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Policy Responses to Rising Global Fuel Prices: A Rapid Assessment for Papua New Guinea

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Abstract

Global crude oil prices have surged following the war in Iran and disruptions to the Strait of Hormuz, creating a dual economic challenge for Papua New Guinea (PNG). Rising import costs have triggered severe imported inflation, while Liquefied Natural Gas (LNG) and crude oil exports deliver windfall revenues. In response, the government introduced a K1 billion (USD 230 million) relief package to freeze fuel prices and waive excise duties and the Goods and Services Tax (GST). This study examines three policy issues: the pass-through of higher import costs to domestic food and non-food prices and their effects on food consumption; the broader macroeconomic implications of sustained global fuel shocks; and the fiscal trade-offs of fuel subsidies against LNG export gains. Short-run price multiplier analysis shows rapid transmission of import costs to consumer prices and household microsimulation analysis shows commensurate effects on household food consumption. Medium-term Rural Investment and Policy Analysis (RIAPA) model simulations reveal PNG's dependence on refined petroleum imports leaves GDP vulnerable to contraction, even as LNG revenues rise. Windfalls accrue mainly to capital-intensive resource firms, while real exchange rate appreciation undermines competitiveness. Fuel subsidies stabilize consumer prices but cannot offset wider macroeconomic volatility. Policy options include

recalibrating subsidies to allow gradual price adjustment, maintaining a managed exchange rate with controlled depreciation, and diversifying exports beyond LNG to strengthen resilience against external shocks.

Background

The West Asia crisis in 2026 entailing the armed confrontations between the USA, Israel, and Iran, has greatly limited the flow of energy supplies via the strategic Strait of Hormuz, which accounts for 25% of the world's seaborne oil trade. Several oil producing countries like the USA, Russia, Saudi Arabia, Iraq, UAE, Iran, and Kuwait (among others) are involved in this war either directly or indirectly. With these states accounting for more than 50% of the total global oil supplies, the energy markets have been significantly impacted by these developments, with the oil prices soaring to all-time high levels. For Papua New Guinea (PNG), the crisis presents two realities.

First, on the import side, PNG faces severe "imported inflation". As reported by the Independent Consumer and Competition Commission (ICCC), crude oil prices on international markets rose sharply, reaching above $110 per barrel during the last week of March. The rise has had an extremely adverse effect on the local Import Parity Price (IPP), which accounts for 65% of the total cost. In turn, this caused a sudden rise in domestic retail prices where petrol increased by K1.70 per litre (39 percent), diesel by K3.25 (73%), and kerosene by K3.35 (82%) in comparison with the average price of March,2026. According to the 2023 PNG Social Accounting Matrix (SAM) database, households are the primary consumers of petroleum products, accounting for 58.15% of total consumption, followed by other services at 15.53%, and transport at 11.73%[1] (IFPRI, 2025). Because fuel costs heavily dictate both household living expenses and the operational costs of energy-intensive industries, the PNG government intervened with a K1 billion fuel relief package. This measure mandated the ICCC to adjust and maintain all domestic retail fuel prices at March 2026 levels, effectively shielding consumers from the immediate global

[1] https://cgspace.cgiar.org/items/76450ce6-d958-4faf-8fa5-5b255c68ee0b International Food Policy Research Institute (IFPRI). 2025. 2023 Social Accounting Matrix for Papua New Guinea (PNG): A Nexus Project SAM. Data Paper. Washington, DC: IFPRI.

market spikes. Further, to help absorb the massive price shock, the government suspended the standard excise duties (e.g., K0.61/litre on petrol) and domestic GST components (e.g., K0.55/litre on petrol).

Secondly, and conversely, as a resource exporter, PNG enjoys massive windfall revenues from its LNG and crude oil exports capturing high international spot prices. However, while a large share of PNG export earnings are derived from exporting resources such as LNG, the resource sectors employ relatively fewer workers than other sectors such as agriculture. Hence, there are already limited domestic spillovers from LNG export windfalls. This calls into question the projected benefits from the higher LNG prices.

In summary, the sharp rise in global energy prices has presented a dilemma in terms of its economic policies since PNG is experiencing "imported inflation." While the government is making significant fiscal sacrifices on the domestic import side, PNG sits on the other side of the ledger as a resource exporter - specifically windfall earnings from LNG and crude exports, which are capturing high international spot prices.

Thus, this sharp increase in global energy prices raises several critical policy questions for PNG:

1. What are the immediate pass-through effects of higher import prices on domestic food and non-food consumer prices in PNG and what effect do these price changes have on local food security and diets?
2. What are the broader macroeconomic and structural implications of elevated global fuel prices on the country's economy?
3. To what extent will higher global LNG prices benefit PNG, and what are the net budgetary implications of the government’s fuel price stabilization subsidy?

To address the first question, we employ a cost-push price multiplier framework within an input-output model to capture the direct and indirect pass-through effects of higher import prices on the domestic Consumer Price Index (CPI). This price model is calibrated using the 2023 Social Accounting Matrix (SAM) for Papua New Guinea. Price increases from the multiplier model were then inputted into a microsimulation model (based on household survey

data) to evaluate the direct, household level effects on food security and diet quality.[2]

Answering the remaining policy questions requires a comprehensive, economy-wide framework to evaluate the systemic impacts on PNG's key macroeconomic indicators. To analyse these economy-wide impacts and policy trade-offs, we utilize the International Food Policy Research Institute's (IFPRI) Rural Investment and Policy Analysis (RIAPA) model. Furthermore, we construct counterfactual scenarios—comparing outcomes with and without the price stabilization policy—to quantify the exact fiscal and budgetary implications of the government's intervention.

Immediate price effects

Figure 1 illustrates the economic impact of the April 2026 domestic petroleum price surge, triggered by the ongoing West Asian crisis. This analysis accounts for a month-on-month increase of 39% for gasoline (petrol), 73% for diesel, and 82% for jet kerosene compared to March 2026. In PNG, the total petroleum consumption mix consists of 10% gasoline, 78% diesel, and 12% jet kerosene[3]. Using these consumption shares as weights, we calculated a weighted average increase of 67% in domestic petroleum prices for April 2026. This shock was then simulated through a price multiplier model to estimate its downstream effects on producer and consumer prices.

As shown in Figure 1, the aggregate producer price index (PPI) across all products increases by 0.6%, while the consumer price index (CPI) rises by 2.8%. For the food group, the impact is relatively muted, with producer and consumer prices increasing by 0.3% and 0.4%, respectively. Conversely, the non-food group experiences a sharp divergence: consumer prices surge by 4.6% compared to a modest 0.7% increase in producer prices.

Consequently, Figure 1 clearly demonstrates that the domestic petroleum shock inflicts a significantly higher burden on consumer prices than on

[2] The household survey used was the IFPRI PNG-Rural Household Survey (https://doi.org/10.7910/dvn/byzmz6)

[3] https://www.theglobaleconomy.com/Papua-New-Guinea/gasoline_consumption/

producer prices, heavily driven by the non-food sector. The magnitude of these price transmissions depends heavily on sectoral energy intensity in production and household consumption patterns. As established in the previous section, households in PNG account for more than half of national petroleum consumption, followed by the services and transport sectors. Because the government does not subsidize consumer goods, these soaring input costs pass through directly to retail markets, ultimately explaining why the impact on consumer prices is so pronounced.

Figure 1: Producer and consumer price impacts

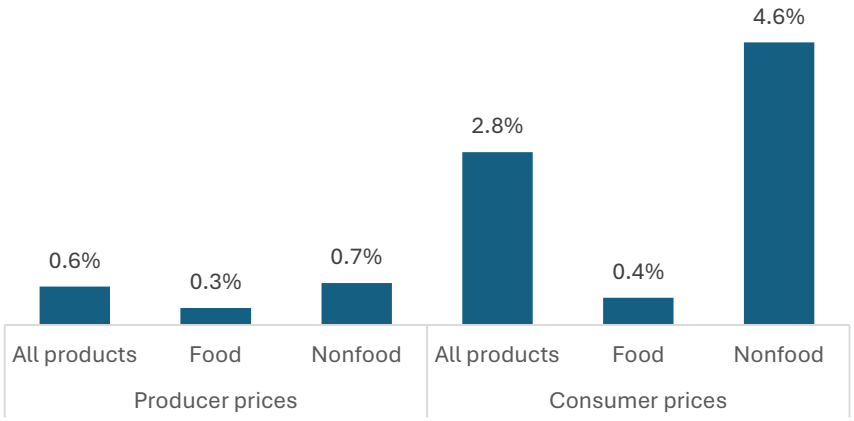
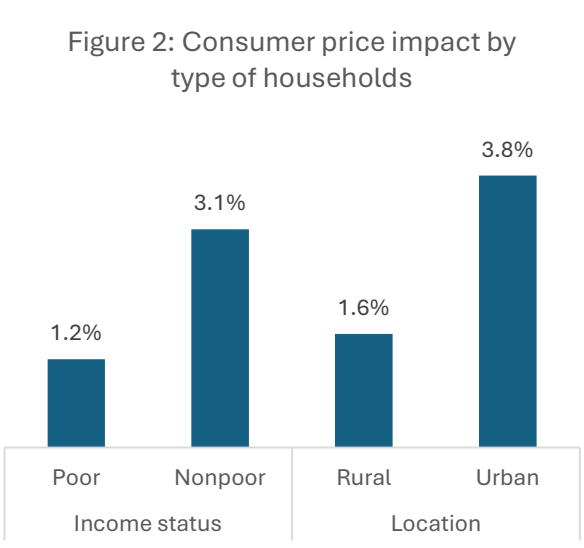
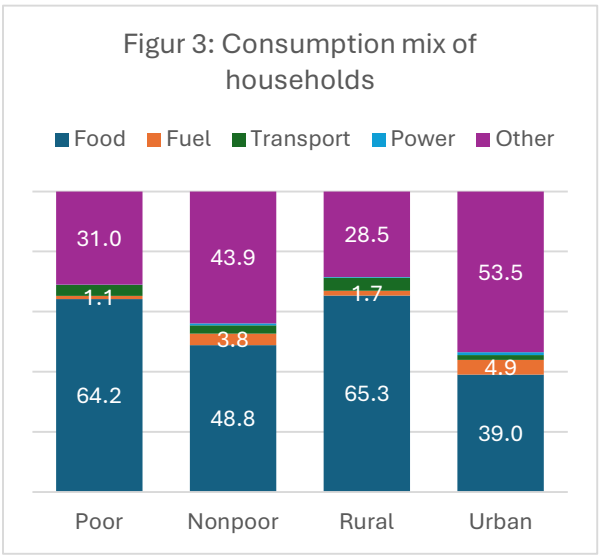


Figure 2: Consumer price impacts by type of households





Furthermore, we analyse the consumer price increases across different household segments. The Social Accounting Matrix (SAM) database utilized in this study categorizes households into five distinct per capita consumption expenditure quintiles, with each quintile representing 20% of the household population. The database further disaggregates the population within each quintile into rural and urban areas to map their specific consumption expenditures.

According to World Bank estimates, approximately 40% of PNG's population lives below the national poverty line. Consequently, we have designated the bottom two quintiles as "poor" and the remaining three quintiles as "non-poor" to isolate the impact of inflation by socioeconomic status. As illustrated in Figure 2, poor households experience a 1.2% increase in consumer prices, whereas non-poor households face a 3.1% increase. Disaggregating by geography reveals a similar trend: the Consumer Price Index (CPI) for rural households rises by 1.6%, compared to a sharper 3.8% increase for urban households.

These varying impacts are directly driven by the distinct consumption baskets of each household group. As shown in Figure 3, poor and rural households allocate a substantial share of their total budget to primary food items—approximately 64% and 65%, respectively. In contrast, their direct fuel consumption is minimal, accounting for just 1.1% of spending for poor households and 1.7% for rural households. Conversely, non-poor households spend 48.8% on primary food and 3.8% directly on fuel, leaving the remainder for other commodities. Similarly, urban households allocate 39% to primary food and 4.9% to fuel. Because primary food production and consumption are inherently less fuel-intensive than other sectors, poor and rural households in PNG absorb a smaller overall consumer price shock than their non-poor and urban counterparts.

Table 1 provides a closer at the household level effects of these food and non-food price increases, zooming in on the food security and diet quality outcomes experience by rural households, broken down by highland and lowland areas and income quintile. The changes in consumer prices have an expected

negative effect on both food security – measured by the undernourishment rate – and deity quality – measured by IFPRIs ReDD index.[4]

Overall, lowland households experience greater increases in undernourishment, on average, as well as decreases in diet quality. The largest decrease in diet quality occurs for rich lowland households who are likely experiencing larger effects from the fuel price shocks due to being wealthier (as previously reflected in Figure 3).

Table 1 also presents the incidence of depreciation (as defined by not meeting the target consumption threshold of a standard reference diet) for six main food groups and the average percentage gap by which households are not achieving these thresholds.[5] The patterns here follow what we saw for under-nourishment and diet quality, with lowland households experiencing larger changes. We do see that across all households; starchy staples see the largest increase in the percentage of households deprived and deprivation gap. This indicates that consumer price increases are first and foremost driving households away from staple foods – a worrying sign when these are important foundations of calorie consumption and diets.

Table 1: Food security & diet impacts

	Under-nourishment			**Diet quality**		
	Perc. point change			**Perc. change**		
Quintile	**Highlands**	**Lowlands**	**All Rural**	**Highlands**	**Lowlands**	**All Rural**
1	0.6%	0.9%	0.8%	-0.5%	-1.0%	-0.7%
2	1.2%	3.2%	2.2%	-0.8%	-1.3%	-1.0%
3	4.1%	2.3%	3.2%	-0.9%	-1.5%	-1.2%
4	1.8%	1.5%	1.6%	-1.0%	-1.8%	-1.4%
5	0.6%	1.6%	1.1%	-1.1%	-2.2%	-1.6%
All HHs	**1.6%**	**1.9%**	**1.8%**	-0.8%	-1.6%	-1.2%
	Deprived			**Deprivation gap**		
	Perc. change			**Perc. change**		
Food group	**Highlands**	**Lowlands**	**All Rural**	**Highlands**	**Lowlands**	**All Rural**
Starchy staples	2.0%	5.8%	3.9%	2.1%	2.1%	2.1%
Vegetables	2.7%	0.5%	1.6%	0.4%	1.7%	1.0%
Fruits	0.2%	1.3%	0.8%	1.0%	1.9%	1.4%

[4] https://doi.org/10.1016/j.foodpol.2023.102471

[5] The reference diet being used is the EAT-Lancet healthy reference diet (https://doi.org/10.1016/S0140-6736(18)31788-4)

ASFs	-0.3%	0.0%	-0.1%	-0.3%	0.4%	0.0%
Vegetal protein	0.1%	-0.1%	0.0%	0.4%	0.0%	0.2%
Oils & fats	0.0%	0.3%	0.1%	0.9%	2.3%	1.6%
All foods	1.0%	1.6%	1.3%	0.8%	1.7%	1.2%

Overall, the changes in rural food security and diet quality are in line with the overall changes to consumer prices shown in Figure 2. The microsimulation presented here has only looked at changes within rural households as there is no reliable household survey data for urban households in PNG. However, we would expect the discussed patterns to hold and for urban households to have roughly twice as large of effects on food security and diet quality relative to rural households (based on the difference between the consumer price changes in Figure 2).

Although poor and rural households face a relatively lower direct impact on their consumer baskets, and subsequently food security and diet quality, they remain highly vulnerable to the broader, economy-wide repercussions of the West Asian crisis. The spike in fuel prices inflates overall production costs across the economy, compressing profit margins as consumer demand and sales volumes contract. In response to these tightening margins, firms are likely to scale back production, subsequently reducing their demand for both labor and capital.

This contraction in production inevitably drives up unemployment and suppresses household wage incomes nationwide. To robustly evaluate these macro-micro linkages and quantify the systematic impacts of this shock on the PNG economy, an empirical investigation was conducted using the International Food Policy Research Institute's (IFPRI) Rural Investment and Agricultural Policy Analysis (RIAPA) model. Detailed descriptions of this model and results are described in the following sections.

Medium run economy wide analysis using economywide model

The medium-run, economy-wide impact refers to the year-on-year change in key macroeconomic indicators between a baseline (no-crisis) period and a crisis period. Given prevailing global uncertainties, the International Monetary

Fund (IMF) has outlined three distinct scenarios based on the potential duration of the conflict:

1. **Reference scenario:** Assumes the conflict ceases and prices stabilize by April 2026.
2. **Adverse scenario:** Assumes the conflict lasts until June 2026.
3. **Severe scenario:** Assumes a prolonged conflict extending throughout the entirety of 2026.

Under the reference scenario, the IMF forecasts that the average price of crude oil will increase from US$ 69/bbl in 2025 to US$ 82/bbl in 2026. However, should the conflict persist until June 2026 (the adverse scenario), average prices are projected to reach US$ 100/bbl in 2026, and could climb further to US$ 125/bbl if the crisis extends into 2027. Apart from spikes in crude oil prices, global prices for fertilizer and food commodities are also expected to rise due to the suspension of shipping through the Strait of Hormuz.

PNG is highly vulnerable to these external shocks, as imports account for approximately 79% of its petroleum product supply, 44% of fertilizer, 24% of basic metals, and 10% of food. Furthermore, a heavy dependency on imported fertilizer indirectly impacts the domestic food supply during crisis periods. Consequently, this medium-run analysis for PNG incorporates global inflation across petroleum, fertilizer, and food prices. In addition to rising import prices for petroleum, this study evaluates increases in LNG export prices to determine whether windfall gains from LNG exports benefit the PNG economy. Furthermore, because the Government of PNG introduced a domestic petroleum price stabilization mechanism in response to rising import costs, two counterfactual scenarios and one policy scenario were developed for each conflict duration.

The specific details and assumptions regarding projected global price increases for petroleum, fertilizer, and food across the reference, adverse, and severe scenarios are outlined in Table 2. In this analysis, petroleum and fertilizer prices are assumed to increase at the same rate as the IMF's crude oil price projections. Projections for food and metal price inflation are derived from insights within the IMF's *World Economic Outlook (April 2026)* report.

Table 2: Projected increase in global prices corresponding to duration of conflict

Policy Scenarios	Counterfactual scenarios	Conflict scenarios		
		Reference	Adverse	Severe
A. Do-nothing	1. Without LNG export price (Only import price increase)	Petrol: 29% Fertilizer: 29% Food: 2% Metal: 3%	Petrol: 58% Fertilizer: 58% Food: 4% Metal: 6%	Petrol: 82% Fertilizer: 82% Food: 6% Metal: 8%
	2. With LNG export price (Import price plus LNG export price increase)	Above import prices plus LNG export price rise: 29%	Above import prices plus LNG export price rise: 58%	Above import prices plus LNG export price rise: 82%
B. 100% Domestic petroleum price stabilization	3. With LNG export Price + 100% Govt. subsidy on additional fuel price	Same as above counterfactual scenario 1		
C. 75% Domestic petroleum price stabilization	4. With LNG export Price + 75% Govt. subsidy on additional fuel price	Same as above counterfactual scenario 1		
D. 50% Domestic petroleum price stabilization	5. With LNG export Price + 75% Govt. subsidy on additional fuel price	Same as above counterfactual scenario 1		

To analyse the economy-wide impacts of these scenarios, we adopted the International Food Policy Research Institute's (IFPRI) RIAPA model. The RIAPA modelling system is built within a Computable General Equilibrium (CGE) framework. As an economy-wide simulation tool designed for forward-looking, country-level analysis, it serves as an economic laboratory to test the impacts of various policies, investments, and macroeconomic shocks[6].

Results:

[6] https://www.ifpri.org/project/riapa-model/

A. Impact on key macroeconomic indicators

Table 3 presents the key macroeconomic indicators across the analysed scenarios. Under the "do-nothing" policy scenario, an increase in the import price of petroleum causes Gross Domestic Product (GDP) to fall by 0.12%, 0.26%, and 0.37% in the reference, adverse, and severe conflict scenarios, respectively. This decline in GDP is largely driven by a contraction in private consumption; higher petroleum prices raise the cost of living, forcing households to cut their demand for commodities.

Simultaneously, the spike in petroleum prices makes imports more expensive, leading to a decline in total imports for PNG. On the production side, firms scale back output due to escalating production costs. This contraction reduces employment and household income, further depressing GDP and lowering export supply. However, as shown in Table 3, the decline in imports outpaces the fall in exports across all conflict scenarios. Because PNG maintains a positive trade balance with the rest of the world, this sharper drop in imports ultimately improves foreign savings. Consequently, the rise in aggregate savings stimulates capital formation in the economy. Nevertheless, the favourable trade balance and expanded aggregate savings are insufficient to offset the negative impact of higher petroleum import prices on GDP under the "do-nothing" policy.

Table 3: Alternative scenarios and their Impact on key macroeconomic indicators

Counterfactual Scenarios	Conflict Scenarios	GDP at Market Price	Private consumption	Export	Import	Terms-of-Trade	Gross Capital Formation
A. Do-nothing (No additional policy arrangements by the government to mitigate global oil price shocks)							
Only Petroleum import price rise	Reference	-0.12	-1.21	-0.13	-1.23	-3.03	0.79
	Adverse	-0.26	-2.19	-0.30	-2.19	-5.88	1.44
	Severe	-0.37	-2.91	-0.42	-2.87	-8.14	1.87
Petroleum import price plus Liquified Natural Gas (LNG) price rise	Reference	-0.53	-1.46	1.92	-4.46	9.50	-7.82
	Adverse	-1.11	-2.67	3.44	-8.37	18.43	-15.08
	Severe	-1.61	-3.57	4.53	-11.36	25.40	-20.82

B. Complete price stabilization (100% additional subsidy to reduce domestic petroleum price at the pre-crisis level)							
Petroleum import price plus Liquified Natural Gas (LNG) price rise plus 100% subsidy on additional price	Reference	-0.46	-0.60	1.97	-3.67	9.50	-8.52
	Adverse	-0.98	-1.15	3.54	-7.06	18.43	-16.36
	Severe	-1.44	-1.58	4.67	-9.73	25.40	-22.54
C. Partial price stabilization (75% subsidy implies 25% of additional price pass through to the consumers)							
Petroleum import price plus Liquified Natural Gas (LNG) price rise plus 75% subsidy on additional price	Reference	-0.48	-0.84	1.96	-3.90	9.50	-8.33
	Adverse	-1.02	-1.61	3.52	-7.49	18.43	-15.98
	Severe	-1.48	-2.20	4.64	-10.30	25.40	-22.03
D. Half price stabilization (50% 50% of additional price pass through to the consumers)							
Petroleum import price plus Liquified Natural Gas (LNG) price rise plus 50% subsidy on additional price	Reference	-0.50	-1.07	1.94	-4.11	9.50	-8.15
	Adverse	-1.05	-2.02	3.49	-7.84	18.43	-15.65
	Severe	-1.52	-2.73	4.60	-10.74	25.40	-21.59

Source: Authors compilation using IFPRI-RIAPA model results for PNG

Further, if we account for a simultaneous increase in the export price of LNG and the import price of petroleum, PNG's GDP declines by 0.53%, 1.11%, and 1.61% in the reference, adverse, and severe conflict scenarios, respectively. Remarkably, this implies that a sustained increase in LNG export prices driven by a West Asia crisis worsens PNG's economic outcome more than a standalone increase in petroleum import prices would.

This phenomenon contradicts the conventional wisdom that windfall gains from LNG exports should offset the negative shocks of higher petroleum costs. In this study, the GDP contraction is primarily driven by a decline in both private consumption and gross capital formation. While LNG constitutes more than 75% of the country's total exports—leading to a positive trend in total export value—the mechanics of the fixed exchange rate create a significant drag on the broader economy.

Under a fixed exchange rate, the positive terms of trade and the inflow of LNG revenue exert upward pressure on domestic costs. The central bank injects domestic money supply to buy foreign currency which triggers domestic inflation and appreciates real exchange rate. This makes exports of other non-

resource commodities less competitive in foreign markets and domestic producers lose profit and contract production. Ultimately, the decline in total domestic production and subsequent drop in aggregate demand offset the fiscal benefits in terms of windfall gain from LNG export price increase. As a result, there is a net negative impact on gross fixed capital formation and a contraction of PNG's overall GDP. This is a classic case of Dutch Disease or a "resource curse" mechanism, where the fixed exchange rate and the dominance of the LNG sector stifle the rest of the economy.

B. *Impact on Sectors of the economy*

An increase in fuel and fertilizer prices creates structural disparities within the country. Under a "do-nothing" scenario, the agricultural sector's GDP declines at a higher rate than that of the utilities and services sectors. In contrast, an increase in the domestic price of petroleum products benefits the mining and manufacturing sectors. Within manufacturing, the chemical (including fertilizer and petroleum refining), metal products, machinery and equipment, and agrifood processing sub-sectors are net gainers in terms of GDP; together, they contribute more than half of PNG manufacturing GDP. (Please see the table in the Appendix for detailed sub-sectoral GDP impacts).

Data from the social accounting matrix indicates that import dependency stands at 79% for petroleum products, 46% for fertilizer, 24% for metals, and 10% for food. Due to this specific composition of imported versus domestic products, a rise in import prices drives up demand for domestic alternatives. Consequently, domestic producers realize higher profits and expand production.

Interestingly, GDP from the construction sector expands when considering an isolated increase in petroleum prices. However, when an LNG export price rise is combined with the petroleum import price hike, construction GDP contracts significantly. As a capital goods sector, construction expands when there is an increase in gross fixed capital formation (GFCF) and contracts when it declines. Table 4 reveals that under the petroleum-only scenario, GFCF increases by 0.79%, 1.44%, and 1.87% across the reference, adverse, and severe scenarios, respectively. Conversely, combining the LNG export price rise with the

petroleum price hike results in a significant drop in GFCF, causing the construction sector's GDP to contract by 7.82%, 15.08%, and 20.82%, respectively.

Furthermore, fuel price stabilization simulations show only a marginal mitigation of GDP loss and structural disparities. This limited impact occurs because fuel subsidies increase the government budget deficit and lower capital formation. Additionally, subsidizing imported fuel does not affect the real exchange rate, meaning the export of non-resource commodities fails to expand.

Table 4: Alternative scenarios and their Impact on Sectoral Gross Domestic Product

Counterfactual Scenarios	Impact	Agriculture	Mining	Manufacturing	Utilities	Construction	Services
A. Do-nothing (No additional policy arrangements by the government to mitigate global oil price shocks)							
Only petroleum import price rise	Reference	-0.41	0.03	0.20	-0.15	0.75	-0.22
	Adverse	-0.80	0.05	0.40	-0.31	1.32	-0.43
	Severe	-1.12	0.07	0.57	-0.44	1.71	-0.58
Petroleum import price plus Liquified Natural Gas (LNG) price rise	Reference	-0.47	1.28	1.80	-0.41	-7.42	-0.58
	Adverse	-0.90	2.09	3.57	-0.80	-14.29	-1.10
	Severe	-1.24	2.58	5.03	-1.11	-19.72	-1.49
B. Complete price stabilization (100% additional subsidy to reduce domestic petroleum price at the pre-crisis level)							
Petroleum import price plus Liquified Natural Gas (LNG) price rise plus 100% subsidy on additional price	Reference	-0.33	1.26	1.96	-0.27	-8.06	-0.41
	Adverse	-0.62	2.06	3.90	-0.52	-15.46	-0.78
	Severe	-0.83	2.54	5.50	-0.72	-21.29	-1.06
C. Partial price stabilization (75% subsidy implies 25% of additional price pass through to the consumers)							
Petroleum import price plus Liquified Natural Gas (LNG) price rise plus 750% subsidy on additional price	Reference	-0.37	1.26	1.92	-0.30	-7.88	-0.46
	Adverse	-0.69	2.07	3.82	-0.59	-15.12	-0.87
	Severe	-0.93	2.55	5.40	-0.82	-20.83	-1.18
D. Half price stabilization (50% 50% of additional price pass through to the consumers)							
Petroleum import price plus Liquified	Reference	-0.40	1.27	1.88	-0.34	-7.72	-0.50
	Adverse	-0.76	2.08	3.74	-0.66	-14.81	-0.95

Natural Gas (LNG) price rise plus 50% subsidy on additional price	Severe	-1.03	2.56	5.28	-0.92	-20.42	-1.29

A. *Impact on Households*

Tables 5a and 5b present the impact of the global price rise on households. For this study, households are classified into five quintile groups based on monthly per capita expenditure, with each quintile further disaggregated into rural and urban households. The results in Tables 5a and 5b reveal that rural households are more vulnerable than their urban counterparts across all scenarios. For instance, under the "do-nothing" scenario, rural households experience income declines of 1.16%, 2.25%, and 3.12% in the reference, adverse, and severe scenarios, respectively. Under the same conditions, urban households experience smaller income contractions of 0.37%, 0.72%, and 1.01%. A closer examination of the expenditure quintiles indicates that poor households in both rural and urban areas are more vulnerable than wealthier households. The sharp decline in agricultural GDP is the primary driver of this heightened vulnerability among rural households. Crucially, the decline in household income is more severe than the overall loss in national GDP. This discrepancy occurs because foreign companies own most of the capital in PNG mining sector. Consequently, the profit income generated in this sector is repatriated abroad rather than directly benefiting domestic household incomes.

However, domestic fuel price stabilization via subsidies significantly offsets household income losses. Under an adverse scenario with a 100% subsidy, rural households experience an income loss approximately 1 percentage point lower than the "do-nothing" baseline. Moreover, comparing Tables 4, 5a, and 5b indicates that the subsidy protects household income more effectively than national GDP, driven by the fact that households account for 58% of total petroleum consumption.

Table 5a: Alternative scenarios and their Impact on Households Income (Rural)

		Rural households					
		Rural households	**Rural - Quintile 1**	**Rural - Quintile 2**	**Rural - Quintile 3**	**Rural - Quintile 4**	**Rural - Quintile 5**
A. Do-nothing (No additional policy arrangements by the government to mitigate global oil price shocks)							
Only petroleum import price rise	Reference	-1.16	-1.37	-1.32	-1.20	-1.14	-1.05
	Adverse	-2.25	-2.66	-2.57	-2.34	-2.22	-2.05
	Severe	-3.12	-3.69	-3.56	-3.25	-3.07	-2.83
Petroleum import price plus Liquified Natural Gas (LNG) price rise	Reference	-1.87	-2.06	-2.02	-1.92	-1.85	-1.78
	Adverse	-3.60	-3.96	-3.88	-3.69	-3.56	-3.42
	Severe	-4.93	-5.42	-5.32	-5.06	-4.87	-4.69
B. Complete price stabilization (100% additional subsidy to reduce domestic petroleum price at the pre-crisis level)							
Petroleum import price plus Liquified Natural Gas (LNG) price rise plus 100% subsidy on additional price	Reference	-1.42	-1.55	-1.51	-1.43	-1.40	-1.36
	Adverse	-2.67	-2.91	-2.85	-2.71	-2.65	-2.57
	Severe	-3.61	-3.93	-3.85	-3.66	-3.58	-3.47
C. Partial price stabilization (75% subsidy implies 25% of additional price pass through to the consumers)							
Petroleum import price plus Liquified Natural Gas (LNG) price rise plus 750% subsidy on additional price	Reference	-1.53	-1.68	-1.64	-1.56	-1.52	-1.47
	Adverse	-2.90	-3.17	-3.11	-2.95	-2.87	-2.78
	Severe	-3.93	-4.28	-4.20	-3.99	-3.89	-3.77
D. Half price stabilization (50% 50% of additional price pass through to the consumers)							
Petroleum import price plus Liquified Natural Gas (LNG) price rise plus 50% subsidy on additional price	Reference	-1.65	-1.80	-1.77	-1.68	-1.63	-1.57
	Adverse	-3.14	-3.43	-3.36	-3.20	-3.10	-3.00
	Severe	-4.26	-4.66	-4.57	-4.34	-4.21	-4.07

Table 5b: Alternative scenarios and their Impact on Households Income (Urban)

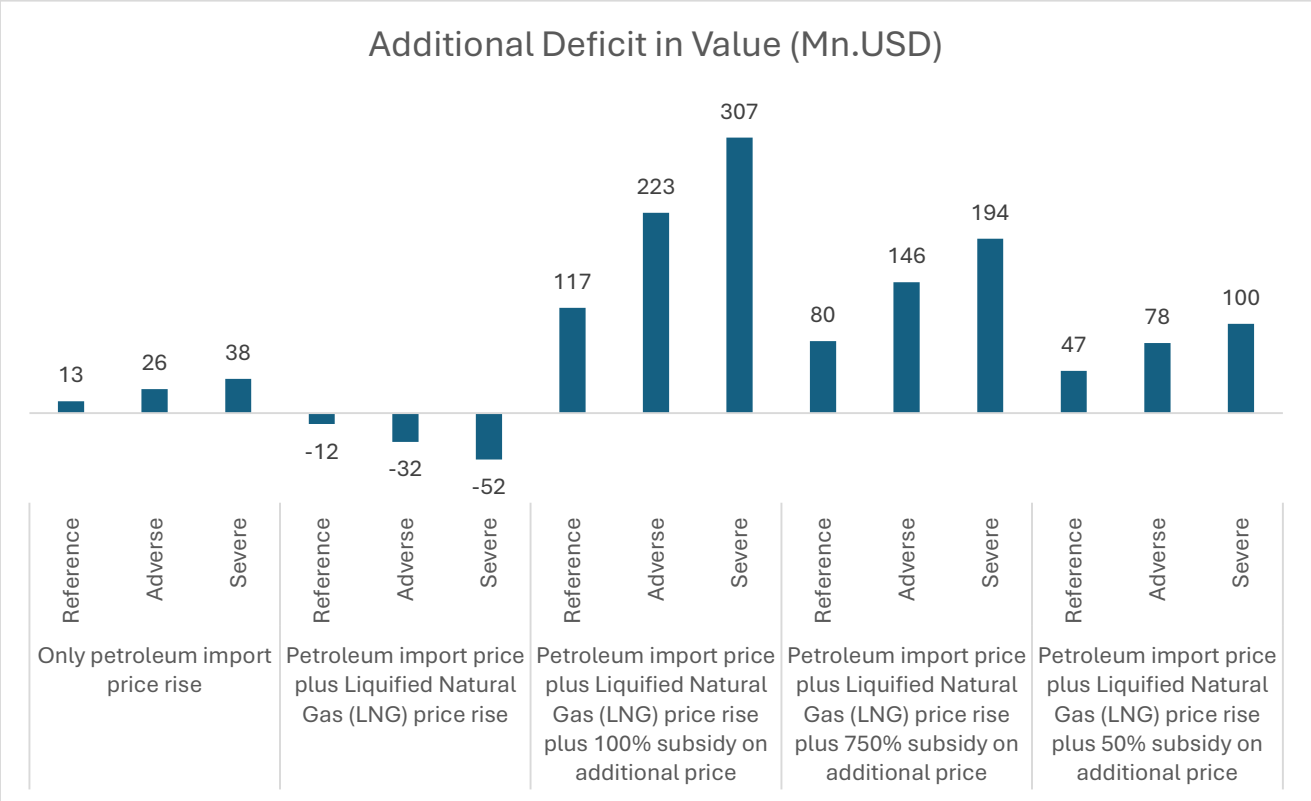
		Urban households					
		Urban households	**Urban - Quintile 1**	**Urban - Quintile 2**	**Urban - Quintile 3**	**Urban - Quintile 4**	**Urban - Quintile 5**
A. Do-nothing (No additional policy arrangements by the government to mitigate global oil price shocks)							
Only petroleum import price rise	Reference	-0.37	-0.50	-0.47	-0.45	-0.37	-0.34
	Adverse	-0.72	-0.98	-0.93	-0.88	-0.74	-0.68
	Severe	-1.01	-1.38	-1.31	-1.23	-1.03	-0.95
Petroleum import price plus Liquified Natural Gas (LNG) price rise	Reference	-1.31	-3.71	-3.01	-1.63	-1.08	-1.18
	Adverse	-2.62	-7.10	-5.79	-3.25	-2.19	-2.38
	Severe	-3.69	-9.70	-7.92	-4.54	-3.10	-3.37
B. Complete price stabilization (100% additional subsidy to reduce domestic petroleum price at the pre-crisis level)							
Petroleum import price plus Liquified Natural Gas (LNG) price rise plus 100% subsidy on additional price	Reference	-0.99	-3.31	-2.63	-1.26	-0.75	-0.87
	Adverse	-1.98	-6.31	-5.02	-2.50	-1.53	-1.77
	Severe	-2.78	-8.57	-6.83	-3.48	-2.17	-2.49
C. Partial price stabilization (75% subsidy implies 25% of additional price pass through to the consumers)							
Petroleum import price plus Liquified Natural Gas (LNG) price rise plus 750% subsidy on additional price	Reference	-1.07	-3.41	-2.73	-1.36	-0.84	-0.95
	Adverse	-2.15	-6.52	-5.22	-2.70	-1.71	-1.93
	Severe	-3.02	-8.87	-7.12	-3.76	-2.41	-2.72
D. Half price stabilization (50% 50% of additional price pass through to the consumers)							
Petroleum import price plus Liquified Natural Gas (LNG) price rise plus 50% subsidy on additional price	Reference	-1.15	-3.51	-2.83	-1.45	-0.92	-1.03
	Adverse	-2.32	-6.72	-5.42	-2.89	-1.87	-2.09
	Severe	-3.25	-9.16	-7.39	-4.03	-2.65	-2.94

Impact on Government Budget

In the 2026 budget, the government estimated a 2.9-billion-kina (US$667 million) deficit under a normal geopolitical and economic baseline. Crucially, this expenditure baseline did not account for any domestic fuel subsidies. As shown in Figure 3, if only petroleum import prices rise (without a subsidy), the budget deficit is projected to increase by $13 million, $26 million, and $38 million under the reference, adverse, and severe conflict scenarios, respectively. Conversely, the combined effect of rising petroleum import prices and higher LNG export prices reduces the budget deficit by $12 million, $32 million, and $52 million USD across those same scenarios. This net reduction is driven by windfall gains from soaring LNG export prices.

Following the onset of the crisis, the Government of PNG announced a 1-billion-kina (US$230 million) relief package in April 2026 to stabilize domestic petroleum prices at pre-crisis levels. Figure 3 indicates that fully funding this 100% subsidy will expand the budget deficit by US$117 million, assuming the crisis does not escalate beyond April 2026 (the reference case). However, if the crisis persists through June 2026, the required funding for the 100% subsidy increases to US$223 million. This suggests that the current US$230 million (1 billion kina) package will remain sufficient only if the crisis does not stretch past June. Should the crisis endure through the entirety of 2026, a complete stabilization policy would require a total of US$307 million—demanding an additional US$77 million beyond the current allocation.

Figure 3: Additional budget deficit (US$ million)



Conclusions & Policy Recommendations

PNG's economic stability is highly vulnerable to global energy market volatility due to a critical structural imbalance: the country relies heavily on refined petroleum imports while its exports are dominated by LNG. When global fuel prices rise, the economy suffers an immediate contractionary shock as escalating import costs drive up production overheads and depress overall GDP. Paradoxically, even when global LNG prices surge, the broader economy experiences a negative impact on GDP growth. PNG's overreliance on resource revenues is already a source of fiscal volatility. This "resource curse" dynamic

triggers a real exchange rate appreciation that makes non-resource export sectors uncompetitive, while the resulting windfall profits flow almost entirely to foreign extraction companies rather than local households, who hold minimal capital in the mining sector. The main challenge for PNG in the broader economy is to develop other non-extractive export sectors for employment. While the government's domestic fuel subsidies can temporarily insulate consumers by stabilizing pump prices, they fail to fix these underlying macroeconomic distortions and cannot stabilize the wider economy.

To mitigate these vulnerabilities, PNG must implement a coordinated, two-tiered policy framework. In the short run, the government needs to reexamine its current subsidy levels and gradually pull back interventions to allow the domestic market to independently adjust to global price baselines. A gradual withdrawal will ensure that impacts on transport costs, food prices, and business variable operating costs are attenuated. Simultaneously, the central bank should maintain its managed exchange rate framework while allowing for a gradual currency depreciation to counteract the real exchange rate appreciation and restore competitiveness to local industries. Over the long run, because PNG's export profile remains concentrated in LNG and acutely exposed to global shocks, the nation must aggressively reinvest its resource wealth into diversifying its export portfolio. Expanding non-extractive sectors will build structural resilience, protect national output from future commodity shocks, and foster more equitable economic growth.