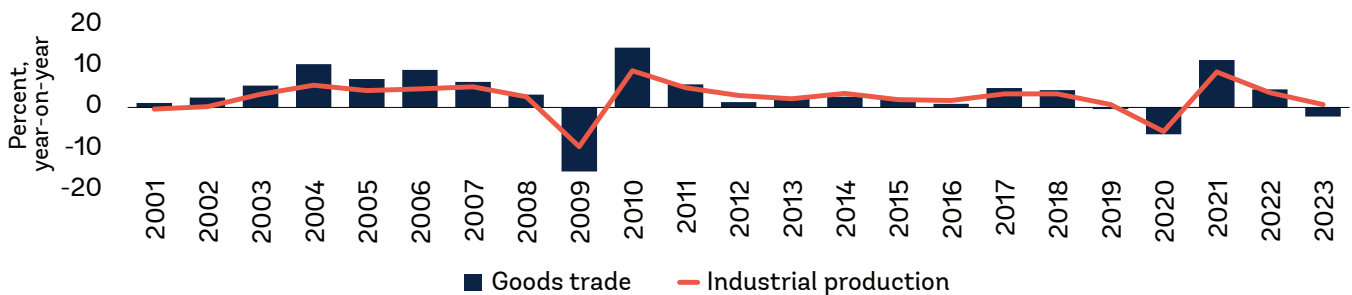
Source: World Bank Global Economic Prospects, January 2024

3. **Global trade in goods and services experienced minimal growth in 2023.** The latest estimation by the World Bank shows that trade in goods and services expanded marginally by 0.2 percent in 2023, marking the slowest growth outside global recessions in the past 50 years. However, the trade of goods contracted last year, depicting a decline in major advanced economies and deceleration in EMDEs, and reflecting the significant reduction in the growth of global industrial production (Figure 2). This marked the first sustained contraction in goods trade outside a global recession in the past 20 years.

Figure 3. In 2023, PNG is estimated to continue growing and to reach higher than its pre-pandemic output level like most countries in the East Asia and Pacific (EAP) region. *(percent deviation from 2019 real output level)*
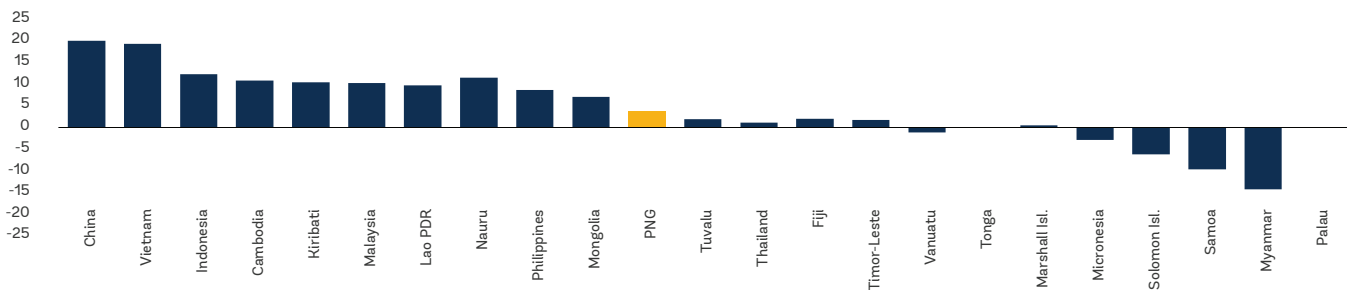
Source: World Bank EAP Economic Update, April 2024

Figure 4. PNG economy is estimated to grow slower in 2023 partly due to the resource sector contraction. *(percent and percentage point contributions, annual growth)*
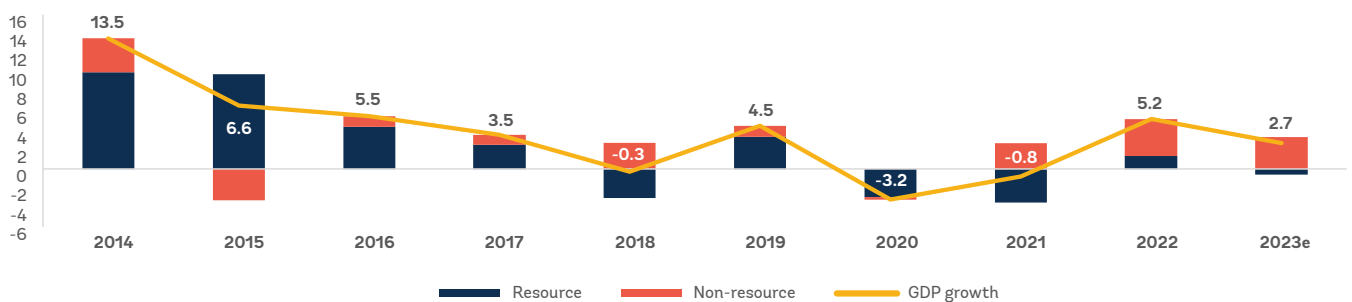
Source: Statistics of Papua New- Guinea

4. **Against this backdrop, PNG is estimated to have grown slower in 2023.** In line with many countries in the EAP region, PNG output in 2023 is expected to have been above its pre-pandemic level (Figure 3). However, the government estimates that economic growth was a modest 2.7 percent in 2023, almost half of last year's performance (Figure 4). The lower value-added growth in the resource sector has played a negative role, resulting from delays in the reopening of Porgera mine and lower LNG production. On a positive note, the growth of the non-resource sector continued and supported the economy owing to increased government spending. The Agriculture Forestry and Fisheries (AFF) sector is estimated to have grown slower, by 2.2 percent, in 2023. The growth in the agriculture sector is attributed to the increase of cocoa and copra oil production, thanks to replanting programs in the cocoa industry, the recovery of copra oil production driven by higher prices, and the pickup of coffee production after the election-related disruptions. However, the production of palm oil and logs declined, partly due to slower global demand from China. Mirroring this, exports of agriculture products remained strong yet at much slower pace (see BOP section), backed by exports of cocoa, rubber, marine products, and copra oil (Figure 5).

Figure 5. The lower export volumes in logs and palm oil can be offset by the growth in cocoa and rubber. *(percent change, 2023 estimate)*

Source: BPNG

Figure 6. The lower export volumes in logs and palm oil can be offset by the growth in cocoa and rubber. *(percent change, 2023 estimate)*
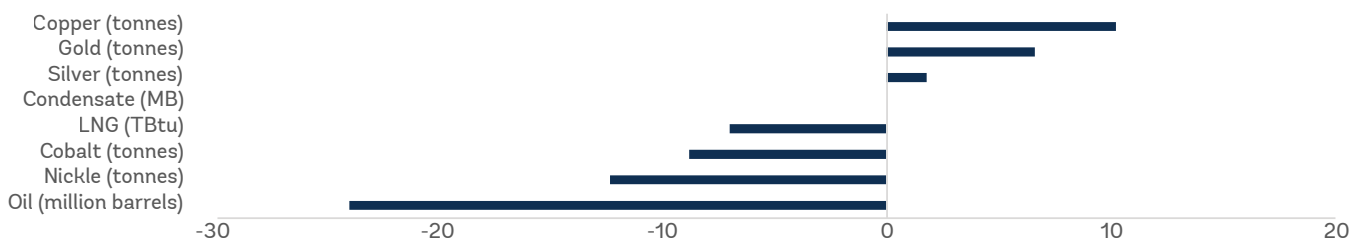
Source: BPNG

5. **The resource sector is estimated to have contracted in 2023, after a strong rebound in 2022.** The value added from the resource sector is estimated to decline by 2.2 percent in 2023. The significant drop in the output of the mining and quarrying and oil and gas sectors is attributed to the normalization of LNG and condensate production after an historic above-capacity production in 2022. The mining and quarrying sector is estimated to continue growing by 2.2 percent in 2023, yet at a slower rate than the previous year. Meanwhile, the oil and gas sector is expected to contract by 4.2 percent in 2023. This reflects the below-capacity production of LNG projects due to scheduled maintenance at plant sites. At the same time, the lower oil production is showing the maturing of existing oil fields and reserves level is on depleting trajectory. A similar picture can be seen through the slower exports of mineral product (see External section) (Figure 6).

Box 1. Faster GDP data release by National Statistics Office

The release of the latest Gross Domestic Product (GDP) data in November 2023 marks a major achievement by the National Statistical Office of Papua New Guinea. The data release included the actual GDP figure both for 2022 and 2021, reducing the release time lag from 22 months to 10 months (Figure 4). For several years, GDP data had been released with a lag of almost two years due to low capacity. With support from the Australian Bureau of Statistics and collaboration with intergovernmental agencies and stakeholders, the NSO can improve the production of timely and reliable statistics.

More timely and better statistical data facilitates evidence-based decision-making, promotes efficiency, and contributes to the overall development and well-being of societies. The difference between the GDP growth estimate and the actual figures for 2021 and 2022 was significant. The growth estimate for 2021 based on the 2023 Mid-Year Economic Fiscal Outlook (MYEFO) was 0.1 percent, compared to the actual figures of a 0.8 percent contraction and marks a continued economic contraction from 2020. The gap between the actual numbers of GDP growth in 2022 and the estimates based on 2023 MYEFO is 0.9 percentage points and is even higher when compared with the 2023 Budget Papers. This highlights the importance of timely and reliable GDP data to get the right pictures of past economic performance in make better policy decisions.

6.   **Employment index in the formal sector continued growing in 2023Q3, yet slower from the last peak in the previous quarter as economic growth slowed.** Total formal employment index grew by 3.5 percent YoY in 2023Q3, largely driven by the mining and petroleum sector (Figure 7). Employment in the mining sector continued recovering partly in line with the plan of Porgera gold mine reopening which has started recruiting, although it remained below the pre-pandemic level. Further, employment growth in the non-mineral sectors agriculture was mixed. This was attributed to the employment growth in the Agriculture, Forestry and Fisheries, Transportation, Storage and Accommodation sectors, which increased by 6.5 and 6.8 percent YoY in Q32023 respectively (Figure 8). In part, this was following the increase of mobility and economic activity, such as in the mining sector. However, for the same period employment in other non-mineral sectors contracted, such as in construction, retail and wholesale trade, and manufacturing.

Figure 7. Total employment in the formal sector increased by 2 percent in Q22023, recovered to the pre-pandemic level. *(index, Q42019=100)*

Source: Bank of PNG

Figure 8. Meanwhile, the formal employment in many services sectors has not recovered to the pre-pandemic level. *(index, Q42019=100)*

Source: Bank of PNG

7.   **PNG's recent growth model has been less inclusive than previously thought.** The updated poverty estimates illustrate that even less economic activity has been trickling down to the population than was previously thought. When comparing the monetary poverty rate in PNG to countries with a similar per capita GDP, the average poverty rate at the International Poverty Line of $2.15 (2017 PPP) is one-quarter the poverty rate in PNG (10.7 percent). Box 2 shares recent evidence on how economic growth translated into economic outcomes for the poor and delivery of essential services.

Box 2. How inclusive has PNG growth been?

Since the last official estimate of monetary poverty in 2009, there has been a substantial amount of economic growth and a continuation of the resource boom in the country. One key question is the degree to which this economic growth translates into better economic outcomes at the bottom end of the distribution and the degree to which the government translates these revenues into better delivery of essential services. Previous analysis illustrates that there have been some small improvements in some health outcomes over that period (e.g., Pandey and Howes 2022). However, new estimates of monetary poverty and access to essential services in the 2016-2018 DHS illustrate that this growth and resource revenue have resulted in little change in many key well-being dimensions.

Figure B1 illustrates that this growth has not improved welfare outcomes of the worst off. Although no survey has collected the necessary expenditure and consumption modules necessary to estimate monetary poverty since 2009, there have been several surveys that collect close correlates of monetary poverty. Estimates using the 2016-2018 Demographic and Health Survey (DHS) illustrate that the close correlates of poverty hardly changed, and that the imputed monetary poverty estimate was identical to the 2009 estimate of 40 percent of the population living in poverty at the international poverty line of $2.15 (2017 PPP). Furthermore, there has been little improvement in those close correlates between the 2016-2018 DHS and the 2022 Socio-Demographic and Economic Survey (SDES), suggesting that the monetary well-being of the population today is similar to that of 2009 (e.g., Baxi et al. 2023).

Figure B1 further demonstrates that estimates of poor access to essential services also changed very little from their initial low base and that added resource revenue did not improve the delivery of essential services. Importantly, the unchanged shares of the population with poor access to essential services, several of which are essential to a livable planet and highlighted in the World Bank's new vision, are uniquely poor relative to the rest of the world and are larger than the share that is monetarily poor in several cases. Furthermore, not only did the economic growth and resource revenues not translate into tangible outcomes for the population, the lack of improvement in access to any of the essential services reported in Figure 1 stands in stark contrast to the rest of the world. Using figures reported in the World Bank's Poverty and Inequality Platform, there was an improvement in three of the five indicators on average in the rest of the world over the same period and in 3.8 indicators on average in the country that are most similar to PNG.[2]

Figure B1. Share of the Population that is Monetarily Poor or Has Poor Access to Essential Services
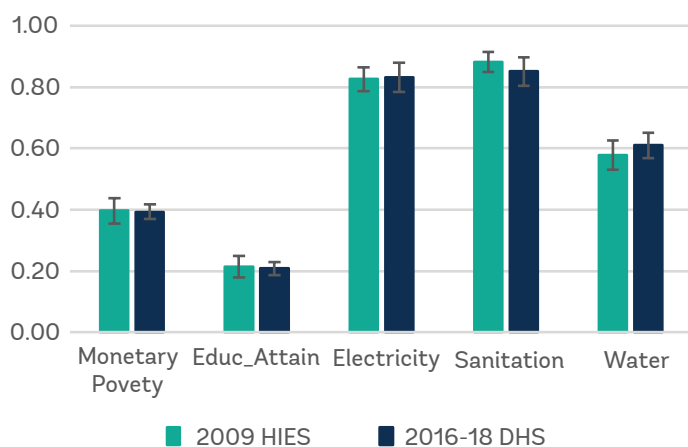
Notes: These figures compare the change in deprivations between the 2009 Household Income and Expenditure Survey and the 2016-2018 Demographic and Health Survey, and then compares these changes in Papua New Guinea to other countries reported in the World Bank's Poverty and Inequality Platform. The estimate of monetary poverty in the 2016-2018 DHS is imputed using non-monetary indicators and the relationship between monetary poverty and those indicators in the 2009 HIES.

[2]There are 93 countries that shared surveys with the World Bank's Poverty and Inequality Platform during the period that can be used to construct comparable indicators; and the other comparison region are the six countries with the most similar multidimensional poverty headcount in the pre-period using the World Bank's Multidimensional Poverty Measure. Improvement is defined as a reduction in deprivation by five percent or more.

I THE FISCAL TRAJECTORY FOR PAPUA NEW GUINEA HAS IMPROVED. (KALO FAINU/WORLD BANK).

1.2. Fiscal developments

9. **The budget deficit is estimated to have continued to decline in 2023 on the back of higher revenue collection.** The budget deficit is expected to have reached 4.4 percent of GDP in 2023, half of the level during the pandemic and in line with the authorities' medium-term budget repair strategy. The decline is attributed to the increase in revenue and grants, which exceeded the increase in expenditure. In 2023, total revenue and grants is expected to have grown by 10.1 percent. Meanwhile, the expenditure is projected to have increased by 3.9 percent compared to the previous year's outturn. This is partly due to budget increase as introduced in the supplementary budget, which is 3.1 percent higher than the original budget. It is important to note that a significant part of the deficit reduction in 2022-23 compared to 2020-21 was due to higher tax revenue from the resource sector.

Figure 9. Budget deficit in 2023 is estimated to be half of 2020, as revenue expanding.
(percent of GDP)
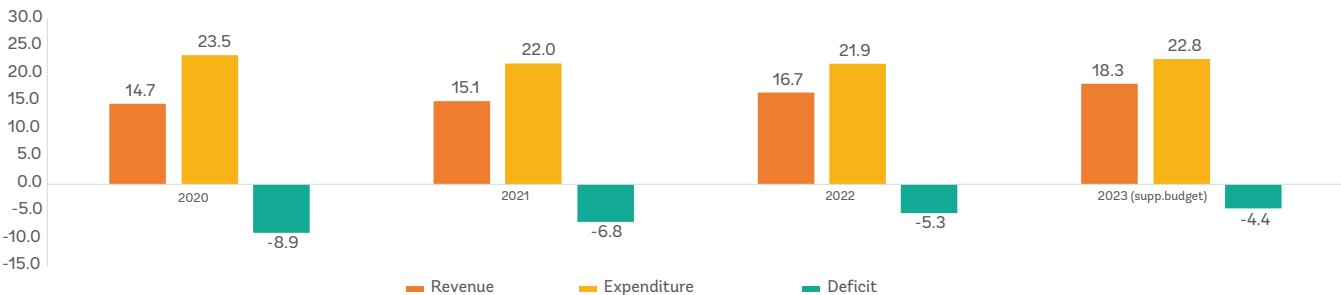
Source: Treasury Department of PNG and World Bank staff calculation
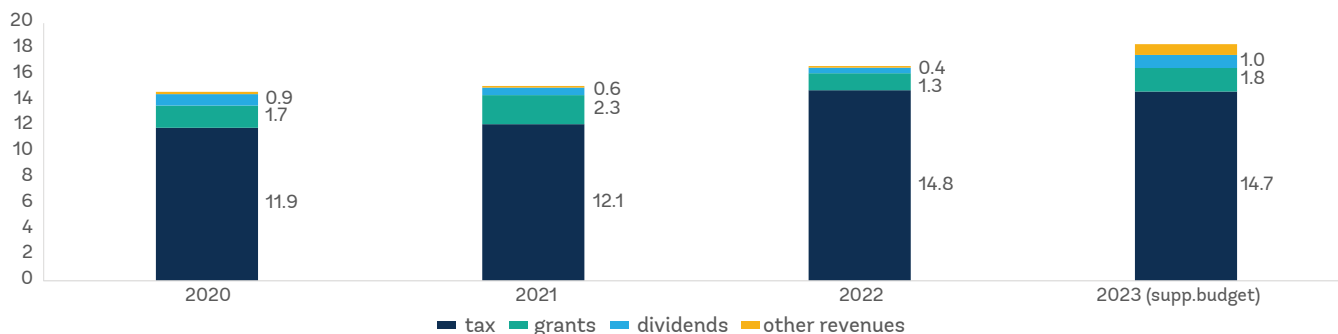
Source: Treasury Department of PNG and World Bank staff calculation

10.   **Higher revenue collection can be attributed to favourable commodity prices, improved corporate profits, higher employment, and wage growth.** Non-tax revenue in 2023 is expected to more than double from the previous year (Figure 10.). Dividend payments are expected to have been higher on the back of favourable commodity prices. However, the actual amount is uncertain due to the historically low execution of the planned dividend amounts. Additionally, the 2022 NTRA Act (Non-Tax Revenue Administration) has been effective since the third quarter of 2023 and resulted in higher revenue from Statutory Authorities and Agencies. Meanwhile, the overall tax collection in 2023 is estimated to fall slightly by 0.8 percent compared to previous year, or to reach 14.5 percent of GDP, but will remain the largest source of revenue. At this level, PNG's position is still below average Pacific Island countries (Figure 11). On the one hand, tax revenues from personal and corporate income taxes remain strong, reflecting positive economic growth, improved employment, and better tax compliance. However, the increase is still not enough to offset the loss revenues from Mining and Petroleum Taxes (MPT) and the Dividend Withholding Tax (DWT) due to the moderation of global oil prices and lower earnings after the one-off gain in 2022. As of June 2023, actual revenue collection reached 35.8 percent of the estimated revenue for the year. For the first six months tax collection was still on track, yet non-tax revenue was far behind.

11.   **The government allocated additional spending in the 2023 Supplementary Budget, as higher revenues were expected.** The added budget funds were mainly used for operating expenditure, such as goods and services expenditure to pay rents, utilities, and government arears as well as to cover the projected overrun in interest costs. Meanwhile, the capital expenditure remained unchanged (Figure 12). In response to the cost-of-living pressures, government provided support through the Household Assistance Package, amounting to 0.5 percent of GDP or 2.3 percent of the total expenditure in the supplementary budget. For the first half of 2023, government spending grew marginally by 1 percent year-on-year, or 40.1 percent of the total supplementary budget. Some of the executed spending included the frontloading fund for urgent priority expenditures like Government Tuition Fee Subsidy (GTFS) program and some critical capital investment programs, as well as interest spending. Meanwhile, the disbursement of Government employee compensation was still on track, although the risk of overruns persists.

Figure 11. PNG's tax revenue is still relatively low in comparison to its peers.
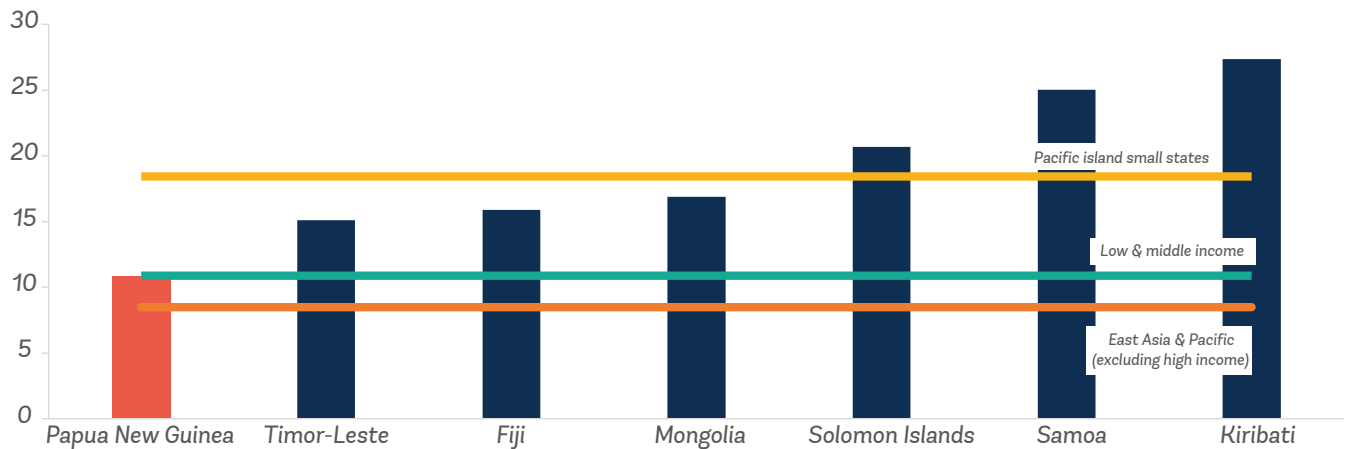
Source: World Development Indicators, World Bank

Figure 12. Additional spending is allocated for recurrent spending.
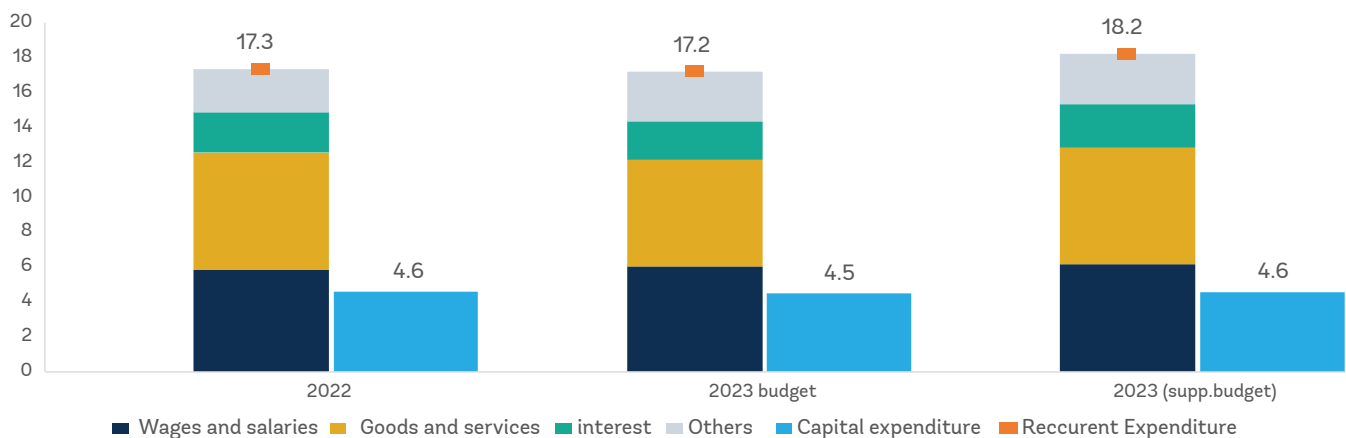
Source: Treasury Department of PNG and World Bank staff calculation

Table 2: Main Fiscal Indicators

(Percent of GDP)	2020	2021	2022	2023e
Total government revenue	14.7	15	16.7	18.2
o/w Tax revenue	11.9	12.1	14.8	14.5
Resource tax revenue	0.2	0.7	3.6	2.7
Non-resource tax revenue	11.7	11.4	11.2	11.8
o/w Grants	1.7	2.3	1.3	1.8
Government expenditure	23.5	21.8	22	22.6
Expense	19.3	17.9	18	18.5
o/w Wages and salaries	7.1	6.6	5.8	6.1
o/w Interest	2.6	2.4	2.3	2.5
Net acquisition of non-financial assets	4.2	3.9	4.0	4.1
Primary balance	-6.2	-4.4	-3	-1.9
Net lending/borrowing	-8.8	-6.8	-5.3	-4.4

HIGHER FOOD, BETEL NUT, AND TRANSPORT PRICES WERE THE MAJOR DRIVERS OF CONSUMER INFLATION. (TOM PERRY/WORLD BANK).

1.3. Monetary policy and price developments

12.   **Inflationary pressure has been low in 2023 albeit building slowly since the third quarter.** Headline inflation fell steadily from 6.3 percent in 2022Q3 to 1.4 percent in 2023Q2, year-on-year, while increasing to 2.2 percent in the next quarter and further to 3.9 percent in the last quarter of 2023 (Figure 13). Core (underlying) inflation followed a declining trend during this period and stood at 0.7 percent in 2023Q4, 3.9 percentage points lower than in the same quarter of 2022. The average headline inflation in 2023 was 2.3 percent compared to 5.3 percent in 2022. Gradual easing of food inflation and a sharp drop in the education expenditure had significant contributions to the low inflation episode in 2023. However, the recent rise in inflation was largely driven by higher prices of seasonal items, including betelnut, which increased by 13.2 percent, year-on-year. Food and betelnut continued to be the major determinants of headline inflation in 2023 with a relatively smaller contribution from the transport sector. The Government Tuition Fee Subsidy (GTFS) introduced in 2020 under the 'leaving no child behind' policy had a large impact on the education expenditure since early 2022 when parents needed to pay 38 percent of the education fees. Education inflation fell by 23 percent in 2023Q4 which dragged headline inflation by 1.1 percentage points.

Figure 13. Inflation was low in 2023 albeit rising since the third quarter. *(Percent)*
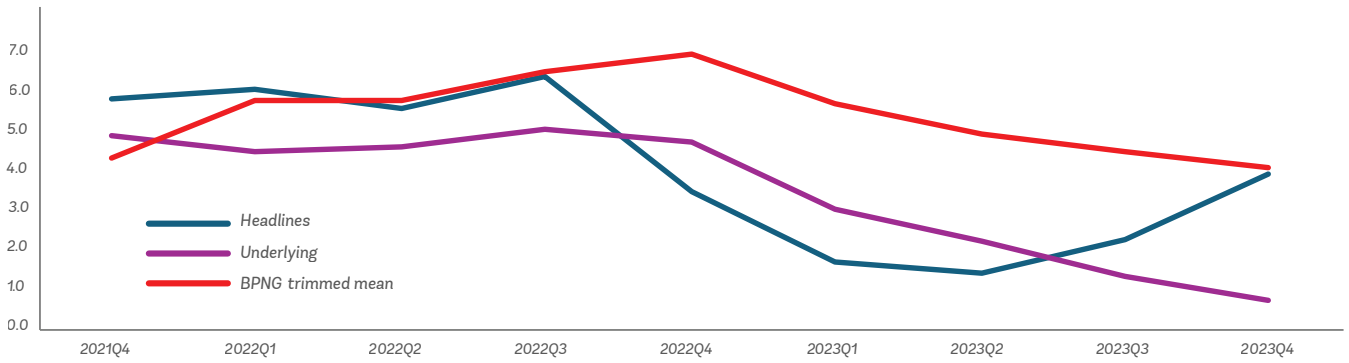
Source: National Statistical Office (NSO).

Figure 14. Falling education expenditure helped achieve low inflation in 2023. *(Contribution to headline inflation, percent, year-on-year)*
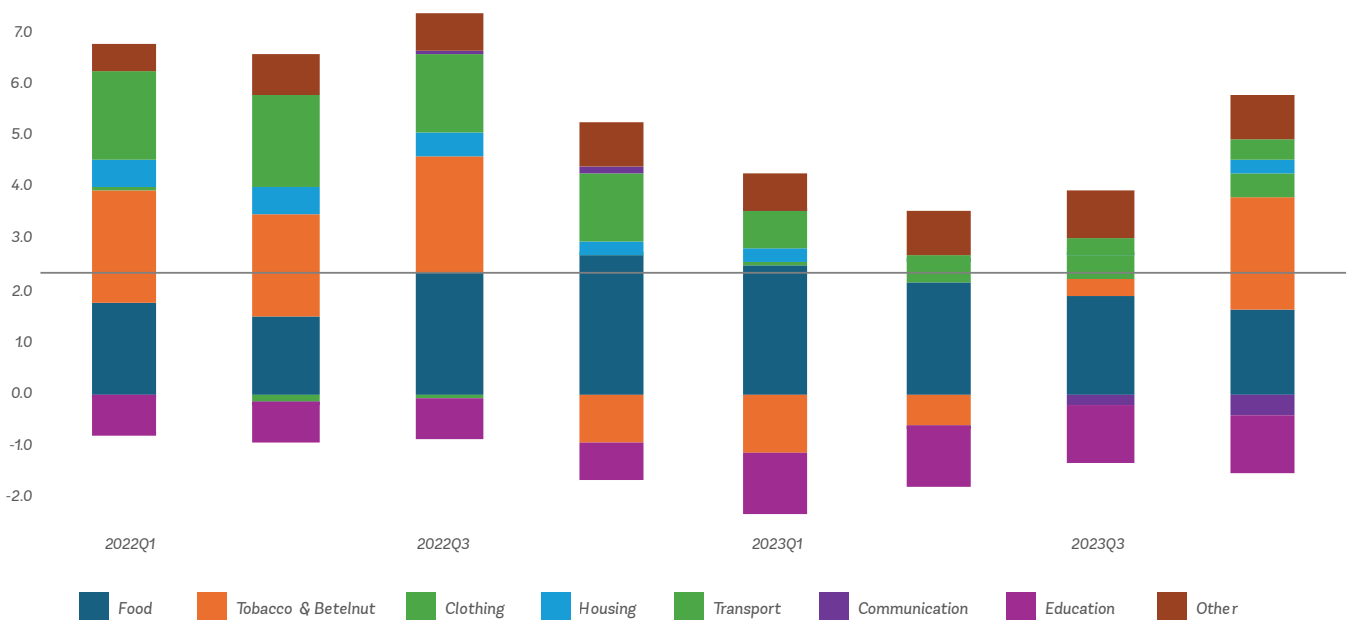
Source: NSO.

13. **Low partner inflation and stable global commodity prices helped maintain a low inflation in 2023.** PNG's major import partners experienced a relatively slower pace of inflation in 2023 (Figure 15). For example, inflation is Australia fell from 7.8 percent in 2022Q4 to 4.1 percent in 2023Q4, year-on-year. During the same period, U.S. inflation more than halved while Chinese consumer prices declined. Concurrently, global commodity prices remained relatively stable throughout 2023 (Figure 16). Average global energy and food prices in 2023 were 29.9 percent and 9.2 percent lower respectively. Overall, PNG witnessed relatively lower import prices in 2023 which resulted in a lower imported inflation.

Figure 15. Inflation fell in most of the import partners. *(Year-on-year, percent)*

Legend: Australia, Singapo re, USA, Hong Kong SAR, China, China
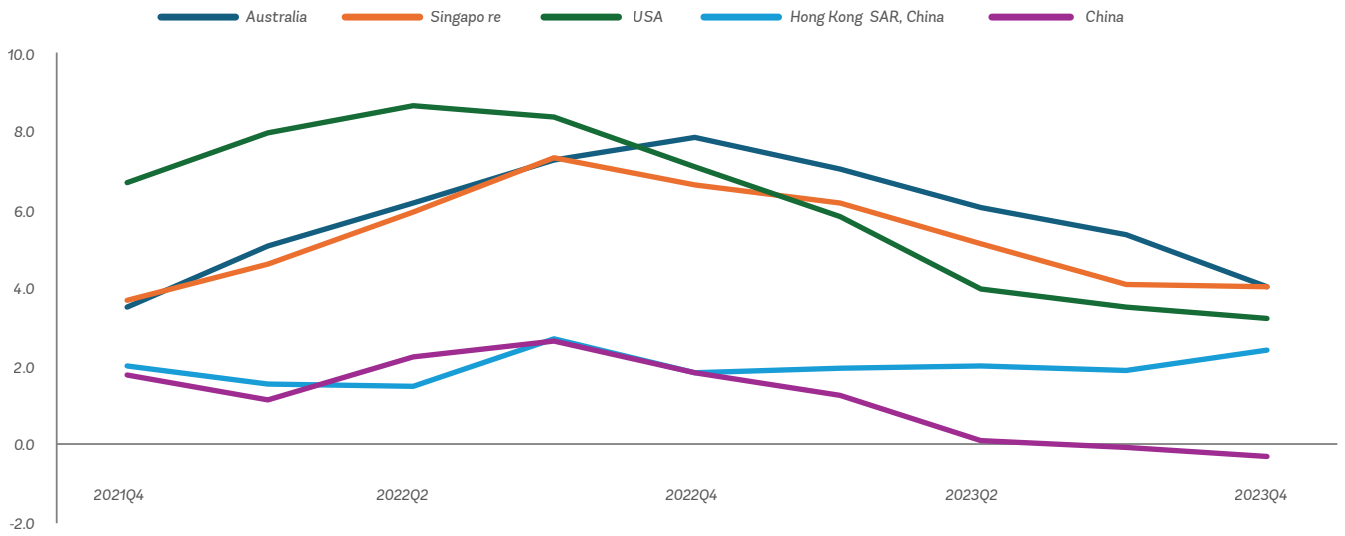
Source: International Financial Statistics, IMF (April 2024).

Figure 16. Global commodity prices were stable in 2023. *(Index, 2010M01=100)*

Legend: Energy, Food, Raw ma terials, Fertilizers
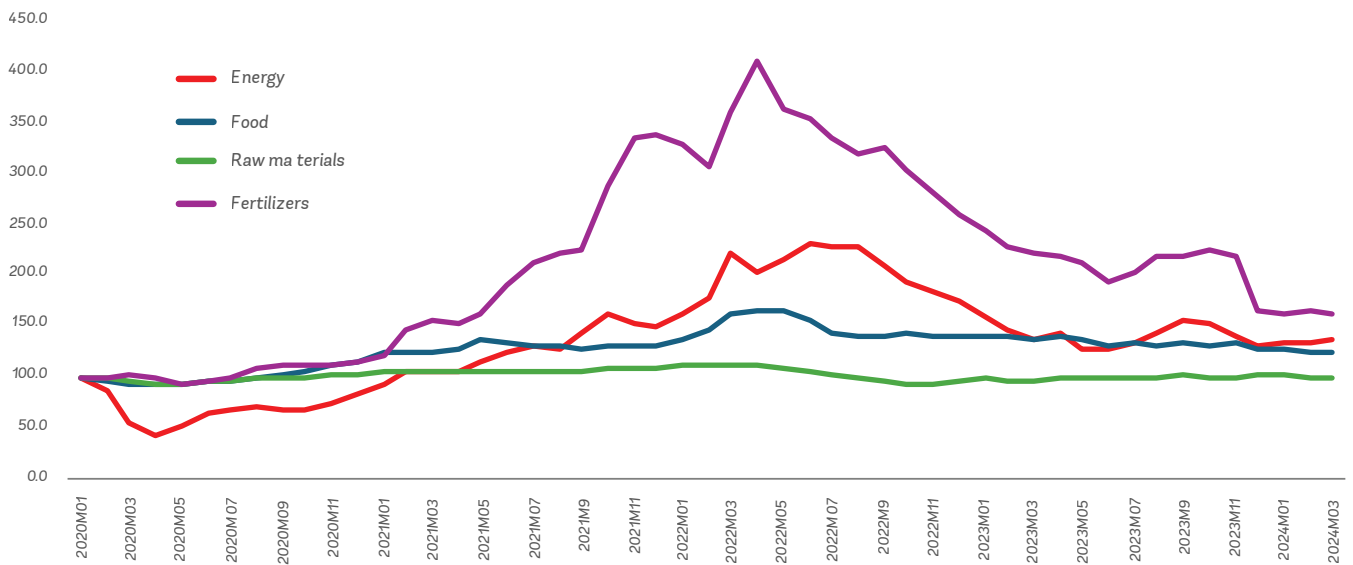
Source: World Bank "Pink Sheet" (April 2024).

While low inflationary pressure widened space for an expansionary monetary policy, the central bank forecasts higher inflation in 2024 and intends to tighten its policy. The central bank of Papua New Guinea (BPNG) reduced its policy rate, the Kina Facility Rate (KFR) three times since August 2023, cumulatively by 100 basis points in the second half of 2023, and further by 25 basis points in the first quarter of 2024. Following more than a-year of tightening stance during the post COVID-19 period (July 2022-August 2023), BPNG reduced KFR to 3.0 percent in September 2023, to 2.5 percent in November 2023, and further to 2 percent in February 2024 from 3.5 percent in August 2023. The policy rate cut was part of BPNG's commitment toward aligning the interest rate to its newly introduced 7-day Central Bank Bill (starting at 2 percent) to the KFR under the IMF program commenced in March 2023. The aim of the policy rate cut was to improve liquidity management and transmission of the policy rate to the market interest rates (BPNG 2023). However, commercial banks' indicator lending rates remained unchanged in 2023. Moreover, the central bank policy rate remained relatively flat in PNG compared its peers reflecting a weak response to inflation (Figure 17). Notably, PNG's inflation dynamics in 2023 was different from its peers

which showed an upward trend (Figure 18). In its latest monetary policy statement (BPNG 2024), the central bank has expressed intention to tighten monetary policy over the next six months to tackle the recent rise in inflation and future inflationary pressure arising from exchange rate adjustments. The tighter monetary policy would be implemented through a combination of higher policy rates (including KFR and cash reserve ratio) and issuance of longer-term central bank bills.

Figure 17. Policy rates in PNG and its peers. *(Central bank policy rates, percent)*
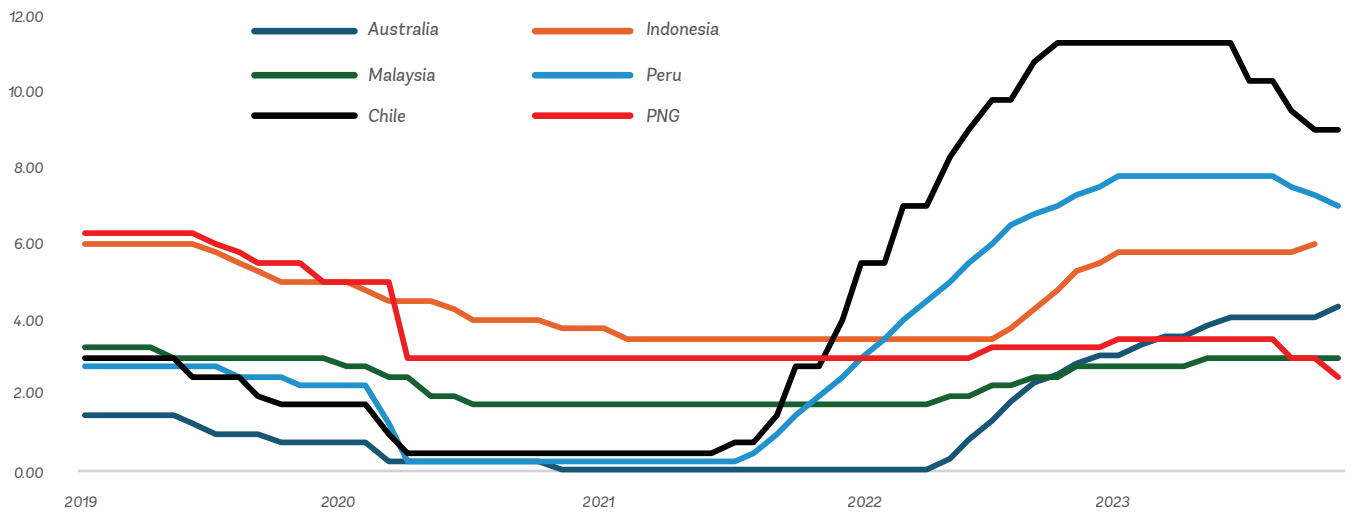
Source: Central bank of respective countries.

Figure 18. Inflation in PNG and its peers. *(Inflation, year-on-year)*
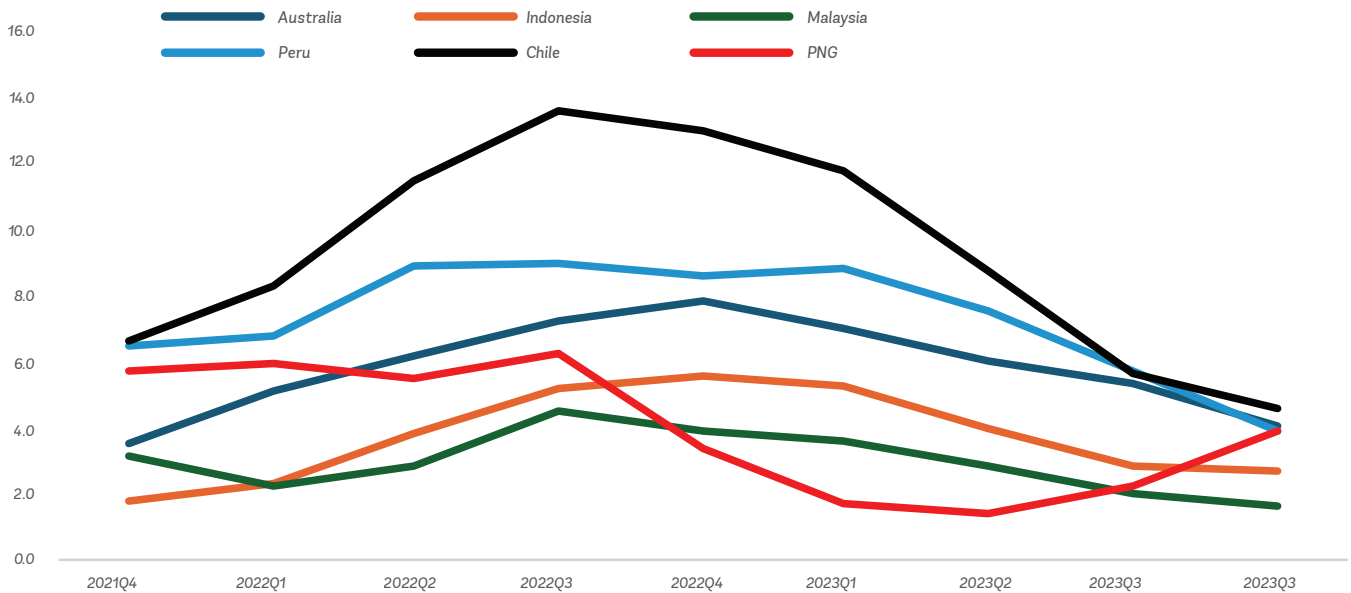
Source: International Financial Statistics, IMF, November 2023).

14.   **The ease of money supply growth in the second half 2023 was driven by a lower government borrowing.** BPNG's tightened monetary policy in response to higher inflation during the second half of 2022 and the first half of 2023 resulted in a lower growth of money supply. The growth in broad money supply was 10.8 percent in 2023Q3 compared to 18 percent in 2022Q3 (Figure 19). The slowdown in the money supply resulted from a lower government borrowing (net claims on central government) which recorded a negative growth for four consecutive quarters since 2022Q3, rising only slowly to 5.5 percent in 2023Q3. Net foreign assets increased in the first half of 2023, year-on-year, and were the main contributor to the overall money supply. Claims on the private sector also rose sharply during this period and contributed significantly to money supply growth. The impact of monetary easing in the second half of 2023 is yet to be seen as the monetary aggregates data are not available.

Figure 19. Broad money supply and its determinants. *(Year-on-year growth and sectoral contributions, percent)*
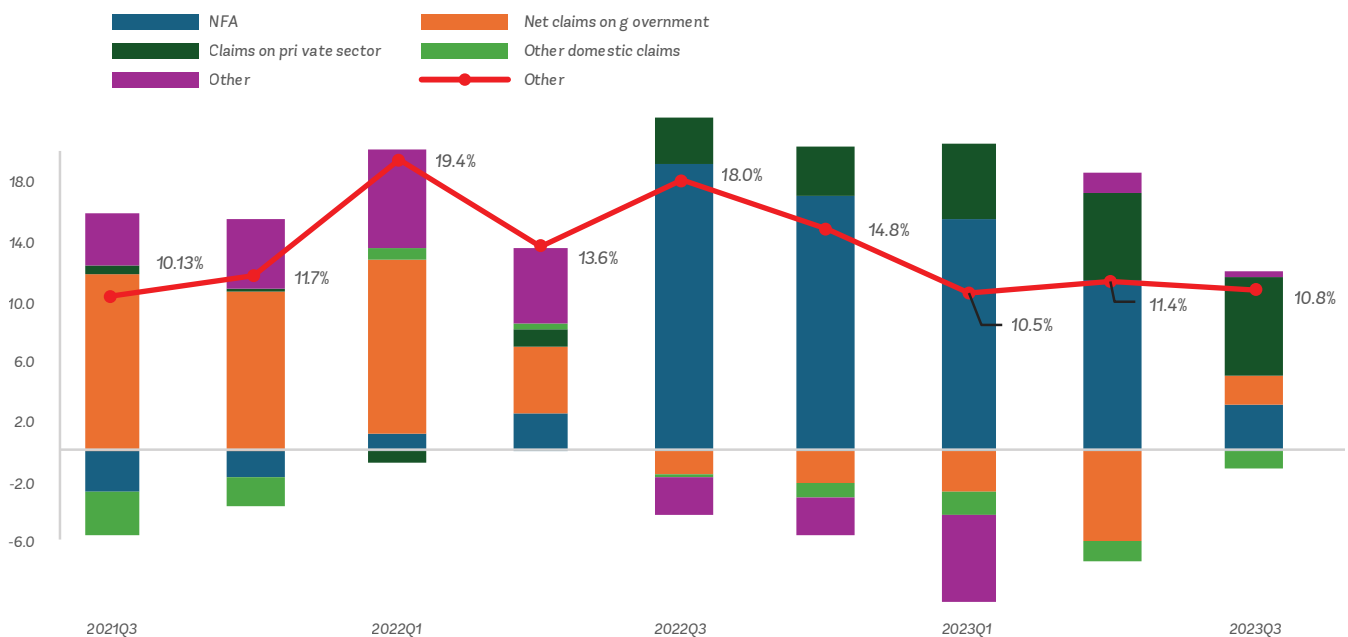
Source: Bank of Papua New Guinea.

Figure 20. Commercial banks' holding of liquid assets. *(Kina, millions)*
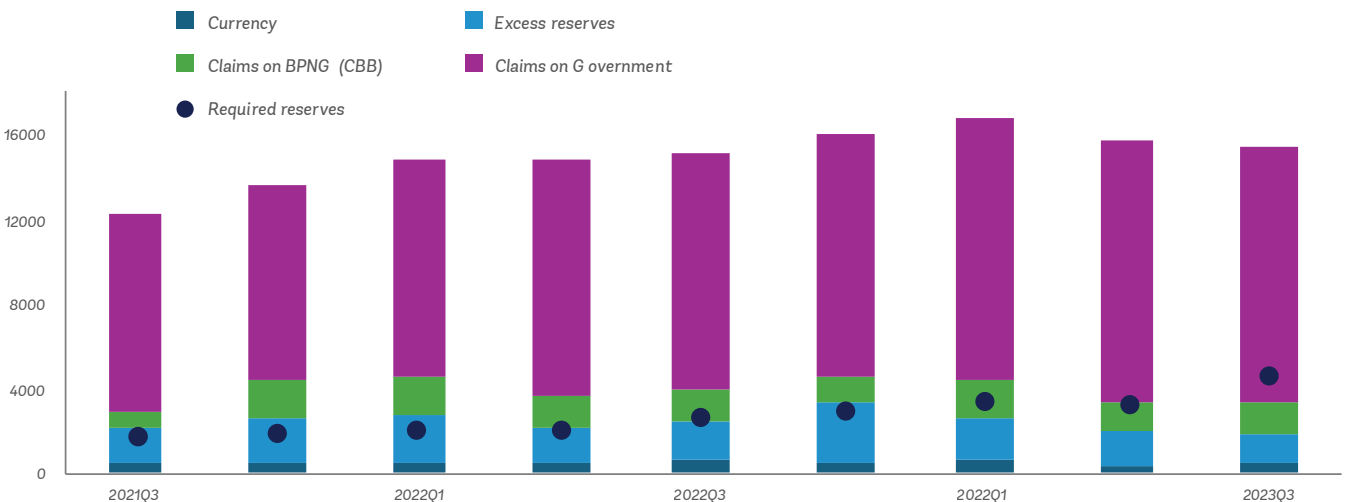
Source: Bank of Papua New Guinea.

15. **The central bank modernized its monetary policy operations to deal with the financial sector liquidity.** Excess liquidity in the financial sector restrains the effective operations of monetary policy. Commercial banks' holding of liquid assets stood at Kina 15.5 billion in 2023Q3, Kina 374 million higher than in the same quarter of 2022 (Figure 20). Banking sector liquidity continued to be driven by government borrowing which constituted two-third of the overall liquidity. To deal with this, the BPNG introduced a 7-day Central Bank Bill (with cessation of the 28-day Central Bank Bill) in August 2023 under the fixed rate full allotment (FRFA) auction, mopping up Kina 1.9 billion (~ US$ 529 million) of excess liquidity (IMF 2023). Further, the central bank raised the cash reserve requirement (CRR) cumulatively by 300 basis points in the last quarter of 2022 and kept it unchanged at 10 percent to date. The policy rate cuts during the second half of 2023 and the first quarter of 2024 were in contrast to the de facto liquidity tightening, providing an inconsistent signal to the monetary policy stance. However, the central bank's recent announcement of monetary tightening and the alignment of the fixed rate with the KFR at 2.0 percent in February 2024 is a positive move towards improving the effectiveness of monetary policy and liquidity management (BPNG 2023b). Further, BPNG's statutory objective is expected to be revised in 2024 under the IMF-supported reform program, restoring price stability as the primary goal of monetary policy (BPNG 2024). Notably, BPNG has started reporting the summary of its Board meeting (held immediately before the issuance of MPS) in its March 2024 Monetary Policy Statement and intends to continue the same in future under Section 11(2) of the Central Banking Act (amended in 2021).

16. **Commercial credit increased in the first half of 2023 and went mostly to the extractive sector, particularly, to mining.** The outstanding advances of the commercial banks increased by 9.6 percent in 2023Q3, year-on-year, compared to 6.1 percent in 2022Q2 (Figure 21). The higher growth reflects rebound in the business activity and private sector employment since the reopening of the PNG economy in 2022 (BPNG2023a). Most private sectors contributed positively to the overall credit growth except the commerce and construction sector (Figure 22). The higher growth resulted mainly from 21 percent growth in advances to the extractive sector, and 17 percent growth in personal loans. Conversely, credit to the government fell by 32 percent, year-on-year. Notably, credit to the agriculture sector more than tripled and contributed 2.5 percent to the overall credit growth in 2023Q3.

Figure 21. Outstanding Commercial Banks' Advances. *(Million Kina [bars] and year-on-year growth rates [line])*
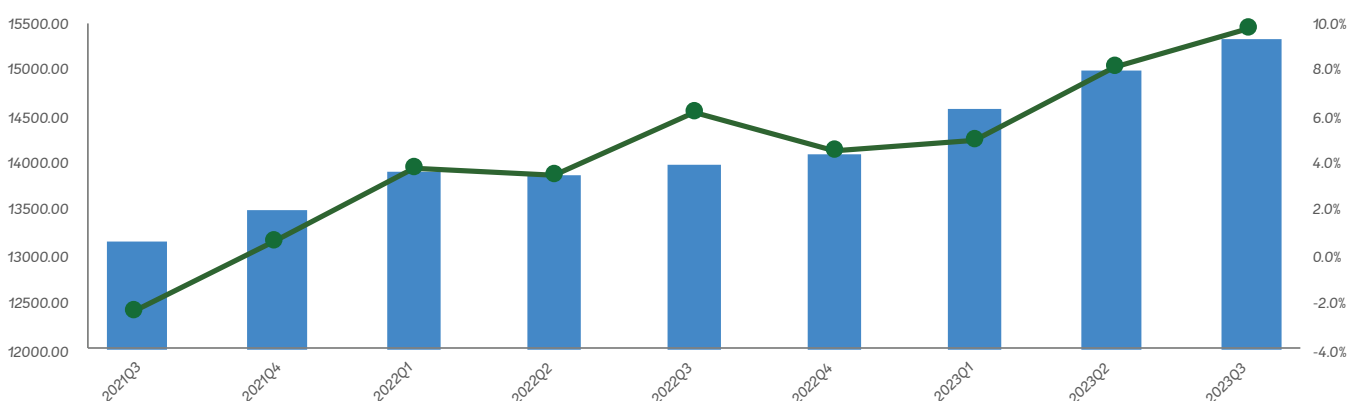
Source: Bank of Papua New Guinea.

Figure 22. Sectoral contributions to 2023 Q3 credit. *(year-on-year growth, percent)*
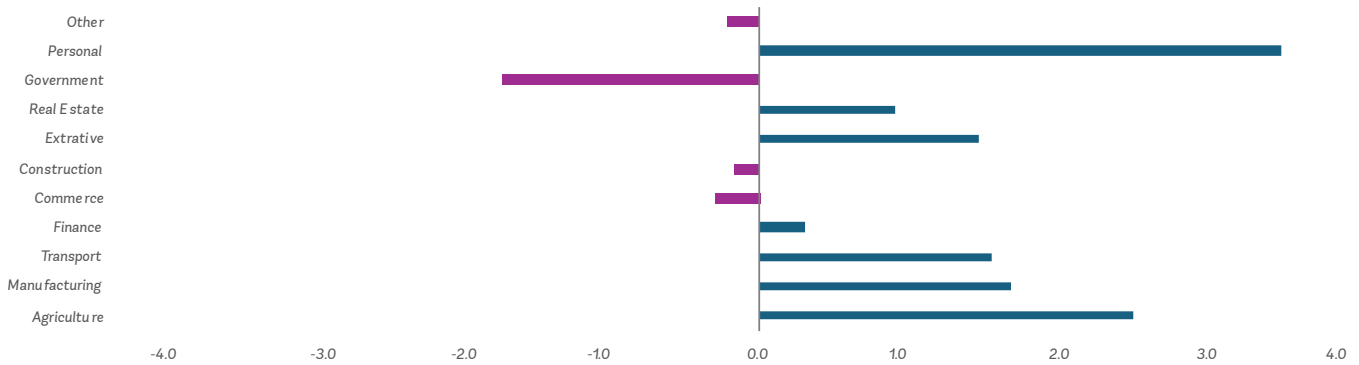
Source: Bank of Papua New Guinea.

17. **The financial sector remains liquid, well-capitalized, and profitable.** The financial sector of PNG performed well in the first half of 2023 and non-performing loans declined from 6.3 percent in 2022Q2 to 5.2 percent in 2023Q2 (Figure 23). The banking sector maintained adequate capital; however, regulatory capital in terms of the risk-weighted assets fell below 40 percent in the recent quarters (Figure 24). Commercial banks reported profit in 2022 and the first half of 2023. The Bank of South Pacific (BSP), the largest commercial bank in PNG, reported an operating profit of Kina 1.2 billion (~US$ 342 million) for the first three quarters of 2023, which is 3.3 percent higher, year-on-year, compared to 2022. Another major bank, the Kina Bank, reported a net profit of Kina 46.6 million (~US$ 13 million) for the first half of 2023 which is 2.2 percent higher than in the first half of 2022. Both banks attributed their profits to the post-COVID economic recovery and the associated higher credit demand.

Figure 23. Non-performing Loans. *(Non-performing loans to gross loans, percent)*
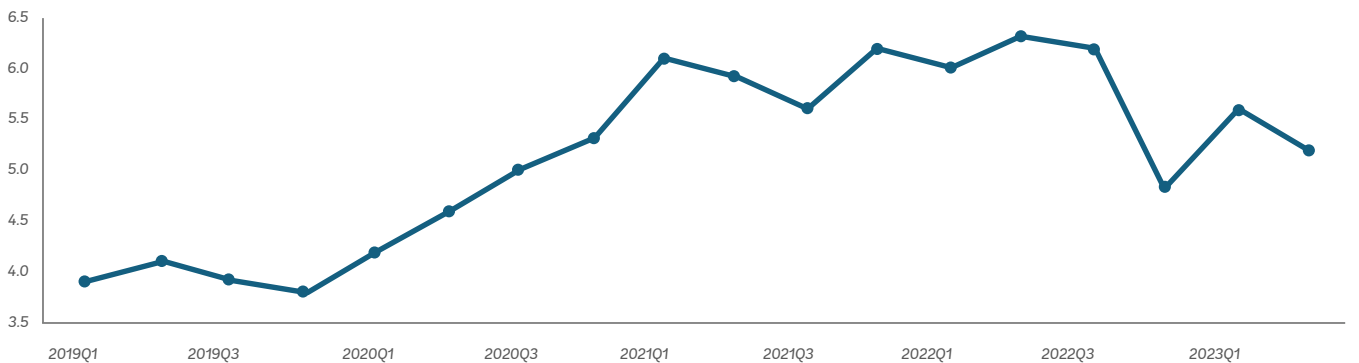
Source: Bank of Papua New Guinea.

Figure 23. Non-performing Loans. *(Non-performing loans to gross loans, percent)*

Source: Bank of Papua New Guinea.

Table 3: Selected monetary and price indicators

(Percent of GDP)	2017	2018	2019	2020	2021	2022	2023 Jan-Jun
Broad money growth	-0.7	-3.9	4.4	7.0	11.8	14.1	11.4
Reserve money growth	-16.6	-1.9	12.4	2.2	10.8	29.5	20.3
Domestic credit growth	0.1	-6.8	5.1	2.3	9.3	0.3	-1.5
Growth of credit to the private sector	-3.6	7.1	4.0	4.3	0.4	4.7	12.7
Inflation, period-average	5.4	4.4	3.9	4.9	4.5	5.3	1.5
Inflation, end-of-period	4.7	4.8	2.7	5.1	5.7	3.4	1.4
Kina facility rate, period average	6.25	6.25	5.90	3.50	3.00	3.10	3.23
Interest rate on 28-day CBB, period average	1.30	1.40	1.39	1.37	1.31	1.41	2.17
Interest rate on 182-day T-bills, period average	4.73	4.71	4.68	4.63	4.35	1.97	2.12
Deposit rate, weighted average, period average	0.52	0.68	0.88	0.92	0.45	0.25	0.32
Lending rate, weighted average, period average	8.39	9.10	8.68	7.75	7.64	7.99	8.32

Source: Official historical data.

A LARGE TRADE SURPLUS RESULTED BOTH FROM THE HIGHER COMMODITY PRICE-DRIVEN EXPORTS AND FROM A SLOWDOWN IN IMPORTS. (TOM PERRY/WORLD BANK).

1.4. External sector

18.   **The current account balance improved in 2022 and continued in the first half of 2023.** The central bank has shifted from BPM5 to BPM6 in reporting the balance of payments (BOP) data. The BOP data from 2015 onwards is now available in the new format at the BPNG website (see Box 3 for details). According to the new reporting system, the surplus in the current account (CA) rose to US$ 3.3 billion in the first half 2023, US$ 1.5 billion higher than in the first half of 2022 (Figure 25). The higher CA surplus resulted mostly from a wider trade surplus of US$ 5.0 billion in 2023H1 compared to US$ 3.8 billion in 2022H1, reflecting weaker imports and favourable export commodity prices. Conversely, the financial account (FA) balance narrowed by US$ 333 million in the first half 2023, year-on-year, mainly due to a lower net direct and other investments (Figure 26). The FA balance in 2023H1 was US$ 3.2 billion comprising net direct investment of US$ 510 million and net other investment of US$ 3.1 billion.

Figure 25. Current account balance and compositions. *(Million US$)*
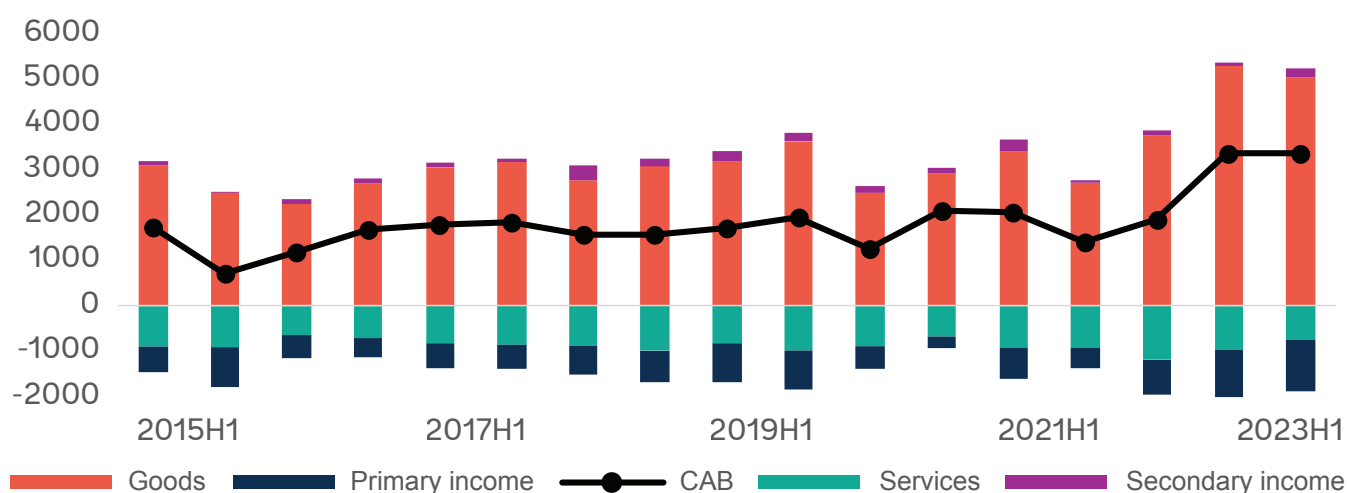
Source: Bank of Papua New Guinea.

Figure 26. Financial account balance and compositions. *(Million US$)*
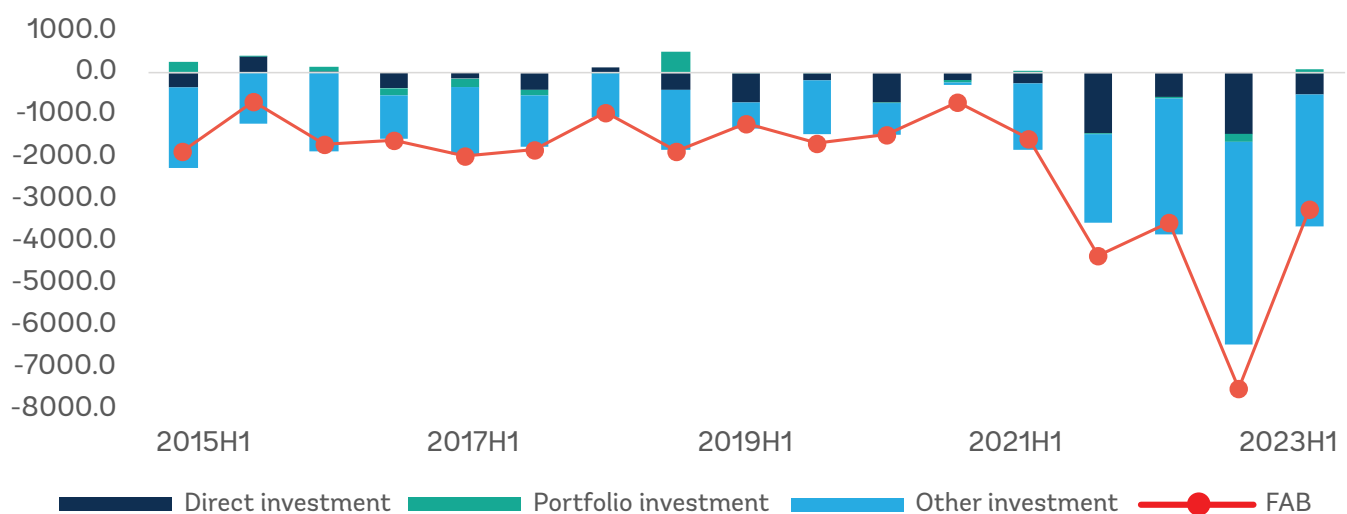
Source: Bank of Papua New Guinea.

Box 3. Adoption of BPM6 reporting system and major changes

In September 2023, the central bank of Papua New Guinea (BPNG) published the balance of payments data from 2015 onwards following the sixth edition of the Balance of Payments and International Investment Position Manual (BPM6) of the International Monetary Fund (IMF). The new reporting system covers a wider range of international transactions reflecting greater cross-border activities and financial flows. For the period 2015-2021, the current account balance is reported as US$ 1.95 billion (8.5% of GDP) lower in BPM6, on average (see Figure B1). The financial account balance is also reported as US$ 1.38 billion (6.3% of GDP) lower, on average, during this period.

Figure B1. Current and Financial Account balance in the old (BPM5) and new (BPM6) reporting system.
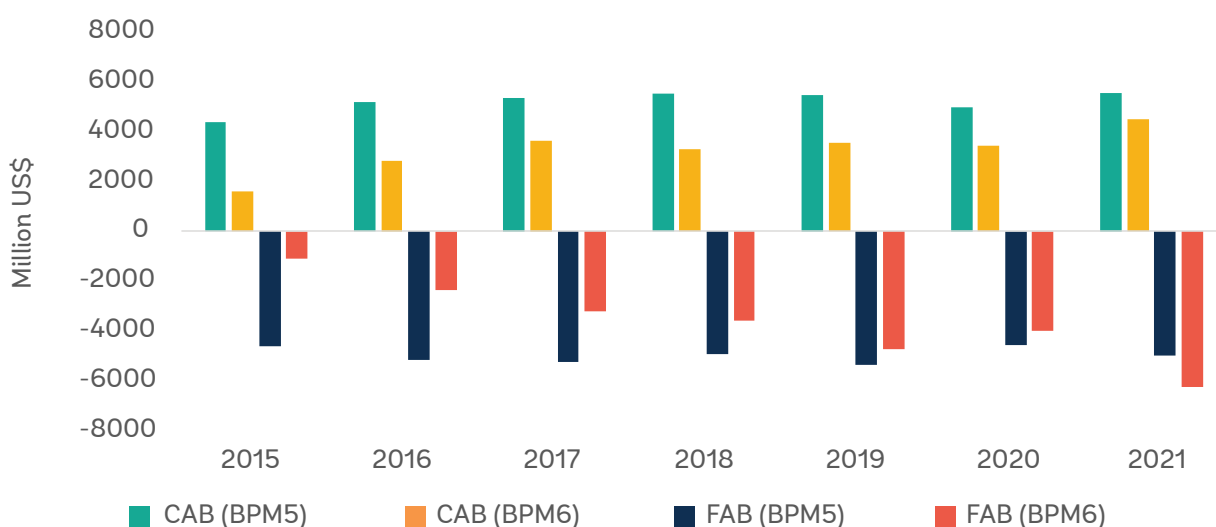
Source: Bank of Papua New Guinea

The BPM6 reporting system takes into account the discrepancies arising from the PNG LNG exports which commenced in the late 2014. As a significant portion of LNG export proceeds are allowed to be kept offshore under the project development agreements between the government and the project developer, it was previously reported in 'other investment' under the financial account. This is now reflected in the BMP6 reporting system under 'Net errors and Omissions'. The transactions relating to the PNG LNG sector contributes mostly to the differences in the figures reported in the BPM5 and BPM6 reporting system (Figure B2). Other major changes include reclassifications, sign conventions, and terminology. A detailed explanation of the changes in the BOP reporting system is available at the BPNG website[3] (see BPNG Quarterly Economic Bulletin, September 2022).

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[3]Available at September-2022-Quarterly-Economic-Bulletin-QEB.pdf (bankpng.gov.pg)

Figure B2. Contributions of the PNG-LNG related transactions in the difference between BPM5 and BPM6, average of 2015-2021.
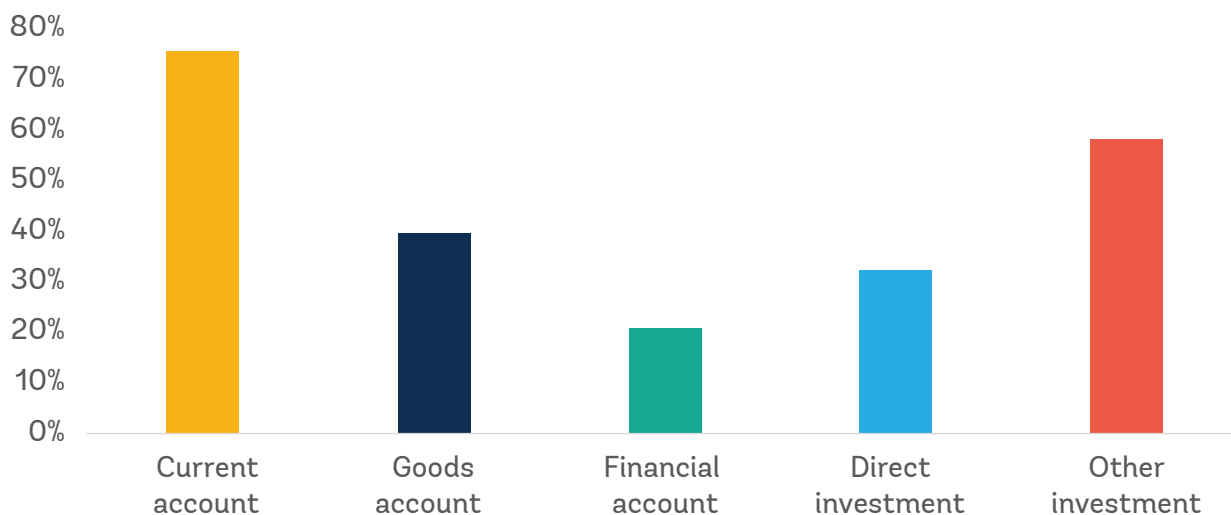
Source: Bank of Papua New Guinea

19. **Exports declined sharply in the first half of 2023, driven by the agriculture and energy sector.** Following a buoyant performance in 2022, exports fell during the first six months of 2023. Total export growth in the first half of 2023 was negative 8 percent, year-on-year, reflecting a fall from a higher base in 2022 (Figure 27). PNG had a record export of US$ 14.3 billion in 2022, driven by favourable international commodity prices and better performance of the agriculture and extractive sector. However, total export receipts in 2023H1 was US$ 6.3 billion compared to US$ 6.8 billion during the same period of 2022. Export slowdown was driven by 30 percent and 9 percent lower exports in the agriculture and energy sector, respectively. Conversely, mining exports were 11 percent higher during this period. Commodity-wise, palm oil had the largest contribution to the export slowdown which fell by 45 percent in 2023H1, year-on-year (Figure 28). On the contrary, coffee exports rebounded strongly in 2023 following more than a year of negative growth. Exports of crude oil and liquified natural gas (LNG) fell by 26 percent and 3 percent, respectively, approaching gradually to their normal levels.

Figure 27. Export composition and growth rate. *(Million US$ and y-o-y growth rate)*
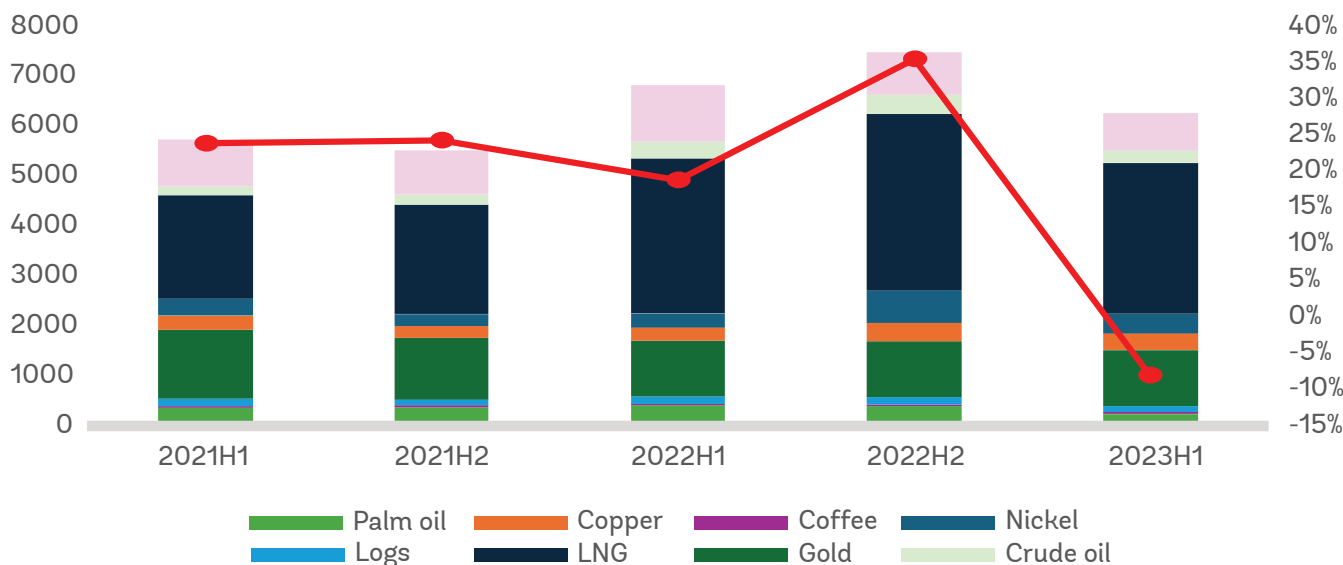
Source: Bank of Papua New Guinea.

Figure 28. Sectoral contributions to export growth. *(Percent)*
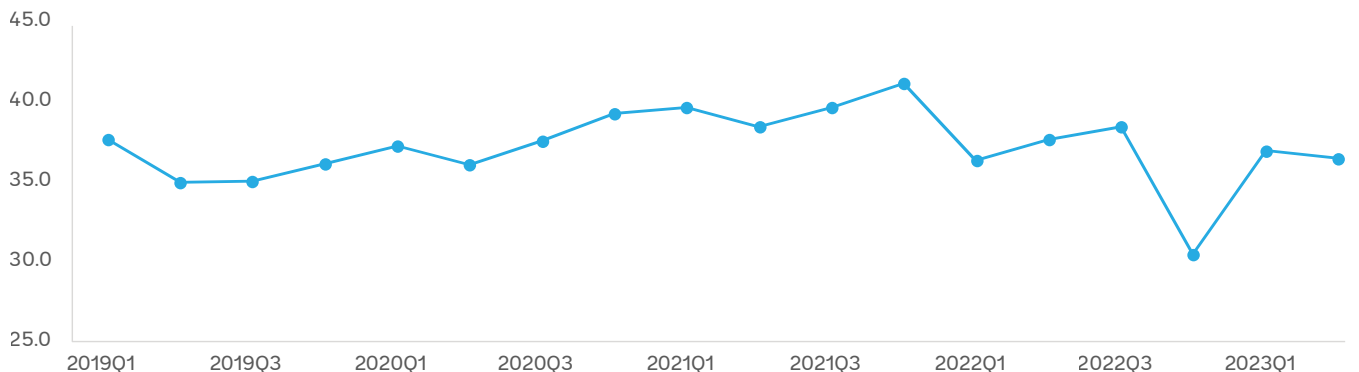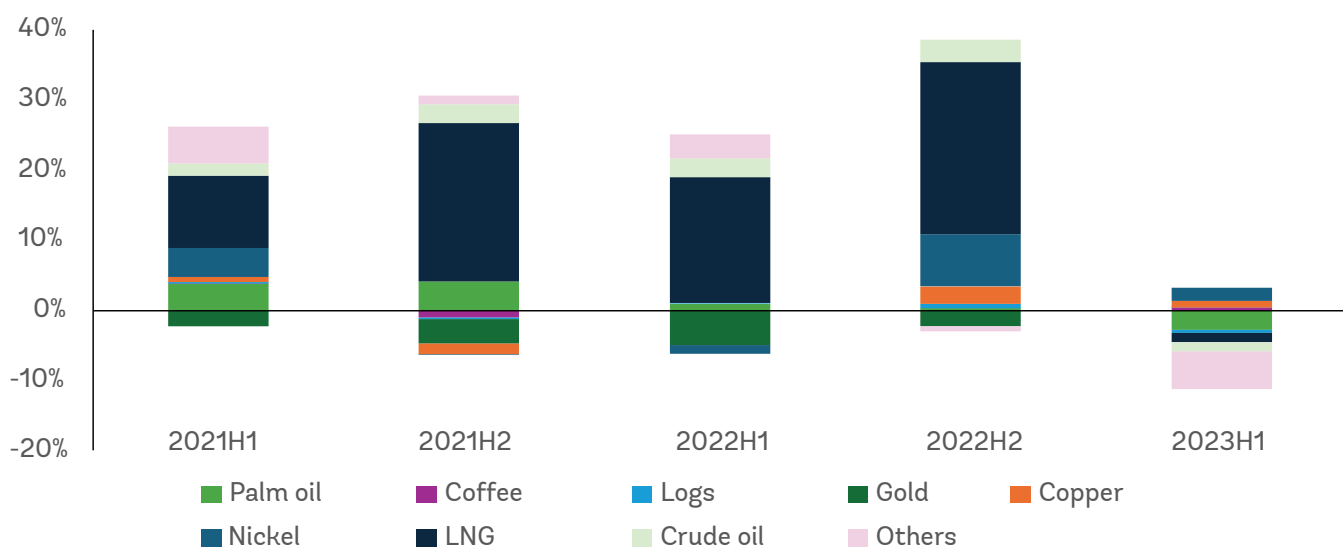

Source: Bank of Papua New Guinea.

20.   **The windfall from high commodity prices decelerated in the first half of 2023 accompanied by a lower volume of extractive exports.** PNG benefited significantly from the higher international commodity prices that prevailed during 2021-2022. However, with the gradual easing of global commodity prices, the windfall began to shrink from the second half of 2022. The total export price index was 5.4 percent lower in 2023Q2, year-on-year, while the price index of the non-extractive export fell by 23 percent (Figure 29). Notably, average international LNG prices was 23 percent lower in 2023 compared to 2022 (see World Bank 'Pink Sheet', April 2024[4]). Falling export prices were accompanied by a lower export volume which fell by 16 percent in 2023Q2, year-on-year (Figure 30). Both extractive and non-extractive export volume declined, by 17 percent and 9 percent, respectively. Most of the agricultural commodities had a lower quantity of exports except coffee, which increased by more than 50 percent in 2023Q2.

Figure 29. Export price index. *(Index, 2020Q1=100)*
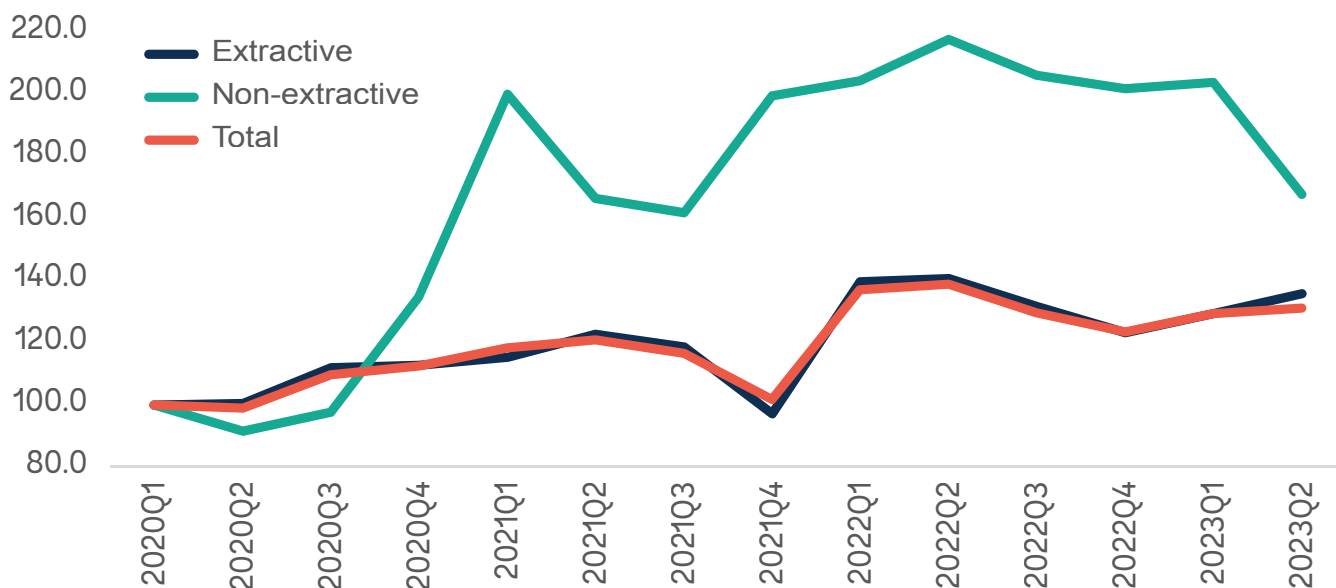
Source: Bank of Papua New Guinea.

Figure 30. Export volume index. *(Index, 2019H1=100)*
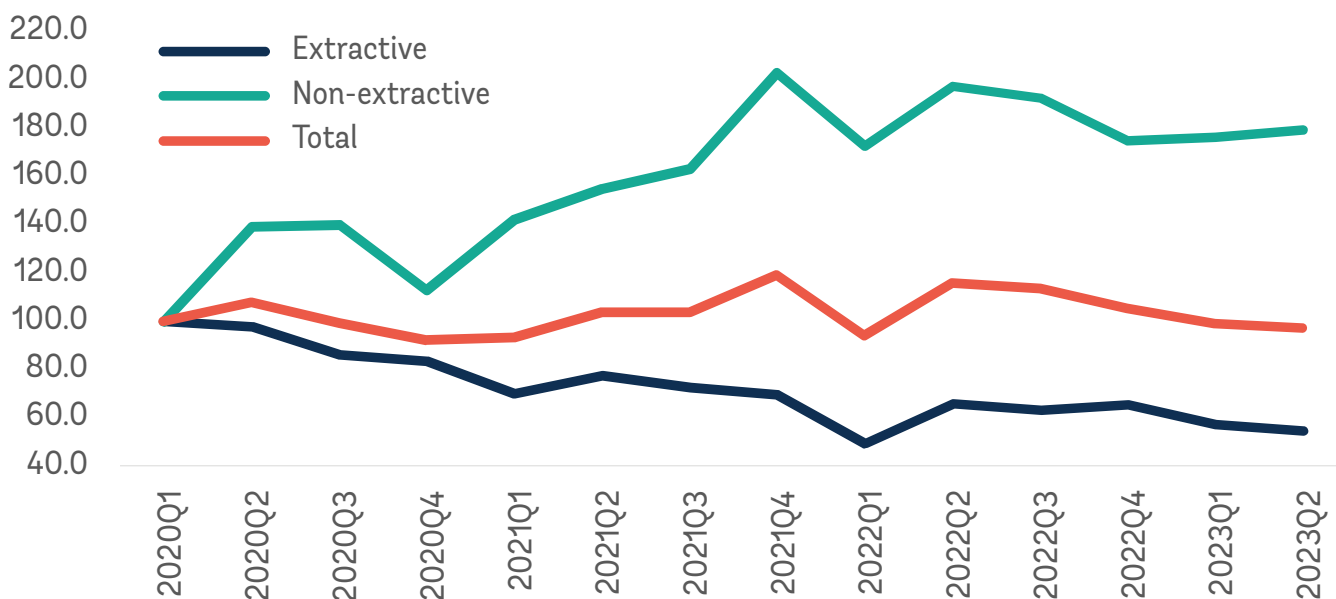
Source: Bank of Papua New Guinea.

21. **Import slowdown continued in the first half of 2023 led by lower food, manufacturing, and capital machinery imports.** Imports are on a sustained fall with progressively negative growth since the second half of 2022. Total imports in the first half of 2023 were US$ 1.3 billion, 58.4 percent lower, year-on year, reflecting lower imports of all major categories (Figure 31). Food and manufacturing imports were respectively 93 percent and 67 percent lower in 2023H1, year-on-year. Most importantly, imports of machinery and transport fell for consecutive six quarters since early 2022. All sectors contributed to the import slowdown in 2023H1 with the largest contributions coming from manufacturing, food, and machinery (Figure 32).

Figure 31. Import composition. *(Million US$)*
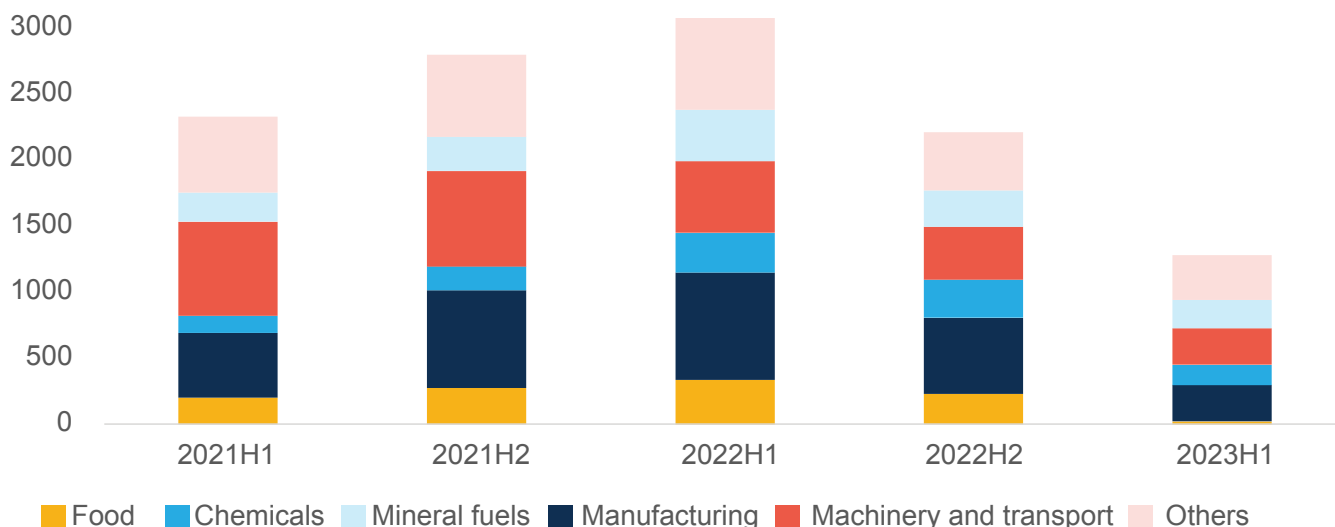
Source: Bank of Papua New Guinea.

Figure 32. Contributions to import growth. *(year-on-year)*
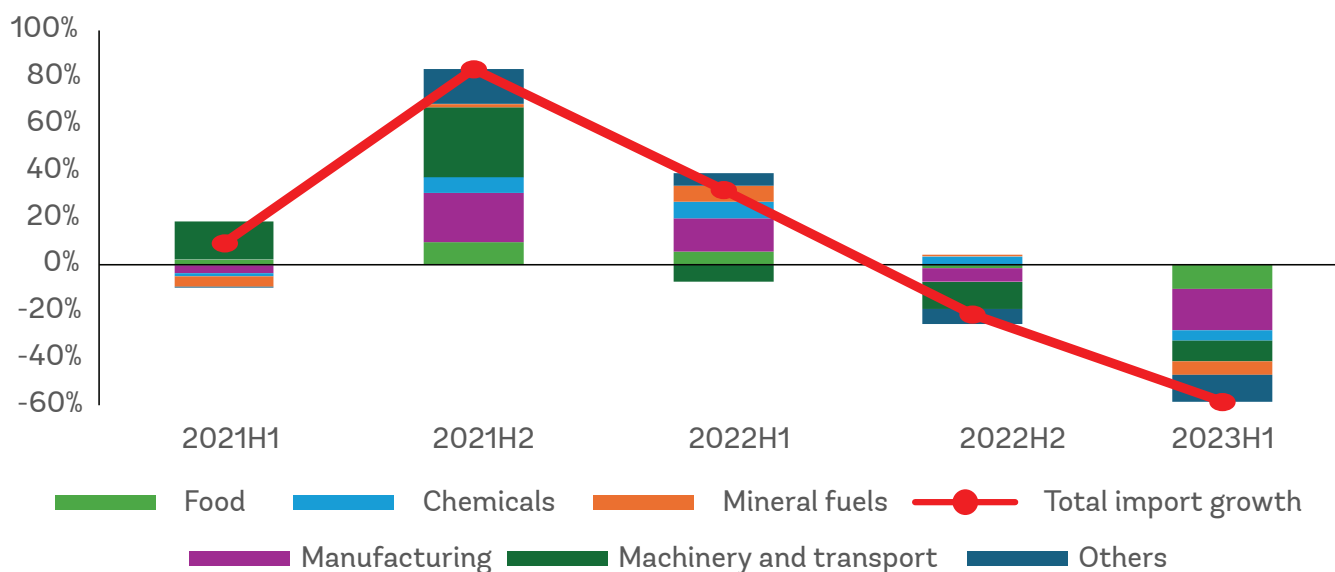
Source: Bank of Papua New Guinea.

22.   **The central bank has adopted crawl-like exchange rate arrangement in January 2024.** The exchange rate arrangement of Papua New Guinea has been reclassified several times over the last decade from floating to crawl-like to the stabilized system. The shortage of foreign exchange since the winding up of PNG-LNG revenue gains led the central bank restrict exchange rate flexibility with several policy restrictions which had severe implications for the Kina convertibility. In the September 2023 Monetary Policy Statement[5], the BPNG announced its intention to gradually move towards a crawl-like exchange rate arrangement[6] while formally announcing the adoption from January 03, 2024, in the March 2024 Monetary Policy Statement. The aim of the new exchange rate arrangement is to ensure Kina convertibility, eliminate currency overvaluation, restore balance in the foreign exchange market, and boost exports in the non-extractive sector. The BPNG has briefly

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[5]Available at MPS-SEPT-2023-Final1.pdf (bankpng.gov.pg).

[6]Under the crawl-like arrangement, the currency fluctuates at least ±1 percent around a central rate or the margin between the maximum and minimum value of the exchange rate exceeds 2 percent. See Classification of Exchange Rate Arrangements and Monetary Policy Frameworks -- as of June 30, 2004 (imf.org) for more details.

discussed the structure of the new exchange rate arrangement such as using Kina-US dollar exchange rate as the nominal anchor, maintaining crawl band within a 2 percent trading margin, and adjusting the crawl-rate every six months based on the extent of Kina overvaluation and the real effective exchange rate. Meanwhile, the central bank intends to continue its intervention in the foreign exchange market to eliminate the outstanding forex orders by 2026. The BPNG also announced that the crawl-like arrangement is for the interim period only with the focus on gradually move towards a flexible exchange rate regime over the longer term which would depend on crucially on the effective reforms in the fiscal and monetary policies.

Figure 33. **Kina depreciated against the US dollar and other major currencies in recent months.** *(Jan-2019=100)*
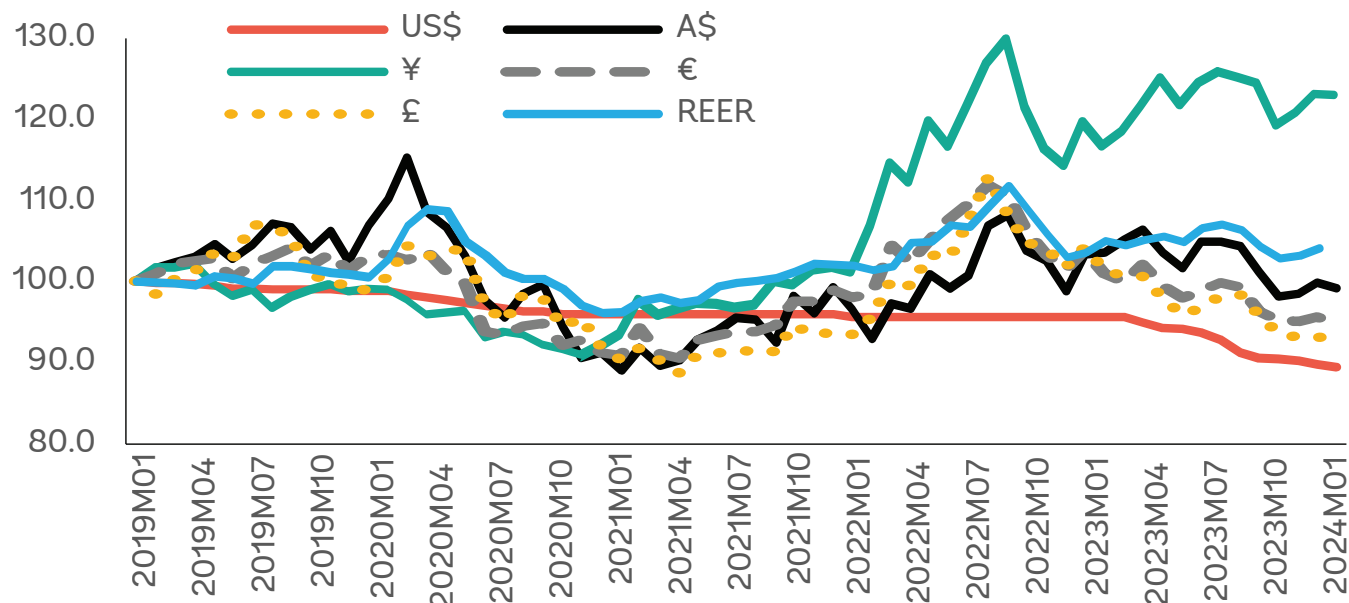
Source: Bank of Papua New Guinea and IMF (November 2023).
Note: An increase reflects currency appreciation.

Figure 34. **Changes in the Kina-US$ exchange rate.** *(Month-on-month)*
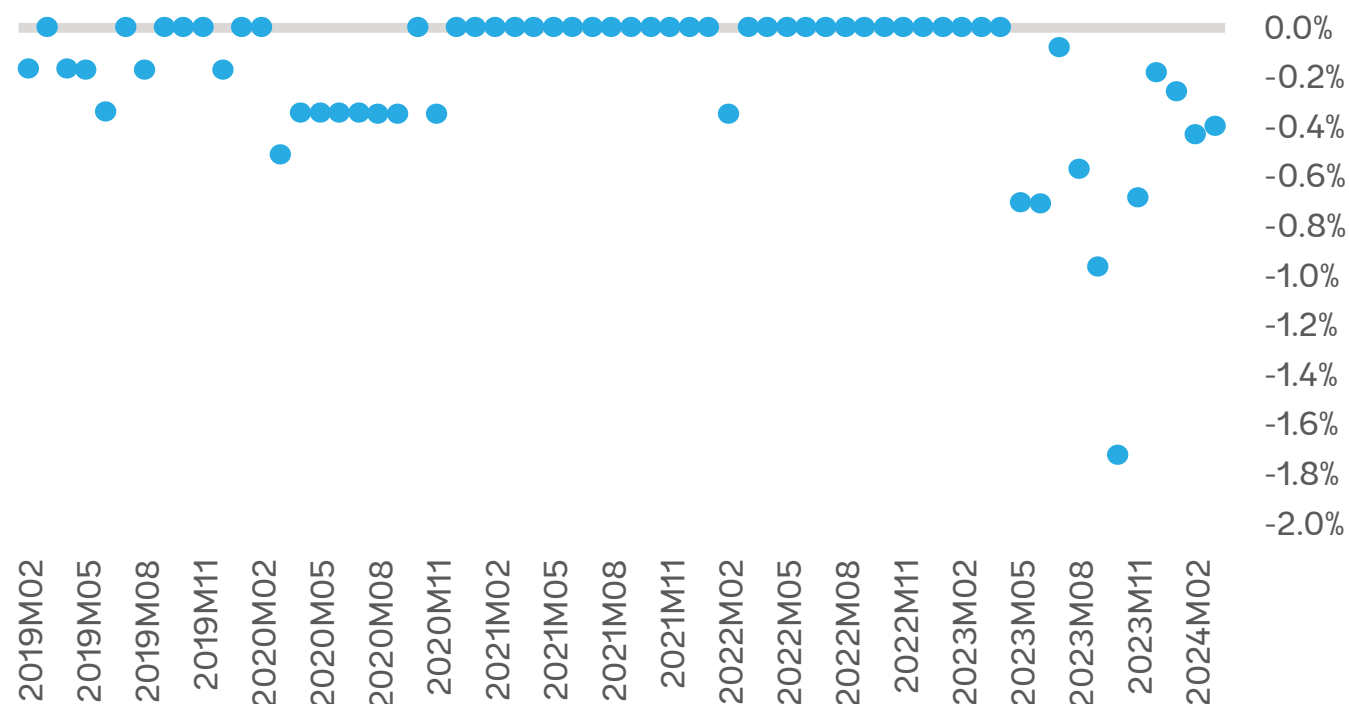
Source: Bank of Papua New Guinea.
Note: Negative values indicate Kina depreciation.

23.   **After a period of stability, Kina depreciated slowly against the US dollar since May 2023.** The exchange rate of Kina against the US dollar remained flat during 2021-2022 except for a one-off month-on-month depreciation of 0.4 percent in February 2022. Lately, the Kina-US$ exchange rate has been exhibiting notable movements since May 2023, towards depreciation. This reflects the central bank's announcement to move away from its de-facto stabilized exchange rate regime. On average, Kina depreciated by 0.6 percent, month-on-month, and cumulatively by 6.7 percent during May 2023-March 2024 (Figure 34). During the same period, Kina also depreciated against other major currencies, cumulatively by 5.7 percent against the Australian dollar, 5.2 percent against euro, and 8.5 percent against the British pound (Figure 33). However, the real effective exchange rate fell only slightly, by 0.2 percent, over this period.

24.   **Nevertheless, the exchange rate remains overvalued, and the forex shortage prevails.** According to the IMF, the real exchange rate of Kina was overvalued between 5 and 15 percent at the end of 2022 which slightly moderated in 2023 due to lower inflation in PNG relative to its trading partners (IMF 2023). The shift from the de-facto stabilized exchange regime is expected to reduce the extent of overvaluation in the coming years. However, the forex shortage persists despite frequent central bank interventions in the foreign exchange market. The outstanding foreign exchange order at the end of August 2023 stood at US$ 364 million regardless of BPNG's cumulative US dollar sale of nearly US$ 1 billion during this period (BPNG2023b). The outstanding forex order remained elevated at US$ 418 million as of March 2024 (BPNG 2024). The central bank intends to continue its forex intervention to clear the backlog over the next two years while maintain the new exchange rate arrangement. Yet, the lack of foreign exchange is viewed as the top impediment to doing business in PNG (PNG CEO Survey, Business Advantage PNG 2023[7]).

25.   **The pressure on international reserves continues as forex inflows keep falling short of outflows, leading to a higher demand for central bank's intervention in the forex market.** The foreign exchange inflows amounted to US$ 5.52 billion in 2023, close to the inflows of US$ 5.19 in 2022. However, a higher outflow of US$ 7.26 billion in 2023 (compared to US$ 6.06 billion in 2022) resulted in a net outflow of US$ 1.74 billion, further pushing the demand for forex and central bank intervention. With BPNG's sale of US$ 1.57 billion in the interbank market, the foreign exchange reserves stood at US$ 3.96 billion at the end of 2023, around US$ 175 million lower than in 2022. Although this level of reserves (covering more than six months of goods and services imports) is viewed adequate (IMF 2023), an unknown amount of the pent-up demand for forex due to rationing remains a risk. A new indicative ceiling on the stock of unmet import-related orders (Kina 150 million starting from March 2024 and successively Kina 25 million lower for the remaining quarters of the year) has been agreed under the IMF-supported reform program.

Table 4: Selected external sector indicators

	2017	2018	2019	2020	2021	2022	2023 Jan-Jun
External accounts							
Exports, f.o.b., of which:	9,508	9,827	10,947	9,073	11,269	14,326	6,233
Extractive sector	7,514	7,829	9,141	7,232	9,154	12,078	5,354
Imports, f.o.b.	3,289	3,980	4,126	3,655	5,137	5,294	1,286
Current account	3,627	3,120	3,655	3,353	3,444	5,240	3,341
(in percent of GDP)	15.9	12.9	14.8	14.1	13.2	20.8	…
Overall balance of payments	110	561	125	450	550	792	-327
Gross official reserves	1,736	2,215	2,313	2,677	3,240	4,042	3,663
(in months of goods and services imports)	3.4	4.3	5.2	4.5	7.1	8.0	…
(in months of non-extractive imports)	7.5	7.4	8.1	10.4	8.4	10.5	…
Nominal exchange rate (Kina/US$), period average	3.19	3.29	3.39	3.46	3.51	3.52	3.53
Nominal exchange rate (Kina/US$), end of period	3.23	3.37	3.41	3.51	3.51	3.52	3.57

Source: Official historical data.

2. Outlook and risks

2.1. Global economic outlook and risks

26. **Global growth prospects have improved in recent months, aided by the reopening of the Chinese economy and strong services recovery in many economies.** Manufacturing surveys for several major economies continue to indicate declining activity, but at a slower pace than previously. Estimates for global growth in 2023 have been revised upwards, reflecting better-than-expected growth in the United States and Euro area in 2022Q4 and an overall improvement in global sentiment.

27. **Growth in the EAP region is projected to tick up 4.5 percent in 2024.** This is still lower than before the pandemic, as global conditions continue to improve, and inflationary pressures decline further. China is forecast to grow by 4.5 percent in 2024 as the bounce back from the re-opening of the economy fades and both proximate problems, such as elevated debt and weakness in the property sector, as well as longer-term structural factors weigh on growth. The rest of the region, which had suffered in 2023 from slowing global growth and tightening financial conditions, is expected to grow by 4.6 percent in 2024. The likely recovery of global trade and the expected easing of global financial conditions are expected to offset the impact of China slowing down. The growth rate in the Pacific Island countries is expected to moderate to 3.6 percent in 2024, as the post-COVID-19 rebound dissipates.

2.2. Papua New Guinea's economic outlook and risks

28. **In PNG, growth is projected to accelerate in 2024, mostly due to reopening of the Porgera gold mine.** The mine restarted operations in 2024Q1 and is expected to reach its normal levels of production by mid-year. Meanwhile, growth could have been even faster, but brief violence and looting in January 2024 put a toll on the economy. According to the Business Council, the loss to the economy was not only from physical losses of assets and property, but also in forgone business revenue, which could lower tax collections and reduce the appetite to invest. In addition, the dispute between authorities and main fuel importer led to disruptions in fuel provision to businesses and households, further slowing down economic activity. Medium-term growth is expected to settle at 3 percent.

29. **Inflation is likely to pick up in 2024.** The government's fiscal measures including education subsidy, household assistance package (a rise in the personal tax threshold from K17,500 to K20,000), and removal of excise duty and GST on fuel had a major contribution to the low inflation episode in 2023. The government in its 13-year fiscal plan has announced a 11 percent increase in the tuition subsidy for 2024 and a 4 percent rise for the next three years. Further, the government allocated 15 percent of its 2024 budget for the education sector, a 11.2 percent rise from 2023. Nevertheless, these temporary measures should not restrain inflation for long. Inflation is likely to increase in 2024 driven by strong economic growth and currency depreciation under the new exchange rate arrangement. Reopening of the Porgera gold mine in December 2023 following nearly four years of shutdown is likely to add further pressure on inflation over the medium and longer term. The easing of monetary policy should therefore be implemented cautiously to achieve an optimal balance between the desired changes in monetary policy operations and inflation.

30.   **The total budget for 2024 is expected to increase amidst receding pandemic effect.** Total spending in 2024 is projected to grow by 8 percent compared to the 2023 estimate. Recurrent expenditure is still receiving the largest allocation, about 80 percent (before grants spending reclassification), with the remainder for capital investment. As the component of recurrent spending, grants to other general governments will increase by half. Furthermore, the capital spending in 2024 is projected to increase by 13 percent or 4.7 of percent of GDP. Some of the Government's flagship investment programs in 2024 will include Connect PNG Infrastructure, District Infrastructure, State Equity Fund, National Land Development and Provincial and District Support Interventions, and Agricultural interventions. In terms of sectoral categories, almost sixty percent of budgeted spending in 2024 will be allocated to administration, education, provinces, and interest payments, maintaining 2023's configuration.

31.   **In 2024, the government expects the budget deficit to fall further, as revenue will grow faster than planned expenditure.** The budget deficit is projected to reach 3.3 percent of GDP in 2024, less than half of its peak in 2020. Tax revenue, the largest component of revenue sources, is projected to grow by 14.5 percent in 2024 compared to 2023 estimate or to reach 15.3 percent of GDP (Table 55). Stronger economic growth, improved employment, new tax measures to improve tax compliance and tax revenue collection, coupled with the resumption of the Porgera mine and higher LNG production are expected to increase tax collections, amid expectations of moderating global commodity prices and pent-up global demand. The 2024 Budget made the tier-2 tobacco excise regime, which was in pilot stage since 2019, permanent and increased the excise rates to continue addressing illicit tobacco trade and raise revenue. In addition, non-tax revenues are projected to increase by 21.2 percent from 2023 estimate or 1.8 percent of GDP in 2024. The planned increase in dividend receipts from state-owned resource companies and the full-year implementation of the NTRA (Non-Tax Revenue Administration) Act 2022 are the main contributors.

Table 5: Fiscal consolidation will continue in 2024 in line with the medium-term budget repair strategy.

As percent of GDP	2023 Supplementary Budget	2024 Budget
Total Revenue and grants	18.3	19.1
Tax Revenue	14.7	15.3
Non-Tax revenue and grants	3.6	3.8
Total Expenditure	22.8	22.3
Recurrent Expenditure	18.2	17.6
Capital Expenditure	4.6	4.7
Deficit	-4.4	-3.3
Debt	52.6	51.1

Source: Treasury Department of PNG and World Bank staff calculation
Note: The category is taken from Statement of Operations for General Government (Appendix 2 of 2024 National Budget Book), before reclassifying grants.

32. **Public debt is forecast to stabilize in near-term as fiscal consolidation continues.** The public debt is projected to hover around 52 percent of GDP in 2024 (Figure 35) within the range set in the PNG Fiscal Responsibility Act (FRA, Amended 2020). This puts PNG just below the Pacific Island Countries average and well below the emerging market and developing economies (Figure 36). Further, PNG is currently at high risk of debt distress, as the debt service-to-revenue ratio threshold has been breached. Public debt as a share of GDP is expected to gradually decline to below 50 percent over the medium term, as a budget surplus is achieved through faster revenue growth than expenditure.

Figure 35. Projected outstanding debt will continue to decline this year and remain within the range of 40-60 percent of GDP. *(percent of GDP)*
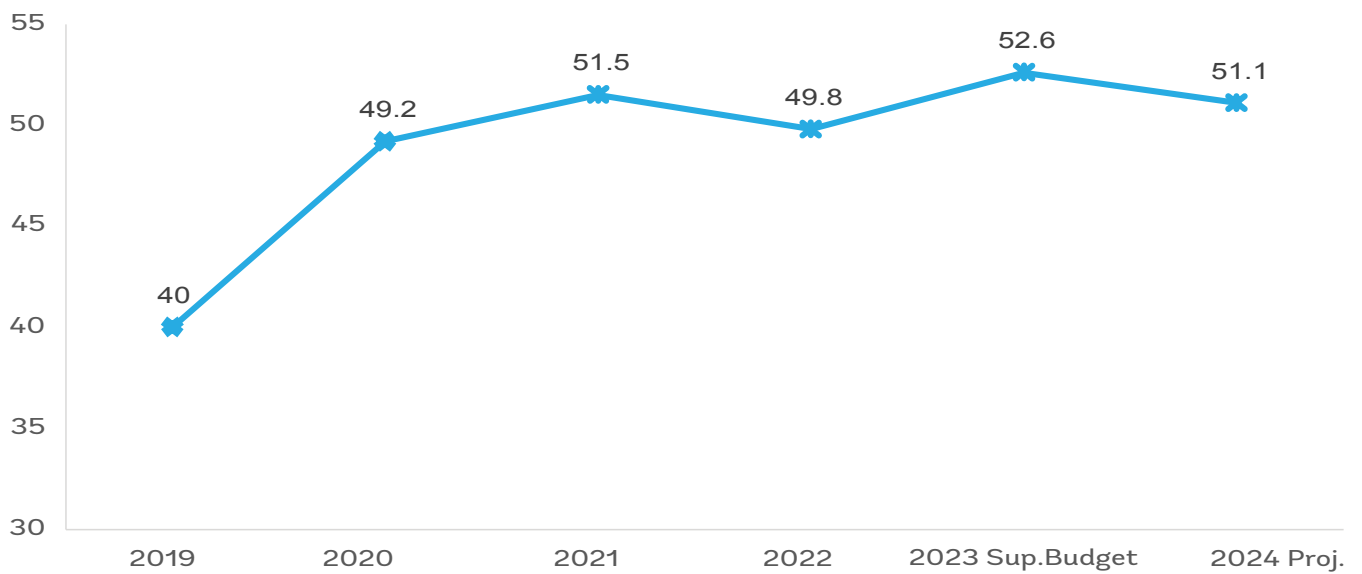
Source: Ministry of Treasury

Figure 36. PNG government debt is close to the average of Pacific Island Countries and below the emerging market and developing economies.
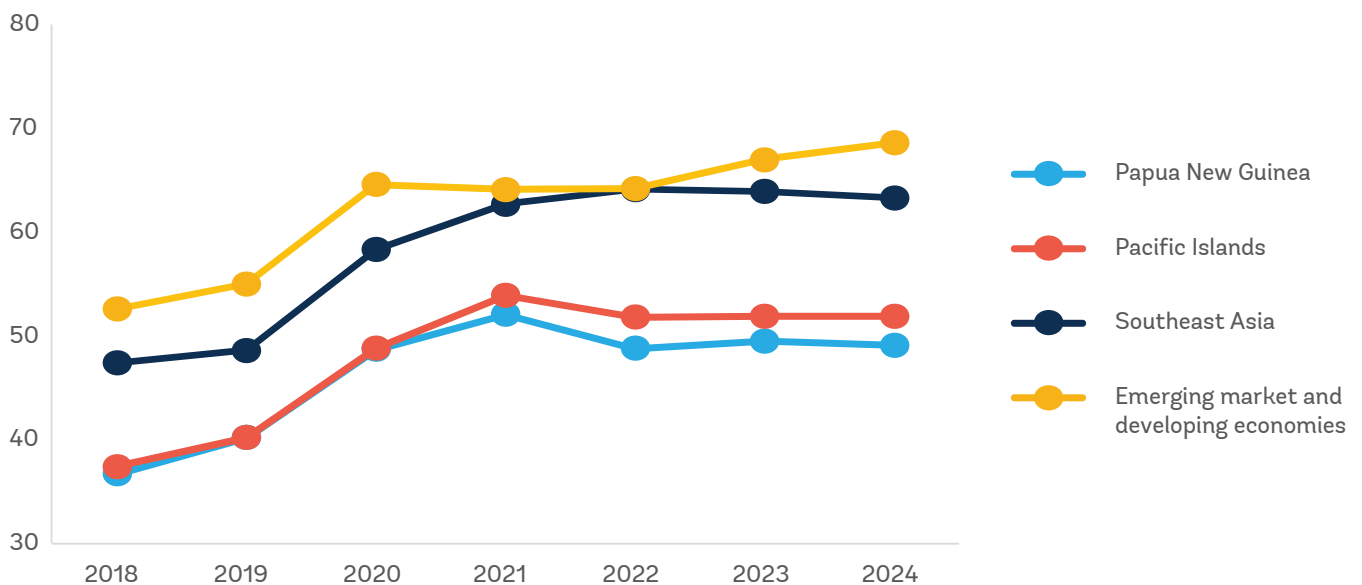
Source: World Economic Outlook database (Oct 2023), IMF

33. **The World Bank projects a 4 percent lower global commodity prices for 2024 which is likely to fall further by 0.5 percent in 2025** (Commodity Markets Outlook, October 2023). The depressing commodity price outlook results from a weaker global demand amid tightened financial conditions, likely to prevail over the near term (World Economic Outlook (Update), January 2024. The lower domestic price pressure from global commodity prices is expected to be balanced by Kina depreciation under the new exchange rate arrangement.

Figure 37. Global prices of PNG's major export commodities fell in the second half of 2022 and are projected to fall in the coming years. *(Index, January 2020=100)*
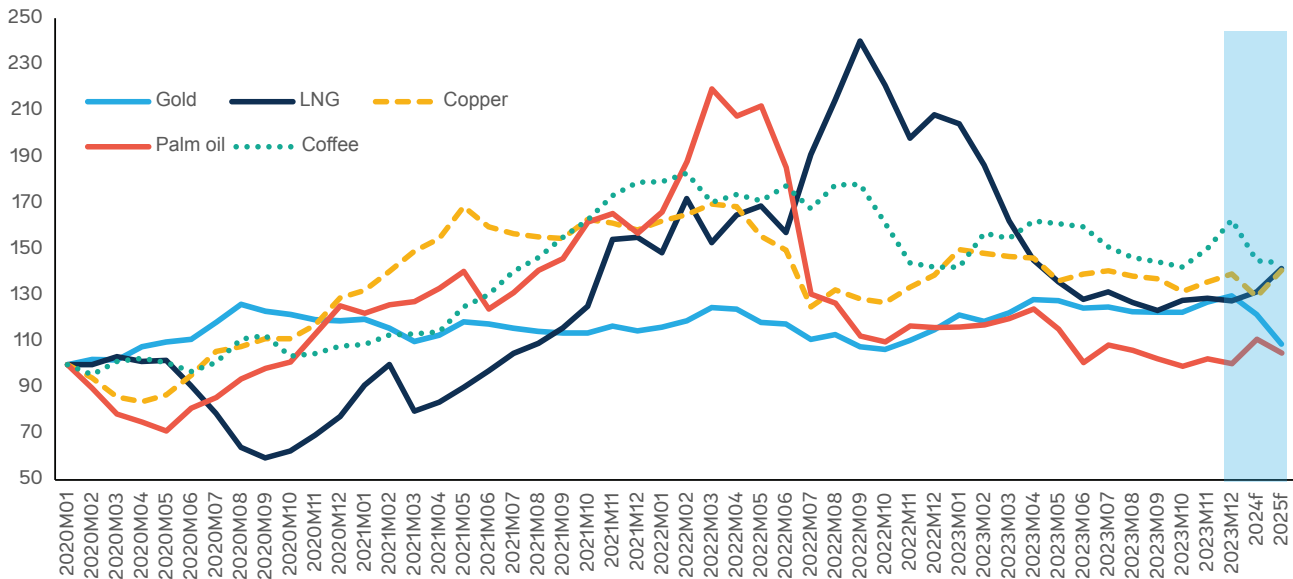
Source: World Bank Pink Sheet, March 2023 (actuals), Commodity Markets Outlook, October 2023 (forecasts).

34. **The central bank's shift away from its de-facto stabilized exchange rate regime is a positive initiative.** A greater but controlled exchange rate flexibility should eliminate exchange rate misalignment over time while ensuring Kina convertibility. Given its exposure to the exogenous commodity shocks and high pass through from exchange rate to inflation, moderate control over the exchange rate would shield PNG from external shocks. As of April 2022, the IMF classified the exchange rate arrangement of 24 countries as crawl-like (see Annual Report on Exchange Arrangements and Exchange Restrictions, International Monetary Fund). Table 6 reports the key economic indicators and monetary policy framework for these countries. Notably, 15 out of 24 countries are commodity exporters . Figure 38 shows the average monthly changes in exchange rate against the US dollar for some of the selected countries during the second half of 2023 (positive value indicates currency depreciation against the US dollar).

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[8]Available at Annual Report on Exchange Arrangements and Exchange Restrictions 2022 | IMF eLibrary
[9]UNCTAD defines a country as commodity exporter if its commodity export is at least 60 percent of the total exports. See The State of Commodity Dependence 2023 | UNCTAD.

Table 6: Key economic indicators and monetary policy framework of countries that followed a crawl-like exchange rate system on April 30, 2022.

Country	GDP per capita (US$)	Export (% of GDP)	Commodity export (% of total export, 2019-2021 average)	Import (% of GDP)	Current account balance (% of GDP)	Total reserves (% of external debt)	Central govt.t debt (% of GDP)	Exchange rate arrangement on April 30, 2021	Monetary policy framework
Afghanistan	408	…	96.7	37.1	…	…	…	Crawl-like	MAT
Algeria	4,000	35.3	93.9	23.7	9.8	1007.9	…	Stabilized	MAT
Argentina	12,941	16.3	82.1	15.4	-0.7	18.1	…	Crawl-like	Other
Bangladesh	1,785	12.9	4.9	20.9	-3.1	34.8	…	Stabilized	MAT
Burundi	262	5.0	95.1	23.3	…	17.1	…	Crawl-like	MAT
China	11,560	20.7	5.8	17.5	2.2	138.4	77.1	Crawl-like	MAT
Congo, Dem. Rep.	529	46.2	82.2	49.0	…	…	14.6	Crawl-like	MAT
Dominican Rep.	8,732	22.1	42.8	32.2	-5.6	30.1	…	Crawl-like	IT
Ethiopia	857	8.2	80.8	18.3	-4.1	…	46.4	Crawl-like	MAT
Gambia	678	4.6	89.8	30.8	-4.1	50.3		Stabilized	MAT
Ghana	2,031	34.9	95.3	35.7	-2.1	…	…	Crawl-like	IT
Guinea	994	43.7	95.0	63.8	16.0	…	…	Crawl-like	MAT
Kenya	1,755	12.2	71.9	21.5	-5.1	19.2	…	Other managed	IT
Lao PDR	2,599	…	77.0	..	-0.1	6.5	…	Crawl-like	Other
Mauritania	1,617	49.1	98.8	54.8	-14.6	…	…	Crawl-like	Other
Mauritius	10,570	56.7	45.4	62.8	-11.5	44.9	87.0	Floating	Other
Papua New Guinea	**2,463**	**45.6**	**96.8**	**13.8**	**22.8**	**21.3**	**48.4**	**Stabilized**	**MAT**
Romania	12,189	43.0	18.5	49.8	-9.1	…	47.2	Crawl-like	IT
Rwanda	940	22.5	91.4	38.7	-9.8	17.8	…	Crawl-like	MAT
Solomon Islands	1,893	…	97.0	…	-13.7	131.5	…	Crawl-like	Other
Sri Lanka	3,988	21.5	33.3	25.0	-2.0	…	…	Floating	IT
Switzerland	90,057	76.9	28.6	63.2	9.9	…	39.1	Crawl-like	Other
Tunisia	3,894	49.4	19.1	61.4	-8.7	20.4	…	Crawl-like	Other
Uzbekistan	3,473	27.3	74.0	44.3	1.9	72.9	34.3	Crawl-like	IT
Vietnam	3,655	94.0	14.0	91.7	-0.3	59.0	37.1	Crawl-like	Composite

Source: World Bank, Global Economic Monitor; IMF 2022; UNCTAD 2023.
Notes:
Papua New Guinea's exchange rate was classified by the IMF as 'Stabilized arrangement' in April 2022.
…: Data not available.
MAT: Monetary aggregate targeting; IT: Inflation targeting.
Composite: Two or more currencies are used as the nominal anchor (IMF 2022).
Other managed: The exchange rate arrangement does not meet the criteria for any of the other categories. Arrangements characterized by frequent shifts in policies may fall into this category (IMF 2022).

Figure 38. Average monthly changes in the exchange rate with crawl-like arrangement. *(July-December 2023)*
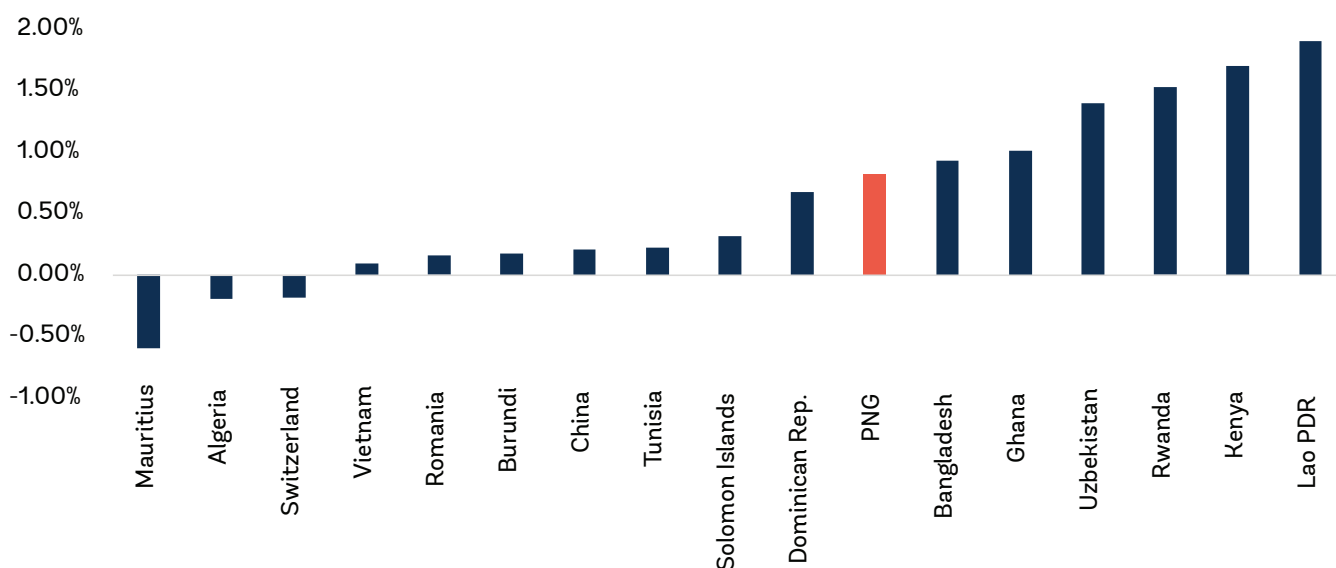
Source: International Financial Statistics, IMF, January 2024.

35.   **With the global easing of commodity prices, the surplus in PNG's trade and current account is likely to fall further in 2024.** Almost all prices of PNG's export commodities are projected to have negative growth in 2024 with LNG and metal prices predicted to fall by 9 percent and 6 percent, respectively. Further, a weaker global demand and tightened monetary policy is likely to have negative impact on the demand for PNG's exports. On the other hand, persistently falling import might have negative consequences for the future growth of the economy, particularly for the non-extractive sector. Greater flexibility of the exchange rate should help alleviate the ongoing forex shortage.

36.   **There are both upside and downside risks to the outlook.** The baseline projection does not account for potential new resource mega-projects, like Papua LNG. Thus, the final investment decision and the initiation of construction present an upside risk to the outlook. Meanwhile, slower-than-expected economic growth could materialize through lower demand for PNG's exports, a more pronounced decline in commodity prices, and the impact of droughts and other climate-related events.

SPECIAL
FOCUS

Invest in Your Children

MORE INVESTMENTS IN HUMAN CAPITAL WOULD PROVIDE PNG'S ECONOMY WITH ANOTHER ENGINE OF GROWTH, FREEING IT FROM ITS DEPENDENCE ON THE NATURAL RESOURCE SECTOR (CONOR ASHLEIGH/WORLD BANK)

37.   **Global experience from resource-rich countries, like PNG, demonstrates that resource riches only yield sustainable improvements in livelihoods when a significant share of the rents from resource extraction are reinvested in physical and human capital.** In other words, for PNG's wealth to translate into sustainable growth that benefits all, more investment is needed in PNG's most sustainable resource: its people. More specifically, this means ensuring that every child is in school, and that the time spent in school results in learning.

38.   **To turn its youthful population into an engine of growth, PNG needs more action on several fronts.** The education sector cannot solve these problems on its own but it will play a critical role in harnessing this potential by ensuring that young people stay in education institutions longer, and, during their schooling, acquire both basic and job-specific skills needed to thrive in PNG's growing economy.

39.   **This Special Focus aims to provide a snapshot of the key challenges facing PNG's education system and provides some ideas on how to address those challenges.** The chapter draws on findings from a recent Country Economic Memorandum, Budget Brief 2023, as well as Fixing the Foundation, a regional World Bank report.

3. Investing in children is one of the best investments PNG can make

40. **Improving education outcomes will generate considerable economic payoffs, given that a better skilled and knowledgeable workforce could better seize business opportunities and take on better-paid jobs.** The global evidence is clear: education—and the skills it creates—contributes to higher economic growth. Cross-country analysis reveals a robust relationship between the skills created in schools, training institutions, colleges and universities, and economic growth. Education increases people's incomes and employability, improves economic mobility, and enables families to escape poverty. It increases individuals' and families' resilience to shocks. In economies with large informal sectors, education is associated with greater access to full-time, formal sector jobs. It also facilitates greater productivity, adoption of technology, and innovation.[10]

41. **One clear example of the payoffs of investing in human capital is that more educated individuals are more likely to hold formal sector jobs, thereby earning more, and contributing more taxes.** For both men and women, pursuing higher levels of education significantly increases the likelihood of being formally employed. In PNG, around 78 percent of men and 75 percent of women ages 15–49, who have some higher education, are employed—compared to only 46 percent of men and 49 percent of women with no education (NSO 2019).

42. **Education can also help break the intergenerational bonds of poverty, with women's education key in this process.** Specifically, girls' education plays a key role in predicting the future development outcomes of children. For instance, DHS 2016-18 shows that a baby whose mother has a higher education is far more likely to survive because their mother is more likely to receive antenatal care from a skilled provider (98 percent), deliver in a facility (95 percent), benefit from postnatal care within 2 days of birth (87 percent), and have less children (3.1 total fertility rate). Similarly, a child whose mother has no education is far less likely to be attending school (58 percent) than a child whose mother has a higher education (87 percent). In short, by providing mothers with more education, PNG can help its children break free from the intergenerational bonds of poverty.

43. **Better education equips individuals with a range of skills that lead to better health, and better life choices.** A large body of research has rigorously documented the range of benefits that are associated with individuals having more education. More-educated individuals live longer, have a lower probability of having a chronic health condition, and are less likely to smoke, drink in excess, be overweight, or use illegal drugs. Education reduces teen pregnancy and increases the control that women have over the size of their families. As mentioned above, better-educated mothers raise children who will be healthier and more likely to complete more years of schooling. Schooling reduces most types of crime committed by adults, as well as crime during late adolescence. More-educated individuals are more likely to participate in civic life; and they are more trusting and tolerant of people. A more educated population generally demands more transparent use of public resources, better service delivery, and government accountability.[11]

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[10]During the green revolution in Asia, farmers with basic education made more efficient allocation decisions in the face of technological changes (Foster & Rosenzweig, 1996). In manufacturing firms operating in more human capital-intensive industries across China, increases in employee education resulted in greater total-factor productivity (TFP) growth, technology adoption, and research and development investment (Che and Zhang 2017). Similar results are seen among firms in OECD countries (Criscuolo, Gal, Leidecker, Losma, & Nicoletti, 2021)
[11]Please see World Bank (2018) World Development Report, chapter 1 for details and references

44. **More investments in human capital would provide PNG's economy with another engine of growth, freeing it from its dependence on the natural resource sector.** Available data suggests that PNG is currently underutilizing the potential of its people: it has the lowest rate of growth in per capita wealth of all of its peers since 1995, with low investments in human capital a key reason behind this poor performance. Using the framework and data from the 2021 updates of the Wealth Accounts database,[12] as Figure 39 shows, per capita wealth has been virtually flat since 1995, growing by only 1 percent over this period, the lowest rate of growth among PNG's peers. One explanation behind this poor performance is that—relative to most peers—PNG underutilizes its human capital: in 2018 (the latest data available), only 46 percent of total wealth came from human capital, below almost all of PNG's peers.[13]

Figure 39. Per capita wealth has been flat in PNG, with slow growth in human capital wealth a key explanatory factor

Percentage change in per capita wealth and per capita human capital since 1995

■ Human capital wealth per capita (right axis) ● Total wealth per capita (left axis)
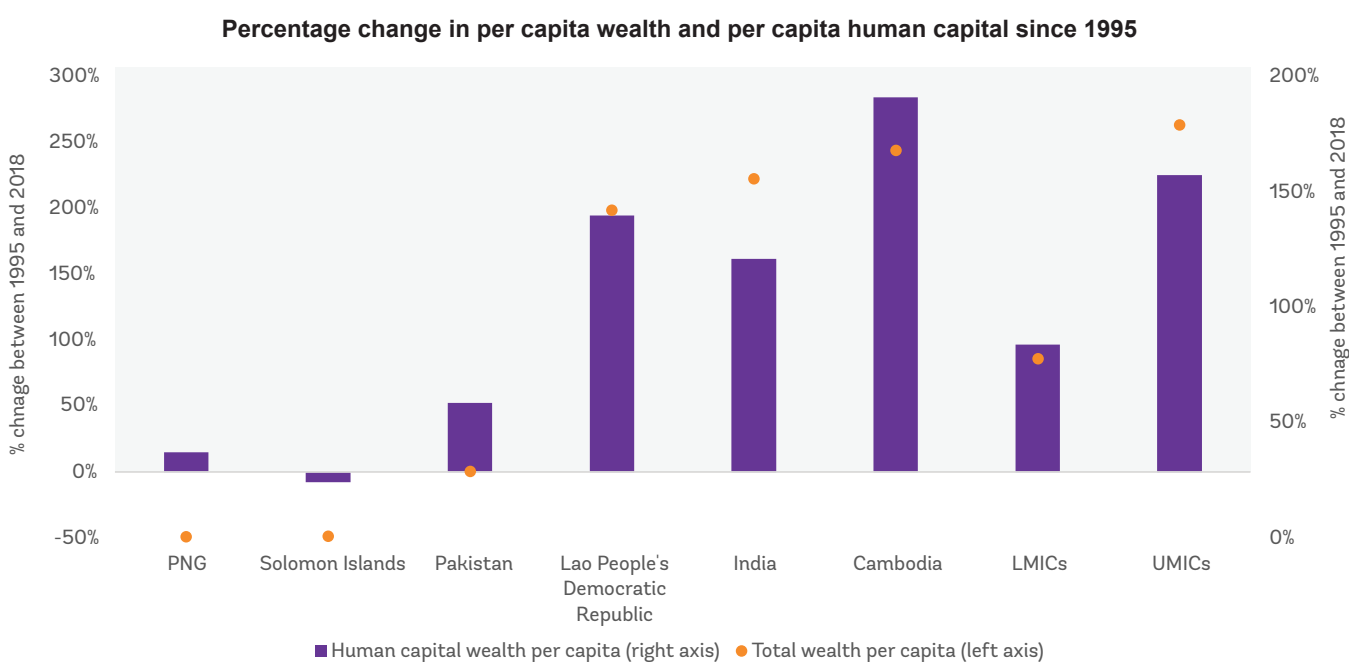
Source: World Bank Changing Wealth of Nations database

45. **These changes take time and require visionary leadership.** Global experience from resource-rich countries demonstrates that resource riches only yield sustainable improvements in livelihoods when a significant share of the rents from resource extraction are reinvested in physical and human capital. This means that while the endowment of natural capital is depleted, the endowment of physical and human capital is expanded, in turn expanding the country's growth potential. Under PNG's current policy settings, this conversion of natural capital to physical and human capital is not occurring to a sufficient degree. If that does not change, then once the construction boom from new projects is over, PNG will return to a trajectory of meagre per capita growth.

[12]According to Lange, Wodon, and Carey (2018), total wealth is calculated by summing up estimates of each component of wealth: produced capital, natural capital, human capital, and net foreign asset (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.

[13]This underutilization is also reflected in the World Bank Human Capital Project (2020) estimates of PNG's human capital index (HCI) which is only 0.43, significantly below the average of LMICs (0.48) and far below the average of EAP countries (0.59). Similarly, the United Nations Development Programme (UNDP) human development index suggests that PNG has one of the lowest scores among its peers. Moreover, looking back, the human development index shows that, while improvements have been made since 1995, PNG had and remains with the lowest score among its peers.

4. The problem: too many young people are leaving school without the basic literacy and numeracy skills they need to succeed in work and life

46.   **Less than half of young people aged 20-24 have the foundational skills (basic literacy and numeracy skills) needed to succeed in work and life, placing PNG's future development aspirations at risk.** In particular, a cohort analysis focusing on today's young people (age 20-24) suggests that nearly sixty percent of these young people (58 percent) left school with either no or just a primary education. Moreover, judging by results from assessments of student learning carried out in 2012, 2015 and 2018, most of them would have left school without the ability to read with understanding. From an economic perspective, PNG's growth aspirations will decelerate as a result. These young people are more likely to struggle to find formal sector employment, more likely to struggle to adapt to future changing economic circumstances, more likely to be engaged in criminal activities, and their children are also more likely to only complete a few years of schooling.[14] In short, young people who leave school without basic literacy and numeracy skills are more likely to be a source of instability for the country than a source of growth and prosperity. In more detail, as Figure 40 shows, according to the latest household survey, about 24 percent of young adults, aged 20 to 24, had not completed their primary education while another 35 percent had not completed lower secondary. Only 5.5 percent had completed some tertiary education and about 12 percent had completed upper secondary.

Figure 40. Most of PNG's youth (aged 20-24) are not acquiring the basic skills to succeed in work and life, representing untapped potential for faster growth
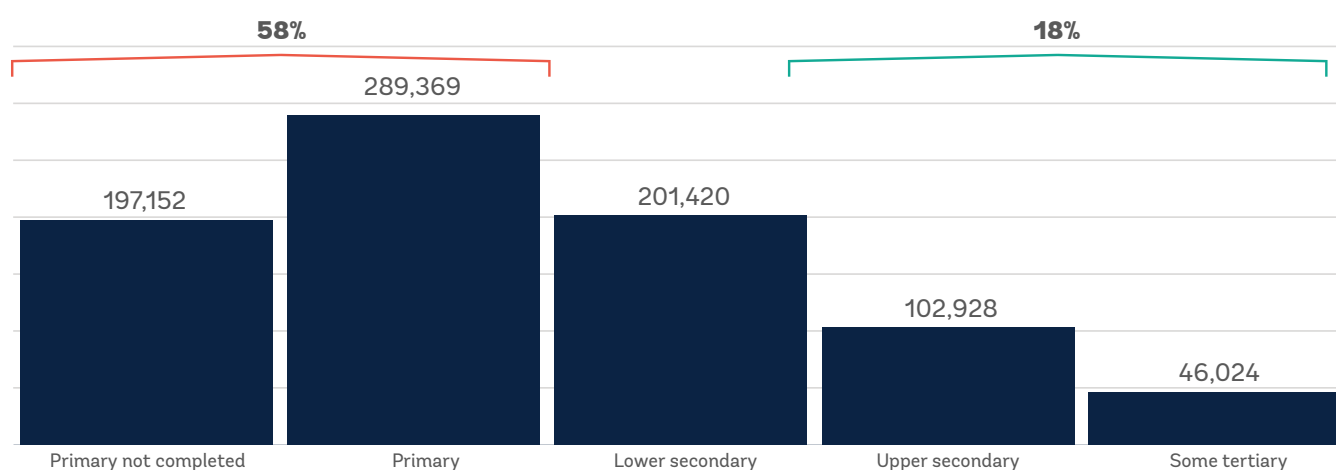
Source: World Bank analysis of 2022 Socio-Demographic and Economic Survey and DHS 2016-18

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[14]These statements are based on global evidence on the correlates between education and various outcomes, not PNG-specific evidence. This global evidence is summarized in World Bank 2018: World Development Report.

5. What underlying challenges need to be addressed to improve outcomes?

47.   **Understanding the underlying challenges explaining the current poor outcomes are important because it is these challenges that need to be addressed to make progress.** Below are some of the key factors that policy makers *can* address and are likely key underlying reasons for the current poor outcomes. In addition, there are some more structural factors that explain the poor outcomes which cannot be addressed. These are listed in Box 4.

5.1   Too many children are stunted affecting their brain development

48.   **Too many children are stunted, affecting their brain development.** Nearly one-half of PNG's children are stunted[15] (45 percent) and around 28 percent are underweight. Stunting impairs a child's cognitive development, making early intervention during the first 1,000 days of a child's life (pregnancy to two years old) vital. PNG has the fourth highest child stunting rate in the world. The rate is double that of countries with comparable levels of income per capita and significantly above its peers. While most countries with high stunting rates have reduced the rates of stunting among under-five children between 2010 and 2020, PNG shows no significant improvement.[16]

Figure 41. Stunting rates have improved elsewhere but not in PNG

Changes in fraction of under-five children not stunted, circa 2010 vs. circa 2020
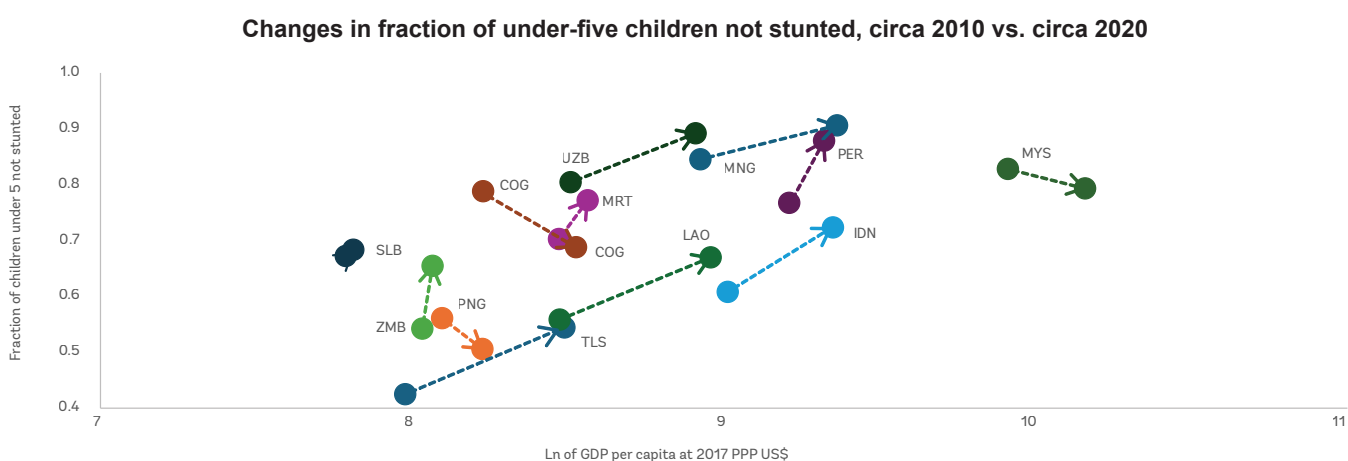
Source: WDI - based on modelled estimates by World Health Organization (WHO)/UNICEF/World Bank.

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[15]Stunting refers to a condition where a child's height is considerably below the average for their age and gender. This condition is often the result of chronic malnutrition, particularly during critical periods of growth and development in early childhood.
[16]For more details on PNG's stunting rate and its underlying causes, please see Hou, Xiaohui. 2015. Stagnant Stunting Rate Despite Rapid Economic Growth in Papua New Guinea: Factors Correlated with Malnutrition among Children under Five. Policy Research Working Paper; No. 7301. © World Bank, Washington, DC. http://hdl.handle.net/10986/22173 License: CC BY 3.0 IGO

49.   **Children are not adequately prepared for school at the right age.** There is strong evidence – both from the region and from PNG – that early learning matters. Attendance in preschool was found to have a significant positive effect on knowledge of letters of the alphabet, words in English, words in Tok Pisin, knowledge of numbers, skip counting, addition, and subtraction (PPF, 2018). Students who attended early childhood education (ECE) scored 4.6 percentage points higher on an early grade reading assessment than their peers who did not attend (PIE, 2023). Yet, attendance rates for ages 4-6 when children should be getting school-ready is extremely poor (see Figure 42)

50.   **Children are not starting school at the right age.** The official age for starting grade 1 is 7 years-old but one-third of PNG's children are not in school by that age. There are at least two reasons why this is problematic: first, there is global evidence suggesting that overage children are more likely to struggle in school. For instance, analysis conducted in Tanzania and Malawi highlight that overage students in primary school attained significantly lower learning outcomes compared to their classmates.[17] The growing body of research suggest that children benefit most when they are learning from an age-appropriate curriculum. Second, starting late implies that the adolescent years – and the competing demands that comes with that age, especially for young women – arrive after only a few years of schooling.

Figure 42. School attendance rates has improved but many children are still not in school and children still start late
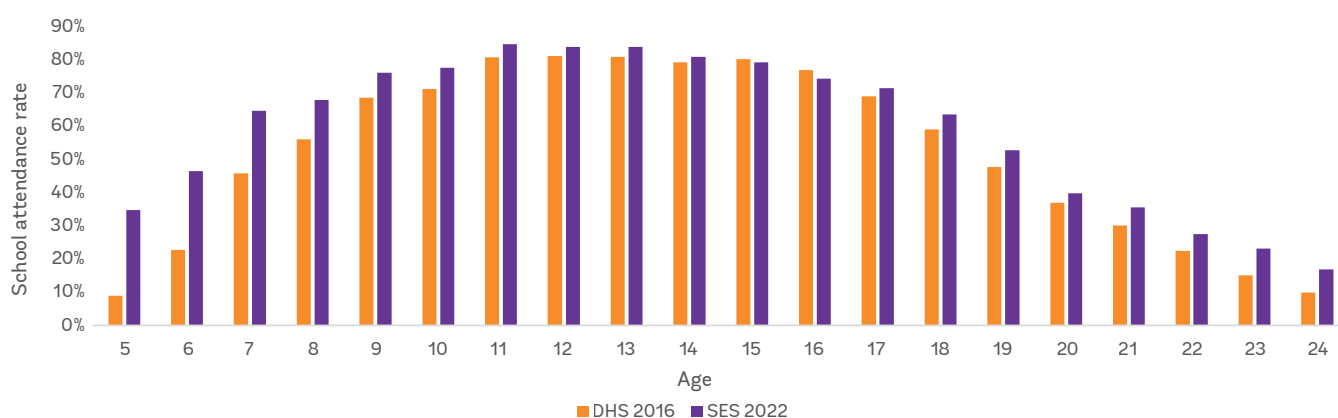
Source: National Statistical Office (2022): 2022 Socio-Demographic and Economic Survey and DHS 2016-18

5.2 Once in school, for a variety of reasons, too few children end up mastering the basics: basic numeracy, and the ability to read with understanding

51.   **Once in school, too few children are mastering the basics: basic numeracy, and the ability to read with understanding but, due to data challenges, the exact magnitude of the problem is difficult to establish.** Results from the Pacific Islands Literacy and Numeracy Assessment (PILNA) in 2018 show that when tested in grade 5, almost one-half of the students (48 percent) struggled to reach PILNA's minimum proficiency level in reading. According to results from PILNA 2021, 5th grade scores improved with only 34 percent of students failing to meet PILNA's minimum proficiency levels in reading. However, as argued in Cahu and Sondergaard (2023), PILNA's definition of minimum proficiency may be easier than the international benchmark used to report on SDG 4.1.1b.[18] When judged against the more challenging, international benchmark, and taking into

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[17]For more information on this analysis see Asim, Salman; Chugunov, Dmitry; Gera, Ravinder. 2019. Student Learning Outcomes in Tanzania's Primary Schools: Implications for Secondary School Readiness. © World Bank, Washington, DC. http://hdl.handle.net/10986/31465 License: CC BY 3.0 IGO.

[18]SDG 4.1 reads: "by 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes." There are multiple indicators associated with the goal, reflecting the different parts of the goal. Indicator 4.1.1 is related to the "quality" ambition of the goal. And this indicator has several sub-indicators: Proportion of children and young people in Grades 2/3 (4.1.1a); at the end of primary (4.1.1b); and at the end of lower secondary (4.1.1c) achieving at least a minimum proficiency level in (i) reading and (ii) mathematics, by sex. And the definition of "minimum proficiency levels" are developed by the Global Alliance to Monitor Learning and coordinated by the UNESCO Institute for Statistics (UNESCO Institute for Statistics, 2019.

account the fact that a large number of children are still out of school, in 2018, possibly as many as 72 percent of PNG's children are not learning to read sufficiently well by grade 5 (Cahu and Sondergaard 2023). (Figure 44. Estimated proportion of 10-year-olds who cannot read and understand an age-appropriate text).

Figure 43. Estimated proportion of 10-year-olds who cannot read and understand an age-appropriate text (measured against global minimum proficiency levels)
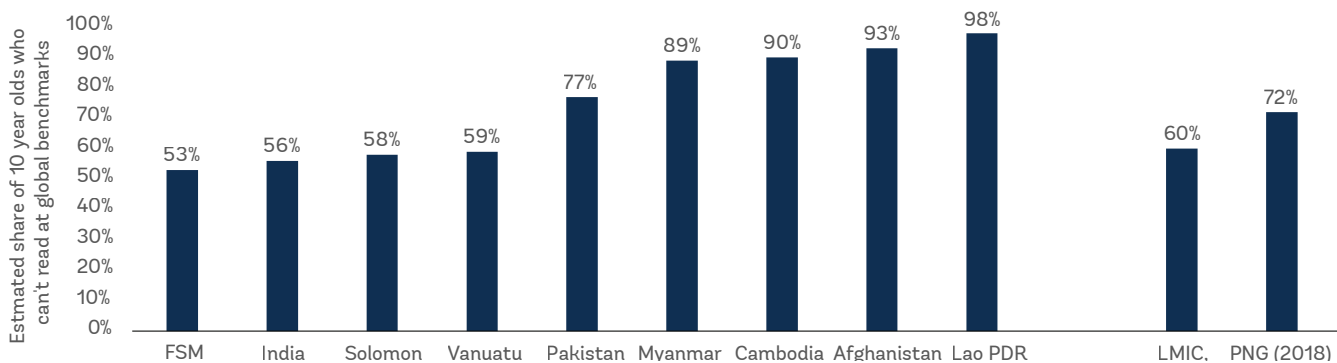
Source: World Bank Learning Poverty Database; Cahu and Sondergaard (2023) for PNG and Solomon Island
Source: World Bank Learning Poverty database and, for PNG and the Solomon Islands, estimated interim learning poverty based on proportion of students achieving at least 'level 6' in PILNA 2018 (see Cahu and Sondergaard 2023).

52.   **There are very large inequities in education outcomes, with children from the poorest parts of the country falling further behind, perpetuating a cycle of widening gaps in the country.** The inequities are visible from the very early years of a child's life: early grade reading assessments show that, already by grade 2, in Madang, it is "only" 25 percent of second graders who cannot read any words on a list of 22 most used words in English. By contrast, the situation is worse in Eastern Highlights where more than half of students cannot read a single word off that list. And, with large gaps already visible by grade 2, the situation worsens as students left behind either drop out or struggle with the curriculum that gradually gets more challenging. By grade 5, PILNA (2015) data suggests that fifth graders in the best performing provinces were nearly 1.5 years of schooling ahead of the worst performing province. And, as reported in World Bank Budget Brief 2023, it is the students from the poorest provinces in the country where outcomes are lagging the most.

53.   **There are several reasons why so many children fail to master the basics in the early primary years of schooling.** Statistical analysis of the fourth and sixth graders' reading, writing and numeracy scores provides clues as to why so many students are not acquiring learning. Specifically, such analysis show that schools lack basic inputs; and there are challenges with the quantity and quality of teaching. These insights are consistent with what is also found in other countries where students are struggling. Below these challenges are discussed in more detail.

5.3   Schools lack basic inputs

54.   **First, schools lack basic inputs: learning materials and infrastructure. Most importantly, in one third of primary classes, there are no textbooks at all.** And about two-thirds of all primary students do not have a reading textbook. Analysis of PILNA 2021 data shows that this gap clearly matters: reading and math scores are *half a year ahead* in classes where students have either their own language textbook or at worse one book for two pupils. In grade 1 and 2 (the former "elementary schools"), 95 percent of schools do not have a school library or book borrowing facility (PPF, 2018). Other key inputs are also lacking: only 36 percent of primary students are attending a school which has a gender-separated toilet. Yet, statistical analysis of PILNA data reveals that having such a toilet matters critically for student learning, likely because, when the toilet is not there, student absenteeism is higher. Indeed, the absence of a toilet is often quoted by parents as a reason

why their children are not in school. In terms of learning, analysis of PILNA 2021 shows that that students who attend a school with flush and gender-separated toilets are, on average, half a year of schooling ahead in reading and math and a fourth of a year in writing.

55.   **Too many children are hungry, impacting their ability to learn.** In a growing number of countries at PNG's income level, a school lunch has become a basic and essential input which is offered at schools to increase attendance and improve student learning. According to the latest PILNA survey, about 40 percent of primary school children do not eat three times a day and 80 percent report being hungry at least some of the time. When asked why students were absent from school in the early grades, no food was the response for 9.2 percent of respondents (PIE, 2023). This has likely a dramatic detrimental impact on learning: 5th graders who eat three times a day have PILNA scores that suggest that, academically, they are a half of an academic year, ahead of their peers who are not eating three meals per day.

5.4   More and better teachers are needed

56.   **PNG still face serious challenges in achieving high teacher quality.** To begin with, there is a quantity problem: there are too few teachers relative to the current and projected student population, and the teacher training colleges do not currently have the capacity to produce enough teachers to fill gaps. Second, amongst the existing teachers, many have very little education. And available data suggest some are not mastering the content they teach and/or are not using effective instructional methods. Third, data suggest that teacher absenteeism is a systemic problem. However, lack of data makes it very difficult to adequately quantify the magnitude of these challenges, and pinpoint – by level of education, subject, or geographical location – where these challenges are more acute than elsewhere. That said, all indications suggests that problems with teachers are particularly acute amongst the elementary teachers – the critically important first years of formal schooling, where students are learning the foundational skills they will need for the rest of their schooling. Below, these challenges are discussed in more detail.

57.   **PNG needs to train, hire and deploy an estimated 4,500-7,500 additional teachers every year for at least the next decade (representing an annual increase of 7-12 percent) to meet current and rising student numbers.** Student-teacher ratios at the primary level exceed thirty in all but four provinces. To bring student-teacher ratios to a maximum of 30 in all provinces, and meet the rapidly growing student numbers, an estimated 4,500-7,500 additional teachers will need to be recruited, trained and deployed every year for at least the next decade.[19] Arguably, even more teachers are needed since 95 percent of the 15,000 elementary teachers are not meeting the Ministry of Education's new requirement for primary teachers, requiring that all should have a degree: 53 percent only have a 2-year teaching certificate (8,400); 34 percent (nearly 5,500 teachers) only have a high school diploma while another 8 percent (1,200 teachers) have only 10 or 11 years of schooling.

58.   **Some teachers are not adequately mastering the subjects they are teaching.** Data to support this are only available for elementary teachers where, as discussed above, nearly half of teachers have at most at high school diploma. When tested in April 2018 in PNG, 25 percent of elementary teachers failed to get a passing score on an assessment of second grade math subject knowledge content.[20] Approximately one thousand elementary teachers in three provinces were tested in basic numeracy skills, with the level of difficulty corresponding to what a child in grade two should be able to master.[23] For instance, one question asked the teacher to double each of these three numbers: 9, 42 and 25. The testing was done to assess if teacher training

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[19]The large range reflects several things: (i) the fact that that current number of teachers is not known with precision, with estimates varying from around 60,000 to 70,000; (ii) different assumptions in forecasts regarding targeted student-teacher ratio; annual attrition rate of teachers; underlying population numbers; and enrollment rates.
[20]Namit, K. (2018) RISE PNG Elementary Teachers' Math Subject Knowledge Assessment Report, Save the Children, Papua New Guinea, Port Moresby.

should focus on improving teachers' content knowledge or their strategies and approaches to teaching. As Figure 44 shows, twenty-five percent of teachers failed to get a passing score on the assessment, and only two teachers (0.2 percent) received a full score. The implication of this finding are: first, students are not learning because many of their teachers, themselves, are struggling with the basics of what they are trying to teach; second, many teachers need substantially more support for them to become effective teachers.

Figure 44. One fourth of early grade teachers are not mastering the content they are teaching
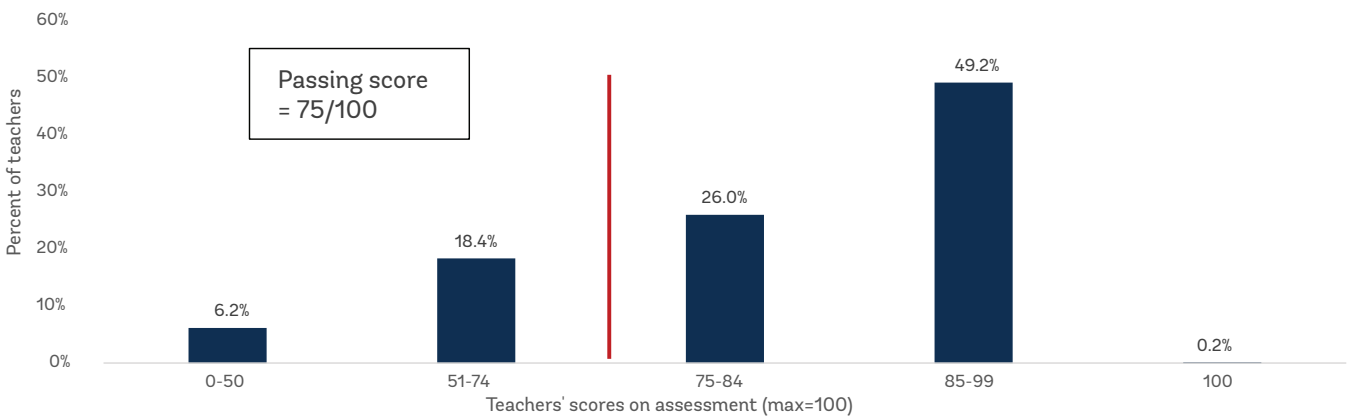
Source: Namit, K. (2018)

59. **Teachers need to strengthen their use of teaching practices that are known to help students learn.** When asked, only 7 percent of grade 3 and 5 teachers report that they often use highly effective teaching practices while 25 percent report that they never use these effective practices (Figure 45, panel a).[22] These data from PNG mirror classroom observation data collected in a more rigorous manner (using classroom observational tools) from other Pacific Island countries. Such data show that, overall, only 3 percent of teachers in Pacific Island countries use highly effective teaching practices in every teaching domain (Figure 45, panel b). For instance, only a small proportion of teachers in these countries pause and check whether students have understood the material just being covered. Accordingly, many teachers are failing to adjust their teaching to the level of students' understanding, another effective instructional practice.

Figure 45. Some teachers need to strengthen their use of teaching practices that are known to help students learning

A. Frequency with which teachers self-report that they use effective teaching practices in grade 3 and 5 in PNG
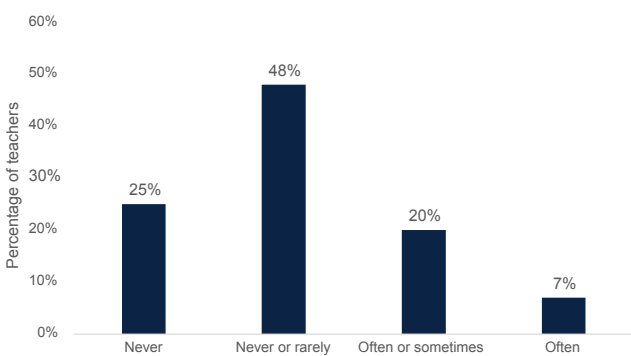
B. Marshall Islands secondary teachers

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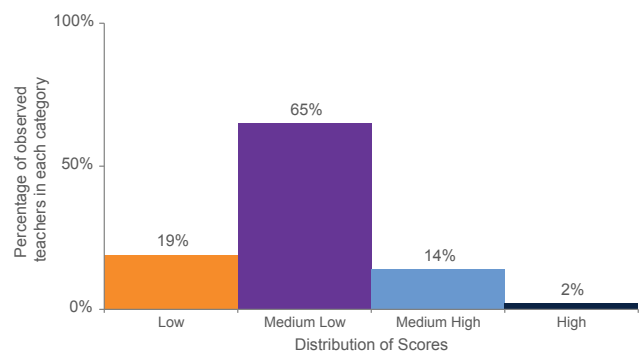
[21]For instance, one question asked: double these numbers: 9, 42 and 25.

[22]Specifically, in PILNA 2021, teachers were asked how frequently they deployed each of the following seven teaching practices (considered effective to engage students): (1) Relate the lesson to students' daily lives; (2) Ask students to explain their answers; (3) Bring interesting materials to class; (4) Ask students to complete challenging exercises that require them to go beyond the instruction; (5) Encourage classroom discussion among students; (6) Ask students to decide on their own problem-solving procedures; and (7) Encourage students to express their ideas in class.

60.   **A large number of teachers are absent.** Recent estimates from unannounced school visits suggest that teacher absenteeism is a systematic problem, at least at the elementary level: an estimated 21 percent of teachers were absent on the day of the unannounced visit (see Figure 46). While less than 3 percent of teachers are absent in high income countries (such as Japan and Korea), absenteeism tend to be a much bigger program in middle income countries. However, PNG has the highest rates reported in the East Asia and Pacific region.

Figure 46. One in five elementary teacher is absent on any given day, significantly higher than in other middle-income countries in the region
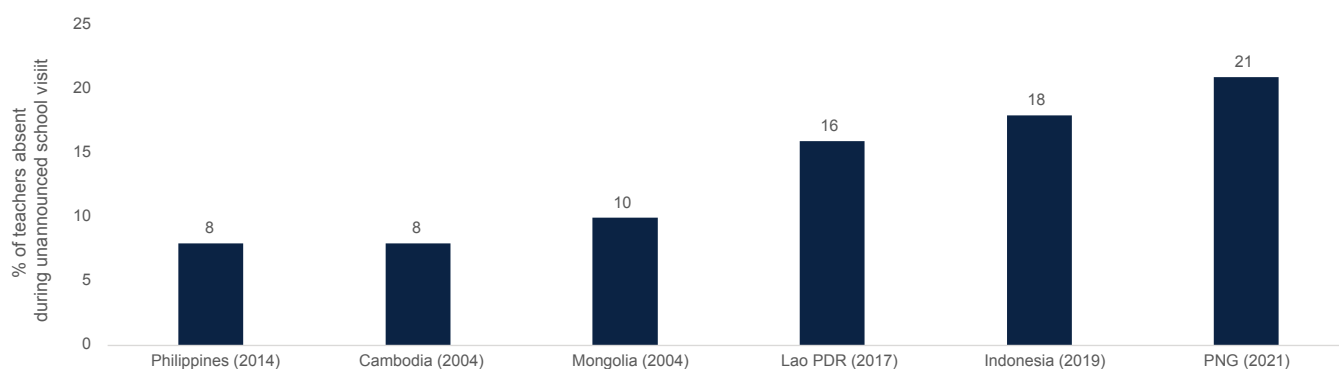
Source: PNG: Partnership In Education (2022): Findings from baseline survey, Philippines: Assessing systems for hiring and deploying teachers in the Philippines (2016), Cambodia: Teaching in Cambodia (2008), Mongolia: Mongolia – Public financing of education: equity and efficiency implications (2008), Lao PDR: Delivery of education services in Lao PDR (2018), Indonesia: Primary education in remote Indonesia (2019)

5.5   Management of the education system needs strengthening

61.   **The lack of inputs, the large number of untrained, unsupported and absent teachers, and the overall poor outcomes suggest that there are challenges related to how the system is financed and managed that need to be addressed.** This section discusses some of these challenges in more detail, focusing on the quality assurance system; the available and use of data; and the management of the teacher workforce.

62.   **Quality assurance systems are under-resourced and stretched beyond capacity.** As documented in a recent review of the Inspection Service in PNG, the systems in place to manage and support quality of teaching and learning in schools are missing: significant challenges of inefficient rules, archaic roles, and stagnant/declining resources cripple the system as the number of students, teachers, and schools increase. With no overall quality control or consistency, schools have made their own assessments of teachers and set expectations for them using a combination of classroom visits and checklist assessments more focused on teacher duties than on crucial student learning approaches. Ninety percent of teachers are waiting for an inspection, sometimes for years, without which they cannot secure full registration, tenure, appropriate salaries, or opportunities for promotion contributing to a demotivated workforce.

63.   **Basic data on students, teachers and schools are woefully inadequate.** Although PNG conducts an Annual School Census (ASC) and publishes the EMIS data in an Annual Statistics Bulletin, there are significant challenges in capturing, storing and disseminating accurate and quality data. Data is typically collected manually and there are extensive delays in data entry, analysis, and publication, making monitoring and evaluation very difficult. Data coverage is fragmented and concerning. For example, there was a drop in permitted and private schools between 2018 and 2021 (from 113 to 19), but no indication of whether the missing schools have closed, or are simply not submitting data.[23] There is no analysis on gender issues and disparities and the statistical

bulletin does not include core education indicators. Data on learning outcomes in lower grades are measured through the triennial Pacific Islands Literacy and Numeracy Assessment (PILNA) and disaggregated by sex, school ownership and location (rural/urban). However, PNG does not conduct its own nationally representative sample-based learning assessment to inform national planning and the PILNA data is not representative at the provincial level. There is no evidence of analysis of national examination results for grades 8, 10 and 12.

64. **Current teacher management systems are cumbersome and inefficient, contributing to the decline in attractiveness of the teaching profession.** At the start of each school year, all teachers are required to submit a physical Resumption of Duties Summary Sheet (RODSS) and Teacher Record of Appointment form through their schools to the Provincial Divisions of Education. Failure to do so by a cutoff date in March or April each year result in the teacher being automatically suspended (auto-suspended) from the payroll system. The rationale for this practice is to start each academic year on a clean slate, remove 'ghost teachers' from the payroll, and ensure all teachers report for duty in the role they were appointed to. Despite grace periods being given to teachers in remote schools, it is common for paperwork to get lost or delayed in their journey from the school to the provincial authorities. Every year, newspapers are filled with stories of a large number of teachers being cut off payroll despite having reported for duty. In 2023 the deadline had to be extended because 50 percent of teachers' forms had not been received by the cutoff date.[24] The consequence for teachers in these circumstances can be months or years of following up with authorities to be reinstated onto payroll, missing class time, losing their life savings through paying bribes, and sometimes losing their jobs. Not only does this deter teachers from serving in remote schools, it also contributes to a decline in attractiveness of the teaching profession.

65. **Finally, managing the system towards better learning outcomes is challenging because the system lacks an assessment system to provide information on the extent to which students are learning.** In the absence of such information, problems are allowed to persist because the crisis is not sufficiently visible to society and to policy makers. PNG does not have a national assessment of its third and fifth graders' numeracy and literacy skills. To measure such skills, it relies on the regional assessment, PILNA. However, for the 2018 and 2021 rounds the data were only collected for a nationally representative sample and, thus, did not provide information on how individual provinces were doing. There is little evidence that the data and findings are used to guide decision making. Apart from the publicity the results get at their launch, the data are not part of the discourse around education in the country. Moreover, there are no grass root efforts to fill such gaps, like the Indian NGO Pratham's efforts to measure and publicize results on student learning in an Annual Status of Education Report (ASER) as an example. Combined this means the problem of poor student learning exists in the shadows.

5.6   The system is underfunded and funds are inequitably distributed

66. **As discussed above, the investment needs are massive and, yet, budgetary allocations have not kept up with the rapid growth in student numbers.** There are signs of scarcity everywhere: in some urban schools, teachers have more than 100 students sitting on the floor, with no textbooks. Each school inspector has the impossible task of having to inspect 275 teachers, up from 187 teachers a decade ago. A key challenge is that budgetary allocations have not kept up with the rapid growth in student numbers. As such, allocations (and spending) on a per student basis have been falling (see Figure 47). In part, the challenge is policy makers no longer prioritize education spending: the education sector used to receive nearly 20 percent of the total budget but currently receives close to 16 percent (see Figure 48). PNG spends less than the average middle-income country but, given its population profile and needs, it should be spending more. Spending in 2021 stood at 3.3 percent, below 4.7, the global average spent by middle income countries. Ensuring that every child is prepared to start school at age 6, has a textbook, a capable teacher, a school with a gender-separated flush toilet, supported by a well-managed education system, overseeing quality and distributing resources and support in an equitable manner simply cannot be done with the current budget allocated.

[24]Resumption Deadline Set for Teachers in PNG, March 21, 2023 - https://edu.pngfacts.com/education-news/resumption-deadline-set-for-teachers-in-png

Figure 47. Budgetary allocation on a student basis have been falling

Per student budget ──●── / Linear (Per student budget) ············
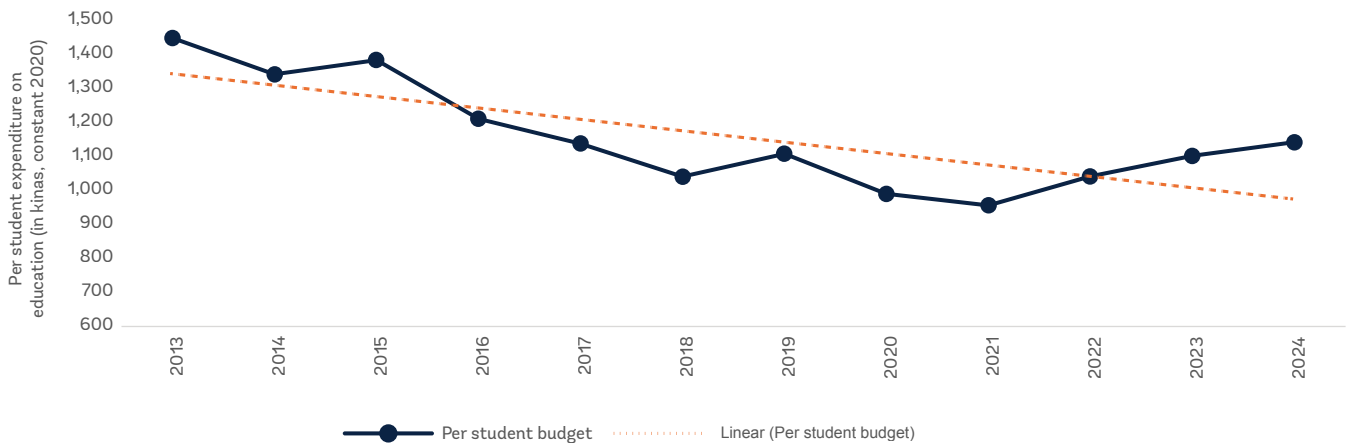
Figure 48. The education sector's share of the budget has been shrinking
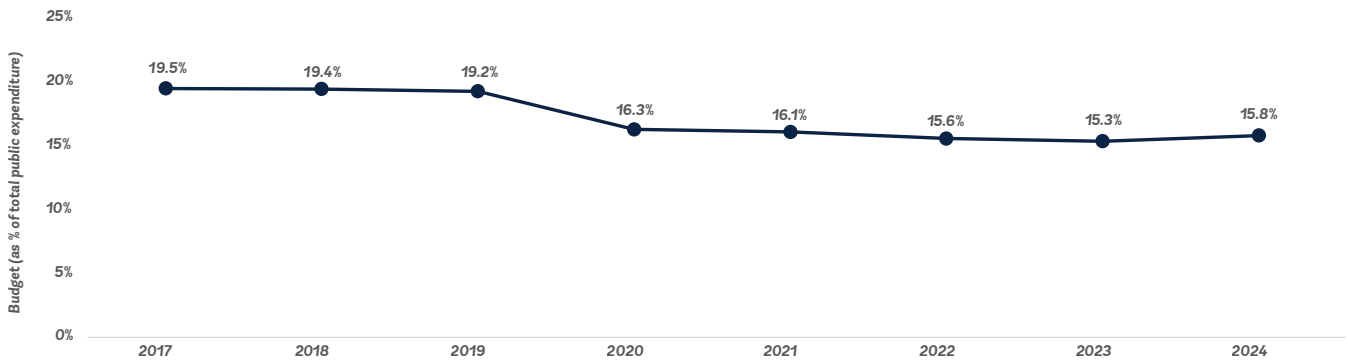
67. **Moreover, funding to schools is not provided in a consistent, transparent and equitable manner.** Despite having strong political support and the financial architecture to facilitate direct funding to schools under the Government Tuition Fee Subsidy (GTFS) policy, there are regular challenges in cash/funds availability, impacting the predictability and consistency in the cash release process to schools. This disrupts the ability for schools to provide planned support to their students. Despite GTFS taking up 20 percent of total education spending, there is no system in place to capture: (a) whether schools receive the amounts they are due; (b) when they receive the funds; and (c) on what schools are spending their resources. As such, it is impossible to gauge whether the frequent allegations of fraud and misappropriations in the media are isolated instances, or symptoms of more systematic weaknesses. Finally, the distribution of the education budget is highly inequitable, with the poorest provinces receiving the smallest per student allocations (see Figure 49).

Figure 49. Education spending is inequitably distributed with the poorest provinces receive the smallest per student allocations

Per student spending on education at province level vs. multi-dimensional poverty rate

$R^2 = 0.5525$

● 2021 actuals ——— Linear (2021 actuals)
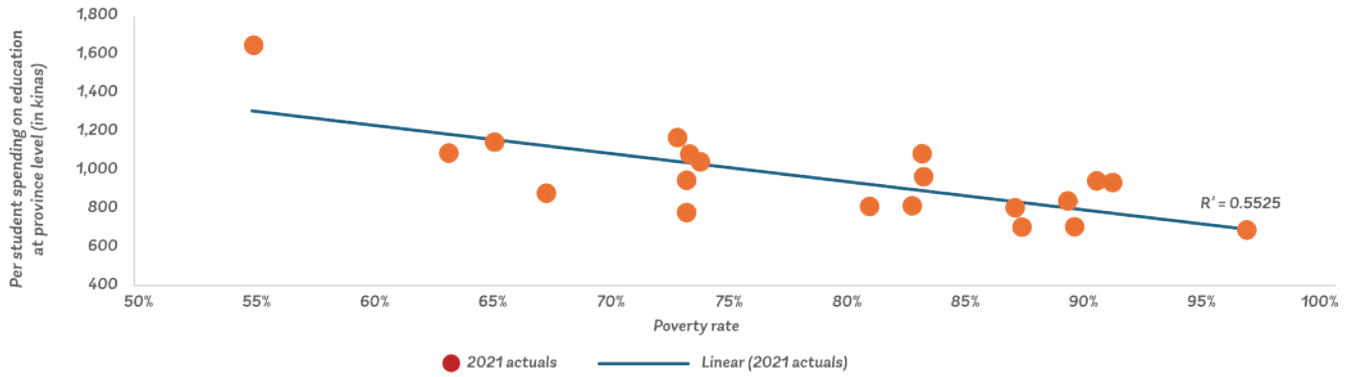
Source: Education spending at province level - BOOST Database (2012-2022), number of students – 2021 education bulletin, MDI – PNG Demographic and Health Survey (2016-2018). Note:: Education spending at province level includes the teacher salaries, teacher leaves fare and education function grants in 20VV21 (actuals) and 2023 (budget and predicted actuals) Per student spending on education at province level is estimated using the number of students reported in 2021 education bulletin

Box 4. **Challenging structural features make it especially costly and difficult to improve human capital outcomes in PNG**

In trying to improve human development outcomes, PNG faces some particularly challenging structural features, shared by only a few of its peers. To begin with, providing quality health and education services for all is particularly challenging when the population is rapidly expanding. Over the past 20 years, PNG's population age 0–14 has been growing by 1.6 percent, per year, exceeded only by Mauritania, Zambia, Republic of Congo, and the Solomon Islands, among the peers (Figure 50).[27] Similarly, providing a quality education for all is particularly difficult and costly for countries with a high degree of linguistic diversity. Such diversity means providing textbooks and instruction in different languages and increases the risks that children show up in school less prepared to be able to absorb teaching in the language of instruction. On this front, PNG is estimated to have the highest degree of linguistic diversity in the world, similar to some of the peers (including the Solomon Islands, Zambia, Congo, Indonesia, and Malaysia) but very different from Mongolia, Mauritania, Peru, and Australia (Figure 51).[28]

Figure 50: The number of children (age 0-14) has been growing rapidly in PNG since 2001
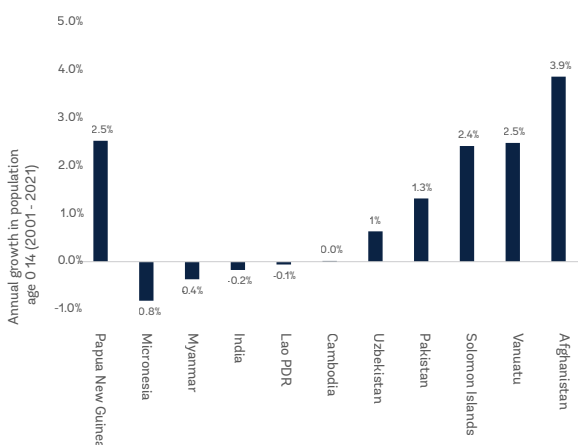
Figure 51: Linguistic diversity is very high in PNG
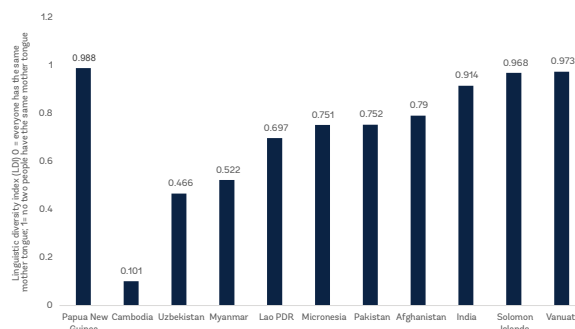
Source: United Nations Population Division (left); Ethnologue: Languages of the World, Twentieth Edition (right).

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[27]The high rates of population growth are caused by high rates of teenage pregnancies and high rates of unmet family planning needs. According to the most recent DHS (2016–2018), teenage pregnancy, among women ages 15–19, accounts for 12 percent of total births in PNG. And there is clear evidence of unmet family planning need: on average women are having one more child than they want—4.2 children instead of 3.0 children.
[28]Greenberg's Linguistic Diversity Index (LDI) is the probability that two people selected from the population at random will have different mother tongues; it therefore ranges from 0 (everyone has the same mother tongue) to 1 (no two people have the same mother tongue).

6. How to improve educational outcomes?

68.   **Given the multiple challenges facing the sector and the overall weak management, there is no rapid, easy fix; a long-term vision, guiding a phased approach to gradually strengthen student outcomes across the education system is needed.** Such phased approach would focus on building a stronger foundation from the bottom up. First, reduce stunting by strengthening efforts in the early years of life to ensure proper brain development. Second, prepare children to start school at the right age by equipping them with key skills – including English language, socio-emotional and emergent literary and numeracy. With these building blocks in place, the primary education system – equipped with basic inputs in place, better prepared teachers and better management – will be able to ensure that most children acquire the most foundational skill of all – the ability to read with understanding – by the end of primary schooling. Third, with more primary graduates who can read with understanding, the stage is set for expanding secondary education and even tertiary education. For the purposes of this Special Issue, the discussion below is confined to the early phases of this transformation: how to ensure that all children learn to read with understanding by the end of primary schooling.

69.   **In practical terms, to get started on this phased approach, the Special Issue recommends taking actions on three fronts.**

6.1   Strengthen efforts to reduce stunting and ensure proper brain development

70.   **The reason for focusing on the early years of life is a simple one: money spent on addressing deficiencies in the early years of life has the biggest return in the productivity gains they generate for individuals later in life** (Heckman and Masterov 2007 and Figure 52). Thus, at the margin, additional efforts and resources should be invested in reducing stunting, immunizing children, and ensuring that all primary students can read and understand an age-appropriate text. In the medium-term money spent here will have a dramatically better return than money spent on improving secondary education, TVET, or tertiary education or hospital care. Two actions, in particular, could be considered toward this goal: (a) invest more resources in reducing stunting by promoting primary health care service delivery, access and availability of maternal health services, and sexual reproductive health services; and (b) prioritize resources and political commitment to ensure every child is fully immunized against childhood illnesses, which are preventable.

Figure 52. Returns to spending are highest in the early years of life
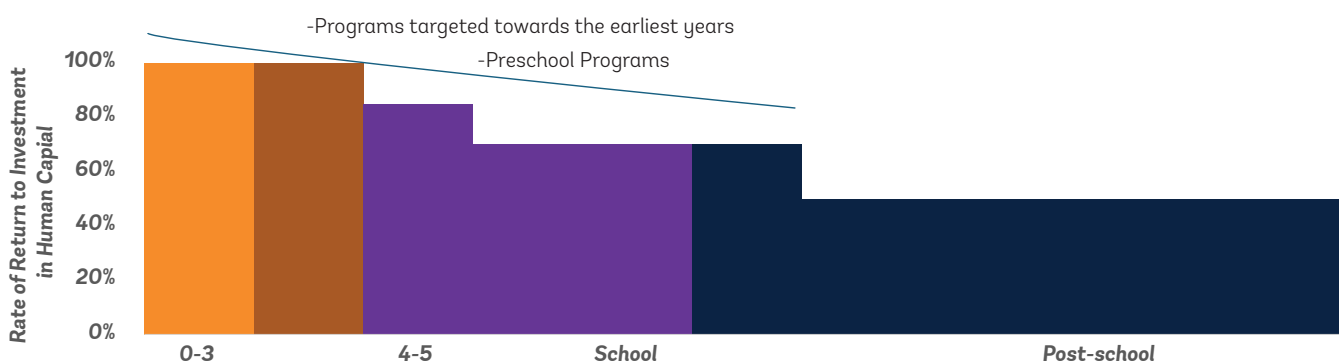
Source: Adapted from Heckman and Masterov (2007).

6.2 Prepare children to be school-ready and start school at the right age

71.   **Government could facilitate expansion, coverage, and quality of ECE by allocating appropriate funding, providing technical support, and promoting collaboration among donors and other stakeholders.** Expanding access to quality ECE will contribute to the children's well-being and their future educational achievement, in addition to enabling women to access productive employment. However, despite being a key government priority, ECE is currently given a negligible share of central government spending. Therefore, incentivizing sub-national governments to also invest in ECE could help accelerate the expansion. Government should also consider partnership with relevant stakeholders by building on the foundations that already exists, such as the church agencies. Providing subsidies through established church education agencies may lower transactional costs and keep salary costs in check. The subsidies should also be prioritized to target the most disadvantaged children first, for example, students in provinces with limited ECE provision and students in remote areas or in areas of poverty. Resources to mobilise national campaigns to increase the awareness of the right age to start school will also be key to help shift social norms.

6.3 Address the underlying causes of poor learning in early grades: ensure that basic inputs are delivered; improve teaching quality; strengthen the management of the system; and increase spending

6.3.1. Ensure that basic inputs are procured and distributed to all schools

72.   **As discussed above, basic inputs such as textbooks, reading books, teacher guides, teacher housing and toilets are still missing in the vast majority of classrooms.** Given the big impact these inputs have on student learning, procuring and delivering sufficient numbers to all schools should be the Department of Education's number one priority.

6.3.2. Strengthen teaching quality by increasing quantities, improving capacity of teachers, and improving motivation

73.   **A very large expansion of teacher colleges' intake and capacity is needed.** As mentioned above, PNG needs to recruit an estimated additional 4,500-7,500 teachers every year and the main constraint for this expansion is the lack of capacity at teacher colleges to train such numbers. Currently, the 22 teacher training colleges in the country are only able to produce an estimated 2,000 graduates per year. Efforts are underway to expand the capacity of teacher training colleges but it will take years before capacity is expanded to the level needed.

74.   **Given that teacher shortages will remain a persistent challenge for at least the coming decade, more attention is needed to make the most of the teachers who are already in the system.** Given these shortages, PNG cannot effort having an unsupported teacher in the classroom (e.g. a teacher without a teacher guide), or an absent teacher.

75.   **The good news is that there is a growing body of evidence on what are the most cost-effective interventions that could help strengthen teaching, and some of these approaches are already being used in PNG.** Specifically, the Global Education Evidence Advisory Panel reviewed over 13,000 studies to identify the best, most up-to-date evidence on cost-effectiveness at scale.[29] Based on this work, they argue that two of the "greatest buys" are interventions that: (i) introduce structured pedagogy (or scripted lessons plans); (ii) targeted instruction or teaching at the right level (TaRL); and (iii) the dual teacher model, one example of an educational technology (EdTech) intervention, also shows promise.

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[29]For more details, please see Banerjee, Abhijit; Andrab, Tahir; Banerji, Rukmini; Dynarski, Susan; Glennerster, Rachel; Grantham-Mcgregor, Sally; Muralidharan, Karthik; Piper, Benjamin; Jaime Saavedra Chanduvi; Yoshikawa, Hirokazu; Ruto, Sara; Schmelkes, Sylvia.
2023 Cost-effective Approaches to Improve Global Learning - What does Recent Evidence Tell Us are "Smart Buys" for Improving Learning in Low- and Middle-income Countries? (English). Washington, D.C. : World Bank Group.

76.   **Structured lesson plans have already shown to be effective in PNG to support teachers to improve student learning.** These structured (or scripted) lessons plans especially useful where teachers lack pedagogical skills or subject knowledge, as they lead the teacher—and thus the student—through a series of activities designed by the best teachers. Such plans are already available in PNG and have been rigorously shown to improve learning. But they need to be made available to all teachers, and teachers need to be taught how to use them. Specifically, Papua New Guinea's Reader Booster Programme was implemented in Madang Province in 2013 and Western Highlands Province in 2014. The program was rigorously evaluated by randomly selecting schools where teachers benefitted from the training and compared these to schools who had not yet benefitted from the training.[38] The program developed highly scripted lesson plans for teachers to follow for one lesson per week and provided teachers with training to implement follow-up lesson plans. Time for these lessons was scheduled during the curriculum time allocated for language instruction; the national curriculum allows teachers to have flexibility in which materials they use and how they teach. In addition to training, teachers were also provided with mentoring and coaching. At the end of one year, the results were already impressive: 23 percent of third graders taught by teachers who used scripted lessons plans had become good readers, compared to only 14 percent in schools where teachers were not yet using such plans (Figure 53). Similarly impressive gains have been observed in other countries (including Kenya, Liberia and South Africa), with the clear message that interventions relying on introducing structured pedagogy can improve foundational literacy and numeracy at relatively low costs (see Banerjee et al 2023 for details).

Figure 53. There is evidence (incl. from PNG) that scripted lessons plans are a cost-effective way to improve student outcomes
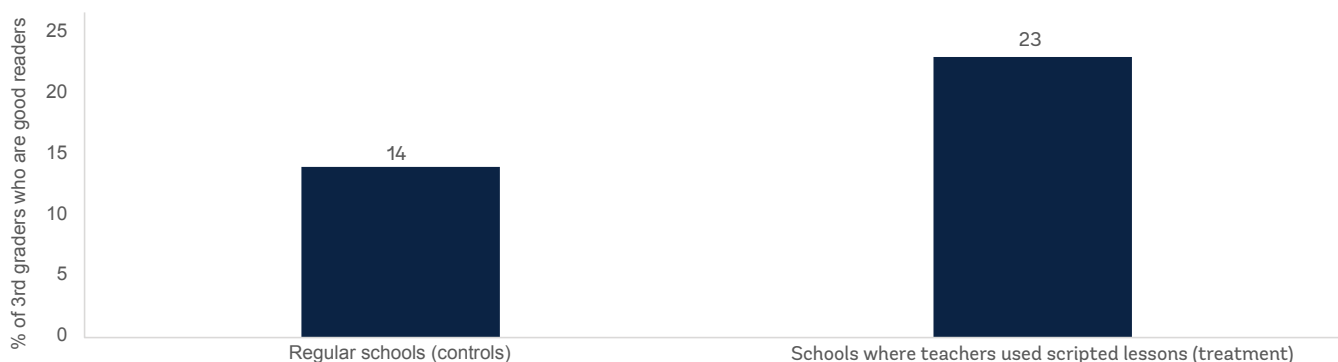
Source: World Bank analysis based on MacDonald and Vu 2018
Note: the figure shows the % of 3rd graders who were good readers in randomly selected "treatment" and "control" schools at the end of the intervention.

77.   **Targeted instruction,** also known as teaching at the right level (TARL), helps teachers address the major challenge of children having different levels of learning. Targeted instruction involves grouping students in school by learning levels, rather than age/grade, and engaging them in activities appropriate to their achievement levels. Targeted instruction can be highly effective. In the Indian state of Uttar Pradesh, there was a 25-percentage point increase in the likelihood of being able to read a story due to this method (Banerjee, et al., 2017). Targeted instruction can also be highly cost-effective, delivering as much as three years of learning per USD 100 spent (Angrist et al. 2020).

[38]In more detail: in both provinces, schools were randomly sampled and assigned to either a treatment group which received the intervention or a control group which did not. In Madang Province, 15 schools were assigned to the treatment group while 16 schools were assigned to a control group. In Western Highlands Province, 23 schools were assigned to the treatment group and 23 to the control group.

78. **There are several reasons why educational technology (EdTech) solutions are worth considering for PNG.** First, many schools are geographically isolated, making access to traditional educational resources challenging. EdTech can bridge this gap by providing online learning platforms, virtual classrooms, and educational content that can be accessed remotely, reducing the isolation and enhancing educational opportunities. Second, given PNG's diverse cultures and languages, EdTech allows for the customization of educational content to cater to various languages and cultural contexts, promoting inclusivity and ensuring that education is relevant and engaging for all students. Third, given the susceptibility of PNG to natural disasters and environmental changes, the adaptability and resilience fostered through EdTech is highly beneficial. Digital learning materials can be easily updated, and online platforms enable swift recovery after disruptions caused by events such as cyclones or earthquakes.

79. **One EdTech intervention appears to be particularly promising: the dual teacher model.** This extends the reach of the best teachers by enabling them to provide content and model elements of effective pedagogy either as pre-recorded or livestreamed sessions. This approach has had significant positive impacts on learning in several rural contexts where high-quality teachers are in short supply, including in Ghana, India, Mexico, and Pakistan. Impacts have been found in multiple subject areas across a range of grade levels. A study of seventh to ninth graders in China found improvements in student learning of 0.23 standard deviations in language and 0.18 standard deviations in mathematics. It is important to note that these remote instruction interventions took place in classrooms during the regular school day and involved the presence of a teacher in the classroom in addition to the remote teacher.

80. **As discussed in the next section, the investments in technology that is likely to be most beneficial at the current juncture are investments in technology to better manage the sector.** This approach – of investing in technology to improve the management and support function of the system is the approach taken by neighbouring Indonesia.

81. **Further work is needed to help bring down the high rates of teacher absenteeism** This can be done by first, collecting better data on the magnitude of the problem; second, doing research to identify the underlying causes of such absenteeism; and third, designing and launching pilots to explore what will be needed to address these underlying causes (and what it will cost to do so).

6.3.3. Improve management of the sector

82. **As mentioned above, management of the sector needs strengthening across a wide range of areas, including the policies and regulation that govern the sector, strengthening capacity of the officials charged with overseeing the sector, as well as supporting head teachers and teachers.** Below are some suggestions on how to start addressing some of the challenges mentioned in section C.3.3 above: (i) what is needed to fix the broken inspection system; (ii) how to improve data quality and use of data in the system; (iii) how to make school spending more reliable, transparent and equitable; (iv) how to improve management of the teacher workforce; and (v) how to shed more light on the learning crisis.

83. **Tackling the challenges in PNG's school inspections system requires a comprehensive, systematic, and sustained strategy to be designed, implemented, and resourced adequately.** A recent review of the inspection service estimates that an allocation of resources between two to four times higher than current spending would likely be needed to strengthen inspection services, and made the following three recommendations to strengthen the inspectorate:

- Approving a clear and stable set of roles for inspectors and the broader school inspection system. This process should include detailed budgeting exercises to ensure that the roles defined are realistic and can be funded sustainably once approved.

- Mobilizing the resources required, ensuring that there is predictability in annual inspection budgets and availability of resources when they are needed.

- Documenting, approving, and operationalizing clear and transparent policies, regulations, and school, school leadership, and teacher professional standards to govern the implementation of those roles.

84. **Improving access, timeliness, reliability, and utilisation of data on students, teachers and schools would involve a drastic overhaul of the current education management information system.** This would involve strengthening the enterprise architecture of the EMIS and processes for data collection, entry, validation, analysis, and dissemination. This should include producing and disseminating guidance documentation, providing ongoing professional development for the system administrators and users, and implementing ongoing change management associated with the requirements of new systems. This overhaul could build on the technical design work already done by the NDoE, with support from the World Bank.

85. **Updating legislation, policy, systems, and practices of teacher administration will help better care for the most valuable input into the education system, quality teachers in classrooms.** Automation, digitisation, and a single integrated teacher management data system is necessary to address the challenges brought about by inefficient and manual administrative processes in desperate need of an upgrade. The World Bank together with development partners have started working with the Ministry of Education to identify specific areas for reform that would simplify existing administrative processes such as the annual teachers' Resumption of Duties process while increasing efficiency and accountability. These changes would require strategic sustained inter-departmental leadership to enable teachers to focus on their most important task of teaching and learning.

86. **An important first step towards bringing more attention to the crisis would be to start measuring student learning and using this data to informs decisions.** Having such data could inform where more efforts are needed, and help identify what are the underlying causes of poor outcomes. The data could also bring wider political (even societal) understanding on what are the learning goals of an education system, i.e. it is not enough that a child is in school; what matters is that the child acquires knowledge skills and competencies. Such data could also be used to set goals against. When government and education leaders pledge to having every child learn to read, it can unleash positive actions that make goals reachable. Globally, the education systems that have made rapid progress in improving student learning share a common feature: there is political ownership of key reforms and commitment to improving student learning, with explicit, concrete, and time-bound goals for early grade readers.

6.3.4. Increase education sector budgets and direct additional spending towards cost-effective interventions and on improving equity of spending

87. **Additional resources should be mobilized towards cost-effective interventions.** The Global Education Evidence Advisory Panel not only provides examples of cost-effective interventions (see recommendations above on structured pedagogy and targeted instruction), the Panel also provides the following cautionary reminder: "one mistake that many systems make is to assume that simply investing more in inputs on the margin, without improving how they are used or for whom, will improve learning." Such investments may seem appealing because, undeniably, schools require textbooks, learning materials, teachers, and buildings to function. However, research conducted across various contexts has consistently shown that merely adding more resources to the existing educational practices, without optimizing their use or altering the approach, does not yield effective results.[29] The Department of Education should heed this advice and advocate/request resources for cost-effective interventions such as a large-scale program to introduce structured pedagogy. Such programs– e.g. in Tusome program in Kenya – usually have three main components: structured lesson plans for teachers, student books, and ongoing training and support for teachers.[30]

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[29]Please see Banerjee et al (2023)'s discussion of "Bad Buys"

[30]For more details, please see Benjamin Piper, Stephanie Simmons Zuilkowski, Margaret Dubeck, Evelyn Jepkemei, Simon J. King,Identifying the essential ingredients to literacy and numeracy improvement: Teacher professional development and coaching, student textbooks, and structured teachers' guides, World Development, Volume 106, 2018,Pages 324-336,

88.   Making school spending more transparent, reliable and equitable will require a concerted effort from a number of different actors. To begin with, the distribution of the sizeable GTFS transfers could be made more transparent by introducing a simpler formula, consistent with whatever the budgetary allocation is for GTFS that particular year. That way, parents and teachers would have an easier time working out what is their school's entitlement. With such knowledge, they could help provide more accountability on how school's entitlements are used. The formula could also be made more equitable by providing more resources for schools catering for more disadvantaged students and/or schools facing higher costs of procuring inputs. However, the biggest source of inequities in school funding is the fact that some provinces, on average, have less than 30 students per teacher, while others have as many as 50. Addressing this source of inequity will be harder, requiring a concerted effort of provinces, the Teaching Service Commission (TSC) and the Department of Treasury to mobilize substantially bigger budgetary allocations to the provinces that are currently operating with very large few teachers per student.

7. What would a transformed education system look like? More young people with the skills and knowledge to become the engine of PNG's future growth and development

89.   **By equipping young people with more education and skills, the young population could be turned into an engine of future growth.** Given today's population structure and fertility rates, twenty-five years from now (in 2050), there will be 35 percent more young people aged 20-24 in PNG than there is today. An ambitious – yet realistic – vision could, by 2050, see a complete inversion of the education outcomes currently observed, with the vast majority (67 percent) of young people acquiring some secondary or tertiary education (compared to only 23 percent today), and less than a third of young people (compared to 71 percent today) leaving school without any secondary education. Figure 54 illustrates what this transformation would look like by 2050.

Figure 54. A vision for the future: by 2050, three-fourth of PNG's youth have completed some secondary education, or a tertiary education
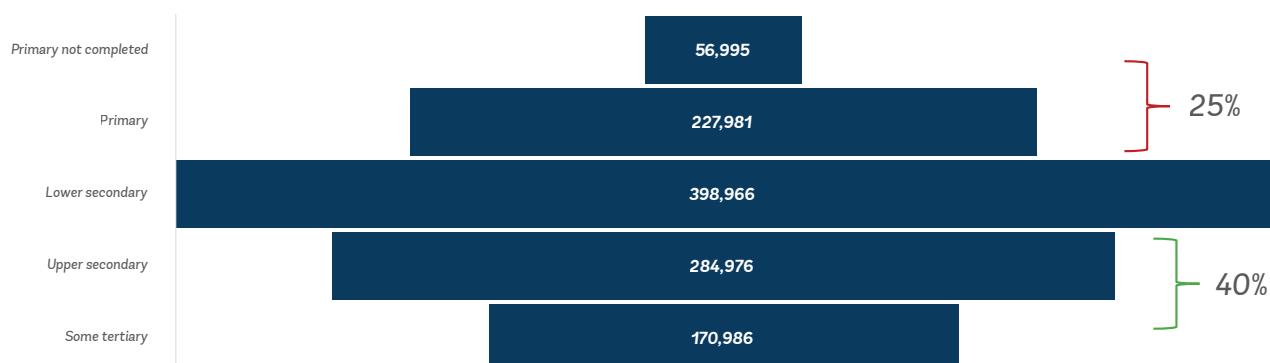
90.   **To achieve this ambitious vision, transformational changes are needed to the education system, starting with a concerted and urgent focus on the children who have just been born.** Specifically, to create more secondary and tertiary graduates by 2050, a bigger proportion of the cohort who was recently born need to learn to read with understanding by the time they reach 10 years of age (around the year 2035). Only by having more primary students who can read with understanding will PNG be able to expand the number of secondary and tertiary graduates.

91.   **In numbers, the vision would require a very large expansion of the education system, growing from approximately 2.3 million today to an estimated 3.8 million in 2050.** The number of children age 4-6 who would be in Early Childhood Education would reach 500,000 in 2050; the number of primary students would expand from 1.7 to 1.8 million; the number of secondary students would double from 500,000 to 1 million and the number of vocational students would expand from 35,000 to 200,000 (see Figure 55).

Figure 55. To create a more educated youth by 2050, a very large increase in student numbers would be needed

Number of students

Legend: ECE, PRI, SECD, VOCA
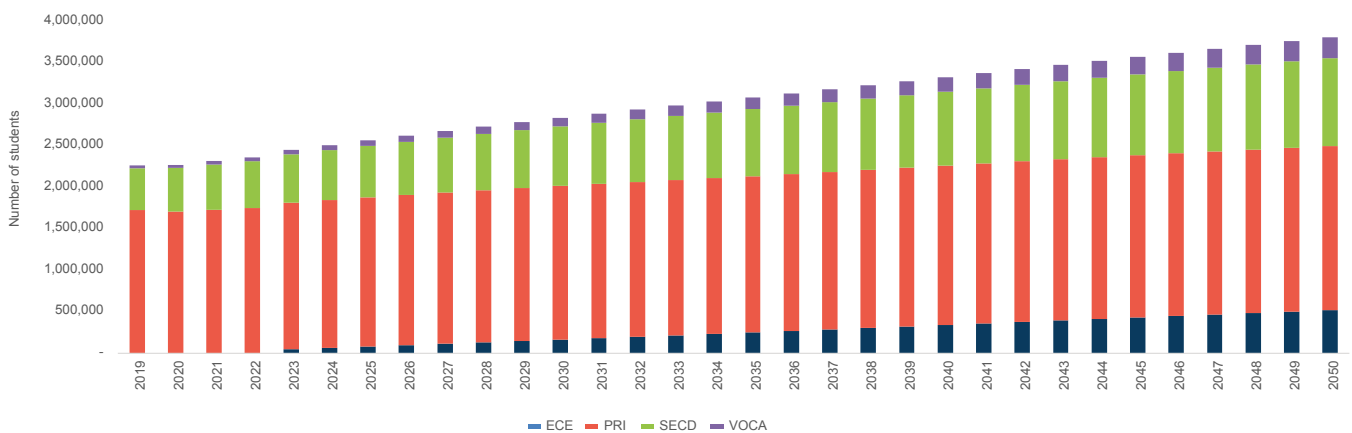
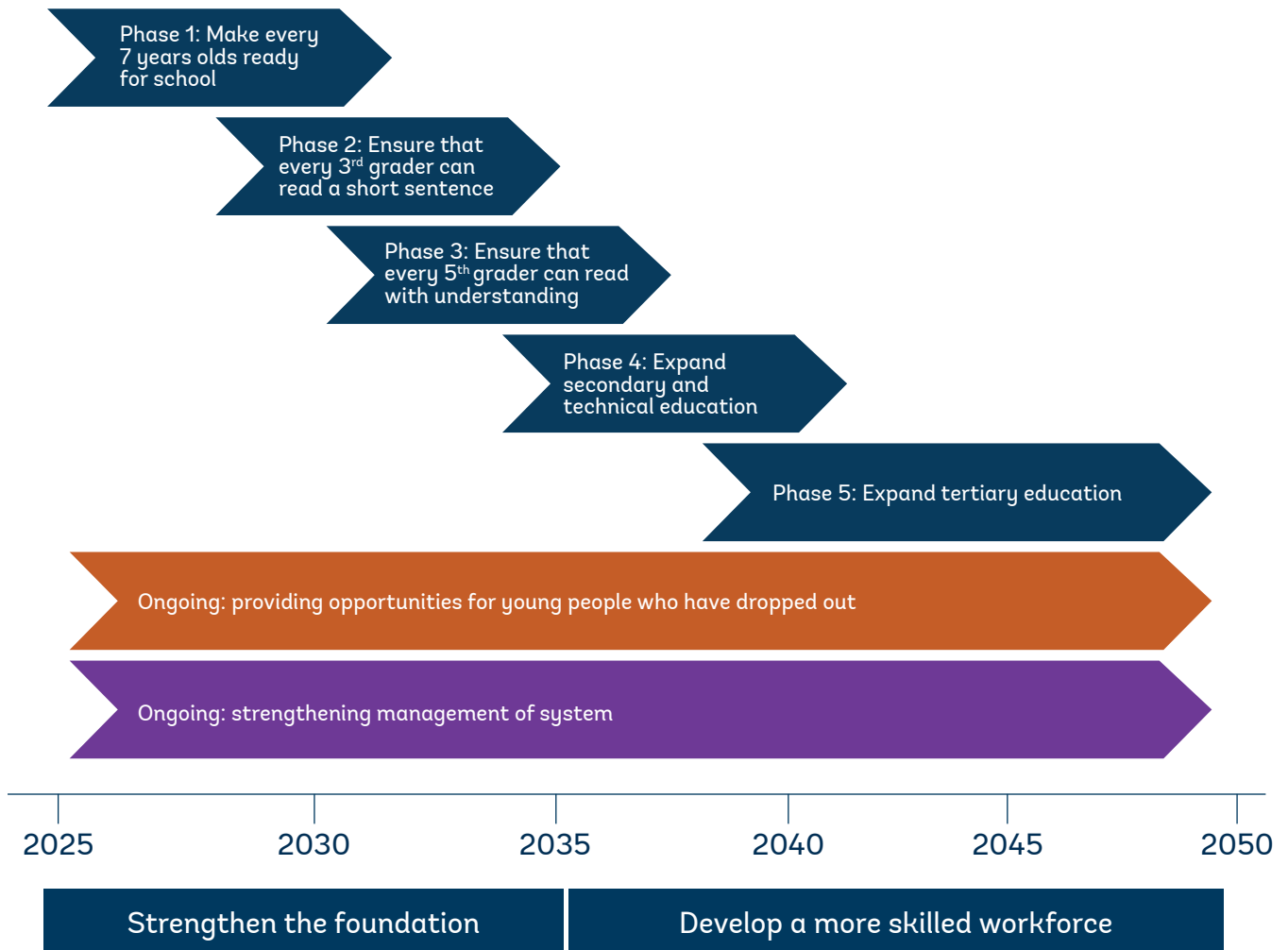92.   **Given existing financial and capacity constraints, a phased approach will be needed to deliver on the vision by 2050.** The education system cannot be expanded overnight. On the "supply side", it takes time to build new schools and train new teachers. On the "demand side", students need to be adequately prepared from one level of education before they can master the more challenging curriculum at the next level. For this reason, a sensible way to start the expansion would be to focus on the children who have just been born. Figure 56 provides an illustration of what such a phased approach could look like, starting with a focus on the children who have just been born: phase 1 would focus on ensuring that every 7-year-old would be ready for school by the year 2030. Achieving this would require a rapid scale up of early childhood education opportunities for this cohort.

93.   **An education strategy focusing purely on improving the outcomes for future generations will not be enough, today's youth (aged 15-24) – making up 20 percent of the population – will also need more attention and support.** Specifically, 28 percent of these youth (15 to 24 year-olds)—nearly 690 thousand individuals—find themselves outside of training, education, and employment. For this reason, Figure 55 suggests an immediate and ongoing focus on providing more opportunities for children and young people who have dropped out. National strategies and plans have marked TVET as an important pathway outside of the traditional post primary education sector. However, its provision is still limited, with only 16,000 students in 2022 anticipated to enrol in vocational education and Flexible Open and Distance Education programs. However, by focusing on fixing the foundation, gradually, the proportion of children who drop out will be reduced.

Figure 56. Given financial and capacity constraints, a phased approach will be needed to deliver on the vision by 2050

Phase 1: Make every 7 years olds ready for school

Phase 2: Ensure that every 3rd grader can read a short sentence

Phase 3: Ensure that every 5th grader can read with understanding

Phase 4: Expand secondary and technical education

Phase 5: Expand tertiary education

Ongoing: providing opportunities for young people who have dropped out

Ongoing: strengthening management of system

2025   2030   2035   2040   2045   2050

Strengthen the foundation   Develop a more skilled workforce

94.   **The scale of the transformation needed require sustained and aligned efforts across a range of stakeholders: head of government, the minister of education, the Treasurer, departments involved in reducing stunting rates, teachers, and parents.** The head of government provides vision and political leadership, which will be needed across successive government administrations. The minister of education must develop credible agendas for reform, making pitches for additional resources to finance cost-effective interventions. The Treasurer will have to allocate sufficient resources to enable implementation of the reform agenda. Teachers will need new tools and enhanced support and be ready to step up to the challenge. Parents and caregivers will need to be engaged in, and advocates for, improved learning. To convince officials in Treasury that additional resources for education will be used productively, the department of education must make the argument that their requests for additional resources are, indeed, the most promising and cost-effective interventions. They will also need to improve data and information to underpin the design, implementation, and evaluation of reform initiatives. Better and more accessible information will also be critical to empowering parents to support teachers—and to hold them to account—in the quest for improved foundational learning for their children. Such mutually reinforcing, and long-term, relationships between key stakeholders—between the ministry of education and finance, between parents and teachers—will be critical in countries' efforts to improve student learning. Those efforts would set the stage for higher productivity and growth and more prosperous societies in the years to come. Progress takes time under the best of circumstances, so action must begin now.

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