EXECUTIVE BOARD MEETING

SM/23/92

April 17, 2023

To: Members of the Executive Board

From: The Secretary

Subject: **Nepal—Selected Issues**

Board Action:	Provides background to EBS/23/41—Staff Report for the 2023 Article IV Consultation, First and Second Reviews Under the Extended Credit Facility Arrangement, Requests for Waivers of Nonobservance of Performance Criteria, Extension of the Arrangement, and Rephasing of Disbursements
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NEPAL

SELECTED ISSUES

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CONTENTS

CLIMATE CHANGE, FOOD INSECURITY AND REMITTANCES IN NEPAL[1]

Despite having low per capita income, Nepal outperforms many similar countries on indices of poverty and food security largely thanks to the safety net provided by remittances. However, climate change, climate shocks, and recent global instability have contributed towards worsening trends This paper utilizes a new macro-model capturing food insecurity, migration and trade. It shows that (a) low yields and remoteness explain a majority of the difference in prevalence of food insecurity across districts in Nepal; b) both climate shocks and persistent climate-change increase food insecurity and disproportionately harm the most vulnerable; c) lower wages in migrant destinations would reduce remittances, increase food insecurity and lower welfare. The paper then presents and quantifies a number of potential policies to address these issues.

A. Introduction

1. Nepal is highly vulnerable to climate shocks and climate change. The average temperature in Nepal in the last decade is over 0.6 degrees higher than the baseline of 1950-1980 (Figure 1A). The monsoon has become increasingly unpredictable, and the number of climate shocks related to floods, storms, and landslides has steadily risen (Figure 1B). These events can damage infrastructure, harm crops, and impact connectivity. The UNEP estimates that floods alone could cost Nepal the equivalent of 2.7 percent of GDP per annum (UNEP, 2015). In a severe climate change scenario, the World Bank estimate that GDP would be 7 percent lower by 2050 (World Bank, 2022). In addition to climate change, the world has been hit by several recent shocks which have increased global food prices including Russia's war in Ukraine and the COVID-19 pandemic.

2. Matching global trends, the prevalence of moderate or severe food insecurity[2] in Nepal has grown every year between 2015 and 2020. Food insecurity currently affects more than one third of the population (Figure 1C). According to the World Food Programme, recent shocks have continued to worsen food insecurity with 18 percent of the population reporting to not have consumed an adequate diet in October 2022 (World Food Programme, 2022). Food insecurity can cause households to adopt costly coping strategies including drawdown of valuable assets and to make risk adverse decisions on which crops to plant, resulting in adverse intergenerational effects, worsening learning outcomes for children and lowering productivity (Behrman, et al., 1997; Asfaw, 2016; Chakraborty and Jayaraman, 2019; Cole and Neumayer, 2005; Strauss and Thomas, 1998). It

[1] Prepared by: Diogo Baptista (University of Cambridge and RES), Ankita Goel (APD), John Spray (APD), and D. Filiz Unsal (OECD). With thanks to Chris Papageorgiou, Cedric Okou, Mai Farid, Pritha Mitra for valuable comments. Thanks to the World Food Programme for providing access to the VAM Household Survey for Nepal.

[2] Food security is defined as "when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life." Undernourishment is defined as "the condition of an individual whose habitual food consumption is insufficient to provide, on average, the amount of dietary energy required to maintain a normal, active and healthy life" (FAO, 2022). The key distinction being that food security is multi-dimensional and includes availability, access, utilization and stability.

does not affect Nepal's districts evenly, with regions in remote areas especially in the far-west and mountainous provinces more likely to report having food concerns (Figure 1D).[3]

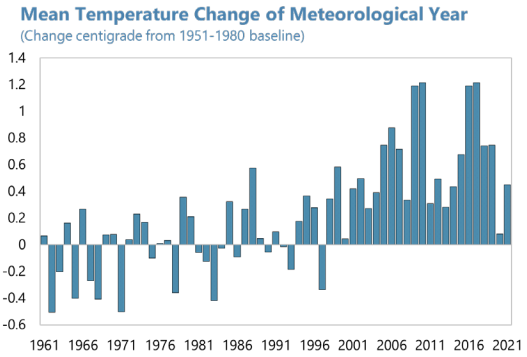
3. A key household coping strategy is to rely on remittances, but these are vulnerable to global shocks and a global climate transition. Nepal has a lower proportion of undernourished households than comparators in its income group and has made significant progress over the last two decades (Figure 1E). One potential explanation is the very high levels of remittance inflows which have grown significantly especially from India, Malaysia and the Gulf (Figure 1F). These remittances can act as a social safety net, allowing the household to avoid more costly alternatives such as selling valuable assets. However, jobs in these countries can be unstable and subject to changing labor laws, immigration policies, or global shocks. For instance, in October 2022, 27.8 percent of households were impacted by a decrease in remittances received (World Food Programme, 2022). In particular, many Nepali workers are located in regions which rely heavily on income from fossil fuels which are vulnerable to a global climate transition.

4. This paper utilizes a new quantitative macro-spatial model of food insecurity in low-income countries calibrated to Nepal to show three main results. First, low yields and remoteness explain most (63 percent) of the difference in the prevalence of food insecurity across districts in Nepal. Second, both climate shocks and persistent climate-change increase food insecurity and disproportionately harm the most vulnerable (10 percent lower yields, 4 percent increase in prevalence of undernourishment). Third, lower wages in oil producing countries (e.g. because of a global climate transmission) would reduce remittances, increase food insecurity and lower welfare (25 percent decrease in wages in oil producing countries, 10 percent decrease in remittances, 7 percent increase in prevalence of undernourishment). The paper quantifies the impact of a number of policy options (cash transfers, better infrastructure, improved agricultural productivity) to address food insecurity and climate change.

[3] See also (Okou, et al., 2022) for detail on drivers of food prices in low-income country settings.

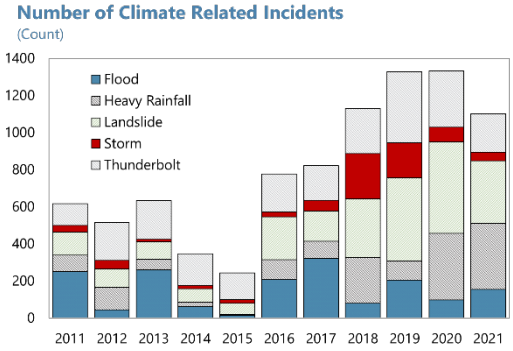
Figure 1. Climate Change and Food Insecurity in Nepal

Panel A: Average temperatures have risen.



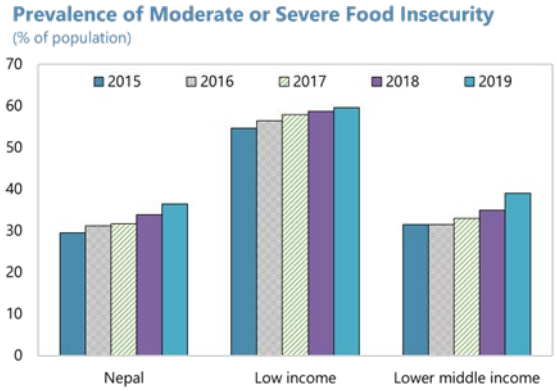
Sources: FAO; and IMF Climate Dashboard.

Panel B: The number of climate-related incidents has risen.



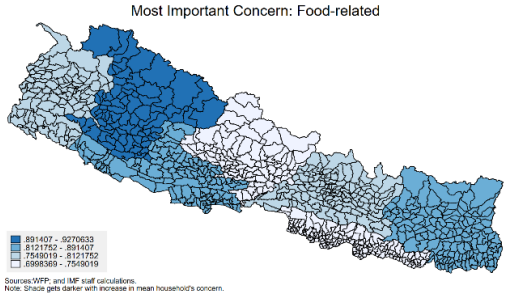
Sources: BIPAD Government of Nepal; and IMF staff calculations.

Panel C: Food insecurity impacts over one third of the population and is getting worse.

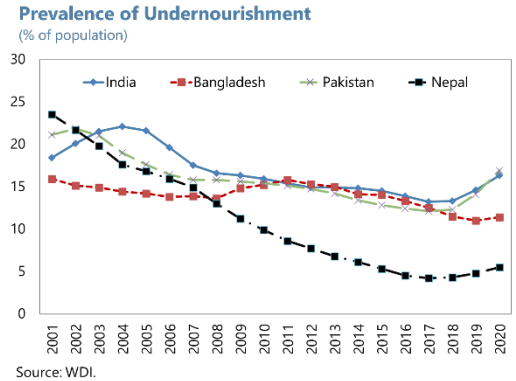


Source: FAO.

Panel D: Food insecurity is not distributed evenly across the country. Remote areas are more impacted.

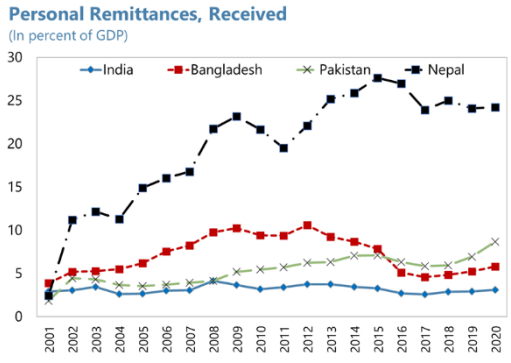


Panel E: Undernourishment has fallen dramatically since 2001, although recent data is less positive.



Source: WDI.

Panel F: Remittances have become increasingly important as a social safety net and are higher than peers.



Source: WDI.

B. Model Description

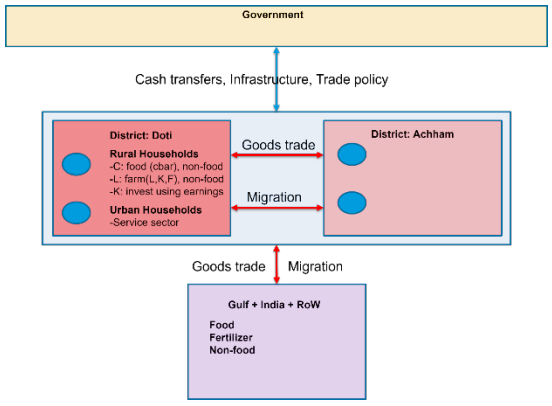
5. This paper utilizes a new model of food insecurity in a macro spatial framework calibrated to the districts of Nepal. The model is shown graphically in Figure 2 and a full description is available in the accompanying working paper (Baptista, et al., Forthcoming). The model contains three key elements: the role of food, heterogeneity, and spatial frictions.

- **Food features in the model in two main ways**. First, food is introduced as a necessity good in household preferences which implies that households spend a larger share of their income on it when poorer. Second, the model disaggregates the production and consumption of agricultural goods into differentiated food products with varying nutritional contents (e.g., calories, vitamins, minerals) and market values.

- **The model introduces two sources of heterogeneity to consider distributional effects**. First, regions exhibit differences in location fundamentals that reflect spatial variation in crop suitability and are subject to local shocks. Second, households within regions exhibit ex-ante idiosyncratic differences due to differences in farm endowments. This captures distributional effects at the local level with households responding differently to shocks depending on their income. This paper considers two key dimensions of food insecurity: (i) a household is *undernourished* if they cannot consume sufficient calories at market prices given their income level; (ii) a *calorie deficit* is defined as how many calories would be needed to make the household no longer undernourished.

- **Spatial frictions are key in determining the extent to which households can utilize migration and trade and, consequently, their vulnerability to episodes of food insecurity.** Regions are connected through the movement of goods (i.e. trade) and people (i.e. migration) both domestically and internationally. In the model, food supply shocks propagate via general equilibrium price channels along trade and migration routes which can have important consequences for both local and aggregate outputs.[4]

Figure 2. Model Figure



[4] The model is calibrated for 50 Nepalese districts plus the Kathmandu valley area using a combination of longitudinal household surveys (HRVS 2016-18), census data, international trade data, and externally calibrated parameters from the relevant literature. Data from World Integrated Trade Solution (WITS) is used to estimate import and export flows of food and non-food goods.

C. Quantitative Exercise

Determinants of Undernourishment in Nepal

6. Table 1 shows which model generated variables correlate with district level prevalence of undernourishment in equilibrium (i.e. in the absence of shocks). The first column shows that districts with 1 percent higher agricultural yields have on average 0.7 percent fewer undernourished households. Column (2) shows that more remote regions are also significantly more undernourished.[5] Columns (3) and (4) show that regions which import more and have more migrants also have a higher prevalence on undernourishment. However, when there are controls for agricultural yields (column 6) these signs flip – importing food and migrating lowers undernourishment. In other words, it is exactly because of the low yields that households in these districts use the coping strategy of importing and migration.

Table 1. Nepal: Determinants of Prevalence of Undernourishment

	(1)	(2)	(3)	(4)	(5)	(6)
Log(Yields)	-0.630***				-0.506***	-1.041***
	(-7.61)				(-5.30)	(-8.59)
Log(Remoteness)		0.285***			0.125**	
		(5.10)			(2.32)	
Food Import Share			1.030***			-0.658**
			(2.95)			(-2.19)
Migration Share				0.823*		-1.358***
				(1.99)		(-3.97)
R^2	0.590	0.344	0.216	0.093	0.626	0.689
Observations	50	50	50	50	50	50

Notes: Dependent variable in regressions is share of Undernourished households at district level.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Impact of Climate Shocks on Vulnerability

7. Climate shocks can lower consumption, increase food insecurity, and lower assets. The impact of a climate shock is shown through a 25 percent lower agricultural yield in one of Nepal's districts in one period. To isolate the effect, agricultural yields are held constant in all other districts. This is equivalent to a significant localized flood hitting one area of the country lowering yields in one year. This experiment is then repeated for each of the districts to identify an average impulse response function. Figure 3 shows how the median household responds to a climate shock and how

[5] One might be concerned that remoteness and agricultural yields do not independently have explanatory power to explain undernourishment. Column (5) shows that when both remoteness and yields are included together they both independently predict undernourishment.

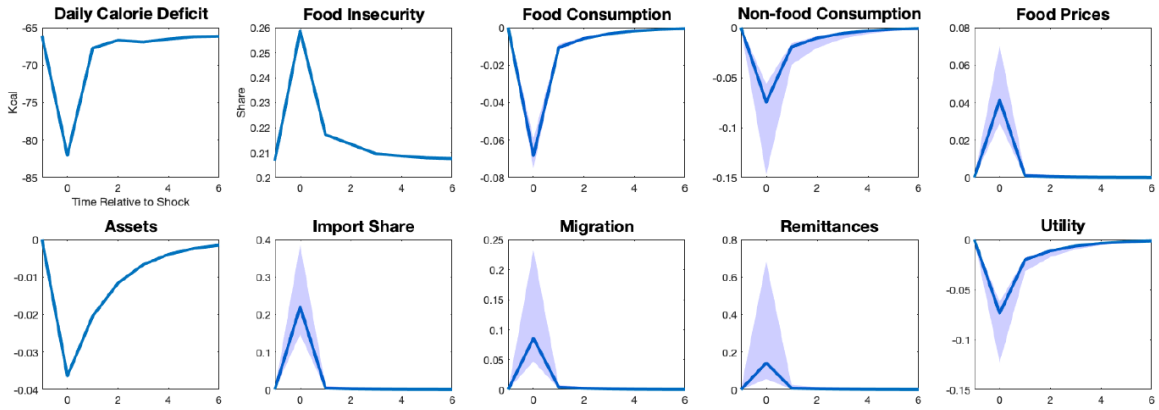
household coping strategies can lead to the shock having persistent scarring effects many years after the shock has hit. Immediately following the flood, food prices jump by an average of 4 percent in affected districts as the supply of food drops. Households can respond in one of three ways:

- First, households can reduce consumption. Food and non-food consumption falls by an average of over 6 percent. However, for some poorer households non-food consumption drops by up to 15 percent. This is because these households are already at the food subsistence level, so their only choice is to cut back on non-food consumption.

- Second, households can cut back on assets, impacting future production. Assets fall by over 3.5 percent as household's reduce investment in climate resilient seeds, sell off livestock, or pull children out of school to work on the farm.

- Third, households can import food and migrate to earn income outside their district or abroad. Following the shock, import shares increase 20 percent and migration and remittances increase 10 percent. However, the extent of these increases is limited by the location of households and spatial frictions. Households in remote locations find migration and importing prohibitively costly, and so must adopt one of the alternative coping strategies.

Figure 3. Impact of a Climate Shock on Median Household



Notes: Daily calorie deficit is the difference between average calorie consumption of food insecure households and 2200 Kcal. Food insecurity measured as average share of food-insecure households (i.e. calorie consumption lower than 2200 Kcal) weighted by district population. For all other figures, solid lines represent the median household response weighted by district population. Graphs include 5-95th percentile bands to show within-district heterogeneity across households, except for import share and migration figures where bands represent inter-district variation.

8. The consequence of a climate shock is an increase in both the number of undernourished households (contemporaneous 5 percentage point increase) and the severity of undernourishment (23 percent increase in calorie deficit) in impacted districts. This translates to an average 6.5 percent fall in welfare. While the shock's impact on agricultural yields only lasts one period, the impact on consumption, assets, undernourishment and welfare lasts up to five harvests as households only gradually recover their assets and savings. Table 2 shows that agricultural yields and access to migration and trade are the most important variables in mitigating the damage from climate shocks. Having 1 percent higher agricultural yields lowers the impact of a

25 percent shock by between 4 and 12 percent. This is because households in more productive agricultural areas have greater surplus to absorb the shock. Similarly, being in a less remote district makes the impact of the shock smaller, because households cannot easily import food or migrate.

Table 2. Nepal: Correlates of Welfare Loss

	(1)	(2)	(3)	(4)	(5)	(6)
Log(Yield)	-0.0416**				-0.0050	-0.126***
	(-2.44)				(-0.27)	(-5.13)
Log(Remoteness)		0.0384***			0.0369***	
		(4.50)			(3.55)	
Food Import Share			0.0359			-0.119*
			(0.65)			(-1.95)
Migration Share				0.0530		-0.299***
				(0.85)		(-4.3)
R^2	0.110	0.297	0.009	0.015	0.298	0.390
Observations	50	50	50	50	50	50

Notes: Dependent variable in regressions is percent change in household welfare. t statistics in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Impact of Persistent Climate Change on Food Insecurity

9. In addition to climate shocks, persistent climate change will lower welfare, increase food insecurity, and migration. To consider the impact of these changes, the paper simulates a permanent 10 percent nationwide reduction in agricultural productivity. As shown in Figure 4A, this causes a large spike in migration away from agricultural areas and a corresponding increase in remittances. Food insecurity rises by 4 percent, as food becomes scarce and more expensive. The net effect on welfare is particularly large, this is because the increase in migration creates a substantial welfare loss as households have no choice but to move away from their homes in rural areas.

Impact of a Global Shift in Wages in Fossil Fuel Producing Countries on Food Insecurity

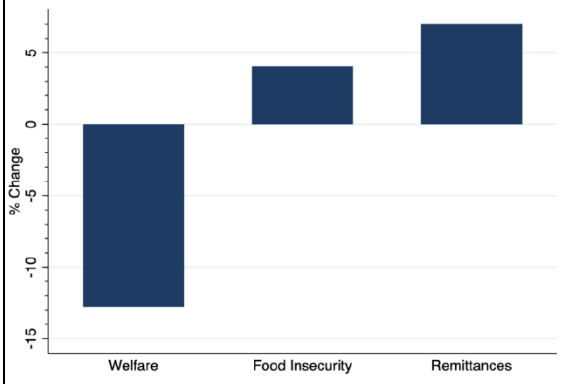
10. If the world migrates to lower greenhouse gas emissions, demand for fossil fuels in countries which currently host large numbers of Nepali migrants will decline.[6] This scenario is modelled as 25 percent lower wages in oil producing migrant destinations. Unlike in the climate

[6] An alternative possibility is that changing labor or immigration laws could make migrant destinations no longer viable

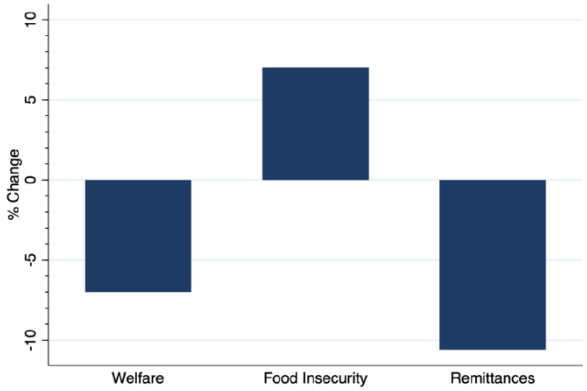
change scenario, migration and remittances now drop as the return to staying in Nepal is relatively higher (Figure 4B). The corresponding lower levels of remittances removes a key household safety net, which increases food insecurity and lowers welfare substantially.

Figure 4. The Impact of Permanent Shifts in Climate Change and Remittances

Panel A: The impact of permanent nationwide 10% lower agricultural yields



Panel B: The impact of a permanent 25% reduction in wages in oil producing countries



D. Policy Options

Better Infrastructure to Lower Migration Costs

11. Lowering migration costs by 25 percent through better road infrastructure, more information to migrants, or via providing better migrant support at destinations can increase resilience to shocks.[7] Figure 5 shows both the steady state impact on welfare and the welfare loss due to the shock for four income quartiles. In comparison to baseline, households are 6 percent less food insecure on average and have almost 10 percent higher welfare. All income deciles benefit, with the bottom quartile benefiting the most. This is because average incomes are higher due to the easier access to migration. Following a shock, welfare losses are approximately 1 percentage point lower because households can use migration to support their agricultural income. This is true for all income quartiles but the strongest effect is among the poorest.

12. The reason for the better outcomes is shown in the impulse response functions in Figure 6. The blue line shows a baseline response to the shock for the median household, while the purple line shows a counterfactual response to the shock with lower migration costs. The shaded areas show how the 5th and 95th percentile of income respond. Under lower migration costs, households can now rely on migration as coping strategy and avoid drawing down assets. This has the added advantage of reducing the duration of the effect of the shock.

[7] Note this paper models a change in both international and internal migration costs, although in practice these costs and the policies to change them may differ. If this was modelled differently it may change magnitudes but is unlikely to change the direction of the outcomes.

Figure 5. Distributional Impact of Lower Migration Cost

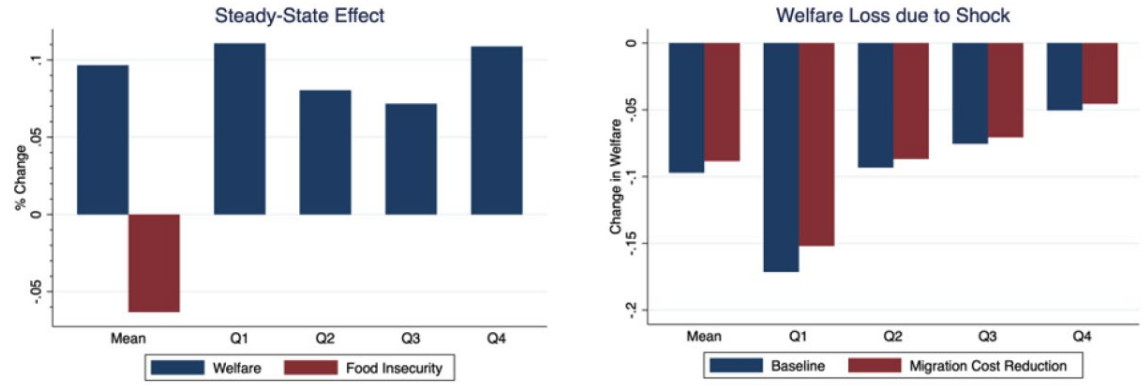
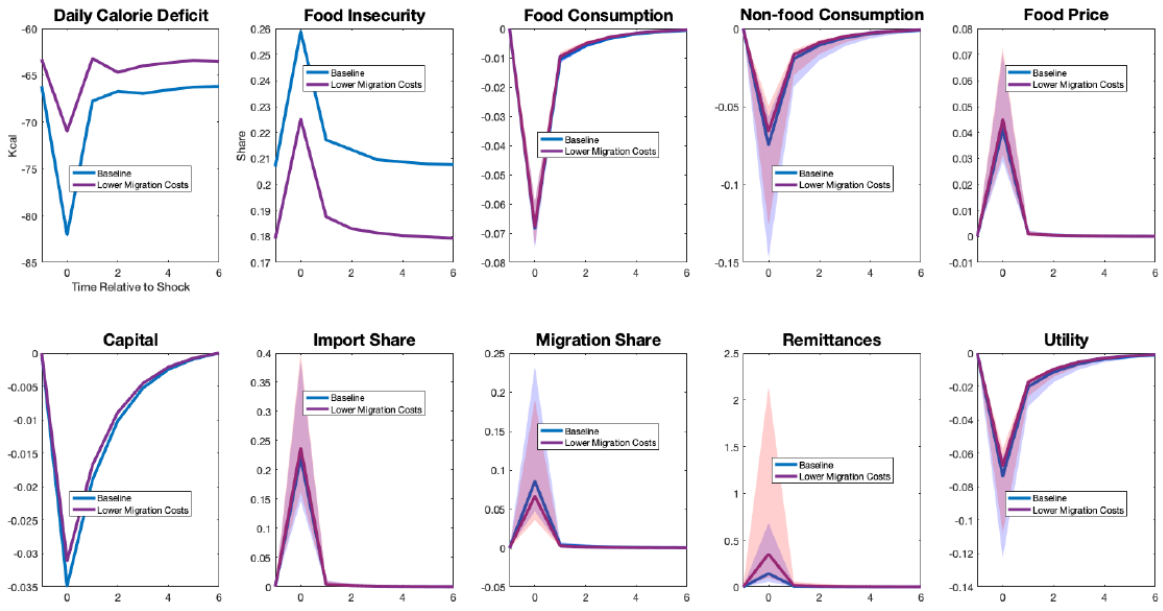


Figure 6. Impact of a Climate Shock on Median Household with Lower Migration Cost



Better Infrastructure to Lower Trade Costs

13. Lowering trade costs by 25 percent through better road infrastructure substantially increases welfare, income, and lowers the impacts of shocks. Figure 7 shows that food insecurity falls 18 percent in steady state compared to baseline, with higher welfare for all income quartiles. The better road infrastructure improves resilience to shocks, with welfare approximately 1 percentage point higher following a 25 percent yield shock. The reason for the better outcomes is that, following a shock, households rely on imported food causing food prices to rise less, and lowering the need to reduce food consumption.

Figure 7. Distributional Impact of Lower Trade Cost

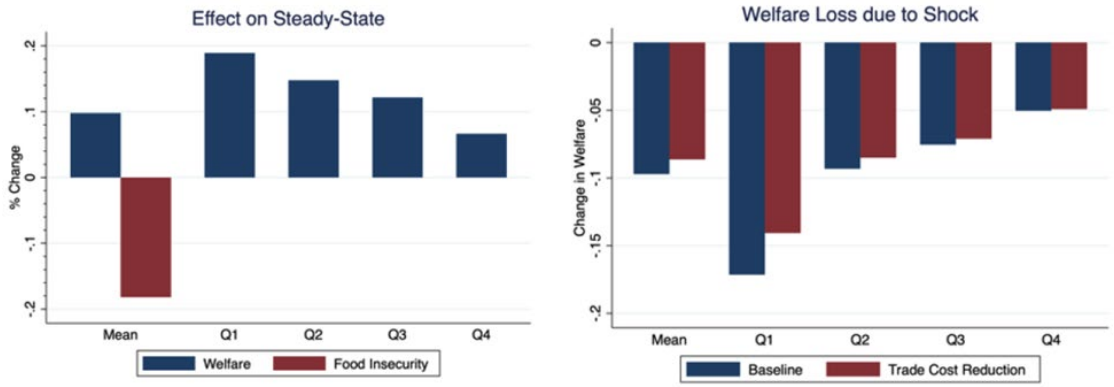
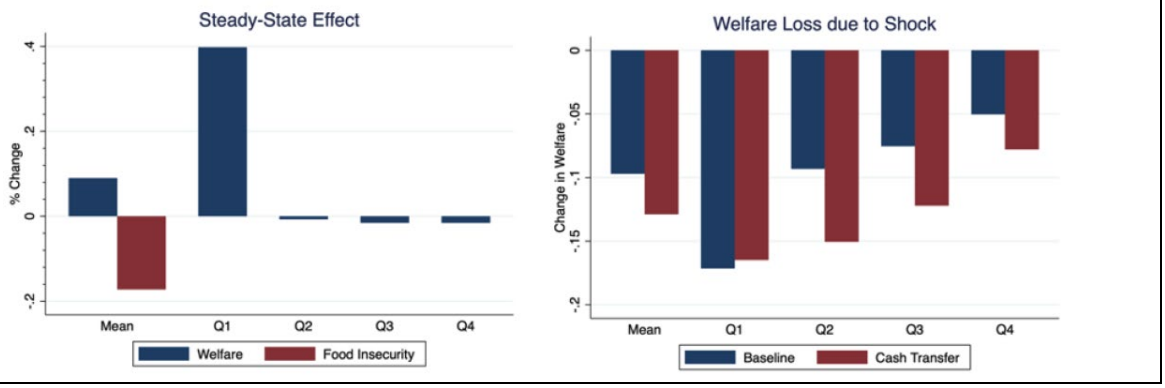


Figure 8. Distributional Impact of Cash Transfers



Introducing Cash Transfers

14. Figure 8 shows how government social support through cash transfers can reduce food insecurity and increase resilience to shocks. This could be implemented as an expansion of the government's Child Cash Grant scheme. In this experiment, all households (rural and urban) pay an income tax of 1 percent with all tax revenues distributed equally among households in the bottom quartile of real income.[8] In steady state, the cash transfer is redistributive with welfare falling in the top three income quartiles and increasing the bottom quartile. The net effect on both welfare and food insecurity is strongly positive. The reason is that the bottom quartile are much closer to the food insecurity threshold and hence a transfer can quite substantially increase their wellbeing. Following a shock, welfare losses for this group are also lower, as they can now rely on the cash

[8] Note that this particular policy is illustrative, and the revenue could be generated from any number of sources.

grant to support their food consumption. The policy also allows households to maintain their assets, and hence shortens the duration of the impact of the shock.[9]

Increasing Agricultural Productivity

15. Given the model results show that agricultural productivity is a key determinant of food security, Nepal can learn from other countries policies including in agricultural extension, improved community water management techniques, and climate resilient agriculture in line with the National Adaptation Plan (2021). Zambia and Bangladesh have adopted training and sustainability incentives in livestock and agriculture to promote efficient storage of water in soil and prevent biodiversity loss. China has adopted digitalization tools to help inform farmers of best practices to increase yields through accurate forecasting of weather (Caixin Global, 2017; Sehgal Foundation, 2021). Morocco supported irrigation systems which help to provide the optimal amount of water based on crop needs (World Bank Group, 2016). Similarly, the Indian state of Maharashtra is enhancing water availability and quality at the farm level by building drainage lines to maximize the surface water utility and by better use of groundwater (World Bank Group, 2018). Maharashtra is also incentivizing the adoption of climate resilient seed varieties which are drought and heat resistant (World Bank Group, 2018). The Nepalese government might consider incentivizing the private sector to build capacity for the development of agri-logistics and cold chains which can prevent post-harvest food losses. Similarly, improvement of payment systems and microinsurance coverage for crop and livestock can boost not only labor productivity but also resilience towards future climate shocks (World Bank, 2022). Nepal could also focus on improving soil nutrients which will support the growth of agricultural plants that are carbon sinks and stress tolerant (NAP, 2021).

16. Another tool to boost agricultural productivity is to encourage the effective use of fertilizers, however high prices and shortages have limited their efficacy in Nepal. Given there are only a handful of major fertilizers' exporters, the COVID-19 pandemic and the war in Ukraine has impacted the value chains severely. For instance, the price of urea fertilizer increased 64 percent in 2022 (IMF, 2022). These events had serious ramifications given Nepal imports 100 percent of mineral fertilizer. The government has tried to cushion this shock through its fertilizer subsidy policy and through purchasing close to 100,000 tons of fertilizers from India. Even in the absence of a global shock, issues exist in the provision of fertilizers. The import, distribution, and sale of fertilizers in Nepal is highly regulated and restricted to two companies. However, there are reports detailing how shortages have caused farmers to resort to black market sources of fertilizers from neighboring countries (particularly India) for a price two or three times of actual cost.[10] Despite government

[9] While there is a large empirical literature pointing to the benefits of cash transfers, they can also sometimes be difficult to implement and subject to leakages.

[10] For more information, refer to the following news articles: Fertiliser shortage haunts farmers ahead of looming paddy season (kathmandupost.com), Farmers Forced to Buy Subsidized Fertilizer at Higher Rates | New Business Age | Leading English Monthly Business Magazine of Nepal, Soaring fertiliser prices raise concern about possible shortages (kathmandupost.com), The Perennial Problem of Fertilizers Shortage in Nepal: Is the government acting as a hurdle? - Samriddhi Foundation

support, many small-scale farmers are unable to buy enough fertilizers. A 2014 study by USAID reports that 70 percent of the fertilizers in Nepal are procured by local farmers through improper channels (USAID, 2014). The fertilizer subsidy mostly supplies urea fertilizers which has been reported to also encourage unbalanced use of fertilizers (World Bank Group, 2022). To encourage more effective use of fertilizer, the Nepal government could consider a gradual opening of the sector to private enterprise by encouraging domestic production, import, distribution, and sales. This should reduce the chance of shortages and delays and help generate a domestic industry.[11]

[11] For an example of how this can be achieved see the Africa Fertilizer Financing Mechanism project developed by the African Development Bank

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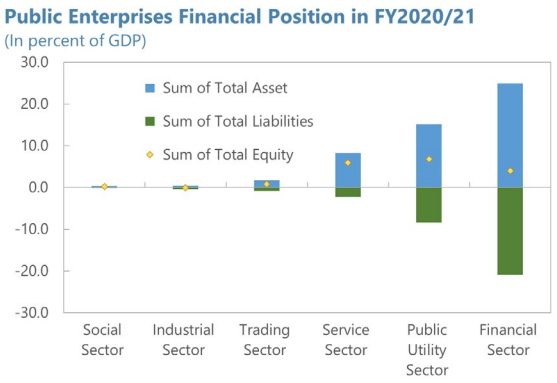
PUBLIC ENTERPRISES AND FISCAL RISKS[1]

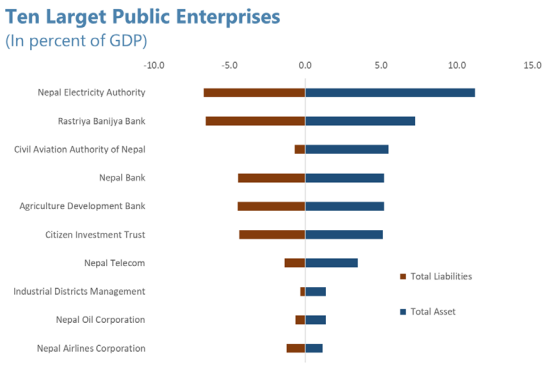
This study finds that COVID-19 pandemic and global commodity price shocks have weakened some public enterprises (PEs)' financial situation, partly as a result of PEs selling their products at prices below costs. The impact of the shocks and the deterioration of some PEs' financial health negatively impacted the budget and increased fiscal risks.

A. Overview of Public Enterprises in Nepal

1. In Nepal, PEs mainly operate in key economic sectors. There are currently 42 PEs: 10 in industrial sector, 4 in trading sector, 9 in services sector, 5 in social sector, 5 in public utility sector and 9 PEs are in financial sector. Their total assets reached 51 percent of GDP and liabilities 33 percent in FY2020/21. The financial sector stands out in terms of the total size of assets/liabilities. Among non-financial sectors, public utilities is the largest followed by service sector and trading sector. Within PEs, the top ten PEs, in terms of their size of assets, are Nepal Electricity Authority (NEA), Civil Aviation Authority of Nepal, Nepal Doorsanchar Company (Nepal Telecom), Nepal Oil Corporation (NOC), Industrial District Management, and Nepal Airlines Corporation (NAC), in addition to three public banks and the Citizen Investment Trust. They account for 94 percent of assets and 91 percent of liabilities of all PEs. Some PEs play a significant role in economic infrastructure investment. They are the government's vehicles for the implementation of sectoral development policies and their investments are concentrated in electricity and civil aviation (airport).



Source: Nepali authorities; and IMF staff estimates.



Source: Nepali authorities; and IMF staff estimates.

2. PEs operate under various legal and regulatory frameworks and in different market settings. They have been formed under different Acts: 33 PEs were established under the Companies Act, the others are under various special acts, Cooperative Act, or the Corporation Act.

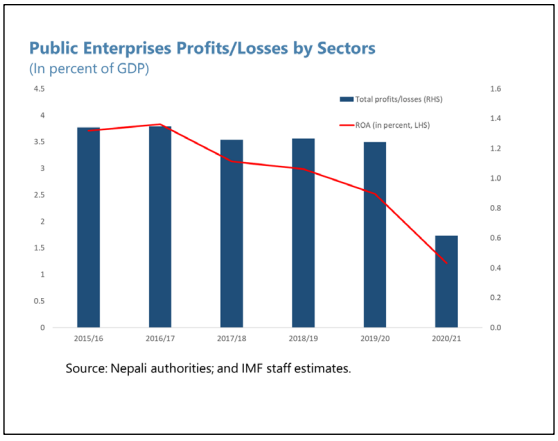
[1] Prepared by Guohua Huang (FAD) and H. Yesim Aydin (MCM). They would like to thank Jarkko Turunen, Russell Green, and Teresa Daban Sanchez for valuable comments. They are grateful for the support of Saraswti Sharma and Sudha Dulal in identifying and collecting the necessary data and background information.

The daily and managerial operations of PEs are governed by various rules and by-laws. There appear neither centralized ownership policies nor central guidelines on the financial oversight of PEs. There is a progress in establishing independent regulators in the telecom and electricity sectors. The Nepal Telecommunications Authority has been regulating the telecommunication market for more than two decades. The Electricity Regulatory Commission was recently established as an independent regulator following the enactment of the Electricity Regulatory Commission Act in 2017. But some PEs also assume the regulatory role, such as the Civil Aviation Authority of Nepal. Most financial PE (e.g. banks) face the competition of other banks, especially in urban areas. Regarding non-financial PE, some of them operates in a regime of monopoly (e.g. NOC, fertilizers) while some others operate in a regulated market cohabitating with a few private sector operators.

3. While MOF exercises certain roles on financial oversight and control, line ministries of PEs assume the policy and ownership role. Financial PEs are under MOF, but non-financial PEs are under various line ministries. For example, the NOC is under the Ministry of Industry, Commerce and Supplies; and the NEA is under the Ministry of Energy, Water Resources and Irrigation. PEs are in principle autonomous in their operation, but their Executive Board of Directors are often chaired by the senior officials of respective parent ministries. Nonetheless, the MOF has certain authority over all PEs. PEs need to submit annual financial statements to MOF for the preparation of an annual consolidated report, the Annual Status Review of Public Enterprises (Yellow Book) on the financial performance of PEs. While PEs are not allowed to borrow externally without the consent of the government (instead they receive on-lending from MOF), they may borrow domestically without MOF's approval. For other fiscal support, e.g., loan and share investment, subsidies, dividend deferrals, they would need to seek MOF's approval with the support of their parent ministries.

B. The Impacts of Shocks on PEs' Financial Performance

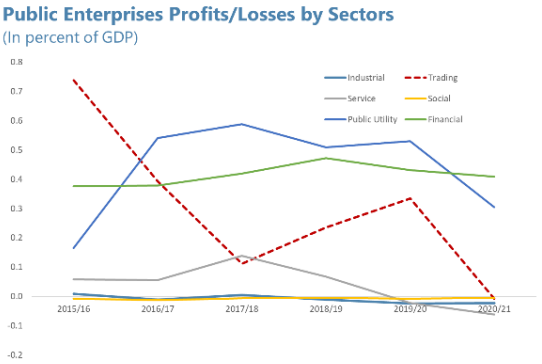
4. The total profits of PEs have been increasing before FY2018/19 but plunged when most PEs were hit in the middle of COVID-19 pandemic. While the total profits of PE sector[2] were largely unchanged in the initial stage of the pandemic (the last four months of FY2019/20[3]), the profits reduced by 0.5 percent of GDP in FY2020/21, as almost half of PEs run in loss that year. Although the financial PEs maintained their profits, the trading sector, public utilities sector, and service sector PEs all saw a big drop in profits or increase in losses in FY2020/21. Among the ten largest PEs, NAC was the biggest loss maker (0.09 percent of GDP) in FY2020/21, and NOC was overturned from the most profitable PE (0.33 percent of GDP in FY2019/20) into a loss



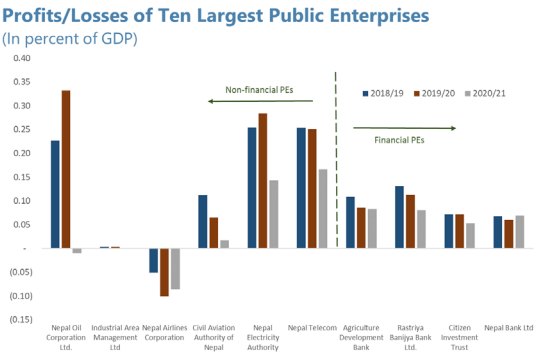
[2] After deducting PEs' loss.

[3] In Nepal, fiscal year ends in mid-July.

maker[4]. It is worth noting that, even before the pandemic, the returns on assets (ROAs) of PEs had been trending down though their total profits were increasing. The profits were driven by massive asset expansion, such as heavy investment in the electricity sector.

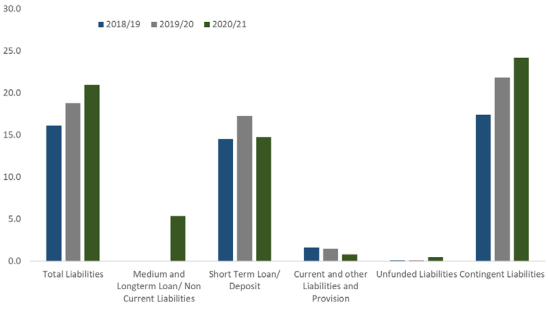


Source: Nepali authorities; and IMF staff estimates.

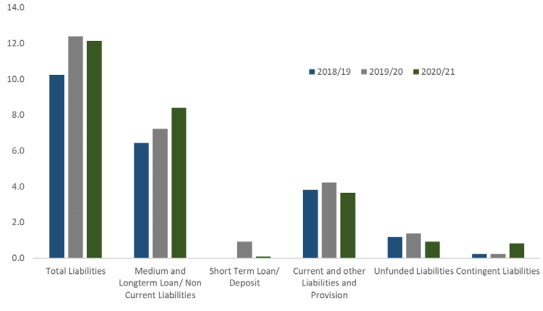


Source: Nepali authorities; and IMF staff estimates.

5. Both non-financial and financial PEs' liabilities had increased quickly during the pandemic. Non-financial PEs' liabilities increased by 31 percent from FY2018/19 to FY2020/21, and financial PEs increased by 44 percent in the same two years, driven by the credit expansion. Medium- and long-term loan as well as other non-current liabilities are the main drivers of these changes. In addition, PEs' unfunded liabilities and contingent liabilities that are both outside their balance sheet are also large (26 percent of GDP in FY2020/21) and increased rapidly. The unfunded liabilities mostly arise from the employee benefits of PEs, including retirement benefits and other incurred benefits. About 80 percent of such liabilities are from the utility sector (mainly NEA). The contingent liabilities are mainly from the Deposit and Credit Guarantee Fund (86 percent of total contingent liabilities) due to its large amount of guaranteed credits (see Box 1).



Source: Nepali authorities; and IMF staff estimates.



Source: Nepali authorities; and IMF staff estimates.

Note: the total liabilities include medium and long-term loan/non-current liabilities, short term loan/ deposit, and current and other liabilities and provision, but not unfunded liabilities and contingent liabilities are not included in total liabilities.

[4] NOC's loss surged almost 9 times in FY2021/22 and far exceeded NAC. These are discussed in the following sections.

6. The recent global commodity price shocks further affected the financial performance of PEs. For example, NOC alone incurred 1 percent of GDP losses in FY2021/22 because the surging fuel purchasing costs were not fully passed through to domestic fuel sales prices.

7. The rest of this section analyzes how the COVID-19 pandemic and recent global commodity price shocks impacted the financial situation of three critical PEs which appear to pose the largest fiscal risks. They include the biggest loss maker (NOC), the most sustained loss maker among the big ten PEs (NAC), and the largest PE in terms of size of assets and liabilities (NEA). The IMF's state-owned enterprise (SOE) health check tool (HCT) tool will be applied to some of them to assesses the financial vulnerability and risks emerging from PEs. SOE-HCT calculates numeric ratios on profitability, liquidity, solvency, and government relationship, using the financial statements of SOEs and their financial transactions with public finance. The tool generates an overall risk rating for PEs by using a simple average and the Z-score methodology (Z-score is a numerical measurement that describes a value's relationship to the mean of a group value). The scales of risks are classified as 1 very low risk; 2 low risk; 3 moderate risk; 4 high risk; and 5 very high risk. [5]

Case 1: Nepal Oil Corporation

8. The financial situation of NOC has severely deteriorated in FY2020/21 and FY2021/22. NOC is the only company authorized to import petroleum products into Nepal. At present, they import exclusively from Indian Oil Corporation under long-term contractual arrangements. NOC does not suffer any competition from other operators in the marketplace. Therefore, its financial situation mostly depends on the structure of costs and price policy. NOC incurred losses of NRP 0.4 billion in FY2020/21 and NRP 47.5 billion (1 percent of GDP) in FY2021/22, compared with the NRP 12.9 billion (0.3 percent of GDP) profits in FY2019/20 due to the plunge of international fuel prices in 2020. NOC was only able to absorb NRP 17 billion (0.4 percent of GDP) loss with previously accumulated profits, drawing down its cash balance and financial investment (including those of oil price stabilization fund). The rest was covered by an outstanding payment to Indian Oil Corporation (around NRP 31 billion/0.7 percent of GDP by mid-August 2022, which was later converted into loans) and loans from one state-owned bank (Rastriya Banijya Bank NRP 3 billion/0.1 percent of GDP). In the end of FY2021/22, the government provided NRP 7 billion (0.14 percent of GDP) to support NOC to repay its loan from Rastriya Banijya Bank and clear some of the outstanding payment to the Indian Oil Corporation.

[5] For more details about SOE-HCT, please refer to https://www.imf.org/en/Topics/fiscal-policies/Fiscal-Risks/Fiscal-Risks-Toolkit/Fiscal-Risks-Toolkit-SOE-HCT

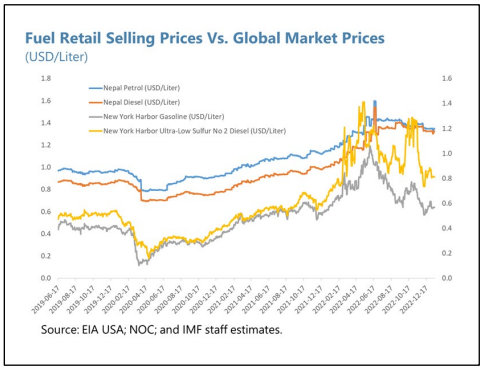
9. The financial risks of NOC have thereafter increased significantly. Applying the SOE-HCT tool, NOC's overall risk ratings increased from category 2 in FY2018/19 to 4 in FY2021/22 (in the scale of 5), which implies its probability of being under financial distress has significantly increased from low to high. Indeed, the risks related to profitability, liquidity, solvency, and government relationship have all jumped up (Figure 1).

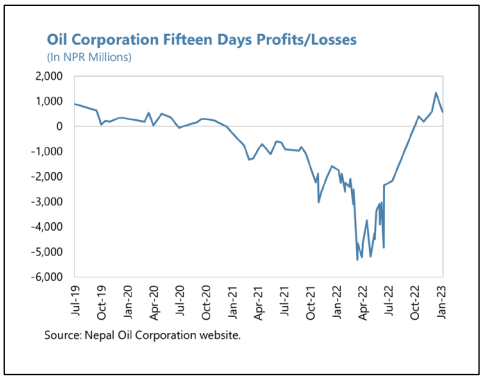
Figure 1. NOC's Risk Ratings

	2019	2020	2021	2022
Profitability				
Return on Assets	Category 1	Category 1	Category 4	Category 5
Return on Equity	Category 1	Category 1	Category 4	Category 5
Cost Recovery	Category 3	Category 3	Category 4	Category 4
Liquidity				
Current Ratio	Category 1	Category 4	Category 3	Category 5
Quick Ratio	Category 1	Category 3	Category 2	Category 5
Debtor Turnover Days	Category 1	Category 1	Category 1	Category 1
Creditor Turnover Days	Category 1	Category 1	Category 1	Category 2
Solvency				
Debt to Assets	Category 2	Category 2	Category 2	Category 5
Debt to Equity	Category 2	Category 2	Category 2	Category 5
Debt to EBITDA	Category 2	Category 2	Category 5	Category 5
Interest Coverage				Category 5
Cash Interest Coverage				Category 5
Debt Coverage				Category 5
Government Relationship				
Government Transfers to Total Revenue	Category 1	Category 1	Category 1	Category 1
50% Test	Category 2	Category 2	Category 3	Category 3
Overall Risk Rating				
Weighted Average*	Category 2	Category 2	Category 3	Category 4
Z-Score	Category 2	Category 2	Category 2	Category 4

Note: Ratings are based on the financial statements of NOC and its fiscal relationship with government.

10. The quickly worsening financial situation was mainly due to the inability to pass through surging fuel import costs to domestic market prices. For example, from July 15, 2020, to July 5, 2022 (i.e. end of FY 2019/20 and FY2021/22), domestic petrol and diesel selling prices increased 77.5 percent and 95.5 percent respectively, while international market prices for them increased much more. For instance, the New York Harbor prices for petrol and diesel increased 176.2 percent and 204.8 percent respectively in the same period. [6] Subsequently, NOC incurred mounting losses. According to Nepal's automatic fuel pricing mechanism, NOC can increase domestic fuel prices up to 2 percent every two weeks. For increases beyond that limit, NOC needs approval from its board, which is chaired by the Secretary of the Ministry of Industry, Commerce and Supplies. However, the surge of import fuel prices was not fully passed through to domestic market due to government's concerns of the social and economic impact of high fuel prices. Assuming the pre-pandemic level of profits are normal, the estimated forgone revenue which was not compensated by budget (i.e. quasi-fiscal activity (QFA) cost) in FY2021/22 would be about 1.2 percent of GDP.





[6] Data source is the EIA USA.

11. The more recent fall in global fuel price has helped NOC recover a part of its loss but sustained profits are needed to recover its financial footing. Even if NOC can return to pre-pandemic level of profits, it will take more than three years to fully recover the accumulated loss and repay its loans. However, if such profits can't be sustained and the QFAs continue, its vulnerable financial situation will be prolonged.

Case 2: Nepal Airlines Corporation

12. NAC operates in competition with other carriers in both the domestic and international flights markets in Nepal. There are 20 domestic airlines and 29 international airlines operating in Nepal. NAC's domestic flight market share was only one percent while international flight market share was 19.7 percent in 2021.

13. The financial situation of NAC was worrisome even before the COVID pandemic. It incurred NPR 2.1 billion (0.05 percent of GDP) losses in FY2018/29 with accumulated loss of NPR 5.6 billion (0.15 percent of GDP) by the end of that year. Its risk rating by SOE-HCT in that year was already high (Figure 2). Although its international flights have been profitable, its domestic flights continued making losses. NAC has argued that it maintained the domestic flights for the purpose of social-economic considerations (e.g. facilitating movement of people to/from remote areas, promoting tourism, etc.). However, more in-depth analysis is needed to assess if those losses are due to uncompensated social obligation (i.e. quasi-fiscal activity) or operational inefficiency. If it is the former, government should cover NAC's loss to reflect the cost of such a social policy. If it is the latter, priority should be given to enhancing NAC's operational efficiency to increase its profitability.

Figure 2. NAC's Risk Ratings

	2019	2020	2021	2022
Profitability				
Return on Assets	Category 4	Category 5	Category 5	Category 5
Return on Equity	Category 5	Category 5	Category 5	Category 5
Cost Recovery	Category 3	Category 3	Category 4	Category 3
Liquidity				
Current Ratio	Category 5	Category 5	Category 5	Category 5
Quick Ratio	Category 5	Category 5	Category 5	Category 5
Debtor Turnover Days	Category 1	Category 1	Category 1	Category 1
Creditor Turnover Days	Category 1	Category 1	Category 2	Category 2
Solvency				
Debt to Assets	Category 4	Category 4	Category 5	Category 5
Debt to Equity	Category 5	Category 5	Category 5	Category 5
Debt to EBITDA	Category 5	Category 5	Category 5	Category 5
Interest Coverage	Category 5	Category 5	Category 5	Category 5
Cash Interest Coverage	Category 5	Category 5	Category 5	Category 5
Debt Coverage	Category 5	Category 5	Category 5	Category 5
Government Relationship				
Government Transfers to Total Revenue	Category 1	Category 1	Category 1	Category 1
50% Test	Category 3	Category 3	Category 3	Category 3
Overall Risk Rating				
Weighted Average*	Category 4	Category 4	Category 4	Category 4
Z-Score	Category 4	Category 4	Category 4	Category 4

Note: For the years before FY2022, ratings are based on the financial statements of NAC. For the FY2022, the ratings are based on the estimates of financial performance according to the provisional revenue, expenses, as well as information on NAC's debts.

exceeded its total assets since FY2020/21, resulting in negative equity which only worsened in FY2021/22. Overall, while NAC's risks profile suggests that risks were elevated already before the pandemic, risks have further increased in some categories.

15. Government has large credit risk exposure to NAC. By the end of FY2021/22, the government had provided NAC loans with an outstanding value NPR 3.6 billion (0.1 percent of GDP) and NPR 34 billion in debt guarantees (0.7 percent of GDP). The total amount of loans as of FY2021/22 from nonbank financial institutions exceeded their initial values, suggesting that the NAC may have faced difficulties in servicing its loans[7] (Table 1).

Table 1. Nepal: NAC's Borrowings and Guarantees

(in NPR billions)

Sources of Loans	Initial Value	Loan Outstanding (FY2021/22)	Government Guarantees (FY2021/22)
Loans from federal government	3.6	3.6	
Loans from financial institutions	34.0	45.0	
Total	37.6	48.6	34
Memo item:			
Total loans/guarantees (in percent of GDP)		1.0	0.7

Source: MOF and staff estimation.

Case 3: Nepal Electricity Authority

16. Compared with other PEs, and despite government policies to support electricity use, NEA's financial situation was not severely impacted by the pandemic. NEA's core businesses of electricity generation, transmission, and distribution do not necessarily require close contacts and are thus not very sensitive to the pandemic. The main channel of pandemic impact was shrinking electricity demand, especially during the lock down period. The other impact is the QFA of providing free and discounted electricity to households consuming small amounts of electricity as per government's policy. In FY2020/21 budget speech, the government introduced free electricity to household consuming up to 10 units per month with 5-ampere meters, as well as discount arrangements for other small electricity consumers, as a household relief measure in response to the pandemics. This arrangement was further extended to include free electricity to households consuming up to 20 units per month in late 2021 to promote the usage of electricity. The costs of delivering discounted electricity are not compensated by the budget. In FY2021/22, NEA distributed 85.99 million units of electricity free of charge, which is estimated at about NPR 558.9 million (0.01

[7] The loans to nonbank financial institutions due by FY2021/22 is estimated at around 0.5 percent of GDP by comparing the actual loan outstanding and the loan amount should those loans were repaid on time. 15 years of original maturities of those loans were assumed.

percent of GDP) in forgone revenue even if the next lowest rate for 5-ampere meters (NPR 6.5/kWh) is applied (Table 2).

17. NEA's financial performance improved as a result of the global fuel price shocks. In FY 2021/22, NEA's total profits reached historic high NPR 16.1 billion (0.3 percent of GDP). This was due to strong electricity demand amid the fuel price surge. As NEA's thermal power plants capacity accounts to only 8.1 percent of its total electricity generation capacity, the global fuel price shocks had a limited impact on its electricity generation costs. Overall, with the recovery of accumulated losses and sustained profits after FY2018/19, NEA's financial position has improved.

Figure 3. NEA's Risk Ratings

	2019	2020	2021	2022
Profitability				
Return on Assets	Category 3	Category 3	Category 3	Category 3
Return on Equity	Category 3	Category 3	Category 3	Category 3
Cost Recovery	Category 3	Category 3	Category 3	Category 3
Liquidity				
Current Ratio	Category 4	Category 2	Category 2	Category 2
Quick Ratio	Category 2	Category 1	Category 1	Category 1
Debtor Turnover Days	Category 5	Category 5	Category 5	Category 5
Creditor Turnover Days	Category 5	Category 5	Category 5	Category 5
Solvency				
Debt to Assets	Category 3	Category 3	Category 3	Category 3
Debt to Equity	Category 4	Category 4	Category 3	Category 3
Debt to EBITDA	Category 5	Category 5	Category 5	Category 5
Interest Coverage	Category 1	Category 1	Category 2	Category 1
Cash Interest Coverage	Category 2	Category 1	Category 3	Category 1
Debt Coverage	Category 5	Category 5	Category 5	Category 5
Government Relationship				
Government Transfers to Total Revenue	Category 1	Category 1	Category 1	Category 1
50% Test	Category 2	Category 2	Category 2	Category 2
Overall Risk Rating				
Weighted Average*	Category 3	Category 3	Category 3	Category 3
Z-Score	Category 4	Category 3	Category 3	Category 3

Note: Ratings are based on the financial statements of NEA and its fiscal relationship with government.

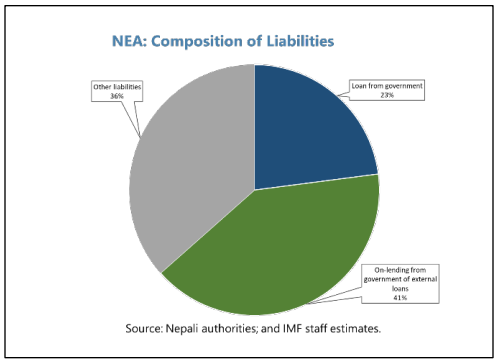
Table 2. Nepal: Electricity Tariff

kWh (Monthly)	5 Ampere		15 Ampere		30 Ampere		60 Ampere	
	Monthly Minimum Charge (Nrs.)	Energy Charge (Nrs./kWh)	Monthly Minimum Charge (Nrs.)	Energy Charge (Nrs./kWh)	Monthly Minimum Charge (Nrs.)	Energy Charge (Nrs./kWh)	Monthly Minimum Charge (Nrs.)	Energy Charge (Nrs./kWh)
0-20	30.00	0.00	50.00	4.00	75.00	5.00	125.00	6.00
21-30	50.00	6.50	75.00	6.50	100.00	6.50	125.00	6.50
31-50	50.00	8.00	75.00	8.00	100.00	8.00	125.00	8.00
51-100	75.00	9.50	100.00	9.50	125.00	9.50	150.00	9.50
101-250	100.00	9.50	125.00	9.50	150.00	9.50	200.00	9.50
Above 251	150.00	11.00	175.00	11.00	200.00	11.00	250.00	11.00

Note: These rates apply to domestic consumers with single phase low voltage (203Voltage)

Source: NEA annual report 2021/22

18. However, NEA still faces financial challenges. While NEA's profits have increased, its capacity to repay debt remains under pressure. For example, NEA's debt to earnings before interest, tax, depreciation and amortization (EBITDA)[8] had come down from 24.3 in FY2018/19 to 17.1 by the end of FY2021/22. This is still way above the threshold for the high-risk category which is defined as five in the SOE-HCT and thus NEA is classified in the highest risk category for this indicator and also the related indicator of debt coverage (Figure 3). However, such risks are partly mitigated by the fact that most NEA's liabilities are loans from the government, two thirds of which are on-lending of external concessional loans. Furthermore, NEA's unfunded liabilities (mainly pension liabilities) also increased to 0.7 percent of GDP by the end of FY2020/21. NEA's liquidity management also needs improvement as both the debtor turnover days[9] and creditor turnover days[10] are classified in the highest risk category.



Source: Nepali authorities; and IMF staff estimates.

19. There are also risks related to power purchase agreements (PPAs). NEA had signed 357 PPAs with various independent power producers (IPPs) by the end of FY2021/22. The combined installed capacity reached 6,366 megawatts (MW)[11]. Most of these PPAs used the provision of take-or-pay, under which the NEA has to buy the contracted amount of electricity or pay a fine. They create long-term expenditure commitments. There are currently additional 269 PPA applications with total capacity of 11,740 MW which could bring the total capacity to 18,106 MW in the coming years. According to the Water and Energy Commission Secretariat's Electricity Demand Forecast Report (2015-2040), electricity demands have a wide range of possibilities, e.g. 5,787 MW - 10,803 MW in 2025, 8,937 MW - 18,371 MW in 2030, and 19,151 MW - 51,330 MW in 2040. If the electricity demand falls short of expectation, NEA may incur losses from such agreements.

C. Fiscal Impact of Shocks Through PEs

20. External shocks can weaken PEs' financial situation which impact public finance through multiple channels. On fiscal revenue side, deteriorating financial performance could result in lower-than-expected dividends, royalties or taxes received from PEs. On fiscal expenditure side,

[8] Indicates the ability of a company to service any debt it holds. The indicator indicates, at the current rate of cash generation, the number of years it would take for the company to generate sufficient cash to pay off all its debt. A higher indicator indicates a more indebted company, where there is a higher risk that it may not be able to service its debt.

[9] Measures the speed with which a company is paid by its customers. A high ratio could indicate that the company is taking a long time to collect amounts owed by its customers and may face increasing liquidity challenges.

[10] Measures the speed with which an SOE pays its suppliers. A high ratio indicates that the company pays its suppliers more slowly and may indicate the build up of arrears or worsening financial condition.

[11] 132 projects under operation with the capacity of 1,532 MW; 141 projects under construction with the capacity of 3,281 MW; and 84 projects under different stages with the capacity of 1553 MW.

higher subsidies may be needed to support PEs, potentially adding to fiscal pressures. In addition, PEs can also impact government's balance sheet, including PEs' debt being taken over (servicing guarantees on PEs' borrowing), equity injection to cover accumulative losses, loan repayment default, reduced net worth due to poor performance of PEs, etc.

21. In the early stage of the pandemic in Nepal, fiscal impacts appeared to be positive. In FY2019/20, the income tax contributed by PEs increased close to 0.1 percentage point of GDP, while dividends increased a little bit more than 0.1 percentage point of GDP. Considering the total profits of PEs in FY2019/20 were similar as FY2018/19, such an increase in fiscal contribution might partly because of the possible super-dividends[12] when fiscal revenue was under stress. On the expenditure side, the fertilizer subsidies increased close to 0.1 percentage point of GDP[13]. Food subsidies and other types of subsidies to PEs are small. Using the FY2018/19 (pre-pandemic) as the status quo, the net impact of the pandemic through PEs on fiscal balance (above-the-line) was positive 0.1 percent of GDP. The share investment and loan investment to PEs, which are arguably mainly used to support infrastructure projects undertaken by PEs, reduced by 1 percentage point of GDP in FY2019/20 because of project implementation difficulties due to the lockdown. (Table 3)

22. However, the fiscal impact of PEs emerged as the pandemic prolonged and as a result of the most recent global commodity price shocks. As discussed in section B, PEs' financial performance deteriorated in FY2020/21 and FY2021/22. Compared with the pre-pandemic FY2018/19, PEs' contribution to fiscal revenue (income tax and dividends) declined by 0.16 percentage point of GDP in FY2020/21 and 0.23 percentage point in FY2021/22. At the same time, fiscal subsidies to PEs increased by 0.1 percentage point of GDP in each of these two years. Overall, these costs added 0.26 percentage point of GDP in FY2020/21 and 0.32 percentage point of GDP to the fiscal deficits in FY2021/22. While government loan and share investment could not reach the FY2018/19 levels in these two years, government purchased 0.14 percent of GDP in NOC loans in FY2021/22.

[12] "Super-dividends": withdrawal of own funds in excess of the distributable income of the accounting year, normally as a consequence of sales of assets or payments out of accumulated reserves.

[13] Fertilizer subsidies are not classified as subsidies to PEs in the budget. Food Management and Trading Company and Krishi Samagri Company (both PEs) import fertilizer and then sell them at a price decided by the government. As the retail prices do not cover the full cost of operations (e.g. import, transportation, and handling costs), government provides subsidies to them. In order to analyze the fiscal impacts of PEs' operations due to the pandemic and recent global commodity price shocks, such subsidies are included.

Table 3. Nepal: PEs' Interaction with Budget

Fiscal year	2018/19	2019/20	2020/21	2021/22*
In millions of NPR				
Income Tax	7,643	11,025	5,526	6,346
Dividends	9,471	14,100	6,721	4,244
Fertilizer Subsidies **	5,993	8,990	11,000	12,000
Food Subsidies	440	460	460	470
Other Subsidies to PEs	807	1,047	1,146	766
Tax Refunds				599
Above-the-line impact (compared with 2018/19)	**-**	**4,753**	**(10,233)**	**(13,119)**
Loan Investment	39,427	47,637	34,425	47,300
of which: loan to NOC to repay its debt				7,000
Share Investment	58,698	12,728	26,967	15,528
Other support commitments***				1,923
In percent of GDP				
Fiscal year	**2018/19**	**2019/20**	**2020/21**	**2021/22***
Income Tax	0.20	0.28	0.13	0.13
Dividends	0.25	0.36	0.16	0.09
Fertilizer Subsidies **	0.16	0.23	0.26	0.25
Food Subsidies	0.01	0.01	0.01	0.01
Other Subsidies to PEs	0.02	0.03	0.03	0.02
Tax Refunds				0.01
Above-the-line impact (compared with 2018/19)	**-**	**0.12**	**(0.26)**	**(0.32)**
Loan Investment	1.02	1.23	0.80	0.97
of which: loan to NOC to repay its debt				0.14
Share Investment	1.52	0.33	0.63	0.32
Other support commitments***				0.04

Source: Yellow books 2020-2022, PDMO report on loan and share investment in PEs 2022, budget tables FY2020/21 – FY2022/23, MOF monthly budget execution reports, and staff estimation.

Notes: * 2021/22 PE income tax is estimated by staff. **Budget amount. *** Committed tax refund to NOC but not yet paid.

23. In addition to the direct budget impact, the fiscal risks from some PEs are also elevated. The federal government has a substantial credit risk exposure to PEs. By the end of FY2020/21, the government's loans to the PE sector reached NPR 252.6 billion (5.9 percent of GDP), 0.9 percentage point of GDP higher than the pre-pandemic level in FY2018/19. In addition, the government still has three outstanding guarantees to NAC equivalent to NPR 34 billion (0.7 percent of GDP, details on the guarantees are discussed in section D). As the financial situation of some PEs, such as NOC and NAC, has been worsening since the pandemic, the risks of government's credit exposure to those PEs have increased. That is, PEs are more likely than before to fail to repay their debt to government and the guarantees to NAC are more likely to be called. Nevertheless, as 80 percent of government's loans go to NEA which is profitable, the risk of large scale default in repaying government's loans is contained.[14] Fiscal risks stem also from the Deposit and Credit Guarantee Fund (DCGF) (see Box 1).

[14] Data source: PE review2022, based on PDMO reported data.

Box 1. Deposit and Credit Guarantee Fund and Fiscal Risks

DCGF provides both deposit insurance coverage and credit guarantee services to member banks. DCGF runs a credit guarantee program for increasing access to finance for the poor, underserved and deprived sector people lacking other sources of funding. During the COVID-19 pandemic, the amount of the guaranteed loans increased. The average amount of the credit guarantee amount increased by 148.1 percent between mid-July 2021 to mid-January 2023 relative to the pre-COVID period (mid-July 2018 to mid-July 2021), while the average increase in the claims paid to banks was 48 percent.

The size of the credit guarantee fund is small compared with its credit risk exposure. The size of the credit guarantee fund is NPR 3.55 billion (less than 0.1 percent of FY2022/23 GDP), corresponding to 1.34 percent of the total guaranteed credit amount of NPR 265.28 billion (4.9 percent of FY2022/23 GDP). The DCGF does not have a target size for the credit guarantee fund. Out of the total guaranteed amount, 62 billion (1.1 percent of FY2022/23 GDP) corresponds to concessional loans. Major ticket items in concessional loans are agriculture, tourism and women entrepreneur loans which correspond to more than 90 percent of the total guaranteed amount.

Programs	Guarantee Limit	Guarantee Fee (in percent)	Compensation (in percent)
Micro Finance and Deprived Sector Credit Guarantee	Up to Rs. 1.5 million	1% p.a. (75% of which is subsidy from government)	75
Agricultural Credit Guarantee	Up to Rs 20. Million	0.6% p.a. (50% of which is subsidy from government)	70 - 80
Educational Credit and Educated Unemployment Business Credit Guarantee	Educational Credit Guarantee - Rs 1 million Educated Unemployment Business Credit Guarantee - Rs 0.5 million	1% p.a. (80% of which is subsidy from government)	80
Small and Medium Enterprises Credit Guarantee	Up to Rs 20 million	0.6% p.a. (50% of which is subsidy from government)	70 – 80
Livestock Guarantee	For large livestock – Rs 0.15 million For small Livestock – Rs 30,000	6% p.a. (75% of which is subsidy from government)	90 (death) 50 (unproductive)
Export Credit Guarantee	Up to Rs. 1 million	1% p.a. (50% of which is subsidy from government)	70-80

Source: DCGF

Potential increases in bank claims on credit guarantee fund may result in fiscal risks.
The 5-year maturity of the concessional loan facility has not yet elapsed, but there are expectations that banks' claims on these loans will be significant. Given the total guaranteed amount of these loans is 1.1 percent of GDP as of mid-January 2023, repayment of claims corresponding to more than 5.7 percent of the guaranteed amount would exhaust the current credit guarantee fund. In addition to the concessional loans, rising NPL levels suggests that bank claims on other types of guaranteed loans (especially in microfinance and SME sectors) may also increase. Banks apply to the DCGF for reimbursement of the guaranteed amount once the loan is recorded as an NPLs. Following an internal assessment of the banks' requests, the DCGF, involved in the process as an indirect lender to the clients, reimburses the banks for the impaired loans, and informs the banks to follow up on the defaulted loan clients and to focus on the recovery after reimbursement. The recovery rates are very low, on average below 0.01 percent, indicating significant moral hazard.

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