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NEPAL DEVELOPMENT UPDATE

Development Amidst Disturbances

January 2016

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Preface

The Nepal Development Update is produced twice-yearly with the following two main aims: to report on key economic developments over the preceding months, placing them in a longer term and global perspective and to examine (in the Special Focus section) topics of particular policy significance. The Update is intended for a wide audience including policy-makers, business leaders, the community of analysts and professionals engaged in economic debates, and the general public.

This update, however, only has the first section to shed light on the impact of recent trade disruptions. The 2016 Spring Update (April) will have the full version with Special Focus section.

This Update was prepared by a World Bank team including Damir Cosic (Senior Economist), Roshan Bajracharya (Senior Economist), Sudyumna Dahal (Economist) and Saurav Rana (Research Analyst). Takuya Kamata (Country Manager), Martin Rama (Acting Country Director), Shubham Chaudhuri (Practice Manager), Rajib Upadhya (Senior External Affairs Officer), Sailesh Tiwari (Senior Poverty Economist), Sabin Shrestha (Senior Financial Sector Specialist) provided feedback and guidance. Sunita Kumari Yadav (Program Assistant) and Arsianti Arsianti (Consultant) formatted the report.

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Executive summary: Development Amidst Disturbances

In the span of six-months, Nepal has been hit by two major shocks. The first one was the April/May 2015 earthquakes that have caused a huge loss of life and assets. The second shock has come in the form of a near complete disruption of external trade following the adoption of the new Constitution on September 20, 2015.

Devastating earthquakes in April and May of 2015 took a huge human toll; destroyed homes, businesses, irreplaceable cultural heritage sites and slowed economic growth. The Government of Nepal (GoN), through a Post Disaster Needs Assessment (PDNA), estimated the value of losses at USD 7.1 billion (physical damage of USD 5.2 billion and economic losses, spanning several years, of USD 1.9 billion). In addition, growth is estimated to have slowed to 3.4 percent in FY15, two percentage points lower than a year before, reflecting both weak agricultural season at the start of the fiscal year as well as earthquake-related disruptions.

Furthermore, the earthquake has put a dent on a stellar record on poverty reduction. Simulations suggest that the earthquakes could end up pushing an additional 0.7-1.0 million of Nepalis into poverty in FY15-FY16, as the result of the earthquake. This translates to additional 2.5-3.5 percent of Nepalis pushed into poverty. In addition to monetary poverty, the deterioration of water and sanitation services, disruption of schools and health services and the possible increase in food insecurity may lead to a bigger impact on multidimensional poverty, if normalization of public services are not restored within a shortest time possible.

Nepal's political parties intensified their efforts to adopt a new constitution, after eight years of deliberations, spurred on by the shift in political priorities following the April/May earthquakes. As the constitutional process drew to an unexpectedly rapid close, protests and clashes, some of which turned violent and deadly, erupted in August across the country's southern belt bordering with India. Following the promulgation of the new constitution on September 20, 2015, protests intensified, leading to a near-complete disruption in cross-border trade. This has resulted in acute shortages of fuel and essential supplies across the country.

With varying intensity, the trade disruptions—which lasted more than four months—have affected economic activity across the board. Industry has been severely affected. Service sector has also been hit hard as tourism, trade, transport have been disrupted. Agriculture has been affected by lack of fertilizers and other inputs which has already affected summer crops and is likely have an impact on subsequent harvests. Both government revenues and expenditures have fallen sharply, while shortages of goods have pushed up prices adversely affecting welfare. Humanitarian effects of the trade disruptions cannot be underestimated with children missing school, hospital running low on critical supplies, and delays in reconstruction and winterization efforts undermining earthquake recovery in the affected areas.

a. Outlook

Prior to the trade disruptions, growth was projected at 3.7 percent in FY16 as continued effects of the earthquake destruction, sub-optimal monsoon rainfall, delays in set up of the National Reconstruction Authority were expected to take a toll on economic activity, especially in the first part of FY16. Growth was expected to pick up to 5.5 percent in FY17, on the back of the increased investment (both public and private), as the political process stabilizes and the earthquake recovery speeds up in earnest. Under this scenario, a normalization was envisaged whereby the faster budget implementation and sustained reconstruction activities could lead to a surge in imports, which would have tipped the current account balance into deficit over the forecast period, despite large remittances. Similarly, increased government spending on capital expenditure, as National Reconstruction Authority speeds up reconstruction activities, would lead to a larger budget deficit.

Clearly, the assumptions underpinning this forecast have changed. Estimating the impact of the trade disruptions in a data-poor and uncertain environment is inherently difficult and imprecise. Based on the data available, and applying a number of different approaches, our current estimate is that if the trade disruptions continue until the end of January 2016, Nepal is expected to record growth of 1.7 percent in FY16. However, uncertainty surrounding this forecast is large and growth could range anywhere from 1 to 2.3 percent.

b. Challenges

Beyond the immediate challenge of overcoming the shock associated with the current trade disruptions, Nepal faces several simultaneous challenges ahead—effective implementation of post-earthquake recovery coupled with a completion of political transition and setting up of a new federal structure. The country also faces the challenge of successful leveraging of its endowments (hydropower potential, human capital) to achieve a faster growth, increasing poverty reduction and creating economic opportunities, especially jobs, for its citizens at home in the medium-term. Additionally, the trade disruptions have highlighted the need to urgently diversify Nepalese economy and society, particularly in terms of trade, transport options and supplies of key resources. Delays or missteps in any one of these challenges may lead to permanently forgone opportunities and income.

Low and middle income countries in general tend to experience a permanent loss of potential output following a geological disaster like the one experienced by Nepal given their lower capacity to execute spending efficiently and effectively in rebuilding lost capital stock. In fact, the key growth constraint for Nepal in the past has been the insufficient public investment and resulting infrastructure deficit. While the quantity of public investment may increase as a result of newly created National Reconstruction Authority, ensuring the quality of spending will be even more critical.

Furthermore, lower oil prices may reduce economic opportunities in the oil-exporting Gulf Co-operation Countries, which are an important destination for Nepali migrants and a key source of remittances for the country.

A. Recent Economic Developments

2015 will be remembered as the year of twin shocks for Nepal. The first one were the April/May 2015 earthquakes that have caused a huge loss of life and assets. The second shock has come in the form of a near complete disruption of external trade following the adoption of the new Constitution on September 20, 2015.

1. The earthquake was a major setback for Nepal

Devastating earthquakes that struck Nepal in April and May 2015 took a huge human toll, destroyed homes, businesses and cultural heritage sites. Post Disaster Needs Assessment (PDNA) carried out under the leadership of the Government of Nepal has estimated that the total value of damages and losses caused by the earthquakes is USD 7 billion: USD 5.2 billion represents the value of destroyed physical assets, and USD1.9 billion reflects the economic losses. Losses span over several years until sectors recovery fully, thus are not limited just to FY15.

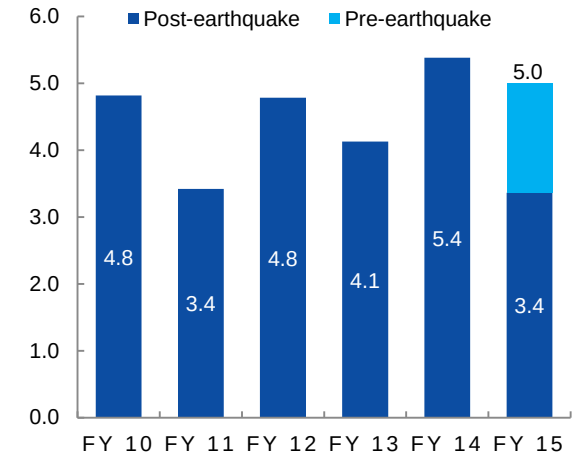
After it rebounded strongly in FY14, growth slowed sharply in FY15 due to earthquake related disruptions. The overall growth rate for FY15 is estimated to be 3.4 percent[1] – the lowest in five years and 2 percentage points lower than a year before (Figure 2). All three major sub-sectors—agriculture, services and industry—experienced lower rates of growth in FY15. The slowdown in services accounted for 1.2 percentage points of GDP drop, with industry and agriculture sectors contributing equally the remaining 0.8 percentage points (Figure 1).

Furthermore, the earthquake has put a dent on a stellar record on poverty reduction. Simulations suggest that the earthquakes could end up pushing an additional 0.7-1.0 million of Nepalis into poverty in FY15-FY16, as the result of the earthquake. This translates to additional 2.5-3.5 percent of Nepalis pushed into poverty. In addition to monetary poverty, the deterioration of water and sanitation services, disruption of schools and health services and the possible increase in food insecurity may lead to a bigger impact on multidimensional poverty, if normalization of public services are not restored within a shortest time possible.

[1] Producers price

Figure 1: Earthquake significantly dented growth in FY15

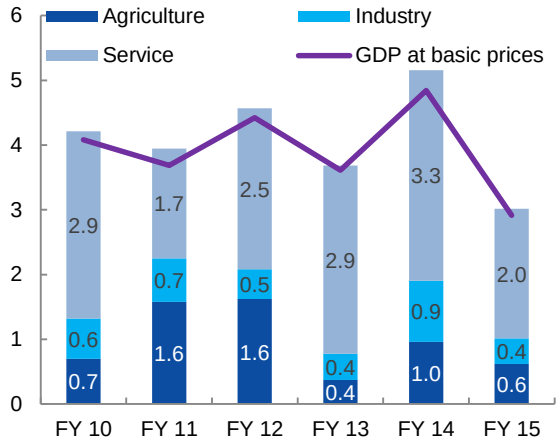
(percent change)



Source: Central Bureau of Statistics (CBS)

Figure 2: While growth slowed across all sectors, service sector contributed the most to the slowdown

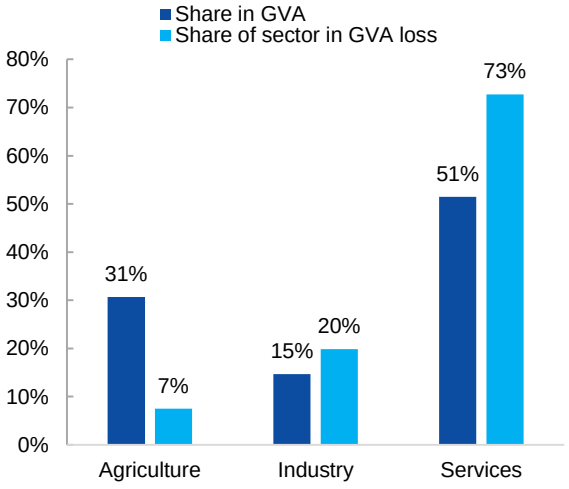
(percent points)



Source: World Bank staff calculations from CBS

Figure 3: Service sector also accounted for the largest losses

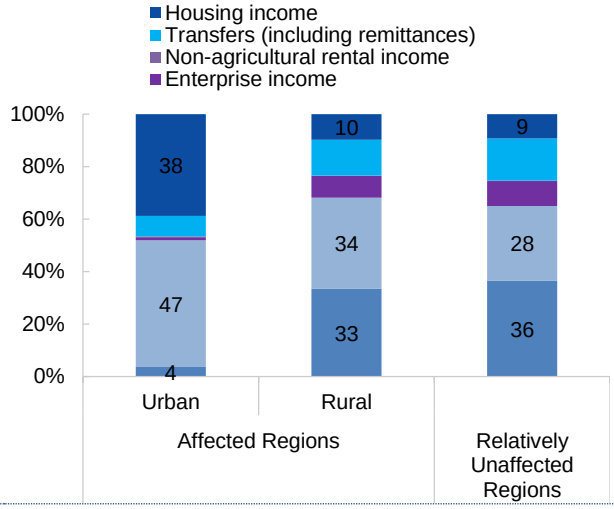
(percent)



Source: Central Bureau of Statistics (CBS)

Figure 4: Speeding up recovery is extremely crucial for the poor in earthquake affected areas

(percent)



Source: WB Staff calculations from NLSS III, 2011

2. Six months later, Nepal experienced a second shock in a form of cross-border trade disruptions

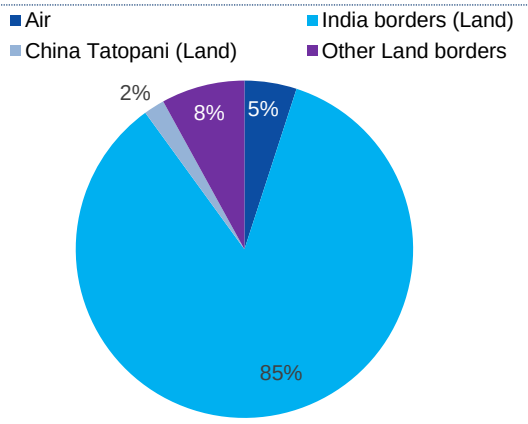
Nepal's political parties intensified their efforts to adopt a new constitution in the wake of devastating earthquakes in April and May of 2015. As the constitutional process drew to an unexpectedly rapid close, protests and clashes, some of which turned violent and deadly, erupted in August across the country's southern belt bordering with India. Following the promulgation of the new constitution on September 20, 2015, protests intensified, leading to a near-complete disruption in cross-border trade. This has resulted in acute shortages of fuel and essential supplies

across the country. While many in Nepal have accused India of barring shipments from entering Nepal and imposing an "unofficial blockade," India has officially denied doing so, citing "unrest, protests and demonstrations on the Nepalese side" as a cause of the trade disruptions

India is Nepal's largest trading partner, accounting for 65 percent of Nepal's total trade, and the principal transit route as more than 85 percent of all imports enter through India irrespective of their country of origin (Figure 5). With alternate land routes through China damaged by earthquakes, Nepal is not only a landlocked country, but is also an India-locked country, with limited ability to expand connectivity and diversify trade in the short-run.

Figure 5: More than 85 percent of imports come through India irrespective of origin

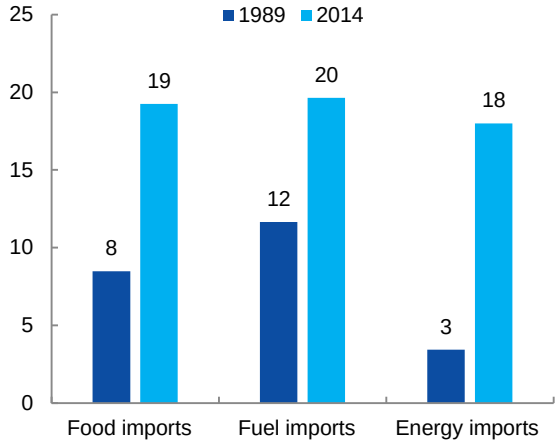
(percent, FY14)



Source: Nepal customs and WB staff calculation

Figure 6: Dependency on imports has grown since the similar trade disruptions in 1989

(Food and fuel import, percent of merchandise imports; Energy imports (net)-percent of energy use)



Source: WDI and WB Staff calculation

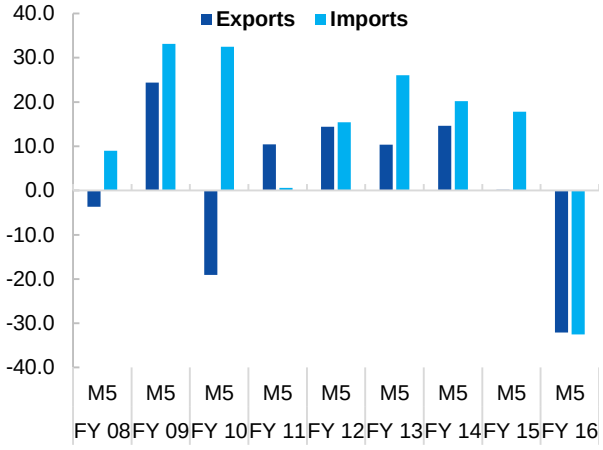
Current trade disruptions could have a larger impact than a similar trade dispute in 1989 did. Despite the recent easing of trade disruptions, it is not entirely clear how long and in what form the present trade and transit dispute could last. However, its impact, if sustained for an extended period of time, could be larger than the similar episode in 1989 given that Nepal's economy is much more depended on trade than it was back in 1989. The 15-month trade and transit blockade of Nepal by India in 1989 affected growth for three fiscal years. Back in 1989, imports and exports of goods and services accounted for 33 percent of GDP while today they account 52 percent of GDP. Today, Nepal imports nearly 20 percent of energy needs from India compared to 5 percent in 1989 (Figure 6).

3. Disruptions have sharply depressed imports as well as exports

As a result of the disruptions cross-border trade has been curtailed sharply. Cumulatively, for the first five months of FY16, imports are down 32.5 percent, compared to the same period of previous year. This is a first import contraction recorded in decades. Similarly, exports have fallen 32 percent in the same period (Figure 7). The nadir of the trade flows appears to be in month four of FY16 (mid-November) with trade improving somewhat in month five (mid-December) of the FY, although still far from pre-disruptions levels. Based on trade data from

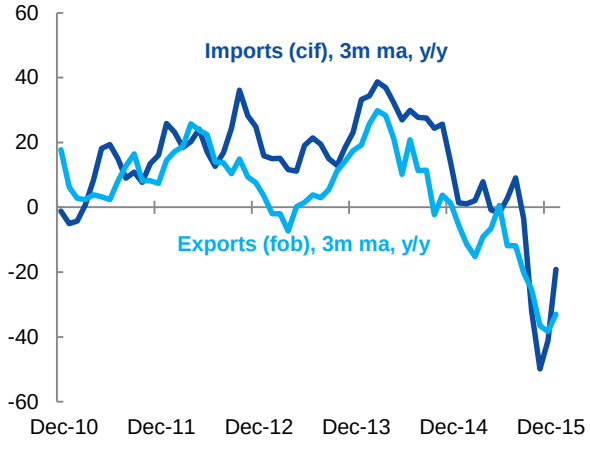
Department of Customs, which has data for first six months (through mid-January 2016), both imports and exports continued their recovery (Figure 8).

Figure 7: Cumulative contraction of exports and imports at a historic high for the five months of FY 16
(percent change, y/y, first five months of fiscal years)



Source: NRB and WB staff calculations

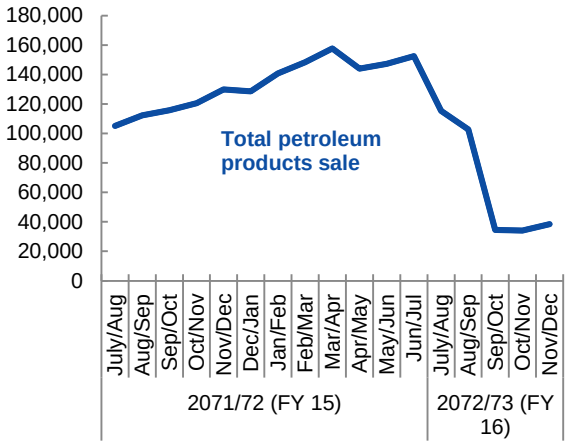
Figure 8: The peak of trade disruptions appear to be in month four (mid-November)
(percent change, 3-month moving average, y/y)



Source: NRB and Dept of Customs and WB staff calculations

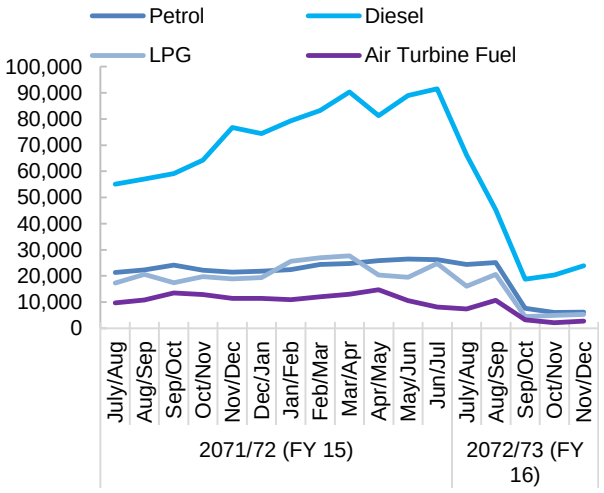
One of the most visible, and immediately felt, impacts of the trade disruptions have been shortages of petroleum products. Nepal Oil Corporation (NOC), the state-owned monopoly importer and distributer, is supplied solely by the Indian Oil Corporation (IOC). Prior to the disruptions, IOC loaded and dispatched, on average, 350 tankers per day. This fell to only 15-20 tankers per daily during October/November. As a result, prices of petrol at the black market reportedly went up 300-600 percent. Liquid Petroleum Gas cylinders used for cooking and heating were reportedly no longer available in the market (Figure 9 and Figure 10).

Figure 9: Total Petroleum products for sale
(in KL)



Source: NOC and WB staff calculations

Figure 10: Breakdown of petroleum products
(in KL)



Source: NOC and WB staff calculations

4. External balance and foreign reserves have strengthened amid shrinking trade deficit and large remittances

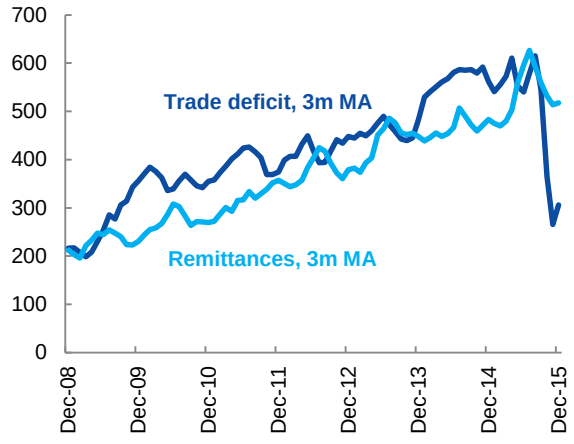
Trade deficit has sharply decreased while remittance have continued to grow but at a slower pace. Trade deficit reached a historic high of 31.2 percent of GDP in FY15. However, given the on-going trade disruptions, and the fact that imports are nine times larger than exports, trade deficit in the first five months of FY16 is down 33 percent compared to the same period of FY15. As in the past, it was offset by inflows of remittances (Figure 11). The surge in remittances during the last quarter of FY15 was the response of Nepali migrants in the aftermath of the April earthquake. In the first five months of the FY16, remittances continued to expand but at a slower pace growing at 11.5 percent (y/y) in dollar terms compared to 20 percent in the beginning of the fiscal year.

However, outflow of migrant workers registered a sharp slowdown. FY15 saw the outflow of migrant workers declined (down 0.8 percent y/y) for the first time since 2009 (Figure 12). In the first five months of FY16, outflow of migrant workers has further declined with negative growth rate of 22.6 percent (y/y) which if continues will severely impact the growth of remittance inflow going forward.

Foreign reserves continue to improve. Total reserves stood at USD 8.1 billion at the end of FY15, despite worsening export performance and widening trade deficit. They were enough to cover 11.2 months of merchandise and services imports, well above with the 8 months coverage target set out in the Monetary Policy for FY15. In the first five months of the FY16, total reserves further increased to USD 9 billion with coverage increasing to whopping 18.4 months of merchandise and service imports amid falling trade deficit and still growing remittances.

Figure 11: Remittance inflows are offsetting trade deficit

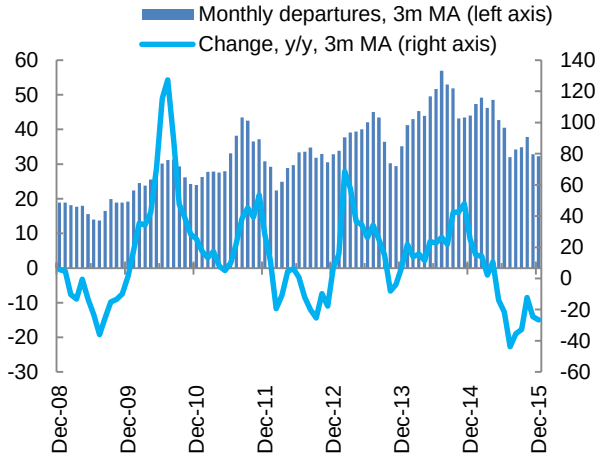
(in USD million, 3-month moving average)



Source: NRB

Figure 12: However, outflow of migrant workers has slowed sharply

(LHS, monthly outflow of migrant workers in thousands, RHS, percent change, y/y, 3-month moving average)



Source: DoFE

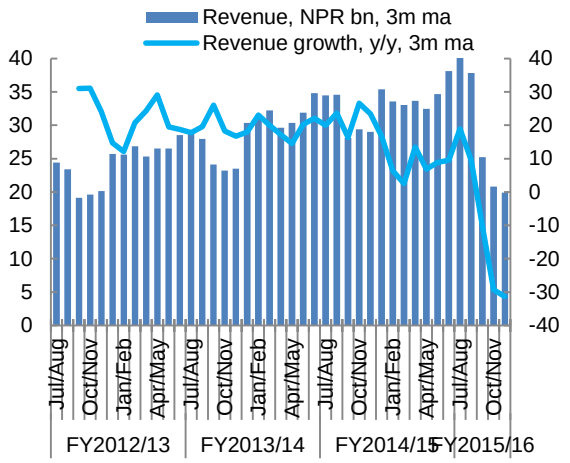
5. Government revenue has been curtailed sharply, leading to lower spending as well

Government revenues have declined sharply as a result of the trade disruption. Preliminary data show that total revenues for the first five months of the fiscal year are down 20.6 percent (y/y)[2]. Customs revenues, are down 31 percent for the first five months of FY16 (though mid-December) compared to a similar period last year. This low base has had an impact on revenue collection from other tax streams, namely Value Added Tax (VAT), income tax and excise tax as Custom is the base for these tax stream collections. For the same period, VAT was down by 21.3 percent (y/y) while excise was down by 23.2 percent (y/y).

In parallel, government expenditure has slowed as well. For the first five months of the FY16, total expenditure is down 9 percent (y/y)[3] compared to the same period in FY15. Recurrent expenditure is sharply down, 12.7 percent (y/y) while capital expenditure is down 3.2 percent (y/y) in the same period. However, FY16 budget called for near doubling of capital expenditure as a response to the devastation caused by the earthquakes. Consequently, by mid-December the amount spent on capital expenditure was a mere 4 percent of the total budgeted amount. Poor implementation of capital expenditure, which was country's systemic problem, has been further exacerbated by the trade disruptions.

Figure 13: Government Revenue has slowed down following the trade disruptions

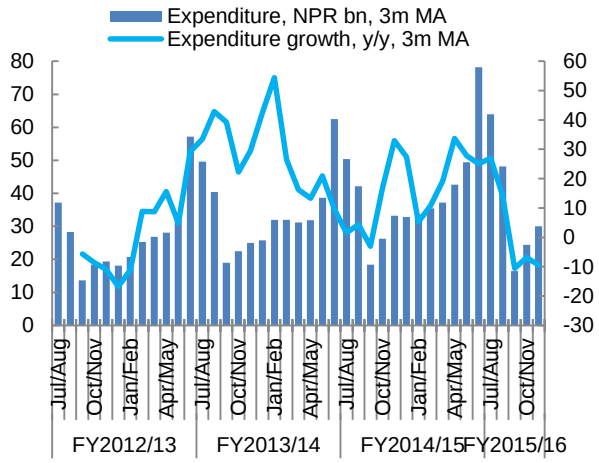
(LHS, in billion NPR, 3m MA, RHS- change, y/y, 3m MA)



Source: NRB

Figure 14: Which has resulted in lower spending as well

(LHS, in billion NPR, 3m MA, RHS- change, y/y, 3m MA)



Source: NRB

6. Supply disruptions have increased prices and pushed inflation into double digits

Inflation is rising back up in the wake of the earthquake and trade disruptions. Since the April earthquake, when inflation was 6.8 percent (y/y), inflation ticked up to 7.6 percent (y/y) in July 2015 owing to supply side disruptions resulting from earthquake. By December 2015, inflation has further increased to 11.6 percent (y/y) due to trade disruptions. Food inflation has accelerated sharply to 14.8 percent (y/y) in December. In addition, the gap between India and Nepal inflations widened to

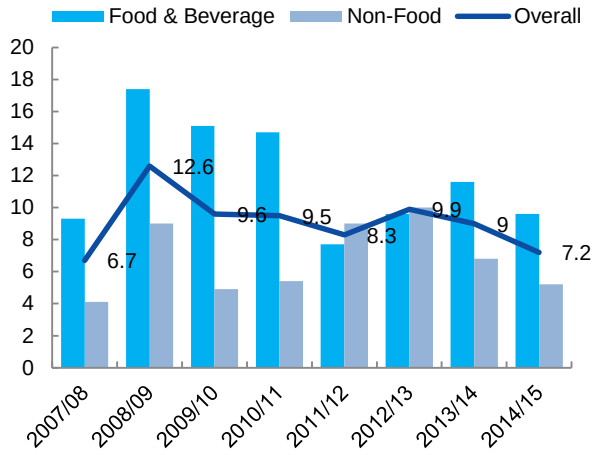
[2] On cash basis and based on data from Nepal Rastra Bank.
[3] On cash basis and based on data from Nepal Rastra Bank.

nearly 6.1 percentage points (from 2 percentage points in April) as inflation in India is broadly stable (Figure 16). Generally Nepal mimics India's inflation trend due to open border and given the peg with Indian rupee.

However, the official CPI statistics likely underestimate the inflation as they do not capture the prices in the informal or black market economy. In addition to sharp rises in petroleum, diesel and LPG prices, other shortages have emerged. Grains, pulses and cooking oil are reportedly selling for 20-50 percent higher prices, while shortages of food products with long-shelf lives also emerged during the peak of trade disruptions

Figure 15: Inflation has ticked up after registering lowest as annual inflation in FY 15

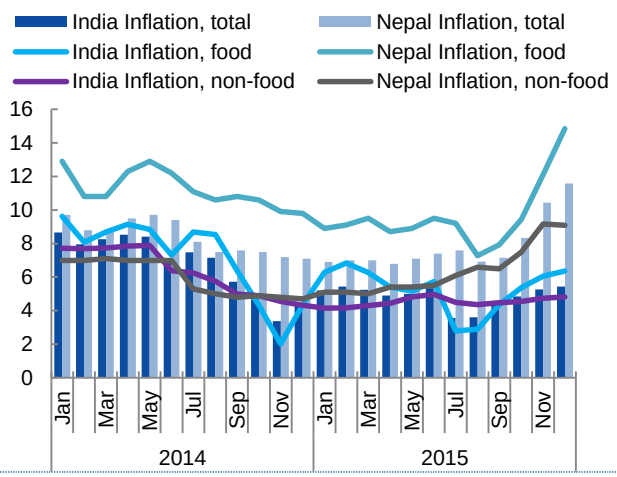
(percent change, average)



Source: NRB

Figure 16: Owing to domestic disruptions in Nepal, the gap between India and Nepal CPI widening significantly

(percent change, yly)



Source: NRB, CSO India

7. Impact on the economy of Nepal so far

The trade disruptions have affected all sectors of the Nepali economy. While higher frequency data that could give an accurate picture of the impacts in the real sector are scarce or lagging, numerous reports are suggesting that the impact on the Nepali economy is significant and broad-based.

Industry, representing some 15 percent of the GDP, has come to a near stand-still. Manufacturing, which was mostly unaffected by the earthquake, has been severely hit due to its close proximity to protests that have halted transport entirely. Reports indicate that the sector was operating at only ¼ of capacity at the peak of trade disruptions during October and November. While some industries were forcibly closed by the protestors in Birjung and Rajbiraj area, others like in Hetauda Industrial Estate—which alone contributes 3.66 percent to the National economy—were closed[4] due to shortage of raw materials and fuel. Imported raw materials and intermediate products needed for production were in short supply all over Nepal. Fuel for generators is running low at a time when power outage has been lasting in excess of 14 hours of per day. According to Central Bureau of Statistics and Birgunj

[4] FNCCI

Chamber of Commerce, around 2,000 firms employing some 400,000 people in the Terai were closed during October/November given the lack of raw materials and fuel. This will have a negative welfare impact on the affected population.

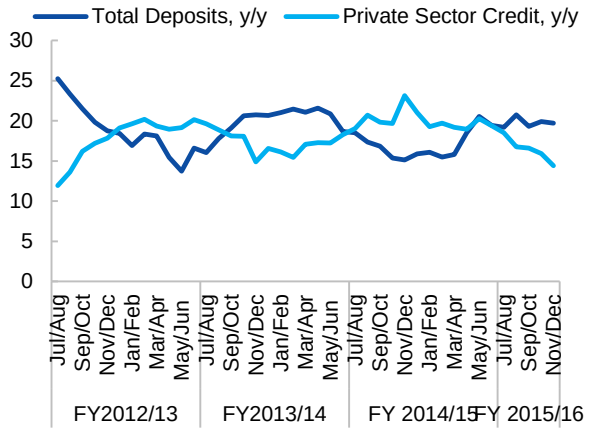
Construction of projects, particularly those of national importance, including hydropower projects have been halted. At the start of the FY, GoN was expecting some 300 MW of new capacity to be added to the grid, which is unlikely now. Others projects will also face a severe delay in the completion. Load-shedding has gotten worse this year as household demand for electricity has increased, given shortages of other fuels, while supply constraints persist.

Services, accounting for 51 percent of GDP, has been hit hard. Tourism, which had started to rebound from April/May earthquakes, has taken another blow as peak tourist season (September to November) coincided with the peak disruptions. Hotels reported 30 percent occupancy rate (down from usual 85-90 percent rate during peak season), with many curtailing services or closing altogether. International airlines operating in and out of Kathmandu are either cancelling/merging flights, shedding weight to carry extra fuel or making stopovers in India to refuel. Freight operators reported that nearly 8,000 containers destined for Nepal were held up at ports and transit points in India forcing importers to pay USD 300,000 a day in demurrage charges in October/November.

Besides the disruptions in daily travels, the travel plans of around 1.5 million people who leave Kathmandu every year during Dashain holidays were severely impacted due to shortage of fuel. Long distance travels from/to Terai were further affected as the protestors attacked and destroyed vehicles. Transport Association of Nepal reported that some 100,000 workers were out of a job and the sector was incurring losses of up to USD 2.5 million (NPR 0.25 billion) per day. The Dashain and Tihar holiday shopping season—which account for 30 percent of the total annual retail sales—has also been severely affected because of the disruptions in supplies, changing household priorities and low consumers' confidence. Furthermore, the Banker's Association reports that the usual NPR 1 billion of new loan volume per day that the banking sector processes came to a halt during the peak of disruptions. The total volume of new lending in the first five months of the FY16 is sharply down to 57 billion compared to 91 billion during the same period in FY15, a drop of 43 percent as issuance of loans to all the major sectors have seen a sharp slowdown (Figure 18). As a result, the credit growth has slowed down to 14.4 percent in mid-November compared to 23.1 percent during the same time in FY15 (y/y).

Figure 17: Growth rate of private sector credit in the first five months has been reduced nearly by half …

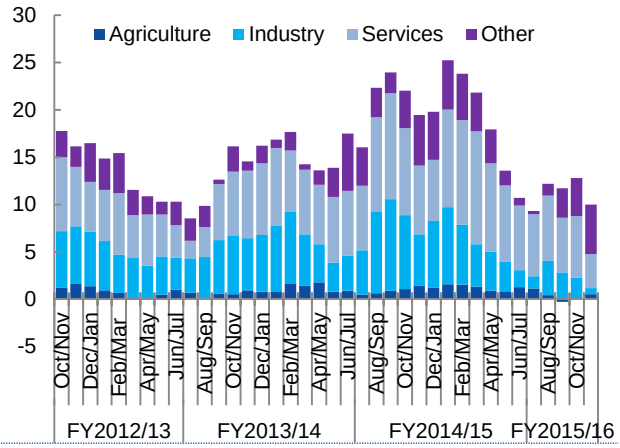
(percent change, y/y)



Source: NRB

Figure 18: …as flow of new private sector lending[5] has slowed sharply across all sectors of the economy

(billions of NPR, 3-month moving average)



Source: NRB and WB staff calculations

Agriculture, contributing 31 percent of GDP, has been relatively less affected. A majority of agricultural output is for subsistence purposes and likely unaffected in the short-term. However, poor monsoon rainfall this year and earthquake-related destructions were already expected to take a toll on agricultural output. Due to the trade disruptions, the effects on agriculture production have been compounded especially due to unavailability of fertilizer. It was reported more than 100,000 tons of chemical fertilizer were stranded in different parts of Nepal and India including at Sisirya Dry Port in Birgunj since mid-July due to the strikes in the Terai region. Furthermore, as the storage facility in the dry port started being full, imported fertilizers were stored outside which could degrade the quality of fertilizers eventually impacting the agriculture harvests. Ministry of Agriculture Development's preliminary projection show that paddy production dropped by 10 percent to 4.31 million tons in FY16 compared to 4.79 million tons in FY15 which was already a drop of 5.1 percent compared to the production of 5.05 million tons in FY14. Thus the paddy production in FY16 is expected to be lowest in the last 7 years. Also, the winter crops are also expected to be affected by the strikes and disruptions in the Terai region. Reports indicate that the dairy and poultry sector outputs dropped off by 40-60 percent, on average, during the peak of disruptions. Dairy industry which collected 500,000 liters of milk valued at NPR 30 million from dairy farmers daily were collecting only 200,000 liters of milk due to the disruptions. Lack of fuel also affected transport of agricultural products to markets.

Table 1: Paddy production expected to be lowest in seven years

(in metric ton)

Cereals	FY 14	FY 15	FY 16 P
Paddy	5,047,047	4,788,612	4,299,078
Maize	2,283,222	2,145,291	2,231,517
Millet	304,105	308,488	302,397
Buckwheat	10,335	10,870	11,640

Source: MoAD

[5] New lending represents a change in stock of outstanding credit at the end of the period.

There are increasing human costs of the trade disruptions as well. Schools were reporting most of their bus fleet grounded and over two million children are missing school for more than three months. Schools in Terai region were particularly hard hit as the schools were forcibly already closed due to strikes, long before the transit/transport disruptions started. Hospitals were reporting dangerously low supplies of oxygen and other medical supplies at the peak of the disruptions which seems to be easing off since the end of December. Even ambulances were not having enough fuel to operate. Social services are curtailed and transfers are not able to offset weakening purchasing power of vulnerable groups given price hikes induced by shortages. Delays in earthquake recovery means that those in need, who have spent not only monsoon and winter seasons in temporary shelters, may end up doing so in coming monsoon, resulting in a year-long stay in temporary shelters.

Investors' confidence has been affected as well. *Statkraft,* a Norwegian Hydro investment and development company of *Tamakoshi* (650 MW) project has announced that it will be pulling out from this project in Nepal. In a further sign of difficult days ahead for hydropower companies, GMR's—an Indian company that is developing Upper *Karnali* hydro project (900 MW)—office was attacked in Kathmandu. This is a significant turn of events from just a year ago when several major hydro-power projects were announced.

B. Outlook

Prior to the trade disruptions, growth was projected at 3.7 percent in FY16 as continued effects of the earthquake destruction, sub-optimal monsoon rainfall, delays in set up of the National Reconstruction Authority were expected to take a toll on economic activity, especially in the first part of FY16. Growth was expected to pick up to 5.5 percent in FY17, on the back of the increased investment (both public and private), as the political process stabilizes and the earthquake recovery speeds up in earnest. Under this scenario, a normalization was envisaged whereby the faster budget implementation and sustained reconstruction activities could lead to a surge in imports, which would have tipped the current account balance into deficit over the forecast period, despite large remittances. Similarly, increased government spending on capital expenditure, as National Reconstruction Authority speeds up reconstruction activities, would lead to a larger budget deficit.

Clearly, the assumptions underpinning this forecast have changed. Estimating the impact of the trade disruptions in a data-poor and uncertain environment is inherently difficult and imprecise and we attempt to overcome this uncertainty by applying several approaches (see Annex for details). Based on limited available data, and applying a number of different approaches, our current estimate is that if the trade disruptions continue until the end of January 2016, Nepal is expected to record growth of 1.7 percent in FY2016.

However, uncertainty surrounding this forecast is large and growth could range anywhere from 1 to 2.3 percent. Our estimate is that if the trade disruptions continue until end-January 2016, we could see a drop in FY16 GDP growth between 1.5 and 2.7 percentage points, depending on the approach, compared to our pre-disruptions scenario. Obviously, the longer the trade disruptions last, the greater the impact in terms of lower growth, increased poverty and worsening humanitarian problems.

Table 2 – Nepal Macroeconomic Outlook

(percent change, unless indicated otherwise)

	FY2014	FY2015 e	FY2016 f (pre-disrupt.)	FY2016 f (post-disrupt.)	FY2016 f (post-disrupt. lower bound)	FY2016 f (post-disrupt. upper bound)
Real GDP growth, at constant market prices	5.5	3.4	3.7	1.7	1.0	2.3
Private Consumption	3.4	3.0	3.5	-3.6	..	..
Government Consumption	18.0	14.3	12.8	12.6	..	..
Gross Fixed Capital Investment	7.4	12.1	14.0	8.7	..	..
Exports, Goods and Services	23.7	5.4	5.0	-9.0	..	..
Imports, Goods and Services	18.0	9.0	10.0	-4.7	..	..
Real GDP growth, at constant factor prices	5.0	3.0	3.7	1.7	1.0	2.3
Agriculture	2.9	1.9	2.5	1.0	0.5	1.0
Industry	6.2	2.6	2.0	0.5	0.1	1.2
Services	6.3	4.0	5.0	2.5	1.6	3.4
Prices						
Inflation (Private Consumption Deflator)	9.9	7.1	8.0	27.1	..	..
Inflation (Consumer Price Index)	8.4	7.5	8.2	12.3	..	..
Current Account Balance (% of GDP)	5.5	5.7	2.6	4.3	..	..
Fiscal Balance (% of GDP)	0.6	-1.2	-1.0	-2.4	..	..

Sources: World Bank, Macroeconomics and Fiscal Management Global Practice.

Notes: e=estimate; f = forecast.

Post-distruptins estimate=Macro model result; Lower bound=sectoral bottom-up approach; Upper bound=Nepal CGE model result.

C. Challenges

Nepal faces several simultaneous challenges ahead—effective implementation of post-earthquake recovery coupled with completion of political transition to a new federal constitution—while leveraging its endowments (hydropower potential, human capital) to achieve a faster growth, increase poverty reduction and create economic opportunities for its citizens at home. Additionally, the trade disruption has highlighted the need to urgently diversify Nepalese economy and society, particularly in terms of trade, transport options and supplies of key resources. Delays or missteps in any one of these challenges may lead to permanently forgone opportunities, income and set back Nepal's aspiration for graduating from least developed country (LDC) status.

Low and middle income countries in general tend to experience a long-lasting loss of potential output following a geological disaster like the one experienced by Nepal given their lower capacity to execute spending efficiently and effectively in rebuilding lost capital stock. In fact, the key growth constraint for Nepal in the past has been the insufficient public investment and resulting infrastructure deficit. While the quantity of public investment may increase as a result of a newly proposed and empowered National Reconstruction Authority, ensuring the quality of spending will be even more critical.

Furthermore, as oil prices are expected to stay low for some time, economic opportunities in the oil-exporting Gulf Co-operation Countries (GCC) may be reduced. GCC countries are an important destination for Nepali migrants and a key source of remittances for the country. GCC countries' fiscal deficits reached 13 percent of GDP in 2015. Region's largest economy and one of the largest destinations for Nepalese workers, Saudi Arabia, is facing a large fiscal deficit of 21.6 percent in 2015 and 19.4 percent in 2016 and has already announced measures to curb public spending. As a result, this is likely to impact the flow of remittances to Nepal which are already showing signs of a slowing down.

Box 1: Economic literature of the impact of large disasters on growth

Economic literature finds that natural disasters have a negative effect on growth in general, with strong disasters leading to permanent losses while quality of institutions, among others, improves countries' ability to cope with the shocks of disasters.

From an economic growth theory point of view, it is not directly clear how natural disasters should affect economic growth. Traditional neo-classical growth models predict that the destruction of capital drives countries temporarily away from their balanced-growth path, while the endogenous growth models provide less clear-cut predictions (Cavallo et al., 2013).

Neo-classical growth theory posits that if a natural disaster (e.g., an earthquake) destroys part of a country's capital stock, then the production possibility frontier shifts inwards, leading to lower total output per capita. Subsequently, increased investment replenishes the capital stock again and puts it back to its steady state level. In terms of growth rates, theory predicts growth to be lower than trend on impact and, under the right institutions, higher than trend thereafter (Klomp and Valckx, 2014).

Endogenous growth theories revolve around the idea that the destruction of physical capital allows the affected economy to replace outdated equipment and structures faster than along the trend growth path (Caballero and Hammour, 1994). For example, models based on Schumpeter's creative destruction theory may even predict higher growth rates as a result of natural disasters, as these shocks can be an accelerator for re-investment and upgrading the capital stock (Loayza et al., 2012; Cavallo et al., 2013). However, a lack of appropriate institutions, inadequate financing conditions, or limited access to international markets may hamper the catching-up process. Hence, again, the prediction is that a natural disaster lowers GDP per capita on impact. However, what is clear from both theoretical approaches is that the recovery from a disaster is directly related to the quality of institutions and their ability to implement it effectively.

Since about early 2000s, a new strain of empirical research has emerged that evaluates a macroeconomic impact of disasters. Two recent studies (Klomp and Valckx, 2014; Lazzaroni and van Bergeijk, 2014) summarize 750 and 1,991 regressions from these macroeconomic impact analysis using a meta-analysis approach to measure the overall impact. They find that, on average, there is a negative relationship between natural disasters and economic growth. The main source of data for these studies tends to be the Emergency Events Database (EM-DAT) that captures outcomes of disasters (number of people affected, damage caused).

Furthermore, looking at physical intensity of disasters (Richter scale, Volcanic Eruptions Index, wind speed, precipitation and temperature), Felbermayr and Gröschl (2014), find natural disasters reduce GDP per capita on impact with stronger disasters (top 1 percentile in strength), on average, 6.8 percent. In addition, looking at the length of impact, they do not find that disasters lead to a temporary boom, on average, in the subsequent five-years. Consequently, they find that "natural disasters harm development, period."

In addition, they find strong evidence that that higher institutional quality, higher openness to trade and higher financial openness improves countries' ability to cope with the costs from the natural disasters.

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APPENDIX: TECHNICAL DESCRIPTION OF ESTIMATES

Estimating the impact of the trade disruptions in a data-poor and uncertain environment is inherently difficult and imprecise and we attempt to overcome this uncertainty by applying several approaches.

First, we construct a sectoral, bottom-up approach. This approach tries to account for three things: i) normal within year seasonality of each of the sectors; ii) impact of the trade disruptions on each of the sectors and iii) each sector's ability to rebound following the restoration of trade. For example, some sectors, like manufacturing, will be able to partially recoup losses due to the disruptions, while others, like agriculture and tourism, will not, given their seasonal nature of farm output.

Second approach is to use the macro fiscal model for Nepal (MFMOD). MFMOD is the World Bank's large-scale forecasting model. The core of the model is a neoclassical production function that combines endogenous and exogenous supplies of capital and labor combined with total factor productivity. Important variables, such as household consumption, are modelled in line with theoretical models of economic agent's behavior but include important rigidities to account for short-run deviations of the economy away from its underlying potential rate of growth. The simulation of the trade restrictions is modelled by exogenously reducing the volume of imports and exports by 50 percent for a period of four months. In addition, to generate the an impact on domestic prices that have been observed so far, domestic consumer prices were also substantially raised during the same period. The shocks propagate through the model through two main channels. Firstly, the reduction in imports reduces the availability of key intermediate inputs for different sectors of the economy, curtailing economic activity. Secondly, the reduction in exports and the sharp rise in consumer prices reduces the real incomes of consumer and investors, reducing consumer demand and investment. The reduction in trade flows reduces the government's collection of customs revenues, reducing the budget balance. The current account balance improves slightly in the simulation owing to the improvement in the net trade balance (Nepal is a large net importer of goods and services so that an equal percentage reduction in volumes improves the net balance).

For third approach, we use a computable general equilibrium model for Nepal (NPLCGE). NPLCGE model built for this exercise is a single country model draw from the World Bank's global CGE model (LINKAGE). The model is calibrated on a GTAP SAM comprising 57 activities, 57 products sectors, 6 factors, 1 household. It is a recursive dynamic computable general equilibrium model (DCGE), which explicitly models the process of convergence of prices and volumes to their new values over 10 periods (2010 to 2020). This approach links a sequence of static equilibriums with a set of equations, which update, at every period, the main macroeconomic variables. The simulation of trade blockade is performed in the model by increasing the transaction cost for both import and exports. The transaction cost is modelled as traditional "Iceberg effect" where transport is treated as an exogenous friction that is fixed and proportional to the value shipped, with the value-added of transportation services treated as pure waste. The simulation calibrated the level of iceberg transaction cost that would generate 50 percent reduction in total trade during four months.