South Asia Economic Focus Fall 2017

# Growth out of the Blue

WORLD BANK
IBRD • IDA | WORLD BANK GROUP

1818 H Street NW, Washington DC 20433

Telephone: 202-473-1000; Internet: www.worldbank.org



1 2 3 4 20 19 18 17



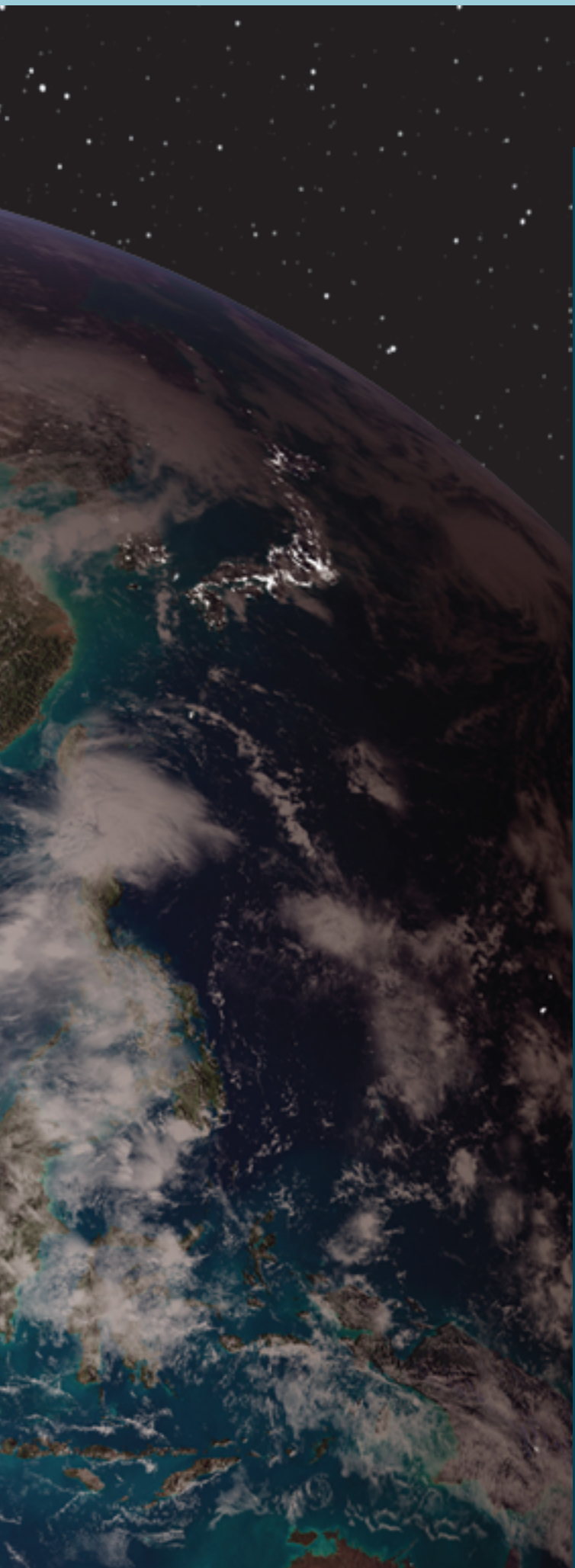
ISBN (electronic): 978-1-4648-1213-2

DOI: 10.1596/978-1-4648-1213-2

Cover photo: ©NASA images by Reto Stöckli, based on data from NASA and NOAA / istock / 3DSculptor

Cover design: alejandro espinosa/sonideas.com

PHOTO: NASA, images by Reto Stöckli, based on data from NASA and NOAA.



This report is a joint product of the Office of the Chief Economist for the South Asia Region (SARCE) and the Macro and Fiscal Management Global Practice (MFM). Its preparation was led by Robert Beyer (Economist, SARCE) under the oversight of Martin Rama (Chief Economist, SARCE) and in close collaboration with Manuela Francisco (Practice Manager, MFM). Substantive contributions were made by Esha Chhabra, Virgilio Galdo and, Yan (Sarah) Xu (all with SARCE). The report greatly benefitted from inputs from Temel Taskin and colleagues in the Development Economics Prospects Group (DECPG) under the supervision of Ayhan Kose (Director DECPG). We are very grateful for comments and suggestions provided by Martin Melecky, Dhushyanth Raju, and Yue Li (all with SARCE), as well as by Poonam Gupta (Lead Economist, MFM), and Rinku Murgai (Lead Economist, Poverty Global Practice). Colleagues contributing to the country briefs include Kishan Abeygunawardana, Damir Cosic, Sudyumna Dahal, Ralph Van Doorn, Adnan Ashraf Ghumman, Poonam Gupta, Zahid Hussain, Sheikh Tanjeb Islam, Mohammad Omar Joya, Taehyun Lee, Tenzin Lhaden, Sabiha Mohona, Smriti Seth and Shegufta Shahriar (all with MFM). Alejandro Espinosa at sonideas signed responsible for the layout, design and typesetting. Alexander Ferguson, Senior Manager, South Asia External Communications (SAREC) coordinated the dissemination, together with Yann Doignon and Joe Qian (both with SAREC). Gonzalo Alberto Villamizar De La Rosa created the accompanying videos, and Neelam Chowdhry provided valuable administrative support.

South Asia as used in this report includes Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka.

The cutoff date for this report was October 3, 2017.

**South Asia Chief Economist Office**
**Macro and Fiscal Management Global Practice**

# Table of Contents


**Recent economic developments** 8

- No longer #1 10
- What is going on in India? 10
- Concerns elsewhere in the region 14
- Good news on the internal balance 15
- Not-so-good news on the external balance 15
- An adequate macroeconomic policy mix? 18

**South Asia economic outlook** 24

**Growth out of the blue** 28

- The measurement of economic activity is imprecise by nature 30
- Nightlight and economic activity 30
- Nightlight intensity and GDP growth 33
- Using nightlight for prediction 36
- Shedding light on recent economic episodes 41
- Toward stronger statistical systems 45

**South Asia country briefs** 50

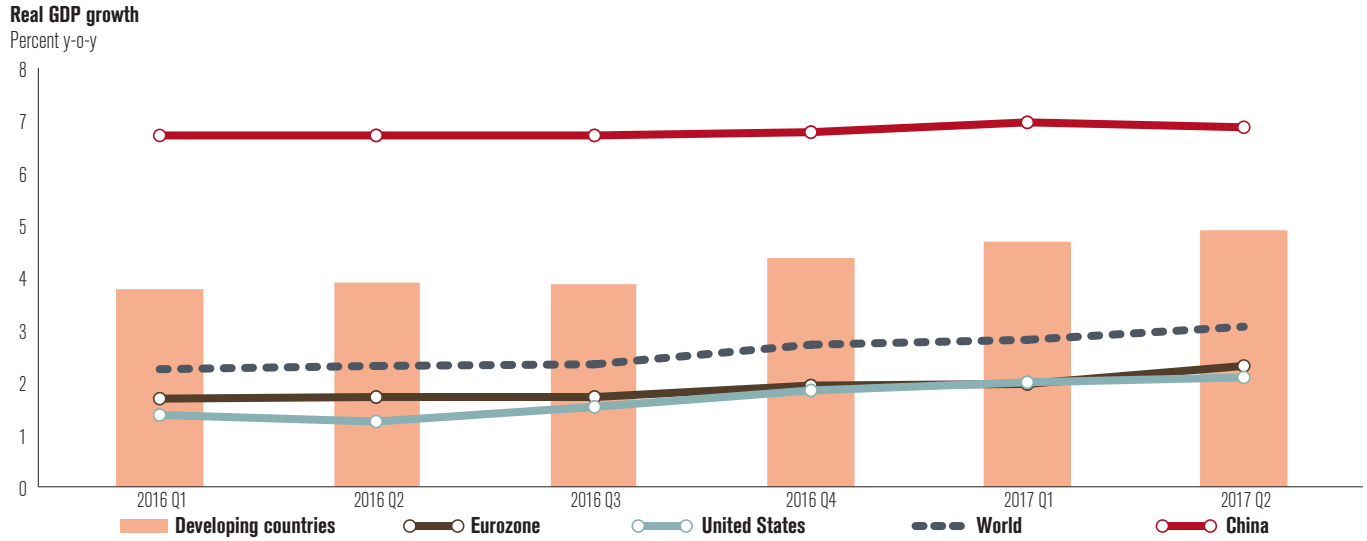
- Afghanistan 52
- Bangladesh 54
- Bhutan 56
- India 58
- Maldives 60
- Nepal 62
- Pakistan 64
- Sri Lanka 66

**South Asia at a glance** 68

# Recent economic developments


For eight consecutive quarters South Asia was the fastest-growing region in the world... but not anymore. Despite benign global conditions, regional growth has slowed down. This trend is the result of a deceleration in India, the region's powerhouse. Short-term disruptions related to the introduction of the landmark Goods and Services Tax can explain the steep decline observed in the last quarter, but the deceleration has been going on for more than one year. Over this period imports increased sharply while private investment declined. Behind these trends lies a combination of large public sector borrowing (especially by the states), relatively sticky interest rates despite decreasing inflation, and an increasingly stressed financial sector. While growth has slightly accelerated elsewhere in the region, concerns remain. Bangladesh has seen an increase in financial sector risks and in Pakistan macroeconomic discipline has weakened. Overall, South Asia has done well on the internal front, with inflation rates declining and being by now below target in most countries. But performance has been less impressive on the external front, with trade and current account deficits increasing in most of the region. From a policy perspective, a major concern across South Asia is the widening of fiscal deficits which now exceed 5 percent of GDP in most of the countries.

Figure 1: The world is growing faster.




Source: World Bank.

# No longer #1

**The world economy continues to recover, with global growth accelerating for the fifth consecutive quarter.** Led by developing countries and the United States, global growth accelerated to 2.8 percent in the first quarter of this year, and further to 3.1 percent in the second quarter. With 3.6 percent quarter-on-quarter growth, the second quarter of 2017 has delivered the strongest global performance since 2010. Developing countries are now growing at 4.9 percent, the fastest since 2014. The United States is growing at 2.0 percent, up from 1.4 percent last year. Despite concerns about a globalization backlash, global trade remains robust and is expected to grow by 2.4 percent this year. Oil prices are slowly rebalancing. And despite prospects of continued monetary policy normalization in the US and the Euro Area, global financing conditions remain benign. The global environment is thus favorable and South Asia is well-positioned to take advantage of it.

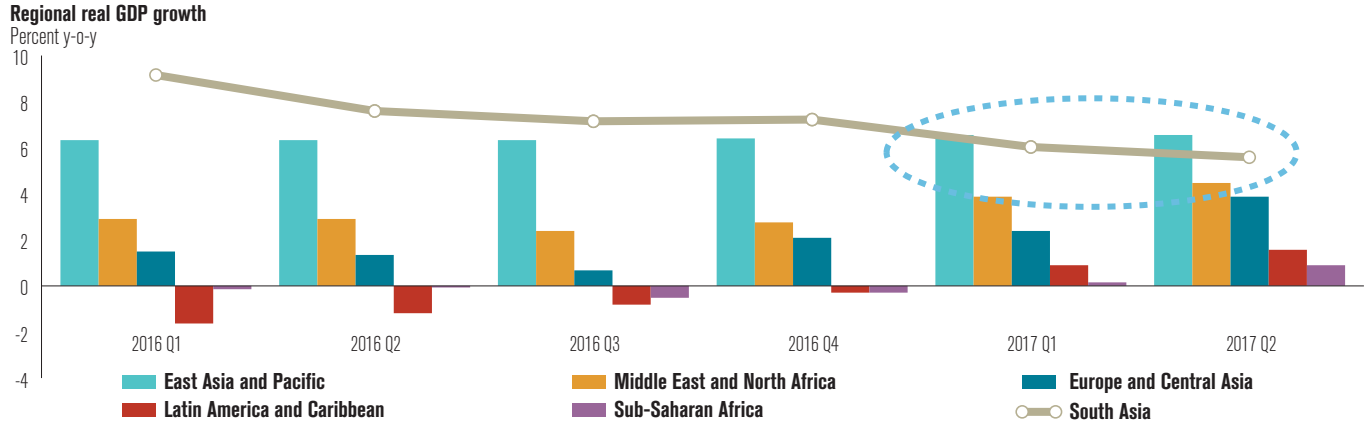
**South Asia forfeits the trend and is no longer the fastest-growing region in the world, with East Asia and Pacific back to top position.** While the difference with East Asia and Pacific is small, it marks a break from previous years. South Asia had been the fastest growing region in the world since the second quarter of 2014. In the first quarter of 2016, regional growth had even reached a record high of 9.1 percent. But since then South Asia's growth rate has gradually but steadily declined. The slowdown has been especially sharp in the second quarter of 2017, with the regional growth rate reaching only 5.6 percent. By contrast, East Asia and Pacific has grown consistently above 6 percent and accelerated to 6.5 percent in the second quarter of this year. Also, for the first time in nearly two years, growth has been positive in all regions, though it remains very low in Sub-Saharan Africa and in Latin America and the Caribbean.

**The slowdown is not happening across all countries in South Asia: it is driven by India, the region's powerhouse.** India grew by over 9 percent in the first quarter of last year, but since then its growth has experienced a stepwise deceleration. While it still grew above 7 percent during the rest of 2016, growth slowed to 6.1 percent in the first quarter of this year and to 5.7 percent in the second. By now India is neither the fastest-growing economy in South Asia nor the fastest growing large economy in the world anymore. The top spot has gone back to China, which grew by 6.9 percent in the second quarter of 2017. Over the same period, the other countries in South Asia saw their growth rates remain stable or increase. The acceleration was particularly strong in Nepal, as its economy rebounded from the earthquakes and the trade disruption of 2015. Growth has also accelerated in Bangladesh, although questions have been raised about the possible overestimation of the figure.

# What is going on in India?

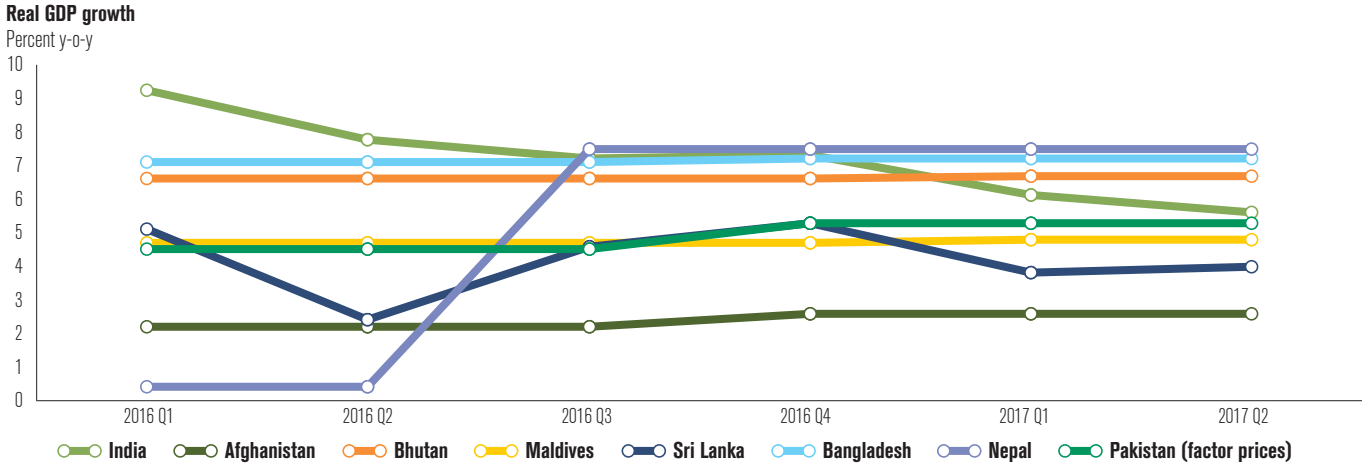
**Much of the public debate on growth in India has focused on the unexpectedly strong deceleration observed in the last quarter.** This unexpected slowdown is generally attributed to a combination of three forces. Some commentators claim that it is a delayed consequence of demonetization, the large withdrawal of currency from circulation that took place in November 2016. For instance, it has been argued that demonetization disrupted supply chains in manufacturing, with impacts that have only become apparent now. A second force, somewhat related to demonetization, is the sharp decline in the growth rate of public expenditures during the second quarter of 2017. Public expenditures were boosted to provide economic

## Figure 2: South Asia is no longer the fastest growing region.



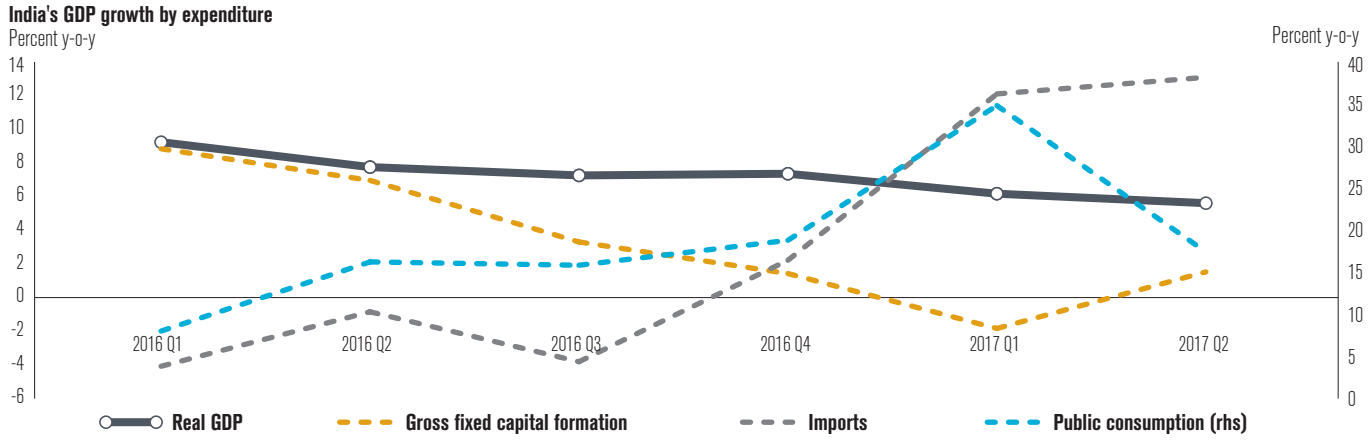

Source: World Bank.

## Figure 3: The region's growth deceleration is driven by India.




Note: For Bhutan, Pakistan, Afghanistan, Maldives, Bangladesh, and Nepal constant growth throughout the calendar/fiscal year is assumed.
Source: World Bank and national statistical authorities.

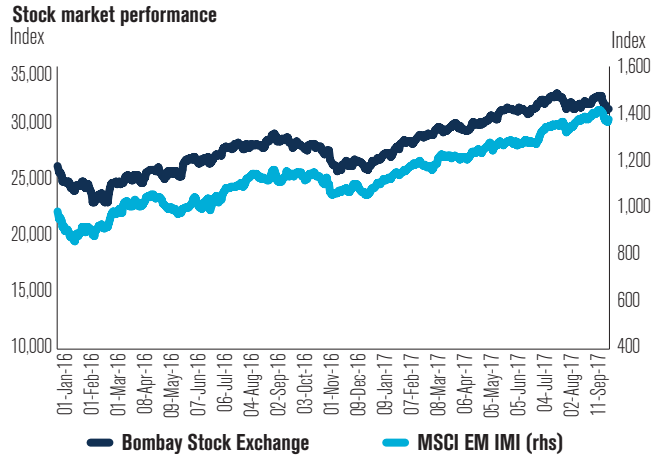
## Figure 4: Growth has been declining for more than one year, during which the drivers of growth changed.



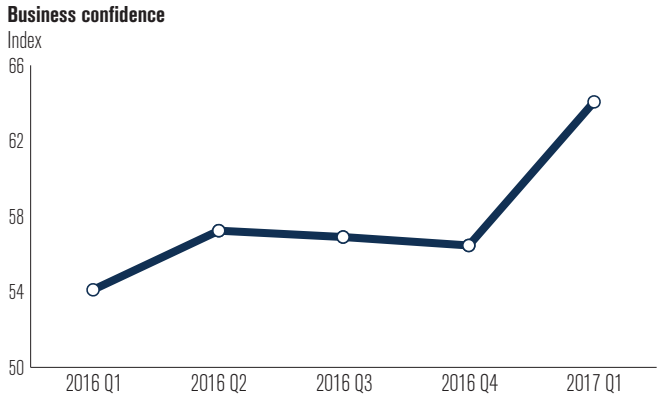

Source: Haver Analytics.

stimulus in the aftermath of demonetization. The subsequent reversal could have affected aggregate demand and hence growth. Finally, a third plausible reason behind the growth surprise of the last quarter is the uncertainty created by the introduction of the Goods and Services Tax (GST). While GST is expected to increase both efficiency and transparency, the complex transition to the new regime might have encouraged a wait-and-see attitude.

## Figure 5: Business confidence and investor sentiment are positive.




Source: Haver Analytics, MSCI.



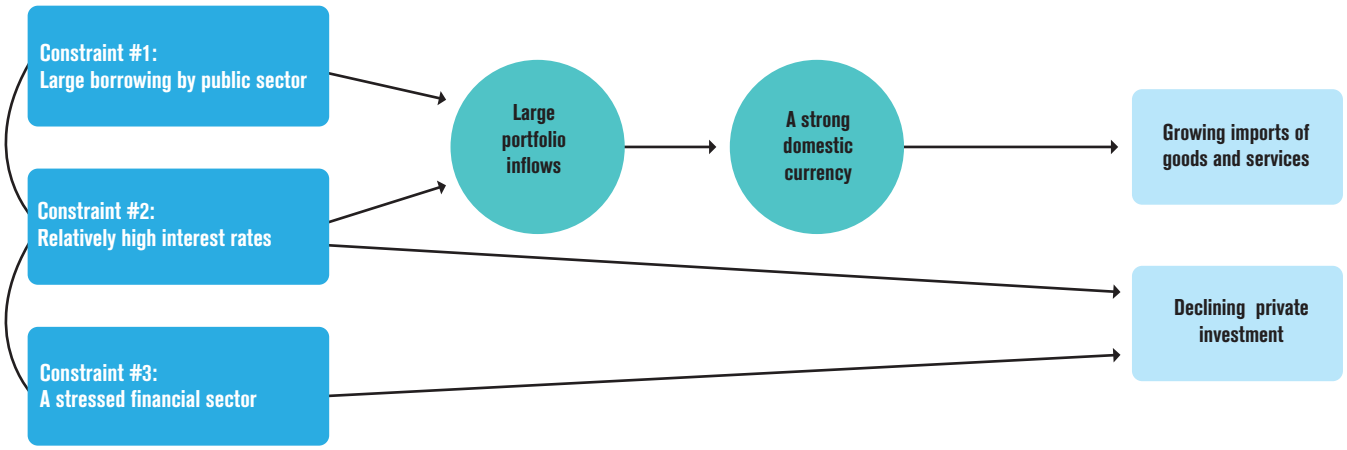

Source: Confederation of Indian Industry/Trading Economics.

**Because the main explanations offered for the slowdown of the last quarter refer to temporary shocks, the growth rate could be expected to bounce back.** Moreover, the unusually low growth rate of the last quarter could also be affected by measurement error. In India, final growth rate figures often differ considerably from first estimates; on average they tend to be 0.5 percentage points higher. The combination of temporary shocks and measurement error suggests no need for a policy correction.

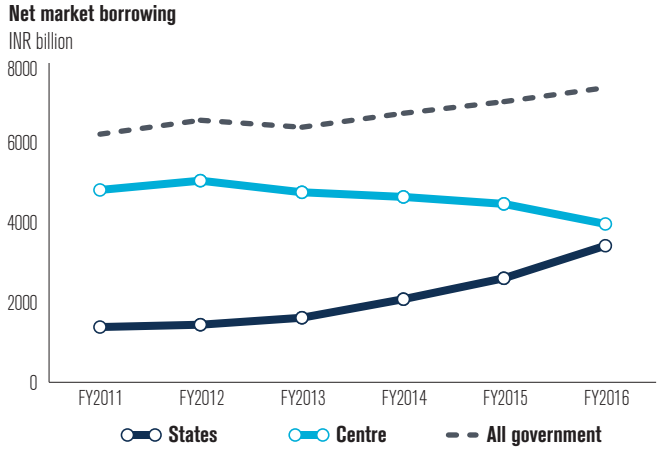
**However, growth has declined for five consecutive quarters in India, and the drivers of growth have changed sharply during this period.** Growth had been decelerating for several quarters before demonetization, and over this period there has been a clear reversal of fortunes between private investment and public spending. In the first quarter of 2016, gross fixed capital formation was growing by 9 percent per year, and public consumption by 8 percent. One year later the corresponding figures were -2 percent and 35 percent. Meanwhile, there was a rapid expansion of imports. In the first quarter of 2016 imports contracted by 4 percent per year, but one year later they grew by 12 percent. Lower private investment and higher imports mechanically bring down the growth rate, and the question is therefore: what lies behind these trends?

**While confidence indicators are somewhat mixed, there seems to be considerable optimism on the prospects of the Indian economy.** The consumer confidence index, which captures perceptions of the economy in six metropolitan cities, is at its lowest since December 2013, with most of the decline happening after demonetization. But the business confidence index reached its highest value since January 2014, jumping ten points compared to last year. Positive investor sentiment is confirmed by the performance of the Bombay Stock Exchange. From January 2016 to September 2017, the stock index increased by 26 percent. This is less than the benchmark MSCI Emerging Market Index, which grew by 50 percent over the same period. But it still reflects a very sizeable appreciation of company values. The adoption

## Figure 6: Three constraints contribute to the growth slowdown.



## Figure 7: Consolidation at the central level is increasingly offset by profligacy at the state level.




Source: Reserve Bank of India.

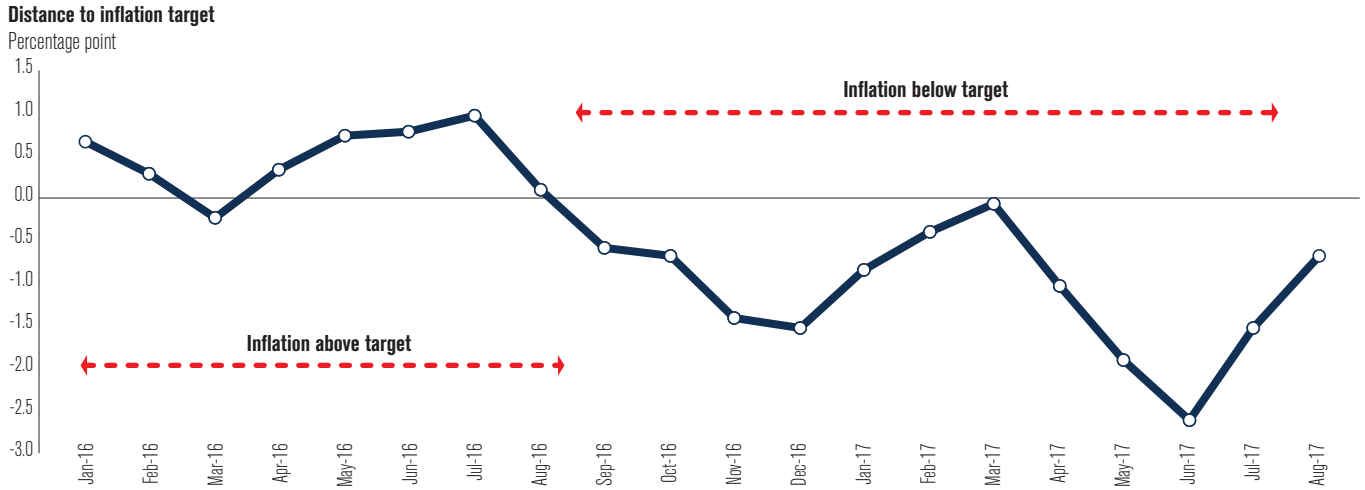
of important policy reforms, including the issuance of the new Insolvency and Bankruptcy Code and the adoption of GST, might have contributed to the positive sentiment.

**Three constraints contribute to the sustained growth slowdown and can explain the decline in investment and increase in imports.** These are the sizeable borrowing of the public sector, the stickiness of interest rates despite declining inflation, and the growing stress in the financial sector. Large public sector borrowing contributes to keeping interest rates high. The combination of large borrowing and high interest rates attracts portfolio inflows to India. The inflows in turn exert appreciation pressures on the currency, which encourages the growth of imports. Relatively high interest rates in a context of decelerating inflation make the servicing of debts more burdensome, and contribute to an increase in the share of non-performing assets in the hands of the financial sector. And the combination of relatively high interest rates and financial sector stress make the financing of private sector investment more challenging. In sum, these three constraints reinforce each other.

**Large public sector borrowing is increasingly being driven by the states, in contrast with the good fiscal discipline displayed by the central government.** Over the years, the central government has been diligent in bringing the fiscal deficit down from the heights of the stimulus policy adopted to cushion the effects of the global crisis. But consolidation at the center is being increasingly offset by growing deficits at the level of the states. This trend is especially worrying when taking into account the build-up of subnational contingent liabilities that could sooner or later be shifted to the central government. The Ujwal DISCOM Assurance Yojana (UDAY) scheme has transferred debt out of electricity distribution companies, but it remains to be seen whether these companies will avoid becoming heavily indebted again. The announced state-level waivers on farmers' loans could increase banking stress, creating future recapitalization needs. And special purpose financial vehicles for local urban authorities could also be a source of contingent liabilities if they are not properly designed and managed. Seen this way, the first constraint is not a temporary blip, and may require policy attention.

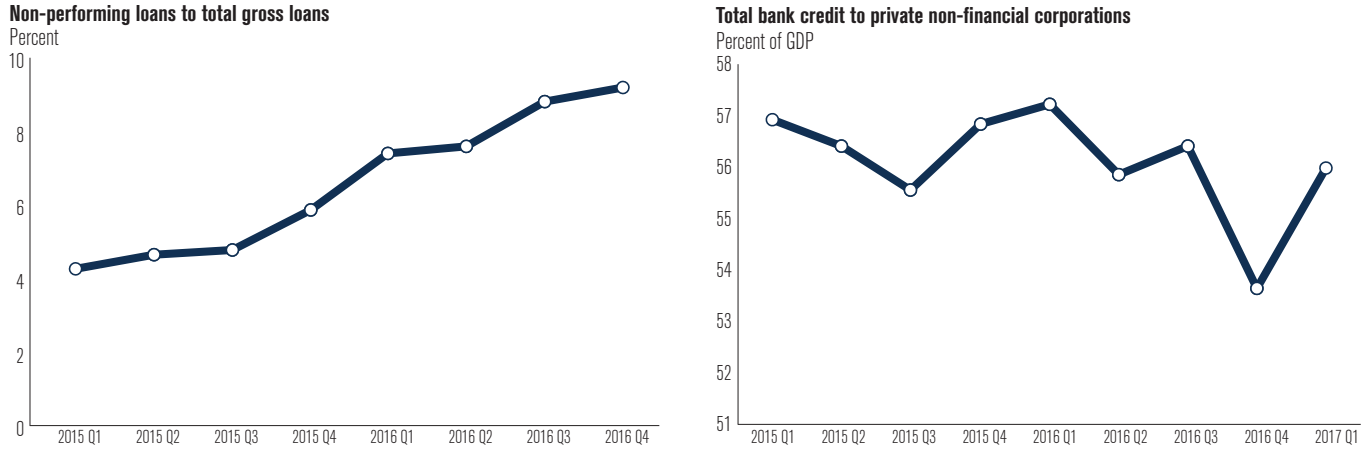
**Interest rates have remained relatively high despite the gradual deceleration of inflation.** The Reserve Bank of India (RBI) has several instruments to influence the level of interest rates, including the Cash Reserve Ratio (CRR), the Statutory Liquidity Ratio (SLR), and policy rates. On the latter, India recently adopted a flexible inflation-targeting (FIT) framework with an inflation target of 4 percent and a band of 2 percent on either side. When the deceleration of growth began, in early 2016, inflation was substantially above the target. By September 2016 this was not so anymore, and over the last year the inflation rate has been below the policy target, at times substantially. RBI has been cautious on its policy stance, lowering the policy rate from

## Figure 8: The inflation rate has declined much faster than the interest rate.




Note: We use an inflation target of 5 percent in 2016 and of 4 percent in 2017.
Source: Haver Analytics and World Bank staff calculations.

Figure 9: India's financial sector is under stress.

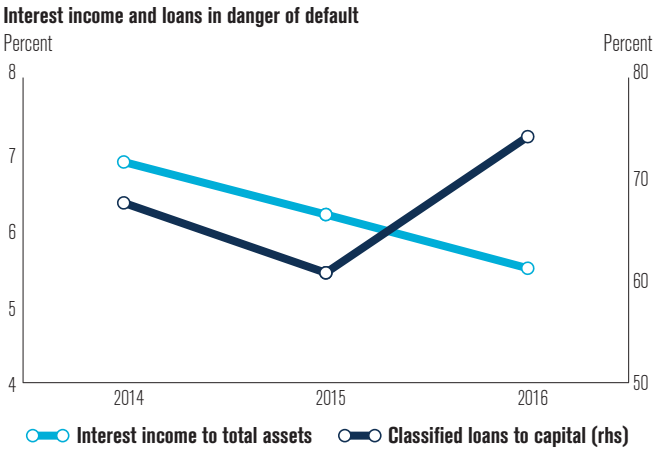



Source: International Monetary Fund Financial Stability Indicators and Bank of International Settlements.

6.25 percent to 6.0 percent only in August 2017. The CRR and SLR have been recently lowered as well. But interest rates have been slow to decline, perhaps a reflection of the pressure coming from large public sector borrowing.

**The combination of stressed banks and overleveraged companies continues to negatively affect credit growth.** The balance sheets of banks and the corporate sector remain challenged. The relative stickiness of interest rates in a time of declining inflation might have increased the burden faced by debtors, further compounding the stress. The share of non-performing loans in total loans keeps increasing, while total bank credit to private non-financial firms is decreasing. Recently, bank lending to industry declined for the first time in over two decades. Since state-owned banks account for most the market in India, there is little risk that financial sector stress will worsen into a crisis. But the question is whether bank consolidation and debt restructuring will be enough to address the current levels of stress, and to what extent banks should be recapitalized.

Figure 10: In Bangladesh, credit risks are rising.




Note: Classified loans refer to loans that are in danger of default; these are loans that have unpaid interest and/or principal outstanding.
Source: Financial Stability Report 2016, Bangladesh Bank.

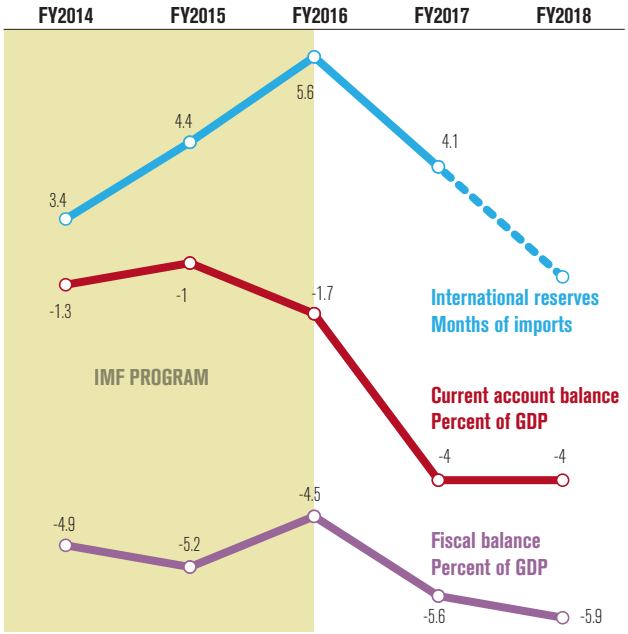
# Concerns elsewhere in the region

**While growth has remained steady or even accelerated in other countries in the region, in several cases there are reasons for concern.** In Bangladesh, the concern is related to growing banking sector distress. The ratio of loans in danger of default to bank capital increased sharply, from 60 percent in 2015 to nearly 75 percent last year. At the same time, the quality of assets and the interest income they generate have deteriorated. Some banks failed to maintain their regulatory capital requirement last year. Because of the shortfall in capital – especially among state-owned banks – the government has renewed a budgetary provision for a possible recapitalization. A stronger legal framework to recover defaulting loans could help the banking sector become healthier.

**In Pakistan, macroeconomic discipline arguably weakened after the IMF program came to an end.** In recent years, there had been clear progress in restoring macroeconomic stability and laying some of the foundations for higher growth. Pakistan also regained emerging market status in the MSCI index and made progress on the China Pakistan Economic Corridor (CPEC); two developments that reinforced general optimism. However, macroeconomic discipline has deteriorated in recent months. Public spending far exceeded budget plans with the fiscal deficit rising to 5.8 percent of GDP in FY2017, 2.1 percentage points above the initial budget target. This was despite an increase in total government revenue by 11 percent.

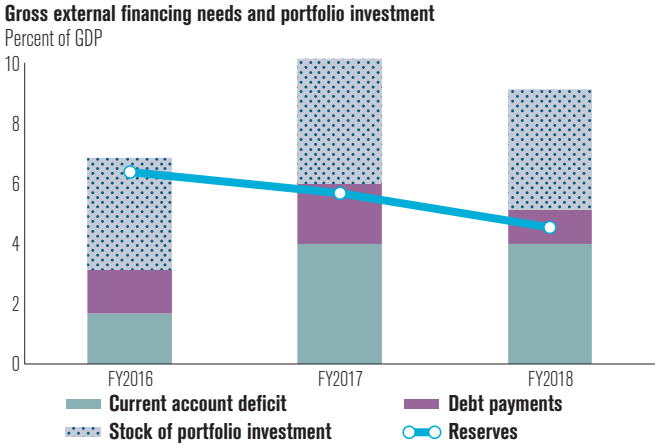
**Pakistan's weaker macroeconomic discipline has led to vulnerabilities in the balance of payments.** Since

Figure 11: In Pakistan, macroeconomic discipline is weakening...




Source: World Bank and State Bank of Pakistan.

Figure 12: ... and the external situation has become more vulnerable.




Note: The current account deficit is from the World Bank. The Stock of portfolio investment is from the State Bank of Pakistan; in FY2017 it is the average from CY2016Q3 to CY2017Q1 and for FY2018 it is assumed to remain at the CY2017Q1 level. The debt payments are calculated as the gross external financing needs minus the current account from the last IMF Article IV. The reserves for FY2017 are the average reserves reported by the SBP during that year and for FY2018 they are assumed to stay at their mid-September 2017 value.
Source: International Monetary Fund, World Bank, and staff calculations.

the IMF program came to an end, external indicators of the economy have deteriorated. The current account deficit more than doubled from 1.6 percent of GDP in FY2016 to 4.0 percent in FY2017. New data for July-August shows a continuation of this trend, with the current account deficit doubling compared to the same period last year. The reserve coverage has also declined. One year ago, Pakistan was in a comfortable position, as international reserves were large enough to cover the current account deficit, the service of external debt and even the total volume of portfolio investments in the country. By now international reserves still cover the first two items, but not the third one. Addressing the sources of this increased vulnerability should be a priority.

# Good news on the internal balance

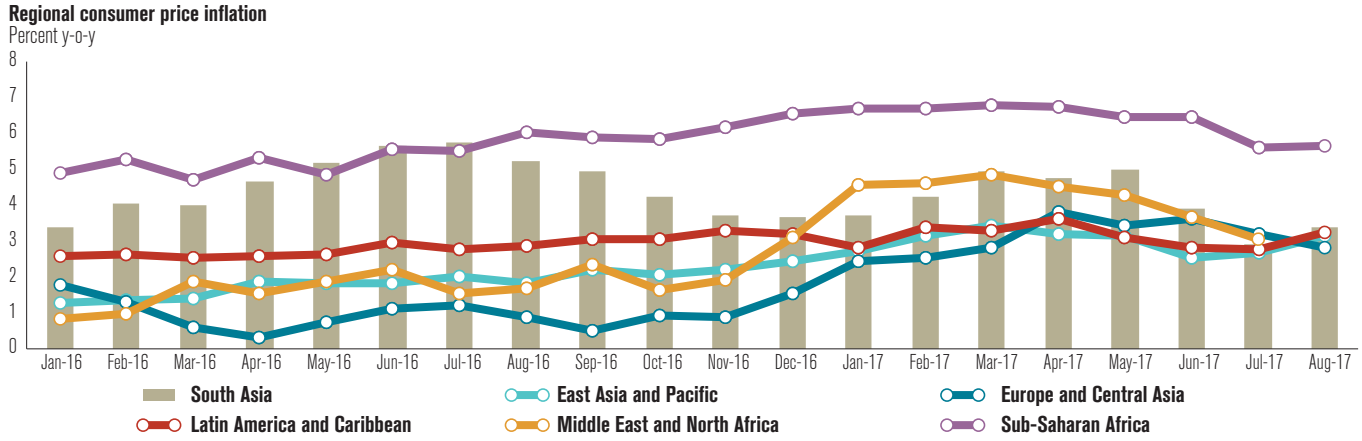
**Consistent with sluggish growth in the region and still relatively low commodity prices globally, inflation has been subdued in South Asia.** The declining trend is somewhat hidden by an annual cycle influenced by the monsoon and its impact on food prices. But each peak and each trough has been lower than the preceding one. The average inflation rate of the region was 2.9 percent in July 2017, and 3.4 percent in August. This makes South Asia one of the regions with the lowest inflation rates worldwide, while it had the highest inflation rate among all regions in the summer of 2016.

**Inflation rates are declining in many countries in the region, and lower food inflation is only part of the story.** The regional decline is not driven by a few countries experiencing sharp price decelerations, but rather by the inflation rate easing simultaneously in multiple countries. In July 2017, the inflation rate was still 5.6 percent in Bangladesh and 4.8 percent in Sri Lanka, but it had reached 2.9 percent in Pakistan and 2.4 percent in India. Low food inflation contributed to the overall price deceleration in these two countries, but not elsewhere. Extreme weather conditions resulting in floods and drought have put pressure on food prices in several South Asian countries, and especially in Sri Lanka and Bangladesh. In India and Pakistan, on the other hand, agricultural production has been strong. In India's case, the moderation of food prices has also been helped by restrained increases in administrated support prices.

# Not-so-good news on the external balance

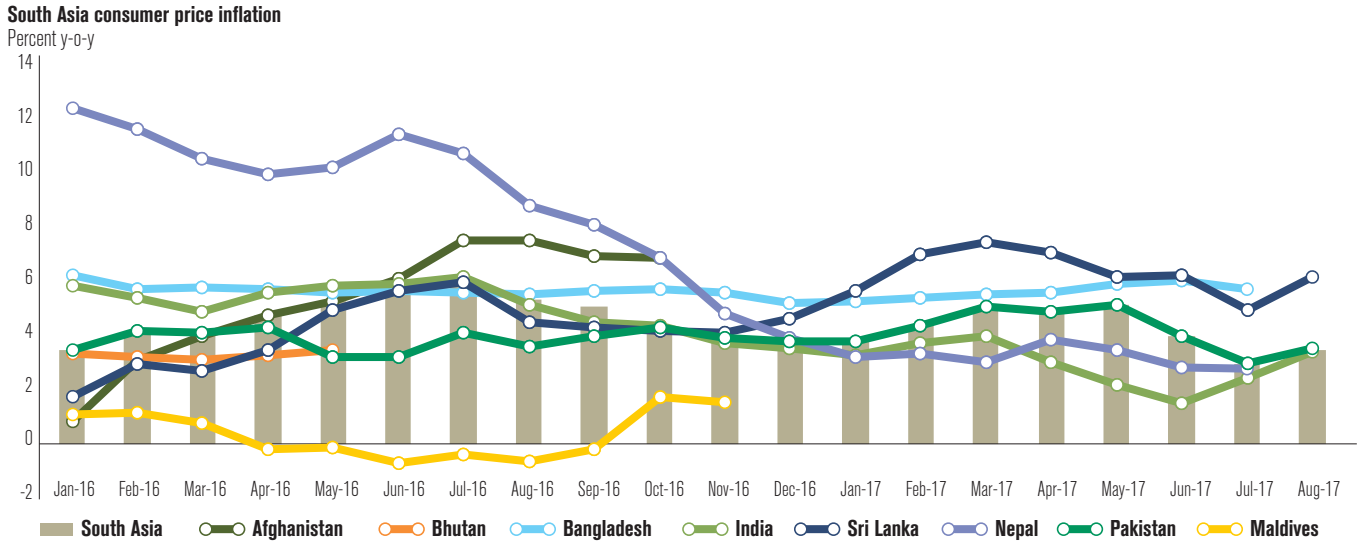
**In contrast with the deceleration of inflation, which suggests a weak demand pressure, trade deficits are widening in most of South Asia.** Most countries in the region have seen larger trade deficits in the first quarter of this year, compared to the first quarter last year, and there are signs of further deterioration. Deficits are particularly large in Bhutan and Maldives, but both countries have special circumstances, related to massive investments under way. In Bhutan, there were large imports of capital goods for hydropower projects. In Maldives, large investments are under way to develop the island of Hulhumalé and resettle population from remote atolls to Greater Malé. In India and Pakistan, on the other hand, the widening of trade deficits has been driven by a surge in merchandise imports. In

## Figure 13: The region's inflation rate nearly halved over the last year.



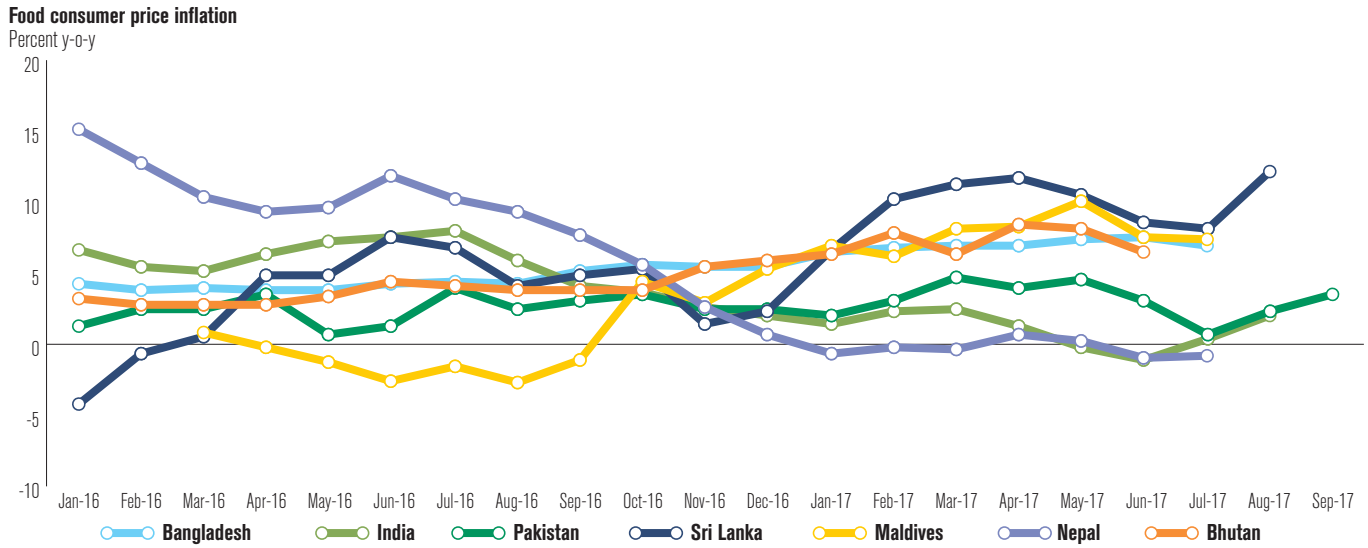

Source: World Bank.

## Figure 14: Inflation declined in most South Asian countries.



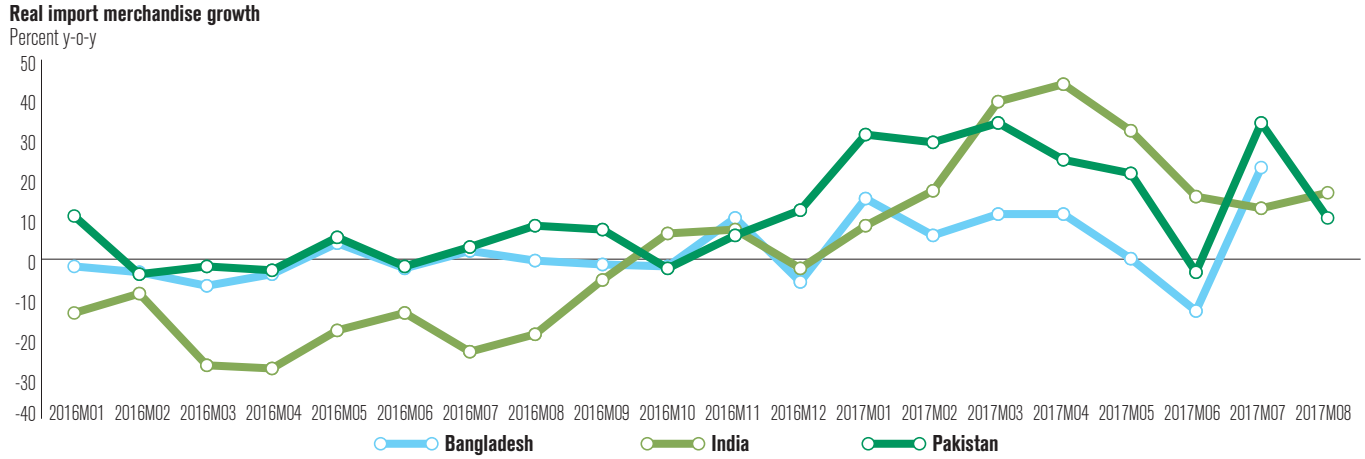

Source: World Bank, Maldives Monetary Authority, Nepal Nastra Bank, and Sri Lanka Department of Consensus and Statistics.

## Figure 15: Food inflation contributed, but it is not the whole story.

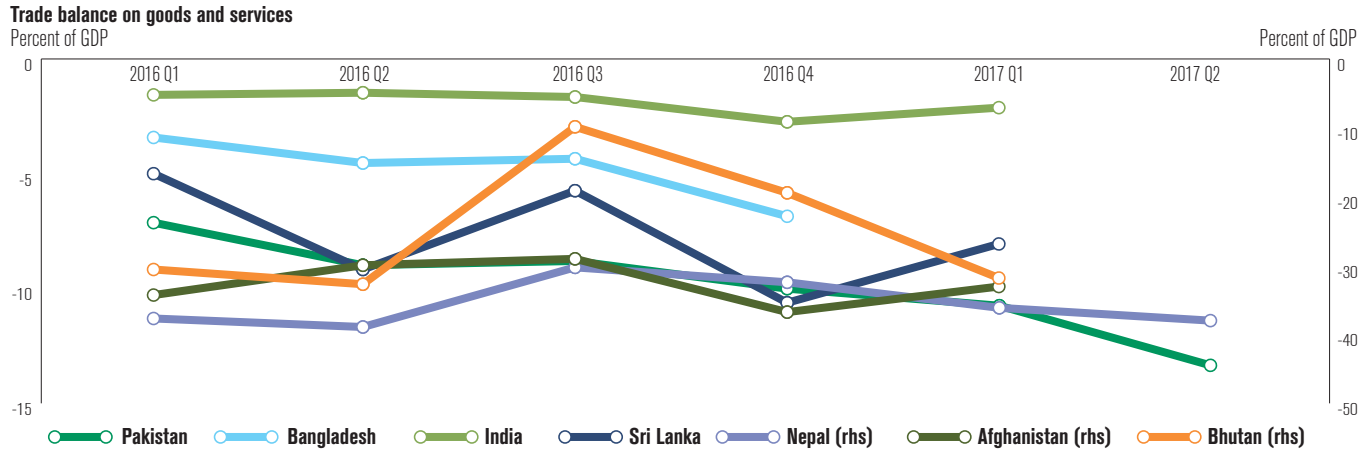



Source: Haver Analytics, Maldives Monetary Authority, and Nepal Nastra Bank.

## Figure 16: Ballooning merchandise imports and widening trade deficits.

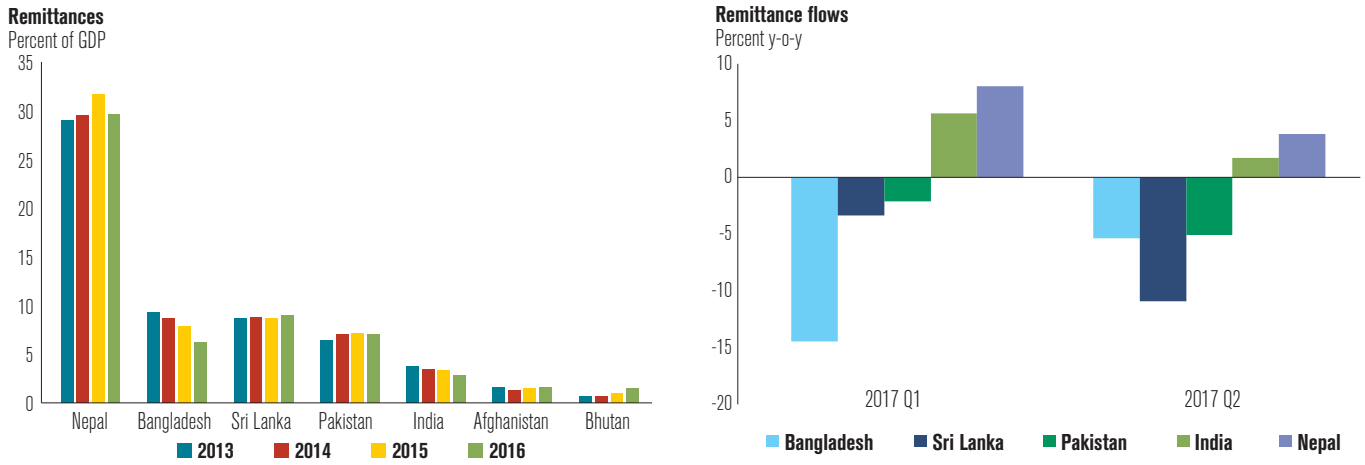



Source: Haver Analytics, Maldives Monetary Authority, and Nepal Nastra Bank.




Note: The quarterly GDP is set constant and equal to the average quarterly GDP in 2016.
Source: Haver Analytics, World Bank and staff calculations.

## Figure 17: Remittances are declining in several countries.

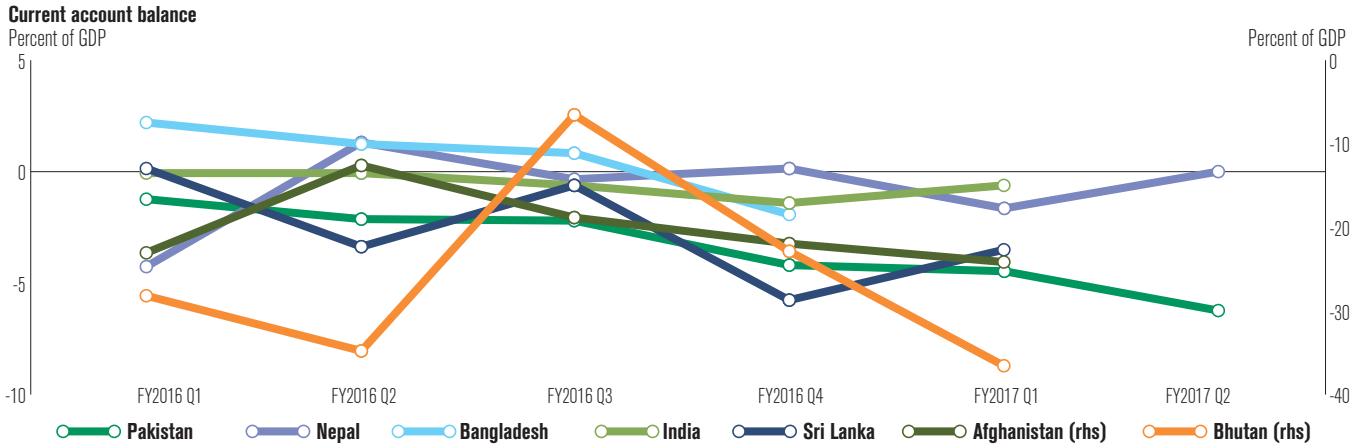



Source: World Bank WDI and Haver Analytics/National Authorities.

India's case there was also an increase in gold imports prior to the implementation of GST.

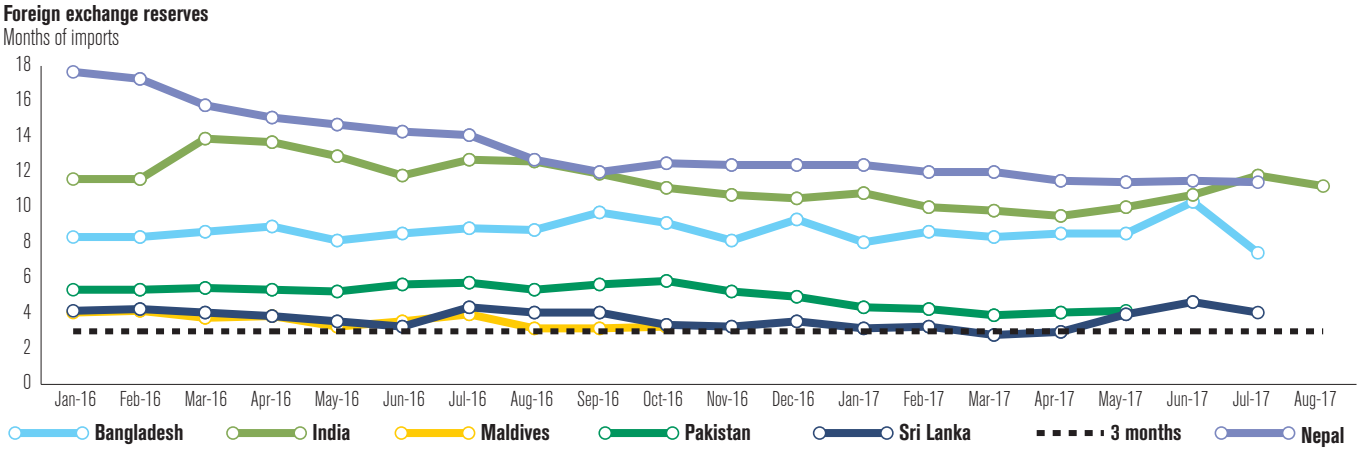
**Remittances are declining in several countries, making the financing of trade deficits more difficult.** Many South Asian countries have large migrant populations, with remittances being a key contributor to poverty reduction. In Nepal, remittances amount to nearly 30 percent of GDP and are a vital pillar of the economy. Remittances reached an all-time high in 2015, a year characterized by major

Figure 18: The current account deficit is widening in most countries.




Note: The quarterly GDP is set constant and equal to the average quarterly GDP in 2016.
Source: Haver Analytics.

Figure 19: The international reserve coverage is generally comfortable.




Note: Nepal covers both goods and services. All other countries covers only goods due to data limitation.
Source: World Bank and Nepal Rastra Bank.

shocks to the economy, under the form of two earthquakes and a trade disruption with India. But remittances to Nepal decreased again last year. In Bangladesh and India, remittances as percentage of GDP have declined year after year since 2012. While in India they picked up again in 2017 Q1, they continue slipping down in Bangladesh.

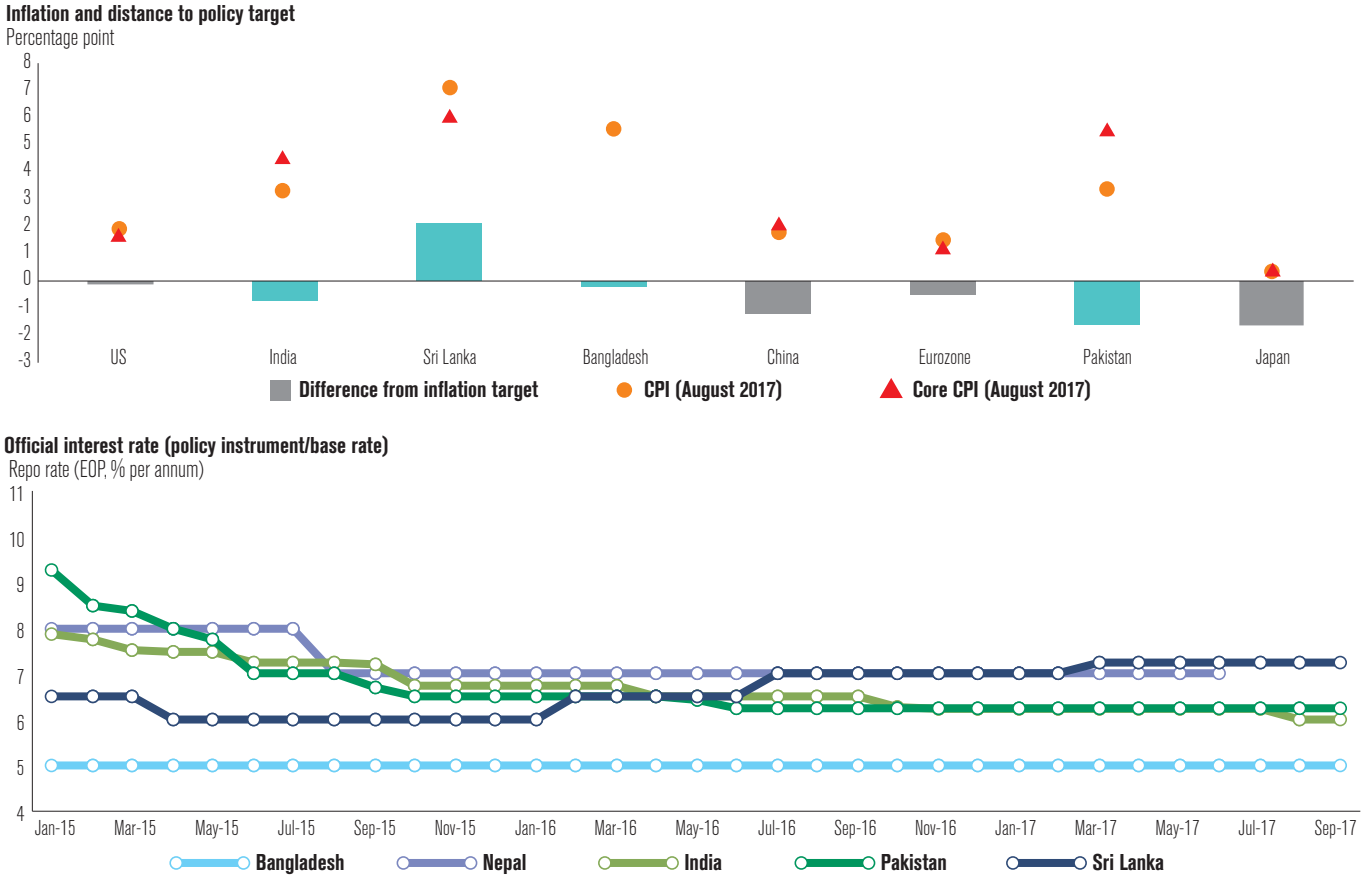
**Current account deficits are mostly widening in South Asia.** All countries in South Asia experienced a current account deficit in the first quarter of 2017. Deficits were particularly large in Afghanistan and Bhutan, where they exceed 20 percent of GDP. But in both cases they are well financed. In Bhutan, the deficit is mostly related to capital goods imports for commercially viable hydropower investments, financed by loans from India. In Afghanistan, the deficit vanishes when accounting for foreign aid inflows. In some other countries in the region, the widening of current account deficits is a source of concern. In the first quarter of 2017 the deficit reached 4.2 percent of GDP in Pakistan, and 3.5 percent of GDP in Sri Lanka.

**Nevertheless, the international reserve coverage measured in months of imports is comfortable across most of the region.** In India, Bhutan, and Nepal, international reserves exceed 10 months of imports. In Bangladesh reserves are relatively high as well, even after a steep drop in July. In Pakistan external borrowing prevented a stronger decline of reserves and in Sri Lanka reserves rose. The reserve coverage remains adequate in these two countries, although increasing their level would build greater economic resilience. As in the past, international reserves are low in Maldives.

## An adequate macroeconomic policy mix?

**Monetary policy is restrained across the region, with Inflation rates below target in most countries.** Not all South Asian countries follow a strict inflation targeting

## Figure 20: Inflation rates are below target in most countries.




Note: Inflation data for Bangladesh and Japan and core inflation data for Sri Lanka and Japan are from July 2017.
Source: Haver Analytics (National Authorities), Eurostat, National Central Banks, International Monetary Fund, World Bank and staff calculations.

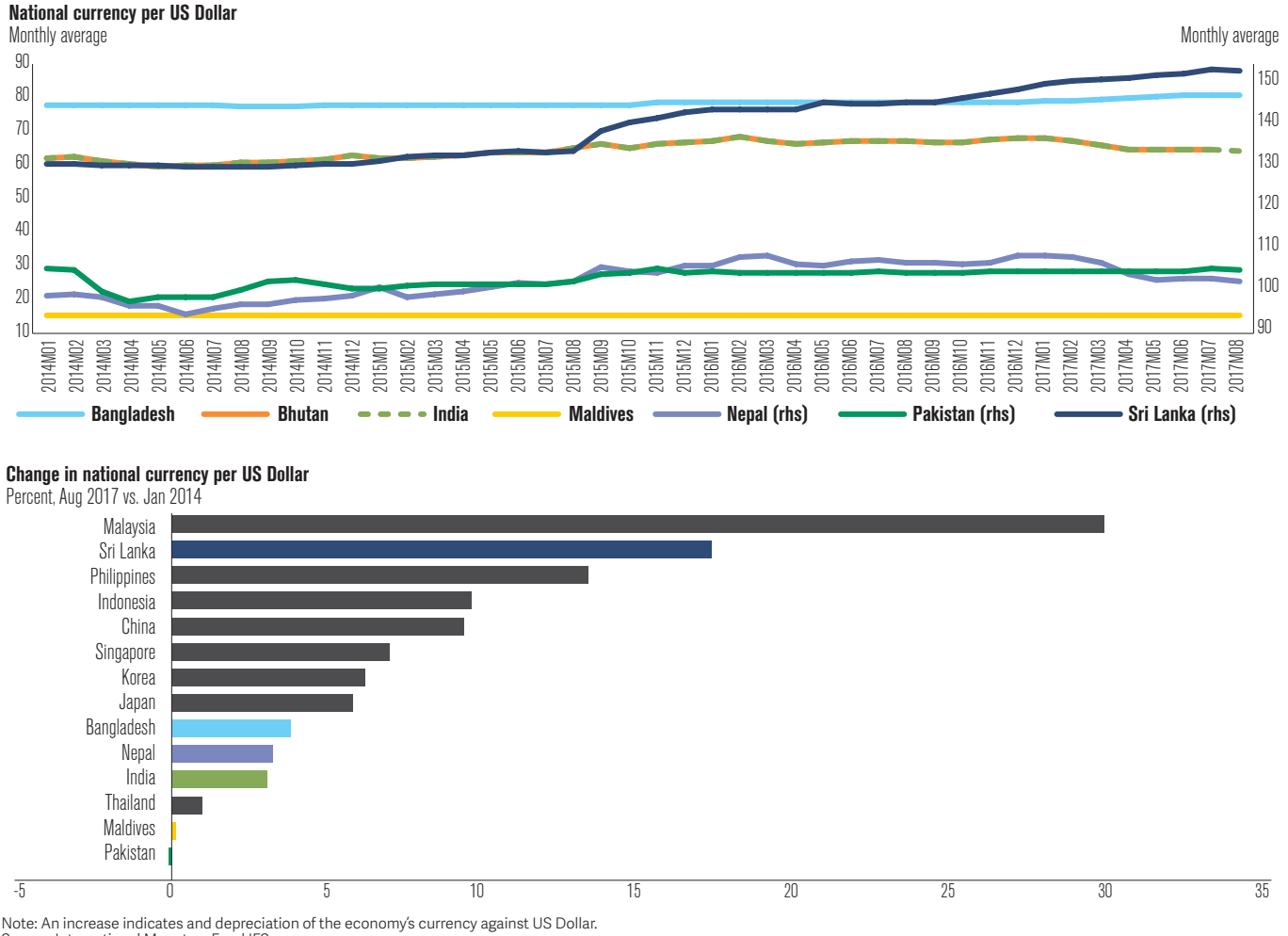
regime, but a comparison of current inflation rates to the inflation goals articulated by central banks still offers interesting insights. Except for Sri Lanka, actual inflation falls short of the explicit or implicit inflation target in all countries. In Sri Lanka, the monetary authority hiked interest rates and confirmed its willingness to contain inflation. Conversely, the Reserve Bank of India lowered its policy rate from 6.25 percent to 6.00 percent in August 2017, and cut the Statutory Liquidity Ratio by 50 basis points effective from mid-October. Both movements show responsiveness by the authorities.

**South Asian currencies have been relatively stable vis-à-vis the US Dollar despite the widening of trade and current account deficits.** Across the region there has been relatively little variation in exchange rates vis-à-vis the US Dollar since early 2014, when current accounts were rather balanced. The only exception is the Sri Lankan Rupee, which depreciated by 17 percent. Such depreciation is much more in line with developments elsewhere, and particularly in East Asian countries. This general stability of exchange rates means that the region has lost competitiveness in relation to its neighbors towards the East. Real exchange rate appreciation was sizeable in India during the first half of 2017.

**The fiscal policy stance remains expansionary, with fiscal deficits generally increasing across the region.** In a recovering global economy the need for stimulus typically recedes and government revenue increases, so that fiscal deficits can be expected to shrink. This has been so across most developing regions, with Europe and Central Asia and South Asia as the only two exceptions. In South Asia the average fiscal deficit rose from 3.6 percent of GDP in 2016 to 4.5 percent this year. Fiscal consolidation, which is very much work in progress, is still proving challenging. Larger fiscal deficits are also associated with the issuance of public debt. And at 60 percent of GDP, South Asia already has the second highest debt level among developing regions.

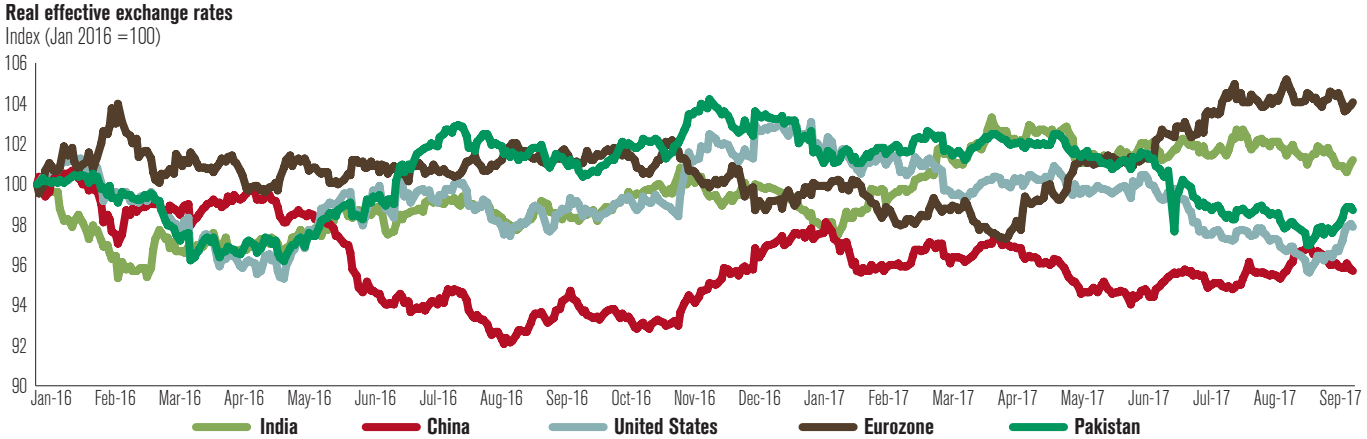
**By now the fiscal deficit exceeds 5 percent of GDP in a majority of South Asian countries, but there are important differences across the region.** At one end, deficits are relatively small and manageable in three of the countries in the region. Afghanistan benefits from huge official aid flows and consequently has a very small budget deficit. In Nepal and Bhutan, the fiscal deficits are moderate at 3.3 percent of GDP last fiscal year in Nepal and at 2.4 percent this year in Bhutan. The level of fiscal deficits is more worrisome in the larger countries in the region. In Bangladesh, both revenues and spending underperformed and resulted

## Figure 21: South Asian currencies are relatively stable vis-à-vis the US Dollar.




Note: An increase indicates and depreciation of the economy's currency against US Dollar.
Source: International Monetary Fund IFS.

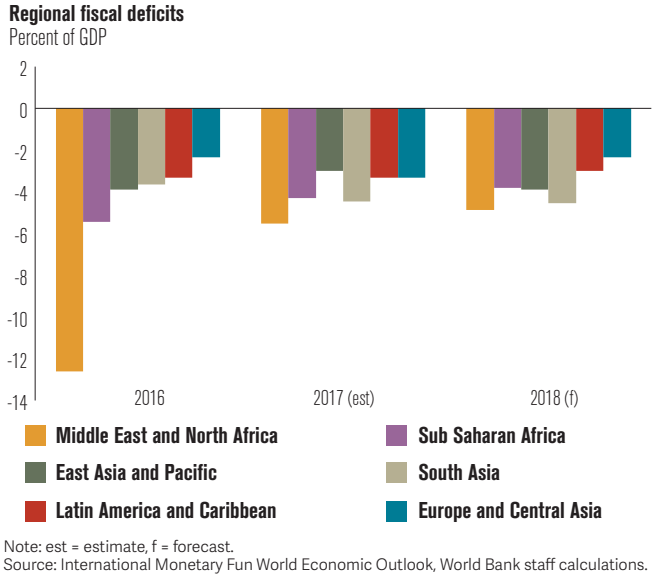
## Figure 22: India experienced real exchange rate appreciation in the first half of the year.




Note: An increase indicates an appreciation of the economy's currency against a broad basket of currencies.
Source: Haver Analytics/JP Morgan.

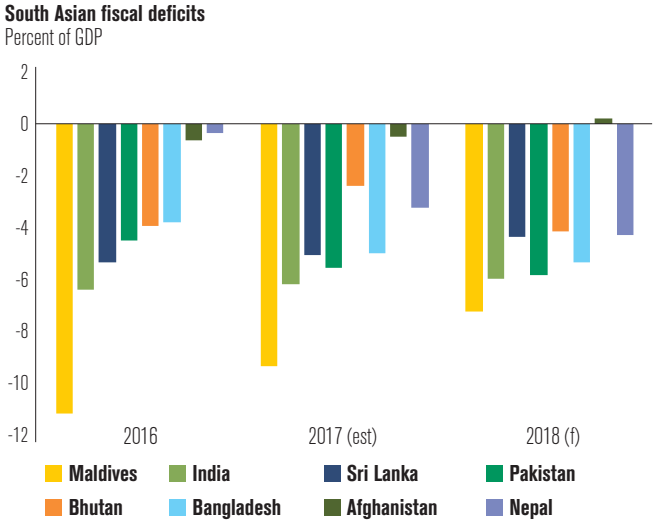
in a deficit of 5 percent of GDP. In India and Pakistan, the deficit reaches 6.2 and 5.6 percent of GDP respectively. Yet the largest fiscal deficit can be found in the smallest country in South Asia.In Maldives, public infrastructure investment increased strongly, while recurrent expenditure fell only slightly as the elimination of electricity subsidy cuts was partially offset by increased recurrent expenditure elsewhere. As existing revenue sources underperformed and proposed revenue measures did not materialize, the fiscal deficit came out at an estimated at 11.2 percent of GDP.

## Figure 23: South Asia's fiscal deficit is increasing.



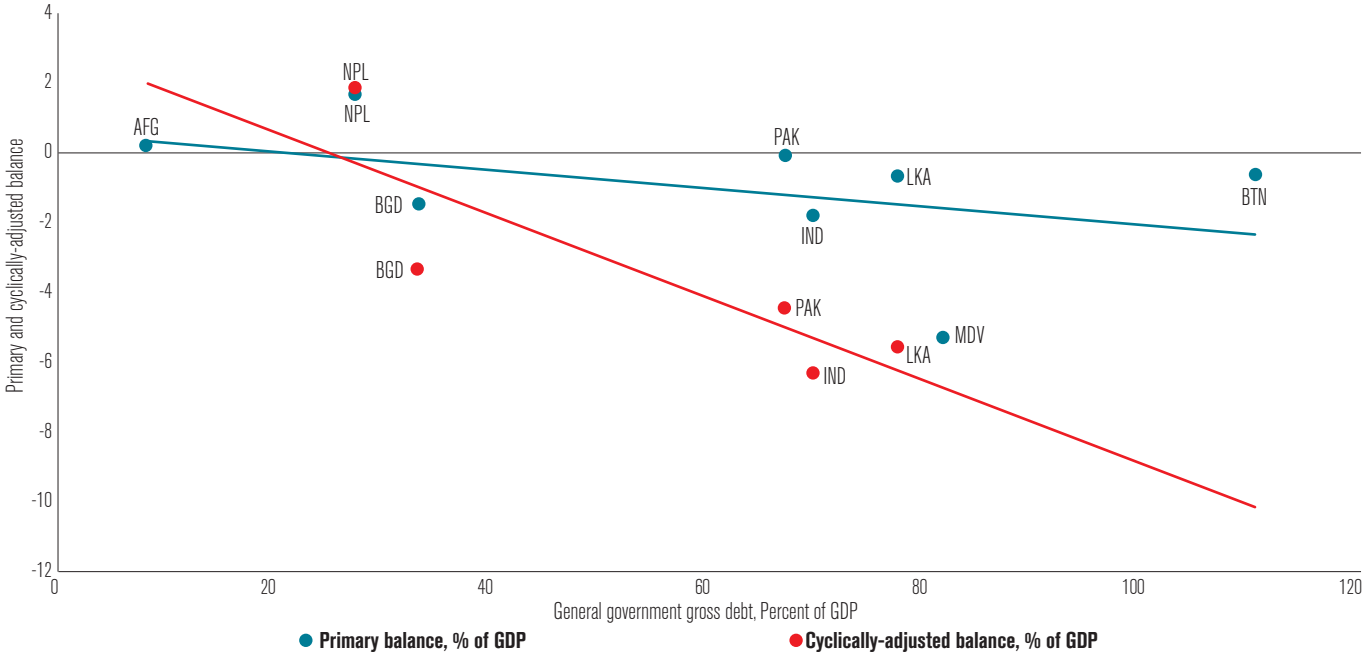

Note: est = estimate, f = forecast.
Source: International Monetary Fun World Economic Outlook, World Bank staff calculations.

## Figure 24: In most countries the fiscal deficit exceeds 5 percent of GDP.




Note: est = estimate, f = forecast.
Source: World Bank.

## Figure 25: Fiscal sustainability is weakening.



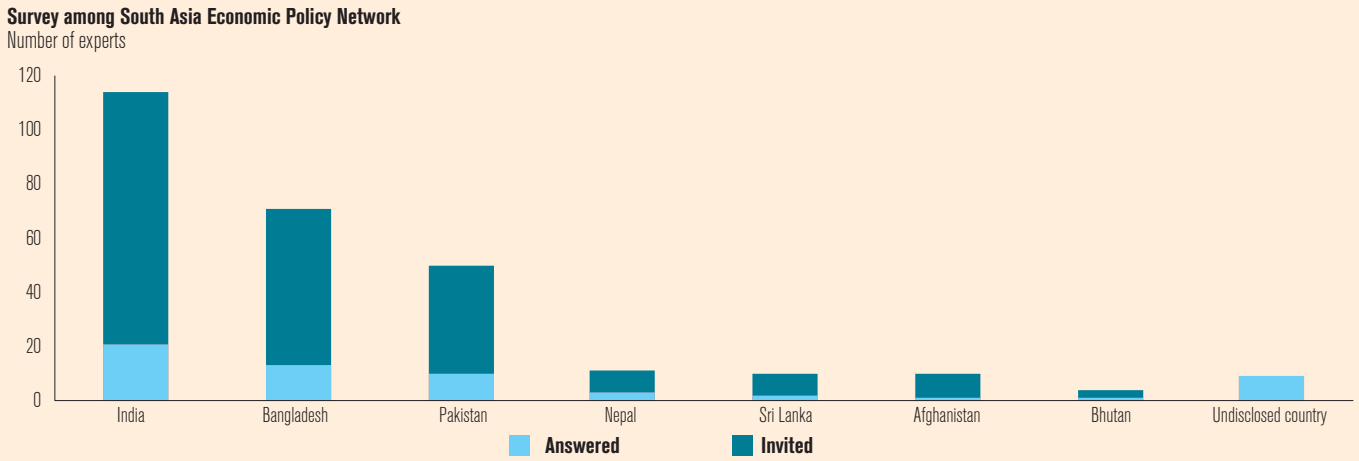

Source: World Bank.

**Standard indicators of the fiscal stance point out in the direction a further deterioration of public finances going forward.** One of those indicators is the primary balance, which does not include interest payments. If the primary balance is negative, then public debt can be expected to be in a steady upward trajectory. Another indicator is the fiscal deficit adjusted by the business cycle. An expansionary stance is justified in times of economic downturn, while a tighter fiscal policy is warranted in times of rapid economic growth. If the fiscal deficit is large in times of rapid growth, then it can be expected to be even larger over the full business cycle. Combining both indicators, a widening of fiscal deficits can be expected across most of the region.

# Views from the South Asia Economic Policy Network

The South Asia Economic Policy Network, launched by the office of the regional Chief Economist at the World Bank at the beginning of the year, represents an attempt to engage more strongly with thinkers and doers across South Asia. The objective is to be more proactive in nurturing the exchange of ideas and to learn more systematically from colleagues and counterparts in the region. The Network currently focuses broadly on macroeconomics. It includes more than 270 researchers and practitioners based in the region. The network has a wide regional coverage including researchers from seven countries, based on peer recognition. Many of them are academics at renowned universities, others researchers at central banks and think tanks, and some are affiliated with policy-making units.

Figure 26: We asked over 270 economists from seven countries about their views.




Source: World Bank South Asia Economic Policy Network.

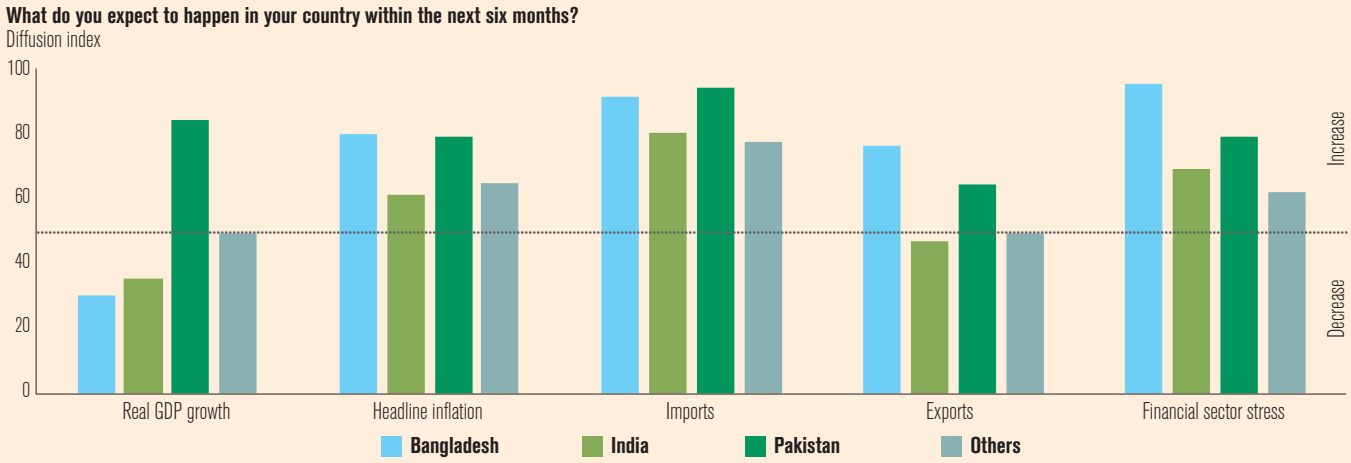
A short opinion survey was conducted among the group for this edition of South Asia Economic Focus. The objective was to take the pulse of Network members on economic developments in their countries, their assessment of the macro-policy mix, and their views on GDP measurement. The response rate exceeded 20 percent, with 60 filled-in questionnaires from all seven countries. Responses regarding the economic situation and policy stance are summarized here; views on GDP measurement are reported throughout the chapter Growth out of the Blue.

Views on the outlook are generally pessimistic. The expectations of Network members regarding economic developments over the next six months are summarized in a single number using so-called diffusion indices. For any indicator, a value above 50 indicates that an increase is expected, whereas a value below 50 corresponds to an expected decrease. The farther away the single number is from 50, the greater the consensus among Network members that an important change is under way. Based on the responses, in India and Bangladesh the members of the Network expect a deceleration in GDP growth, whereas in Pakistan they expect an acceleration. There is no clear pattern regarding growth in the combined responses from the other countries. Network members also expect that inflation will pick-up across all countries over the next six months and that there will be an increase in imports. Financial sector stress is expected to increase across the board, and especially in Bangladesh.

Currencies are perceived to be overvalued and fiscal deficits are considered too high. When it comes to macroeconomic policy, a diffusion index close to 50 means that the stance of the government is considered broadly appropriate. An index above

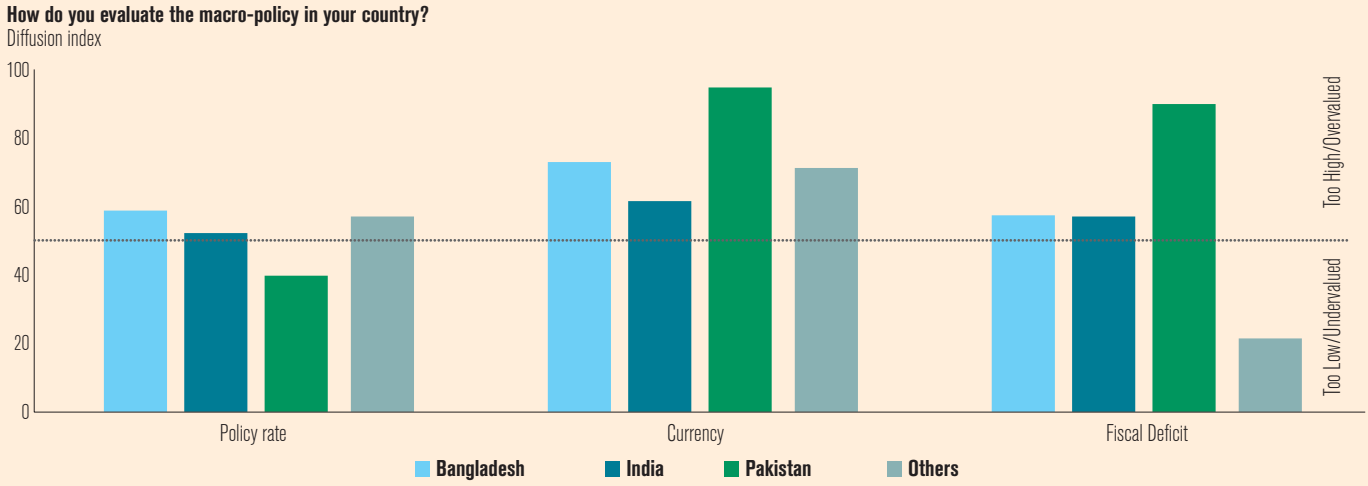
50 indicates that the level of the corresponding indicator is too high or overvalued, whereas and an index below 50 that it is too low or undervalued. In all countries, and especially in Pakistan, Network members believe that the national currency is overvalued. The fiscal deficit is perceived as high in Bangladesh and India, and as too high in Pakistan.

## Figure 27: Views on the outlook are generally pessimistic.




Note: The index is calculated as follows: Index=(P1*100) + (P2*50) + (P3*0), where P1 is the proportion of responses that report that the indicator will increase, P2 is the proportion of responses that report that the indicator will stay the same, and P3 is the proportion of responses that report that the indicator will decrease.
Source: World Bank South Asia Economic Policy Network and staff calculations.

## Figure 28: Currencies are perceived to be overvalued and fiscal deficits too high.

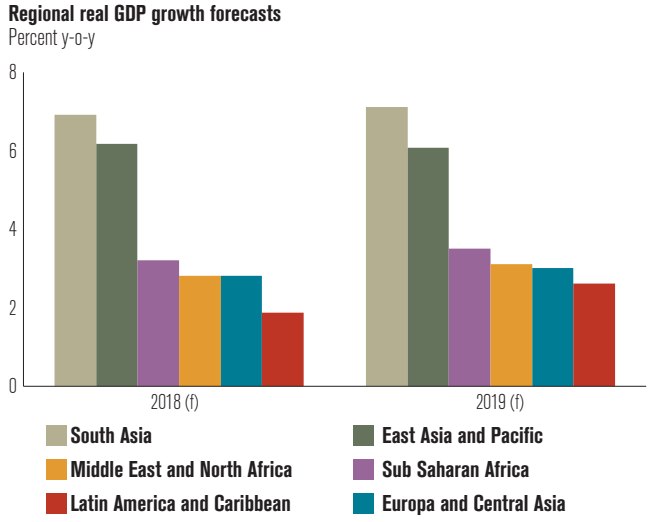



Note: The index is calculated as follows: Index=(P1*100) + (P2*50) + (P3*0), where P1 is the proportion of responses that report that the variable is too large/overvalued/too high, P2 is the proportion of responses that report that the variable is appropriate, and P3 is the proportion of responses that report that the variable is too low/undervalued/too small.
Source: World Bank South Asia Economic Policy Network and staff calculations.

# South Asia economic outlook

At 6.7 percent, growth is projected to remain strong in South Asia in 2017, albeit slightly lower than forecast in June. The growth rate is expected to stabilize around 7 percent over the medium term. Consumption should remain strong and private investment should regain momentum thanks to ongoing support from infrastructure development and economic reforms. However, risks remain tilted to the downside, and may be increasing.

## Figure 29: South Asia is expected be again the fastest growing region over the next two years.




Note: f = forecast.
Source: World Bank.

**Despite current anxieties, growth in South Asia is expected to remain robust.** However, the outlook is slightly less upbeat than it was in June, despite a benign external environment and a pick-up in global economic activity. Relative to June, South Asia's growth forecast for 2017 has been reduced by 0.1 percentage point to now 6.7 percent. The adjustment is related to the recent deceleration of economic growth in India.

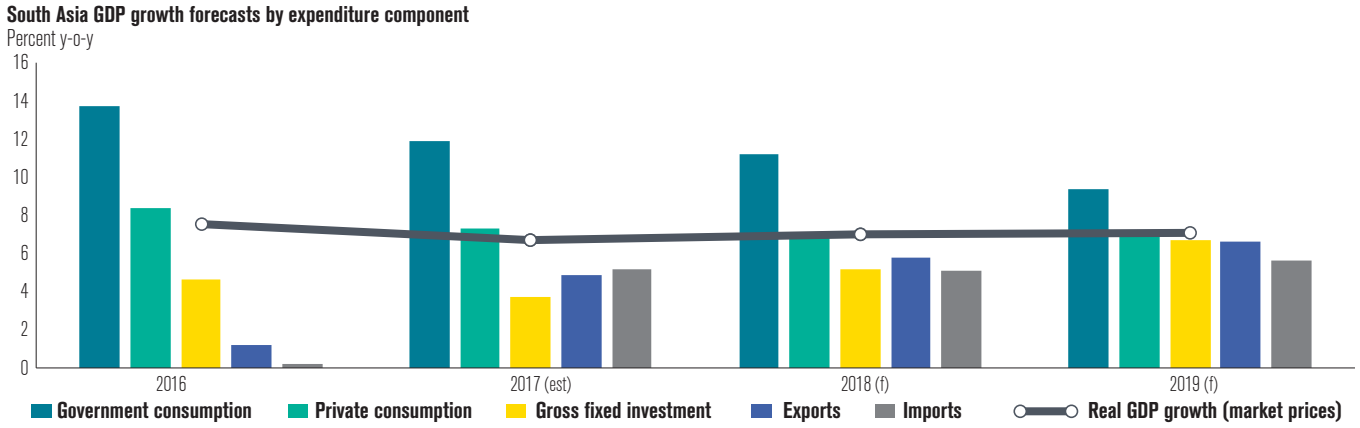
**Growth in the region is expected to pick up to 6.9 percent in 2018, and to stabilize around 7 percent over the medium term.** South Asia is thereby expected to be once again the fastest growing region in the next two years. However, this forecast is 0.2 percentage points below the June projection for 2018 and 0.1 percentage point below that for 2019. The adjustment reflects a relatively weak recovery in private investment, especially in India. Excluding India, growth in the region is expected to remain stable, averaging 5.9 percent over the medium term, which is broadly consistent with the June projection.

**Robust growth prospects rest on the expectation that domestic consumption will remain strong, private sector investment will regain momentum, and exports will recover.** Starting this year, growth should increasingly be driven by investment and exports. Gross fixed capital formation is forecast to accelerate to 5.2 percent next year and to 6.7 percent in 2019. Export growth is seen to increase to 5.8 percent next year and 6.6 percent the year after. At the same time, imports are expected to grow more slowly next year and government consumption is forecast to moderate from 11.9 percent this year to 9.4 percent in 2019.

**Most countries in the region are expected to see an acceleration of economic growth over the medium term.** With 7.5 percent, Nepal rebounded strongly in fiscal year 2017, but this will be a temporary rise: over time growth is projected to decline again towards 4.5 percent, which is more in line with the country's potential. In Bangladesh, growth is expected to moderate. In India, growth forecast to pick-up to 7.3 percent next year and to strengthen to an average of 7.4 percent in the medium term. As hydropower projects become operational, Bhutan will accelerate to 7.6 percent, making it the fastest-growing economy in the region in 2019. Despite concerns about its weakening macroeconomic discipline, growth in Pakistan is expected to increase to 5.5 percent in 2018 and to 5.8 percent in 2019. Sri Lanka and the Maldives will both accelerate slightly and grow at around 5 percent per year. Afghanistan will remain the slowest-growing economy in South Asia, but it is forecast to surpass 3 percent from next year onwards.

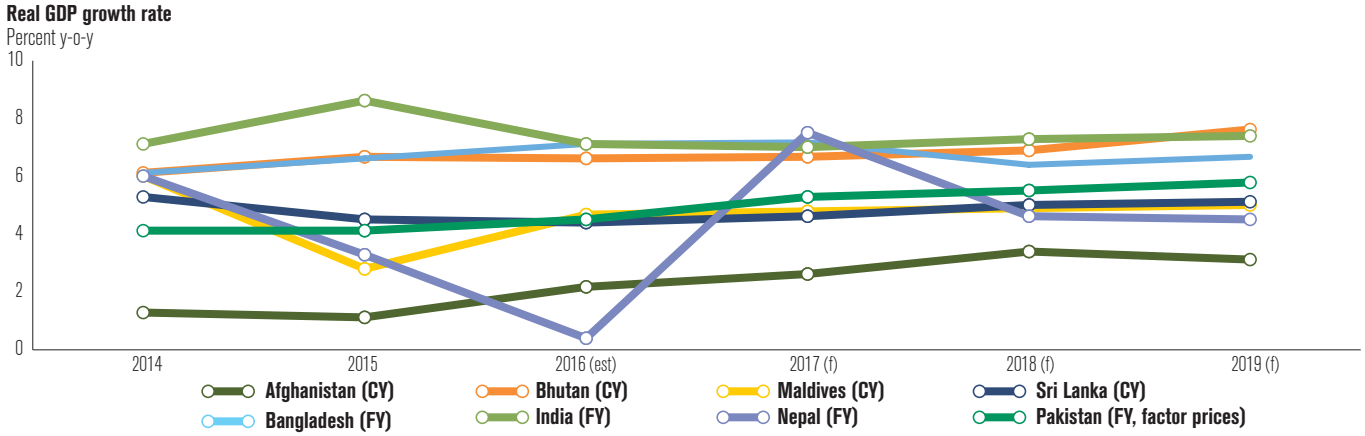
**Underlying the relatively upbeat outlook for the region is the expectation that economic policies will support the growth momentum.** The outlook rests on the assumption that private investment will grow robustly, but for this to happen the region needs to upgrade its

## Figure 30: Growth is expected to be increasingly driven by investment and exports.




Note: est = estimate, f = forecast.
Source: World Bank.

## Figure 31: Most countries are excepted to accelerate over the medium-run.




Note: est = estimate, f = forecast, CY = calendar year.
Source: World Bank.

## Table 1: Most countries are excepted to accelerate over the medium-run.

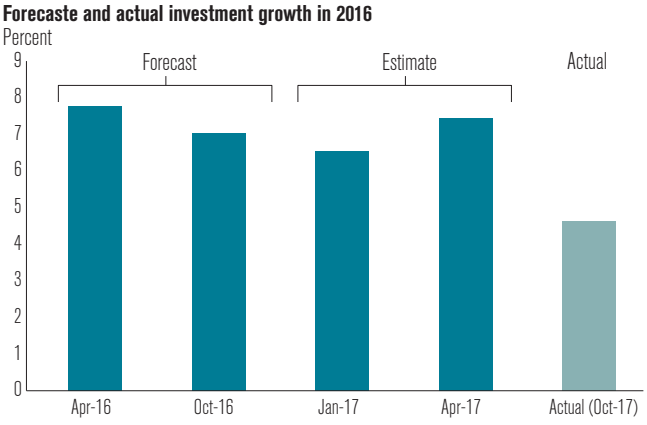
| | 2014 | 2015 | 2016 (est) | 2017 (f) | 2018 (f) | 2019 (f) |
|---|---|---|---|---|---|---|
| Afghanistan (CY) | 1.3 | 1.1 | 2.2 | 2.6 | 3.4 | 3.1 |
| Bangladesh (FY) | 6.1 | 6.6 | 7.1 | 7.2 | 6.4 | 6.7 |
| Bhutan (CY) | 6.1 | 6.7 | 6.6 | 6.7 | 6.9 | 7.6 |
| India (FY) | 7.1 | 8.6 | 7.1 | 7.0 | 7.3 | 7.4 |
| Maldives (CY) | 6.0 | 2.8 | 4.7 | 4.8 | 4.9 | 5.0 |
| Nepal (FY) | 6.0 | 3.3 | 0.4 | 7.5 | 4.6 | 4.5 |
| Pakistan (FY, factor prices) | 4.1 | 4.1 | 4.5 | 5.3 | 5.5 | 5.8 |
| Sri Lanka (CY) | 5.3 | 4.5 | 4.4 | 4.6 | 5.0 | 5.1 |

Note: est = estimate, f = forecast, CY = calendar year.
Source: World Bank.

infrastructure and improve its business environment. Previous forecasts and estimates relied on the same assumption, but they were proven too optimistic. For 2016, investment growth in the region was expected to be in the range of 6.5 to 7.7 percent, a range confirmed by every forecast and preliminary estimate. But according to the final figures, investment growth in 2016 was only 4.6 percent. A similar gap was noticeable for 2015, which hints at an excessive inclination to believe that governments in the region will make the right policy decisions.

**The risks remain tilted to the downside, and they may be increasing.** In the short run, much depends on developments in India. If the slowdown is a transient phenomenon, mainly driven by uncertainties in the implementation of GST and other temporary shocks, then growth in the region can be expected to remain strong. On the other hand, if the slowdown reflects a deeper trend, then the chances for growth to bounce back will very much depend on the capacity of the government to adjust its economic policy stance. In some countries, there are also increasing concerns about fiscal slippages and widening current account deficits. Besides economic policies, the region is vulnerable to natural disasters. Recent floods in some parts of South Asia, and droughts in others, have disrupted economic activity. Events of this sort could weigh on growth and set back prospects. On the positive side, global growth prospects are encouraging, and protectionist threats are not materializing for now. The opportunities for South Asia to seize the moment and ride the rising global tide remain intact.

## Figure 32: Whether investment will pick up crucially depends on policies.




Source: World Bank.

# Growth out of the blue

Measuring GDP is especially challenging in developing countries, where the informal sector is large and institutional constraints can be severe. As a result, GDP growth estimates are often met with skepticism. But new technologies offer an opportunity to improve matters. Luminosity observed from satellites has been shown to be a good proxy for economic activity, and methodologies have been developed in recent years to predict GDP over time and across space based on nightlight intensity. In South Asia's case, GDP predicted using these methodologies closely tracks National Accounts GDP at the aggregate level, and provides a granular picture of GDP at subnational levels. Nightlight intensity also yields new insights on recent economic developments. Thus, the major shocks experienced by Nepal in 2015 had very different impacts across districts. In Afghanistan, local surges in conflict reduced local growth for up to one quarter. And in India demonetization had a short-lived effect at the aggregate level, but a noticeable impact on rural, unbanked and informal districts. To improve economic measurement in South Asia, a greater reliance on big data may help, but a clear agenda toward stronger statistical systems is a necessity.

PHOTO: NASA Earth Observatory images by Joshua Stevens

# The measurement of economic activity is imprecise by nature

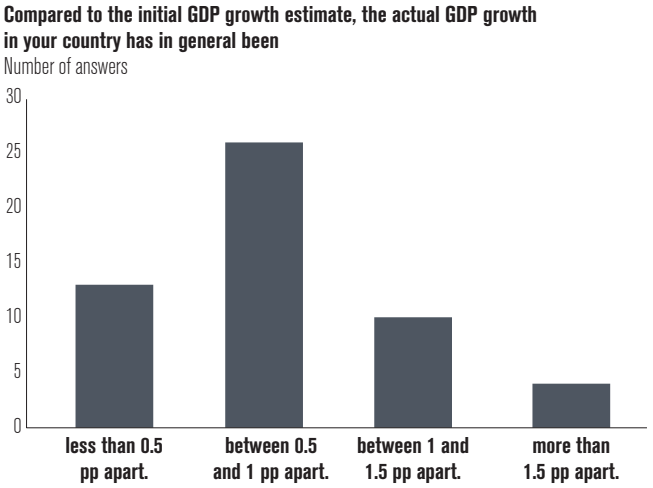
**Properly capturing economic activity is particularly challenging in developing countries.** Gross Domestic Product (GDP), the most standard measure of economic activity, is defined as the value of all final goods and services produced within the country during a given period, net of the value of inputs. With pervasive informality, many final goods and services, as well as many inputs, escape the scrutiny of statistical agencies. Even in the formal sector, businesses and individuals may understate their earnings to avoid taxation and regulation. Since not all economy activity can be precisely captured, GDP data is necessarily based on estimations and extrapolations.

**Skepticism about official growth figures is often amplified by data gaps, inconsistencies and revisions.** Few countries in South Asia produce quarterly GDP estimates, making it difficult to identify trend breaks. Subnational estimates, when they exist, are made available with substantial delays. In some countries these subnational estimates do not add up to national figures. National Accounts revisions, aimed at strengthening GDP estimates, can change growth stories dramatically. And on occasion, statistical agencies are insufficiently insulated from political interference, which amplifies concerns about the relevance of the official data.

**South Asian researchers and practitioners are well-aware of these measurement challenges.** Respondents to a survey conducted for this report see a sizeable gap between GDP estimates and reality. Half of them expect actual growth to be between half a percentage point and one percentage point apart from first estimates. And one third believe that the gap is even larger. Regardless of what the real growth rate is, final figures are often quite different from preliminary estimates. India has a better statistical infrastructure than many other countries, but even there the first GDP growth estimate has on average been revised upward by 0.5 percentage points. The average absolute correction (positive or negative) since FY2004 has been 0.7 percentage points.

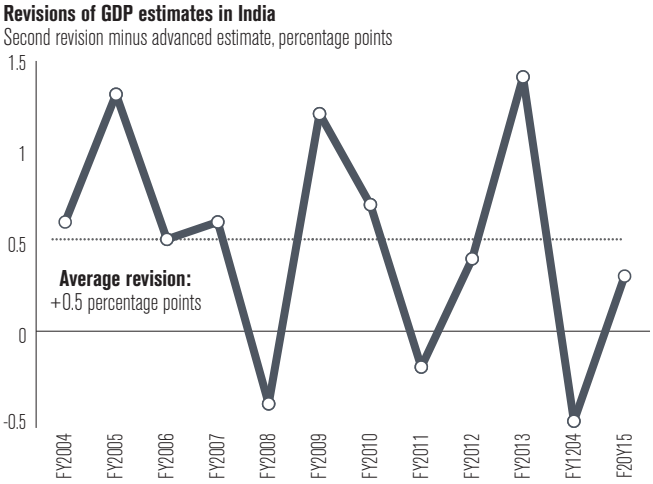
**The rise of big data offers an opportunity to strengthen the measurement of economic indicators such as price indices and GDP levels.** For example, insightful price indices have been developed on the basis of "scraping" the internet. These indices cover a very large number of products and points of sale, they can be updated daily, and they are cheap to maintain. Similarly, satellite imagery and especially luminosity observed from outer space have been shown to generate good proxies for economic activity. Measures of economic activity based on night-time light (or nightlight for short) have some crucial advantages over surveys and censuses. These measures capture economic activity regardless of whether it is formal or informal, they do so with a very high level of spatial granularity, and they are available nearly in real time. Importantly nightlight data is cheap to acquire and is not subject to political interference.

Figure 33: Researchers and practitioners see a gap between estimated and actual growth.




Source: World Bank South Asia Economic Policy Network.

Figure 34: Preliminary GDP growth rates can be revised substantially.




Source: Sapre and Sengupta (2017).

# Nightlight and economic activity

**The correlation between nightlight intensity and GDP levels is by now well established.** Part of the correlation captures the fact that access to electricity, and the reliability

# Measuring nightlight is challenging

Nightlight data at the global level is a byproduct of the Defense Meteorological Satellite Program (DMSP), a meteorological initiative of the US Department of Defense. Since 1976, this program includes a main weather sensor, the Operational Linescan System (OLS). The satellites follow an oscillating low orbit at a mean altitude of approximately 833 kilometers, with nightlight captured daily between 8:30 PM and 9:30 PM. The OLS sensor has the unique capability of detecting city lights, gas flaring, shipping fleets, and fires. An algorithm developed by the National Geophysical Data Center (NGDC) of the National Oceanic and Atmospheric Administration (NOAA) allows to identify stable lights. The treatment of the data includes removing sunlit, glare and moonlit data. Observations with clouds are also excluded as well as lighting features from the aurora in the northern hemisphere. The resulting global composites are known as DMSP-OLS stable nightlights (Elvidge et al. 1997).

Data collected by six DMSP-OLS satellites for years 1992 to 2013 has been made publicly available. The design of the OLS sensor onboard DMSP has not changed significantly since 1979, and new satellite deployments aim at ensuring data collection continuity, given sensor aging (Elvidge et al. 2013). Overlapping years, when data is available from two satellites, are particularly useful to check the comparability of measured nightlight intensity. Due to the absence of onboard in-flight calibration, differences caused by sensitivity discrepancies between satellite instruments are addressed by inter-calibrating the data (Elvidge et al. 2009).

The release of DMSP-OLS nightlight data was discontinued in 2013, at which point a new data product became available. In 2011, NASA and NOAA had deployed the Suomi National Polar Partnership (SNPP) satellite with the Visible Infrared Imaging Radiometer Suite (VIIRS). Data from SNPP-VIIRS has a resolution of approximately 0.5 $km^2$, a wider radiometric detection range solving over-saturation at bright core centers, and onboard calibration, all features that were missing in DMSP-OLS (Elvidge et al. 2013). Yet, the data publicly available is still raw, as some temporary lights and background noise remain.

Several strategies can be considered to clean the VIIRS data. A first approach consists in removing individual nightlight observations below a certain intensity threshold. This threshold is defined by sampling nightlight data from places known to lack human activity, such as natural parks and mountain ranges (Ma et al. 2014). The second approach consists in removing all observations from areas seen as a "background noise mask". These areas are identified by first removing outlier observations from each location, and then clustering the remaining observations based on their intensity. In practice this approach amounts to removing all observations from areas distant from homogenous urban cores. The third approach also involves removing all observations from locations with background noise, but the way these locations are identified is different. For 2015, an annual composite of stable VIIRS nightlight was released (Elvidge et al. 2017). Locations with background noise are identified by comparing the raw data with the stable annual composite. Once this is done, data from these locations can be removed from all VIIRS monthly data.

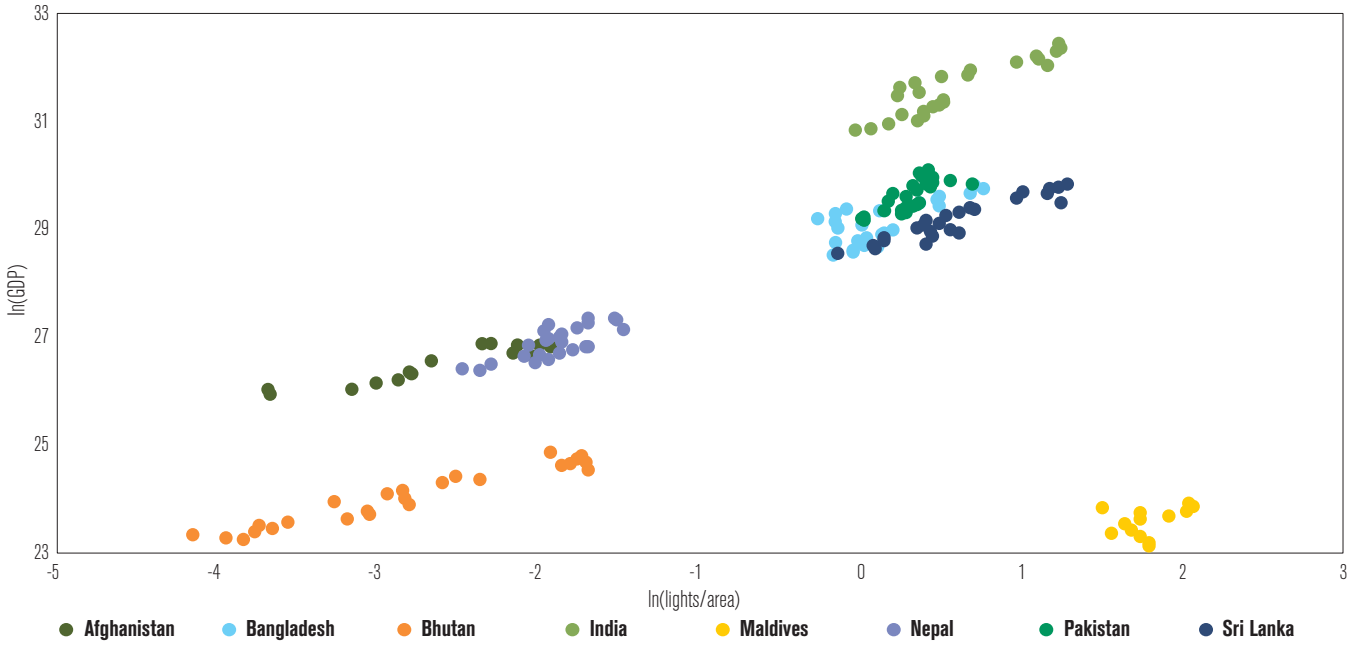
A final challenge is to link the DMSP-OLS annual data with the VIIRS monthly data to generate a longer annual series of nightlight data from 1992 to the present. But this can easily be done by taking advantage of the overlap between the two data sources in 2013.

of power supply, increase as countries develop. Another part of the correlation is due to the fact that, among those who have access, electricity consumption increases with income levels. The overall correlation is typically computed between the level of GDP and nightlight intensity per unit of surface, with both variables measured in logs. While a similar pattern can be observed around the world, there is also variation across countries. In the South Asia region, the correlation coefficient for Bhutan is 0.97, and it is statistically significant at the 1 percent. The coefficient reaches 0.90 in India, with the same statistical significance. But the correlation coefficient is not statistically significant in Maldives, which stands out as the exception to the general pattern in the region.

**The relationship between economic activity and nightlight intensity in South Asia is quantitatively similar to that observed in other regions.** This relationship is typically estimated assuming a constant elasticity between the two variables. This approach was introduced in a seminal academic paper by Henderson et al. (2012), whose goal was to develop a comprehensive framework to improve the reliability of GDP estimates for developing countries. Using that framework, it appears that the relationship between GDP levels and nightlight intensity observed elsewhere in the world also holds in South Asia's case. Analyses like those conducted by Henderson et al. (2012) can thus be applied to the measurement of the region's economic activity.

## Figure 35: GDP levels and nightlight intensity are correlated.

**Nightlight intensity and economic activity, 1992-2016**




Note: For Maldives only the years 2001 to 2013 are covered.

**The strength of the relationship between economic activity and nightlight intensity declines steadily with economic development.** A simple intuition for this pattern is that power supply is a more binding constraint to economic activity in poorer countries. In these countries, the expansion of access to electricity and the improvement of its reliability can have a substantial impact on living standards. But increases in generation capacity are unlikely to have a dramatic effect in rich countries, where access is universal and blackouts almost unheard of. In practice, the percentage change in GDP associated with a one percent change in nightlight intensity is estimated at 0.31 for countries in the poorest decile, and at 0.27 for countries in the second poorest decile. While the estimated elasticity fluctuates around 0.20 for most of the other deciles, it becomes statistically insignificant among OECD countries.

**The relationship is weaker when power infrastructure is limited.** The simple intuition outlined above implies that the relationship between economic activity and nightlight intensity should be weaker if installed power generation capacity remained unchanged. For the sake of the argument, consider a region without access to electricity, hence totally in the dark. In that region changes in economic activity are necessarily independent of nightlight intensity, because there is no nightlight to begin with. Countries with the lowest generation capacity, or with the lowest electricity consumption, are countries where many households and firms are in the dark. Not surprisingly the estimated elasticity is low in these countries. But the elasticity would increase substantially if generation capacity expanded to match that of countries at the next level.

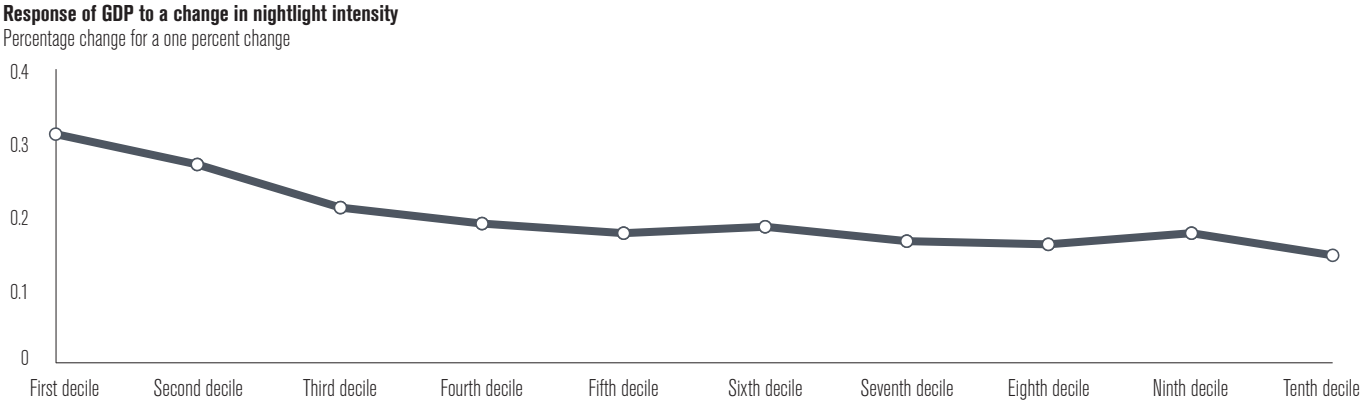
## Table 2: The relationship is similar in South Asia and elsewhere.

| | World ln(GDP) | World without South Asia ln(GDP) | South Asia ln(GDP) |
|---|---|---|---|
| ln(lights/area) | 0.267*** (0.0303) | 0.266*** (0.0314) | 0.248*** (0.0491) |
| Observations | 3,966 | 3809 | 157 |
| Countries | 187 | 179 | 8 |
| (within country) $R^2$ | 0.788 | 0.782 | 0.971 |

Note: The following regression is estimated: , where is the natural logarithm of GDP of country i in year t measured in constant local currency, is the natural logarithm of lights per $km^2$, is a country-fixed effect and is a year fixed-effect Robust standard errors, clustered by country, are in parentheses. *** p<0.01

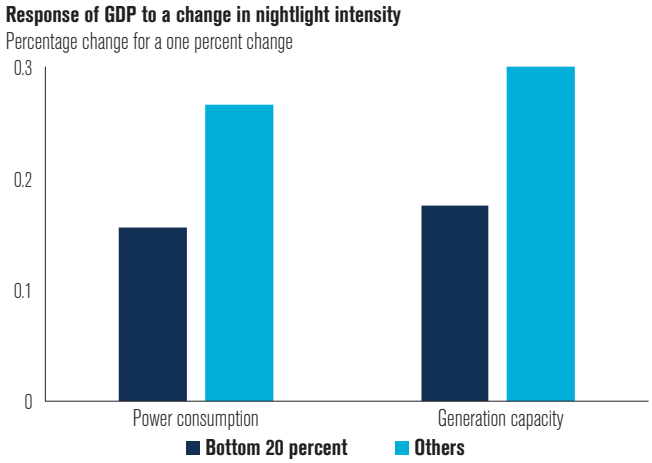
**Nightlight intensity is more strongly correlated with economic activity in manufacturing and in services than in agriculture.** The sector of activity that is typically in the dark is agriculture. In developing countries, including South Asia, access to electricity is especially low among farmers. And even when they have access, farmers tend to use the electricity for activities such as water pumping, which do not generate nightlight. Data analysis confirms this intuition. When considering a large cross-section of countries covering the whole world, the relationship is statistically significant for all three sectors, but it is weaker for agriculture. When focusing on South Asia only, the relationship becomes statistically insignificant for the agricultural sector.

## Figure 36: The relationship is stronger in poorer countries.



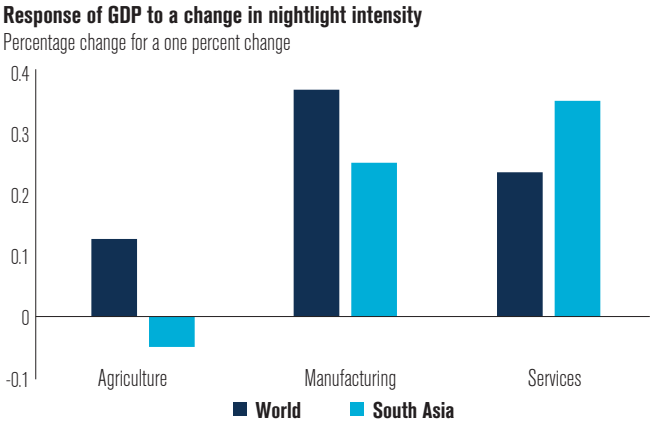

Note: We estimate the same regression as in Table 2 with interaction terms for income decile (based on PPP adjusted GDP per capita) and nightlight intensity.

## Figure 37: The relationship is weaker when power infrastructure is limited.




Note: We estimate the same regression as in Table 1 on two sub-samples – the bottom 20 percent of power consumption/generation capacity and the remaining 80 percent.

## Figure 38: The relationship is especially weak in the agricultural sector.




## Table 3: The short-term relationship is stronger in South Asia than elsewhere.

| | World ΔIn(GDP) | World without South Asia ΔIn(GDP) | South Asia ΔIn(GDP) |
|---|---|---|---|
| ΔIn(lights/area) | 0.0547*** (0.0161) | 0.0557*** (0.0166) | 0.0741*** (0.0154) |
| Observations | 3,778 | 3,629 | 158 |
| Countries | 187 | 179 | 7 |
| (within country) $R^2$ | 0.094 | 0.096 | 0.338 |

Note: The following regression is estimated: $\Delta \ln(GDP_{it}) = a + b_i + c_t + \delta \Delta \ln(light_{it}) + \varepsilon_{it}$, where ln ($GDP_{it}$) is the natural logarithm of GDP of country i in year t measured in constant local currency, ln ($light_{it}$) is the natural logarithm of lights per $km^2$, $b_i$ is a country-fixed effect and $c_t$ is a year fixed-effect. The regressions in the first and second column are estimated using data until 2013. The regression in the thrid column is estimated using data until 2016 and excludes Maldives. Robust standard errors, clustered by country, are in parentheses. *** p<0.01.

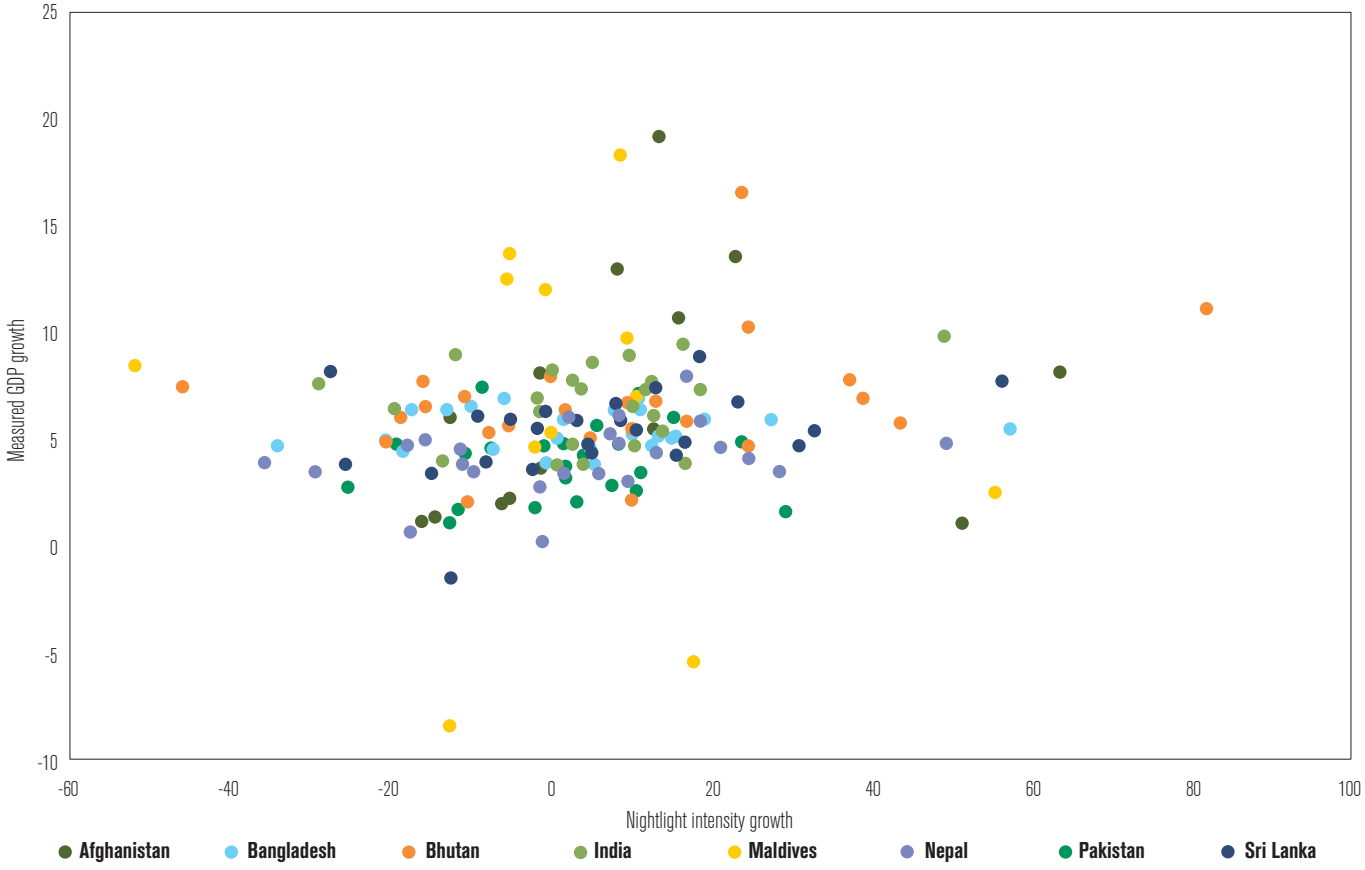
# Nightlight intensity and GDP growth

**The relationship between nightlight and economic activity is weaker in the short-term but it is still significant, and stronger in South Asia.** When considering longer periods of time, economic growth is accompanied by improvements in energy infrastructure. In this context, the strength of the relationship between economic activity and nightlight intensity should not come as a surprise. But infrastructure changes relatively little in the short term. From a statistical point of view, long-term changes in nightlight intensity provide information on fundamental trends in the economy, while short-term changes are "noisier". One consequence of relying on noisier data on nightlight intensity is the "attenuation" of the estimated relationship. But despite this attenuation effect, the relationship between annual changes in GDP and annual changes in nightlight intensity remains significant both in a large cross-section countries and for South Asia.

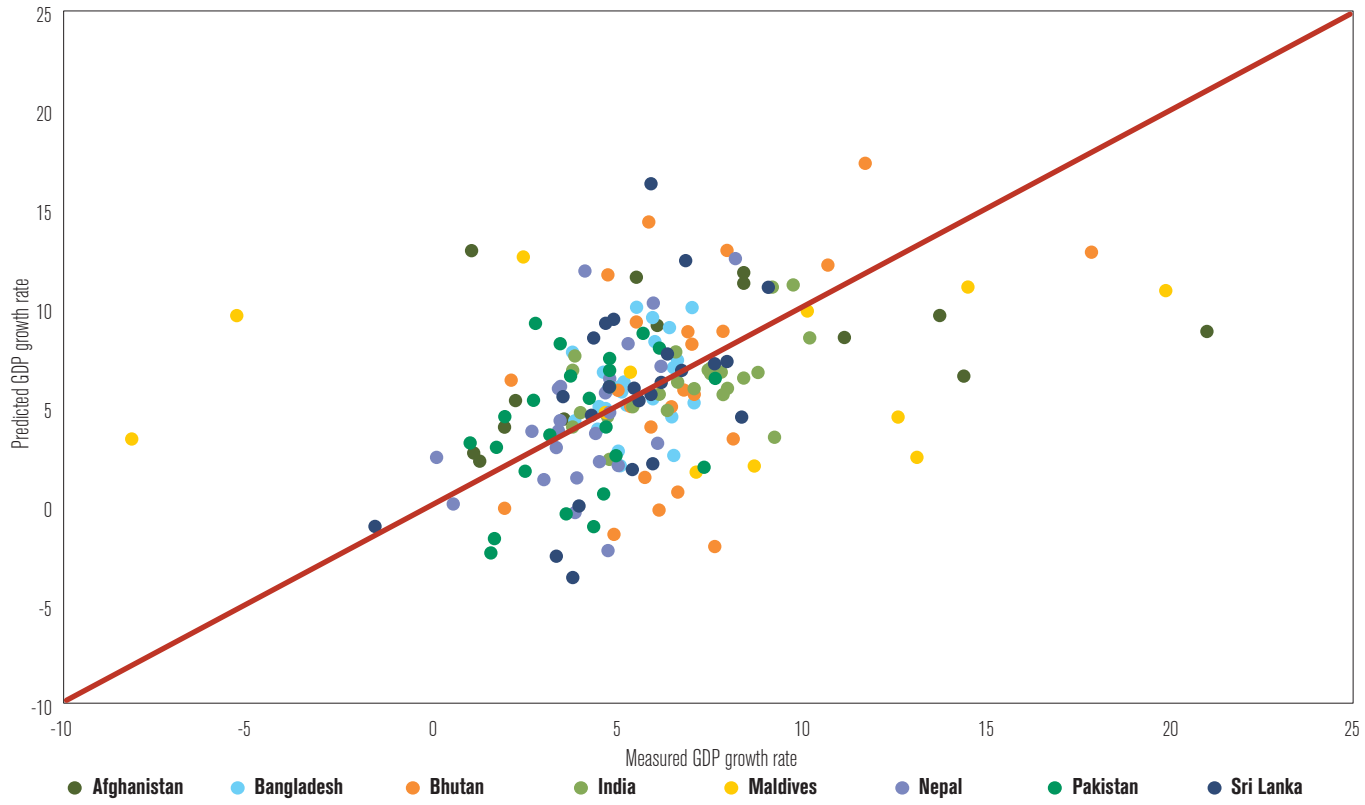
**Predictions of short-term changes in economic activity based on short-term changes in nightlight intensity are informative, albeit not very precise.** The observed relationship between changes in the two indicators varies across countries. For instance, the correlation

## Figure 39: Short-term changes in nightlight intensity carry information and not only noise.

**Annual Change in nightlight intensity and in GDP, 1992-2016**

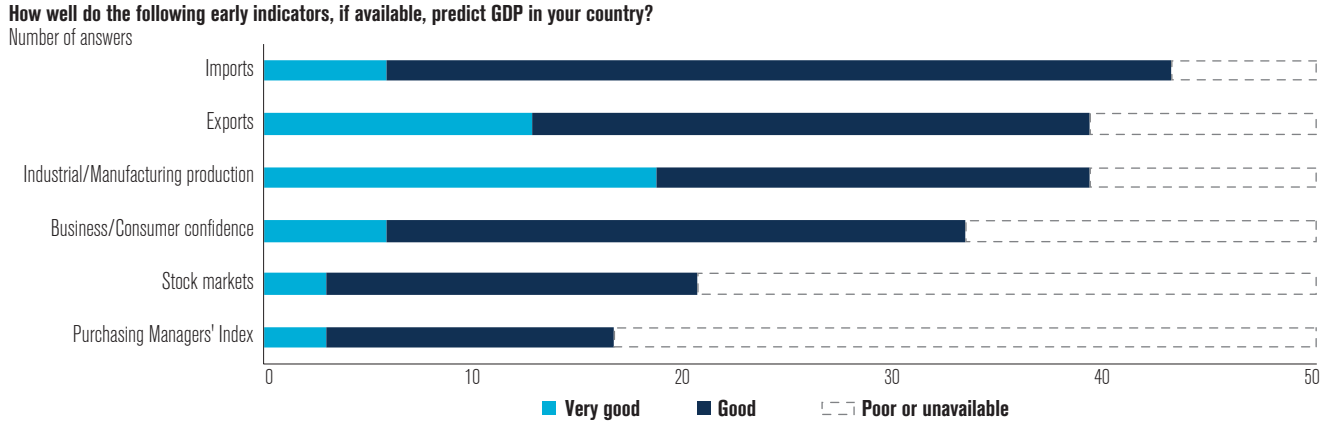



**Annual change in measured and predicted GDP growth, 1992-2016**




Note: For Maldives only the years 2001 to 2013 are covered.

## Figure 40: Several lead indicators are used to forecast GDP growth.




Source: World Bank South Asia Economic Policy Network.

## Table 4: Nightlight is a good lead indicator for annual GDP growth.

| Indicator | Country coverage | Observations | Correlation with GDP |
|---|---|---|---|
| Business/Consumer Confidence | India, Sri Lanka, Pakistan | 16 | 0.64** |
| Manufacturing production | India, Sri Lanka, Pakistan, Bangladesh | 40 | 0.44*** |
| Nightlight intensity (shorter sample) | India, Sri Lanka, Pakistan, Bangladesh, Nepal, Bhutan | 60 | 0.35*** |
| Industrial production | India, Sri Lanka, Pakistan | 56 | 0.34* |
| Nightlight intensity (longer sample) | India, Sri Lanka, Pakistan, Bangladesh, Nepal, Bhutan | 144 | 0.30*** |
| Exports | India, Sri Lanka, Pakistan, Bangladesh, Nepal, Bhutan | 131 | 0.28*** |
| Stock market indices | India, Sri Lanka, Pakistan, Bangladesh | 67 | 0.21* |
| Services/Manufacturing PMI | India, Sri Lanka | 14 | 0.24 |
| Imports | India, Sri Lanka, Pakistan, Bangladesh, Nepal, Bhutan | 150 | 0.17** |
| Banking credit | India, Sri Lanka, Bangladesh | 44 | 0.08 |

Note: All indicators are in growth rates; for Business/Consumer Confidence and Service/Manufacturing Purchasing Managers' Index we also tested levels and demeaned levels but did not find a significant relationship *** p<0.01, ** p<0.05, * p<0.10.
Source: GDP data from World Bank and all other data retrieved from Trading Economics.

coefficient between the two variables is 0.35 in Sri Lanka, and it is statistically significant at the 10 percent level. But the correlation coefficient is only 0.1, and insignificant, in Bangladesh. Despite these relatively low correlation coefficients, predictions of changes in economic activity based on nightlight intensity bear some resemblance with actual changes in GDP. This can be seen by using the relationship estimated in levels to predict GDP based on nightlight intensity, and then deriving a predicted GDP growth rate per country and per year. The correlation between these predicted growth rates and actual growth rates is 0.46 for South Asia as a whole. It exceeds 0.5 in India, Nepal, and Sri Lanka.

**While changes in nightlight intensity are noisy, other lead indicators generally used to predict changes in GDP tend to be noisy as well.** Despite their broad acceptance in the profession, changes in standard lead indicators also display a weak correlation with changes in GDP in the short run. In a survey for this report, South Asian researchers and advisors reckoned that data on imports and exports contain valuable information about changes in economic activity. Only few, however, thought that these variables contain a lot of information. Industrial and manufacturing production were also seen as informative, as were business and consumer confidence indicators. Stock market indices and the Purchasing Manufacturers Index (PMI) were deemed less informative.

**Despite being noisy, the change in nightlight intensity is a better predictor of GDP growth than many standard lead indicators.** One way to see this is to compute the correlation between annual changes in GDP and annual changes in lead indicators in the same year. In line with the views of regional researchers and advisors, changes in business and consumer confidence indices and in manufacturing production have the highest correlation with annual changes in GDP. But changes in nightlight intensity are also highly informative, as shown by the fact that their correlation with annual changes in GDP is statistically significant at the one percent level. And the correlation remains strong across different sample periods. Exports, imports, industrial

## A survey of studies using nightlights in South Asia

Nightlight intensity is strongly correlated not only with GDP, but also with several other socio-economic indicators. Thus, Proville, Zavala-Araiza and Wagner (2017) uncover a clear relationship with electricity consumption and with carbon dioxide emissions, followed by a somewhat weaker relationship with population, methane emissions, and poverty. Ghosh et al. (2010a) focus on the size of the informal economy. By comparing economic activity as captured by nightlight data with official GDP estimates, they conclude that India's informal economy and remittances are much larger than is generally acknowledged. Nightlight intensity has also been used to estimate electrification rates at local levels (Min 2011). Based on this approach, it has been suggested that close to half of the rural population of South Asia lacks access to electricity (Doll and Pachauri 2010).

The high degree of correlation between nightlight intensity and GDP has been shown to hold even at the subnational level (Bhandari and Roychowdhury 2011). This insight has been exploited to generate a range of subnational economic indicators which are not readily available otherwise (Ebener et al. 2005; Ghosh et al. 2010b; Sutton, Elvidge and Ghosh 2007).

Around the world, the use of nightlight data is common in studies dealing with urbanization dynamics. In India, significant changes in urban proportion have been observed in Tamil Nadu, Kerala and Punjab (Pandey, Joshi, and Seto 2013). While the loss of agricultural land to urban expansion has been slow, it appears that it has steadily accelerated over time (Pandey and Seto 2015). There is also evidence of increasing nightlight intensity along the peripheries of major Indian cities (Chand et al. 2009). The growing importance of the urban fringe may explain why measures of urbanization based on nightlight intensity are quite different from those relying on administrative definitions or on land classification by type of use (Ellis and Roberts 2015; Li and Galdo 2017).

Nightlight intensity has also been used to study long-term growth. In India, nightlight data from 2000 to 2010 provides evidence of both absolute and conditional convergence among rural areas (Chanda and Kabiraj 2016). Nightlight data also suggests that there is convergence at the district and state level (Tewari and Godfrey 2016). This in contrast with findings based on GDP data, according to which there is divergence or, at best, neither convergence nor divergence. It also appears the growth of secondary cities has been more conducive to poverty reduction than that of large metropolitan areas (Gibson et al. 2017). And in Pakistan, there are signs of convergence, albeit slow, between the richest and poorest provinces of the country (Mahmood, Majid and Chaudhry 2017).

Finally, another line of research has focused on the consequences of economic shocks. A study on the impacts of the 2015 earthquakes and trade disruption in Nepal finds that aggregate impacts were more modest than suggested by the data, but could be quite significant in specific localities (Galdo, Kitzmuller, and Rama 2017).

production, and stock market indices contain some information, but less than the other lead indicators. Also consistent with the views of regional experts and advisors, the relationship is not statistically significant for the PMI. And it is not significant for banking credit either.

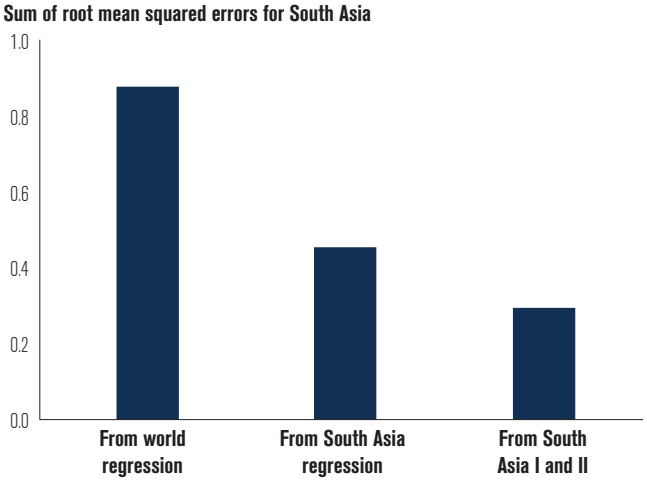
## Using nightlight for prediction

**Three methodologies have been proposed to predict GDP levels or to forecast GDP growth rates based on nightlight data.** These three methodologies, identified by a shorthand name for expositional clarity, are as follows:

- The **elasticity approach** builds on the long-term relationship between GDP levels and nightlight intensity. There can be variations of this approach in practice, depending on the assumptions that are made about the nature of the relationship. For instance, it can be assumed that the relationship is the same for all countries, or that it varies across individual countries, or across groups of countries (Henderson et al. 2012). On the basis of the estimated elasticity, this approach allows predicting GDP levels for each year. Or annualized GDP levels for each month, if monthly data on nightlight intensity is used instead.

- The **spatial approach** uses nightlight intensity to distribute aggregate GDP across states, provinces or districts. To take into account the weak relationship between nightlight intensity and economic activity in the agricultural sector, this second approach first splits aggregate GDP by sectors. Agricultural GDP is allocated to subnational levels based on the distribution of the rural population, whereas non-agricultural GDP is allocated based on the distribution of nightlight intensity (Ghosh et al. 2010b; Bundervoet et al. 2015). Adding up the estimates for the agricultural and non-agricultural sectors, this approach yields predictions of GDP with a potentially high level of spatial granularity.

## Figure 41: Allowing for differences across countries increases precision.




| | World ln(GDP) | South Asia ln(GDP) | South Asia I ln(GDP) | South Asia II ln(GDP) |
|---|---|---|---|---|
| ln(lights/area) | 0.267*** (0.0303) | 0.273*** (0.0481) | 0.169* (0.0611) | 0.350*** (0.0110) |
| Observations | 3,966 | 178 | 78 | 100 |
| Countries | 187 | 8 | 4 | 4 |
| (within country) $R^2$ | 0.788 | 0.976 | 0.987 | 0.994 |

Note: South Asia I includes Afghanistan, Bangladesh, India and Maldives. South Asia II includes of Bhutan, Nepal, Pakistan, and Sri Lanka. All regressions expect the first are estimated from 1992 to 2016. The regression specification is the same as before. * p<0.1 and *** p<0.01.

- The **lead approach** builds on standard practice in short-term macroeconomic forecasting. A relationship is estimated between annual changes in GDP and contemporary or lagged changes in lead indicators considered informative, such as the industrial production index, or the Purchasing Manufacturers Index. The estimated relationship is used to predict changes in GDP when information on the lead indicators becomes available (Armstrong 2001). In this approach nightlight intensity is simply treated as one more lead indicator. This third approach is especially suited for improving short-term macroeconomic analysis.

**A series of relatively simple empirical exercises allows assessing the performance of these three methodological approaches.** By the same token, these exercises show the potential of data on nightlight intensity to yield new economic insights.

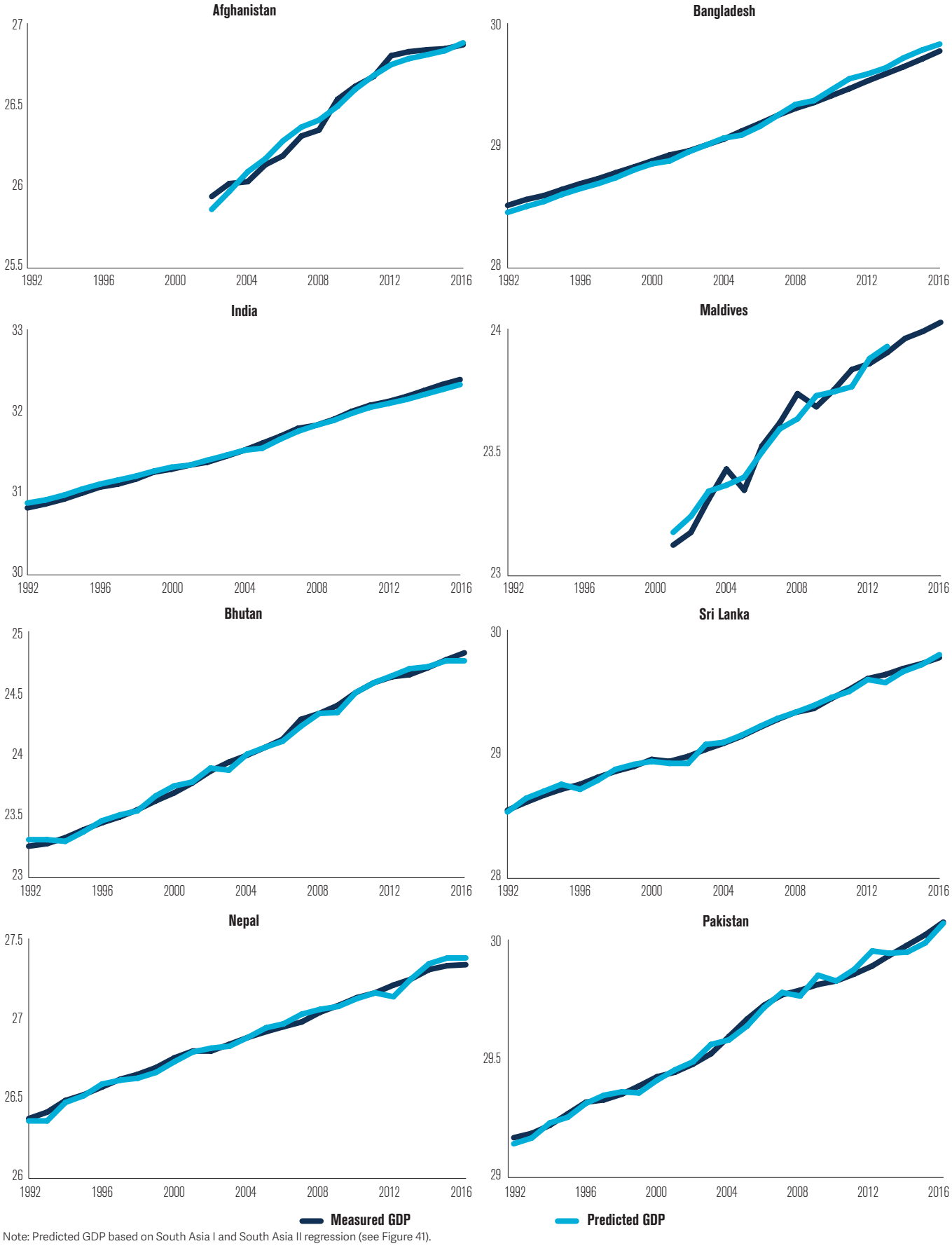
**When using the elasticity approach, allowing for differences across groups of countries increases precision in the estimation of national-level GDP.** Predicting economic activity in South Asia based on a naïve world-level analysis that treats all countries alike results in rather large errors. In India, for example, GDP predicted using this naïve approach increasingly lags behind the observed GDP. Predicting GDP based on a relationship estimated only for South Asian countries results in a much better fit. But even then, there are periods in which predicted and actual GDP show considerable deviation, at least in some countries. Visual inspection of the data reveals that South Asian countries can be sorted into two groups displaying clearly different relationships between GDP levels and nightlight intensity. Estimating the relationship allowing for this difference yields predicted levels of GDP that track National Accounts GDP very closely.

**When using the spatial approach, nightlight intensity predicts GDP at subnational levels relatively well.** The performance of the spatial approach can be assessed for India, where data on economic activity at subnational levels is available. The number of observations that can be used for this assessment is maximized when using GDP data at the state level for FY2014, and at the district level for FY2005. Applying the spatial approach, the correlation between predicted and actual GDP at the state level is 0.85. And it only falls to 0.83 at the district level.

**The relatively good performance of the spatial approach in India's case gives some confidence that it can be applied to countries without subnational GDP estimates.** The same procedure is followed in each of the countries in South Asia, at the level of the district or its equivalent. The only information needed to do this is the breakdown of GDP between agricultural and non-agricultural sectors, the distribution of the rural population by district, and an estimate of nightlight intensity also by district. To facilitate comparisons across space, predicted GDP at subnational levels is measured in per capita terms, with population figures at the district level coming from population censuses. It appears that all South Asian capitals, including Kabul, are in the highest bracket of GDP per capita. Economic centers like Karachi and Chittagong are clearly recognizable and belong to the highest income districts as well. In Sri Lanka, coastal districts appear richer than others, which can be expected in the West but is surprising in the East and North. In India, richer districts are geographically scattered, but most prominent in the Northwest.

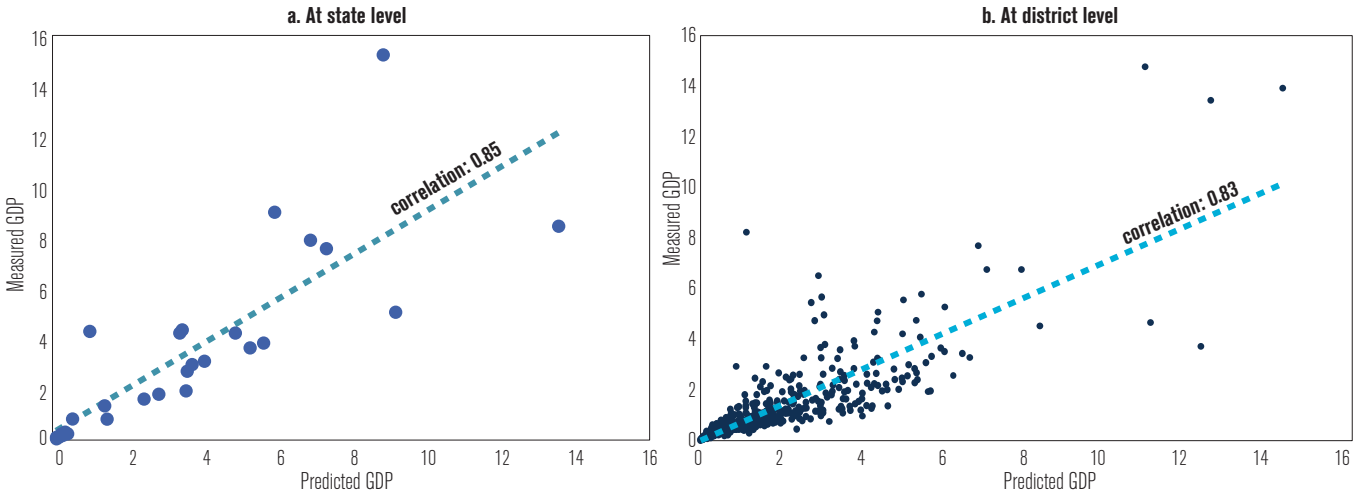
**Nightlight intensity alone is a poor lead indicator for quarterly GDP growth.** Since monthly nightlight data is publicly available only since April 2012, the performance of the lead forecast approach can only be assessed over the last five years or so. And it can only be assessed in the cases of India and Sri Lanka, as these are the only two countries in the region that produce quarterly GDP estimates. A first step, for these two countries, is to compare the correlation coefficients between quarterly GDP and various defensible lead indicators, including nightlight intensity. Some indicators have a high and significant correlation, especially

## Figure 42: GDP predicted based on the elasticity approach closely tracks measured GDP.

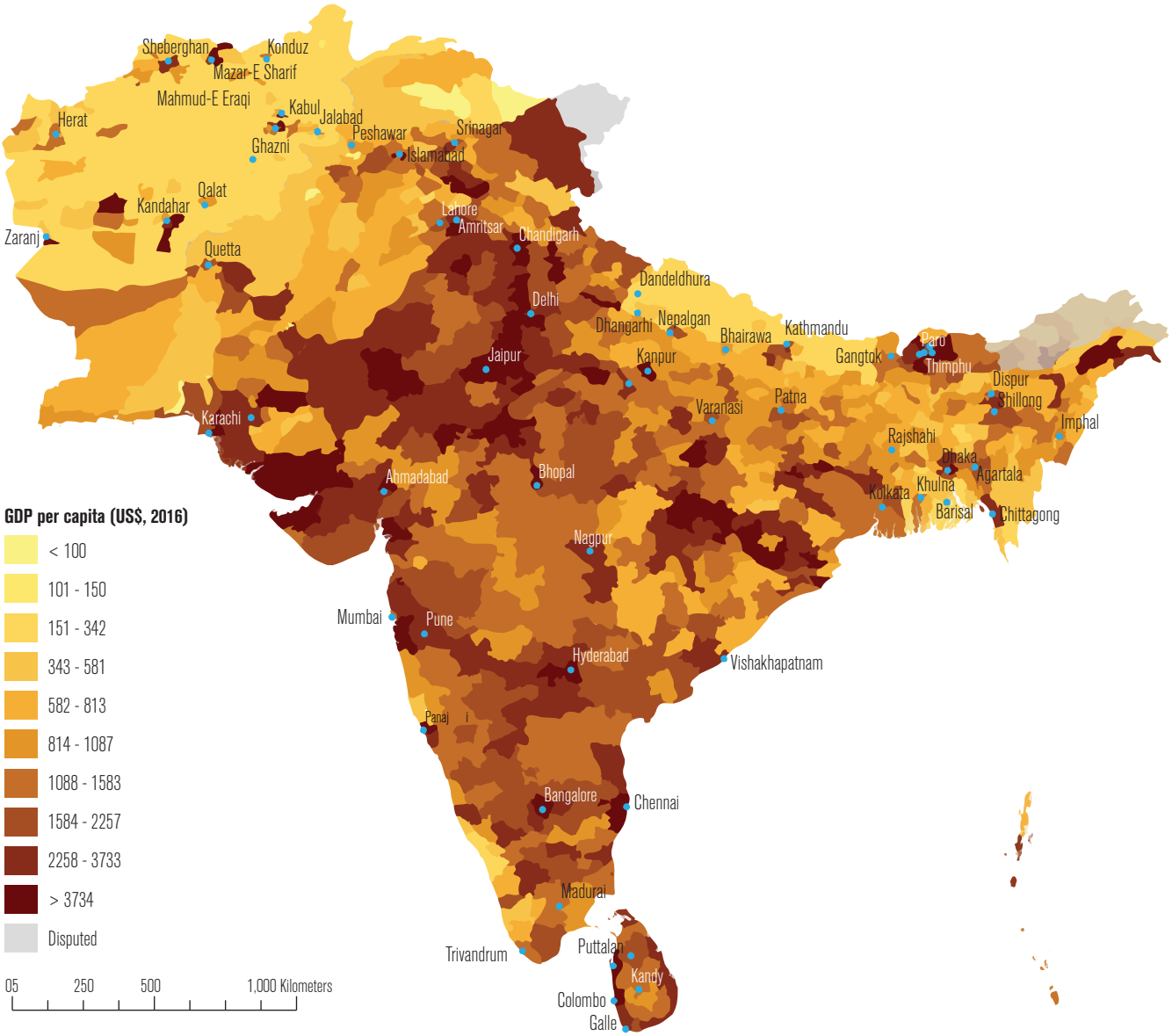



Note: Predicted GDP based on South Asia I and South Asia II regression (see Figure 41).

## Figure 43: In India, nightlight intensity predicts subnational GDP relatively well.




## Figure 44: The spatial approach yields a granular picture of GDP per capita in South Asia.




Note: The boundaries, colors, denominations and any other information shown on this map do not imply, on the part of the World Bank Group, any judgment on the legal status of any territory, or any endorsement or acceptance of such boundaries.
Source: WDI, South Asia Spatial Database (Li et al. 2015), DMSP-OLS, VIIRS, and World Bank staff calculations.

## Table 5: Nightlight intensity is a poor lead indicator for quarterly GDP growth.

| Indicator | Correlation with GDP | | |
|---|---|---|---|
| | Observations | Contemporaneous | Lead |
| Manufacturing production | 51 | 0.71*** | 0.56*** |
| Industrial production | 135 | 0.49*** | 0.43*** |
| Exports | 129 | 0.35*** | 0.30*** |
| Business Confidence | 39 | 0.32*** | 0.30** |
| Banking credit | 97 | 0.32*** | 0.12 |
| Stock market index | 111 | 0.39* | 0.43* |
| Services PMI | 33 | 0.04 | -0.05 |
| Manufacturing PMI | 32 | 0.07 | -0.05 |
| Nightlight intensity | 36 | -0.23 | -0.03 |

Note: All indicators are in growth rates; for Business Confidence and Service and Manufacturing Purchasing Managers' Index we also tested levels and demeaned levels. For the first two the relationship is not significant, for the latter the relationship remains significant but weaker then for growth.
Source: All other data retrieved from Trading Economics.

## Table 6: The lead indicator approach helps improve GDP growth forecasts.

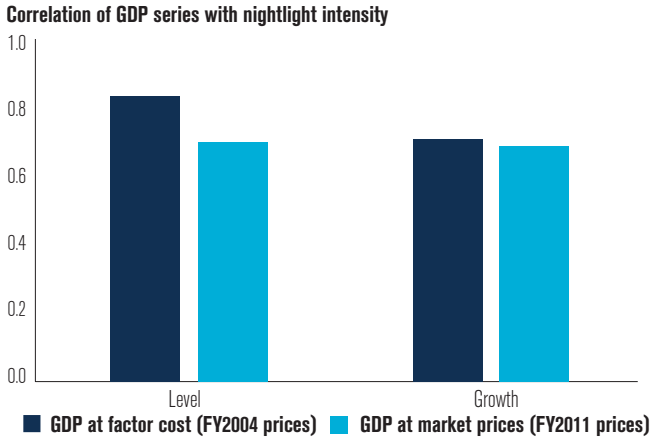
| Forecast Evaluation | | India | | Sri Lanka | |
|---|---|---|---|---|---|
| | | RMSE | MAE | RMSE | MAE |
| Simple benchmarks | | | | | |
| naïve | $\Delta GDP_{(t-1)}$ | 1.0 | 0.9 | 1.8 | 1.6 |
| AR(1) | $\alpha GDP_{(t-1)}$ | 2.0 | 1.7 | 3.0 | 2.8 |
| Single-variable models | | | | | |
| (1) | $X_t$ = Industrial production | 1.9 | 1.7 | 1.5 | 1.4 |
| (2) | $X_t$ = Manufacturing production | 2.7 | 2.5 | | |
| (3) | $X_t$ = Night lights growth | 1.5 | 1.1 | 2.4 | 2.1 |
| (4) | $X_t$ = Export growth | 2.2 | 1.9 | 2.9 | 2.6 |
| (5) | $X_t$ = Loan growth | 0.7 | 0.5 | 6.8 | 6.0 |
| (6) | $X_t$ = PMI | 1.1 | 0.9 | | |
| (7) | $X_t$ = Business confidence | 1.4 | 1.0 | | |
| Two-variable models | | | | | |
| (8) | $X_t$ = Loan growth, industrial production | 0.7 | 0.5 | | |
| (9) | $X_t$ = Loan growth, manufacturing production | 0.7 | 0.5 | | |
| (10) | $X_t$ = Loan growth, nightlight growth | 0.6 | 0.4 | | |
| (11) | $X_t$ = Loan growth, export growth | 1.7 | 1.6 | | |
| (12) | $X_t$ = Loan growth, PMI | 1.5 | 1.2 | | |
| (13) | $X_t$ = Loan growth, business confidence | 1.5 | 1.1 | | |
| (14) | $X_t$ = Industrial production, nightlight growth | | | 1.5 | 1.3 |
| (15) | $X_t$ = Industrial production, export growth | | | 2.3 | 1.9 |
| (16) | $X_t$ = Industrial production, loan growth | | | 6.9 | 6.4 |

Estimation Period: 2013Q2-2015Q4
Evaluation Period: 2016Q1-2017Q2
Forecasting Model: $\Delta GDP_t = \alpha \Delta GDP_{t-1} + \beta X_t + \varepsilon_t$
Note: RMSE = root mean squared error, MAE = mean absolute error.
Source: All other data retrieved from Trading Economics and World Bank staff calculations.

manufacturing and industrial production. Nightlight intensity, however, is not correlated over the whole sample period. While for India it is highly and significantly correlated over some periods, it never is for Sri Lanka.

**However, in combination with other lead indicators nightlight intensity helps improve the precision of GDP growth forecasts.** The lead indicators that individually forecast quarterly GDP growth the best, are banking credit in India and industrial production in Sri Lanka. A simple model combining each of these two lead indicators with nightlight intensity outperforms all other models combining these indicators with another. This model also does better than the naïve model based on GDP growth in the previous

Figure 45: In India both the old and the new GDP series are highly correlated with nightlight intensity.




Note: the correlations have been calculated using quarterly GDP data from the first quarter of FY 2011 to the second quarter of FY 2014. GDP at Factor Cost (FY2004) refers to the old GDP series, whereas GDP at market prices refers to the new GDP series.

quarter. In India, the model with banking credit and nightlight intensity has a 40 percent lower root mean squared error (RSME) over the forecast horizon than the naïve model. In Sri Lanka, the model with industrial production and nightlight intensity beats the naïve model by 15 percent.

# Shedding light on recent economic episodes

**Changes in nightlight intensity provide valuable insights on recent economic episodes whose assessment has so far been blurred by the lack of data.** In recent years, South Asian countries have experienced relatively large shocks and innovations whose consequences are not fully understood yet:

- In 2015 India and Sri Lanka introduced **statistical revisions** that substantially changed the narrative about economic growth. Changes in the National Accounts methodology made a substantial difference in the reported GDP levels, generating debate on whether the old or the new series is closer to reality.

- Also in 2015, Nepal suffered two major **economic shocks**: a series of earthquakes, followed within months by a massive disruption of trade with India. Official statistics suggest that economic activity was severely affected. But the statistical system of Nepal is relatively weak, which raises questions about the real magnitude of the economic slowdown.

- In the same year, Afghanistan saw one of the most violent **conflict outbreaks** since the fall of the Taliban, the Battle of Kunduz. But this was by no means the only conflict episode experienced by the country. It is reasonable to assume that conflict affects economic activity, but there is not much evidence to determine by how much.

- Finally, in 2016 India went through demonetization, a **policy intervention** that withdrew large amounts of currency from the economy. While this intervention has potential benefits in the medium term, in the short term it might have affected economic activity. But it is difficult to tell what the short-term impact was, or how it was distributed across population groups.

## Statistical revisions

In India and Sri Lanka GDP figures estimated based on both the old and the new methodologies overlap for quite some time. In India, data on quarterly GDP at market prices with base year FY2011 is available since the first quarter of FY2011, whereas quarterly GDP estimates at factor cost with base year FY2004 were only discontinued in the second quarter of 2014. Thus, the two series overlap for 14 quarters. In Sri Lanka, quarterly GDP at market prices with base year 2010 is available since the first quarter of 2010, whereas quarterly GDP at market prices with base year 2002 was still released until the last quarter of 2015. In this case, the two series overlap for 24 quarters.

The correlation between the old and new GDP series while they overlap allows assessing whether the two series tell a similar story. This type of analysis has been conducted in numerous opportunities. The innovation is to analyze the correlation between each of the two series and data on nightlight intensity. This exercise can help determine which of the two series captures economic activity better.

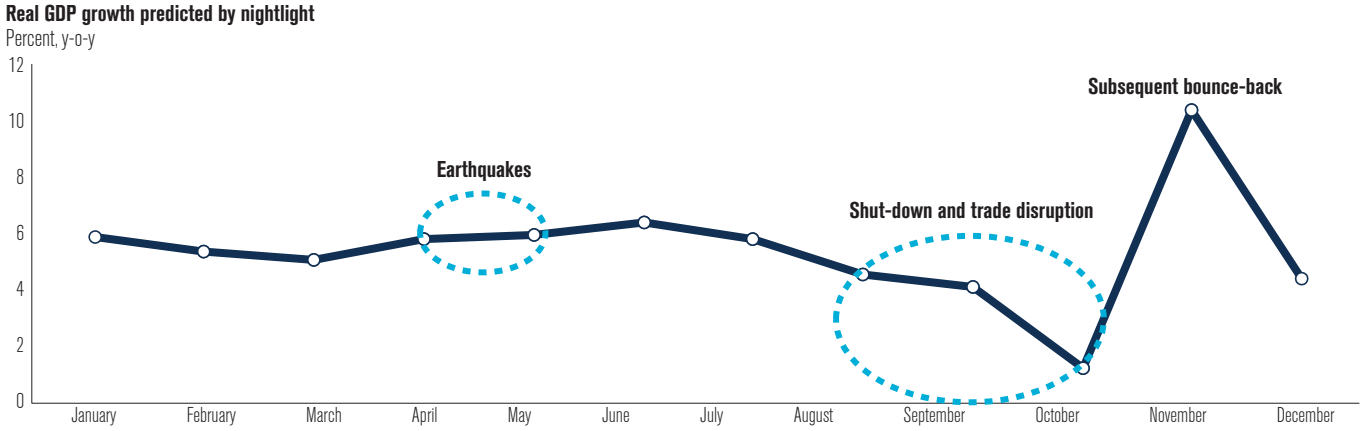
In the case of Sri Lanka, the exercise is unfortunately inconclusive. The correlation coefficient between the two quarterly GDP series is only 0.15, confirming that they tell very different stories. Moreover, none of the two quarterly GDP series is positively correlated with quarterly nightlight intensity.

In India, on the other hand, the old and the new quarterly GDP series are highly correlated, and they do a good job at tracking economic activity as measured by nightlight. If anything, the correlation coefficient with nightlight intensity is slightly higher for the old series, both when considering variables in levels or their changes. But the difference with the correlation coefficients obtained with the new series is not statistically significant. Importantly, the correlation coefficients between GDP series and nightlight intensity are high in absolute terms (in the order of 0.7 to 0.8), suggesting that India's National Accounts provide a relatively accurate picture of economic activity on the ground.

## Economic shocks

With two major earthquakes in April and May, and a severe disruption of trade with India from August onwards, the

Figure 46: Trade disruption had a much larger impact on economic activity than the earthquakes.



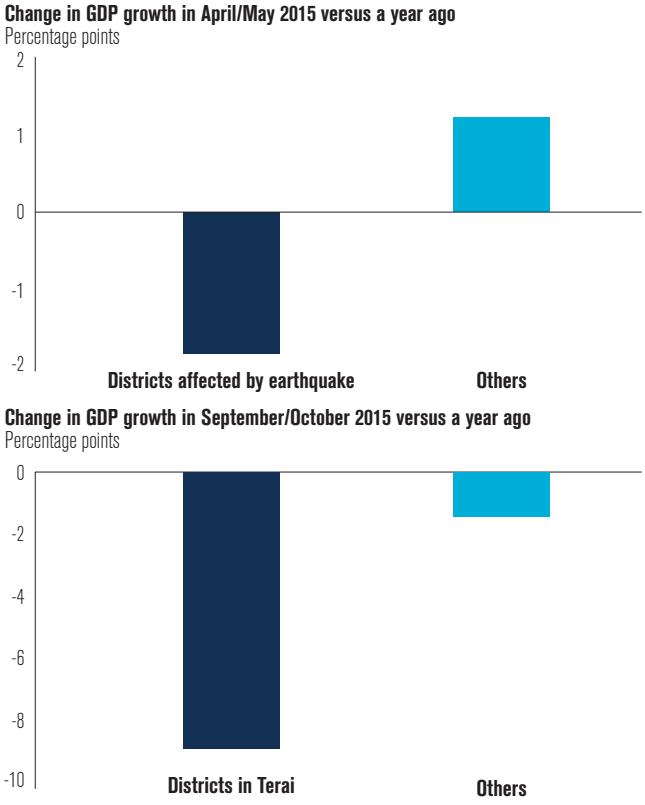

year 2015 was no doubt Nepal's most turbulent since the end of its armed conflict. The two earthquakes killed about 9,000 people, injured at least twice as many, and destroyed uncountable houses and buildings. Later in the year, dissatisfaction among the Madhesi minority about their representation under the new federal arrangements triggered protests that culminated in the complete shutdown of international trade with India. Official statistics put GDP growth for fiscal year 2015 - which started in July 2014 and covers the earthquake - at 3.3 percent and for fiscal year 2016 covering the trade disruption at 0.4 percent.

Based on monthly nightlight data, the economic impact of the 2015 shocks was smaller than official statistics suggest. The earthquakes affected most severely rural areas that were characterized by low nightlight intensity even in good times. The fact that these areas were mostly in the dark suggests that even if local impacts were large in relative terms, they may not have made a major difference at the aggregate level. The impact of the trade disruption, on the other hand, was massive. Based on the elasticity approach, from June to October 2015 the GDP growth rate of Nepal declined by 4 percentage points. But economic activity bounced back strongly in November, and over the full year the GDP growth rate might have declined by less than 2 percentage points.

The shocks had a more substantial impact at the local level. This can be seen by using the spatial approach to estimate GDP by district, and then comparing the performance of districts directly affected by the shocks to that of unaffected districts. However, instead of spatially distributing the official annual GDP, the methodology is applied to the monthly GDP estimated using the elasticity approach. This way of proceeding allows to assess local economic activity on a monthly basis.

In comparing growth rates at the district level, it is important to keep in mind that the locations most affected by the earthquakes, or most affected by the trade disruptions,

Figure 47: The GDP impacts of the shocks were substantial at the local level.

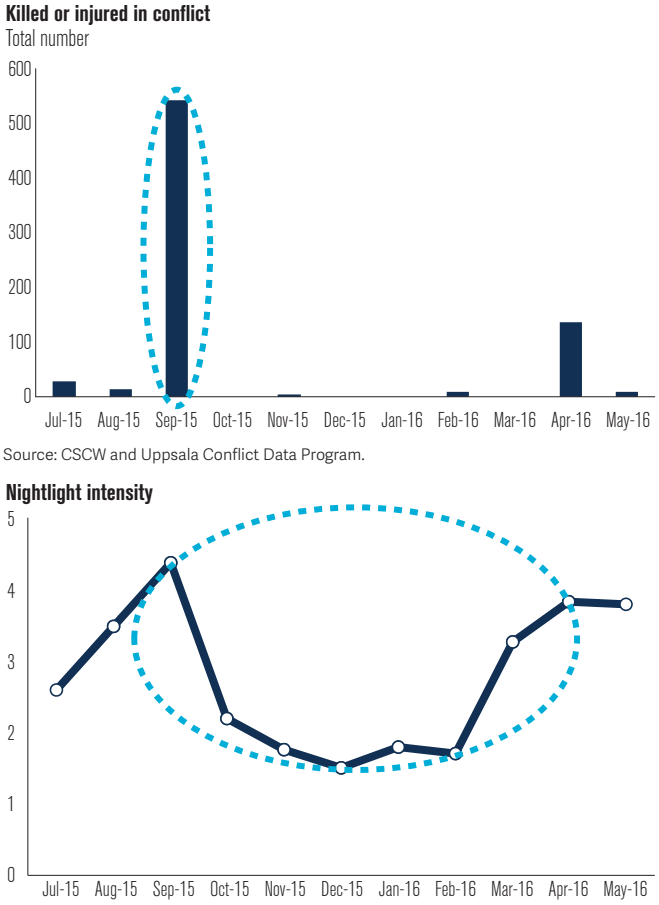



Note: Monthly predicted GDP is distributed across districts according to the spatial approach. The rates reported are the median growth rates among districts.

could be systematically different from other locations. As a result, they could grow at a different pace even in normal times. To address this possible bias, a "differences-in-differences" approach can be used.

The first difference is between the annual growth rate of local GDP in the two months following the shock and the annual growth rate in the same two months of the previous year. The two months considered are April and May in the

**Figure 48: The deadly attack on Kunduz had a lasting impact on nightlight intensity.**




Source: CSCW and Uppsala Conflict Data Program.

case of the earthquakes, and September and October for the trade disruptions. Growth rates are computed relative to the same two months one year earlier. This first difference can be called a growth shock, for brevity. The second difference is between the growth shocks experienced by affected and unaffected districts. The median growth shock across districts in each group is used for the comparison.

Based on this exercise, in April and May 2015 districts affected by the earthquakes experienced a decline in their local GDP by 1.8 percentage points, while unaffected districts grew slightly faster than before. And in September and October 2015, districts in the Terai region closer to India contracted by 9.0 percentage points, whereas the rest of the country saw GDP growth decline by a more modest 1.4 percentage points. These results confirm, once again, that the impact of the trade disruption was much more severe than that of the earthquakes.

## Conflict outbreaks

On September 28, 2015, after a battle that had lasted for several months, the Taliban overran the Afghan military forces and took control of the city of Kunduz. During September alone, more than 500 people were killed or injured. The city was recaptured by government forces in a counter-offensive on October 1, but three days later the Taliban claimed to have regained control of most of it. Heavy fighting continued for several days before the Taliban finally withdrew on October 13. Nightlight data reveals that the battle for Kunduz had a strong and long-lasting effect on economic activity. Nightlight intensity declined strongly in October and remained low until March 2016.

A more systematic analysis of the impact of conflict on economic activity can be conducted combining nightlight data with conflict data at the district level. The number of casualties scaled by the local population provides a defensible measure of the local intensity of conflict. In parallel, the elasticity approach can be used to predict GDP at the district level, based on local nightlight intensity. With this information, it is possible to estimate whether surges in local conflict affect local GDP in the same month, quarter or year. The results suggest that one more dead or injured per 1000 people reduces local GDP growth by 9 percentage points in the same month. While the impact of conflict is not statistically significant over a one-year period, it is still sizeable and significant when the reference period is the quarter.

## Policy interventions

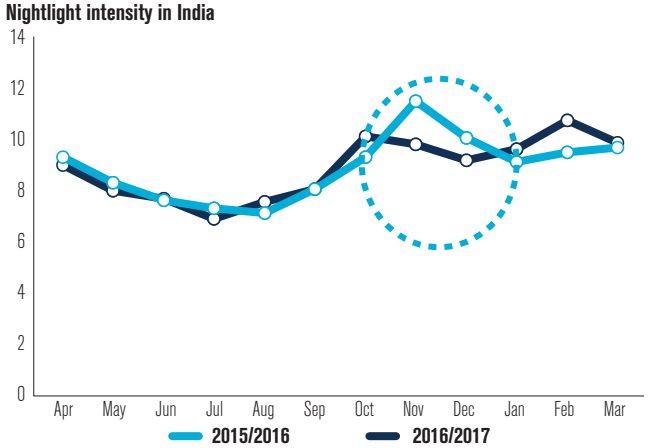
In early November 2016, all 500 and 1,000 rupee banknotes were declared invalid in India. During several months, liquidity was severely constrained. Demonetization, as it came to be known, aimed at curbing corruption and encouraging the use of electronic payments. There is clear agreement that it will take time to assess the extent to which these benefits materialized. But there is considerable

**Table 7: Across districts, conflict reduces GDP growth for up to a quarter.**

| | 2005-2016 | | | 2014-2016 | | | | |
|---|---|---|---|---|---|---|---|---|
| | Annual GDP growth | Annual GDP growth | Annual GDP growth | Annual GDP growth | Quarterly GDP growth | Quarterly GDP growth | Monthly GDP growth | Monthly GDP growth |
| Killed and injured (per 1000) | -1.194 (2.343) | -2.009 (3.025) | -1.306 (1.280) | 0.986 (2.141) | -6.940** (2.370) | -5.541** (2.572) | -9.291** (3.309) | -8.675** (3.309) |
| District and year FE | no | yes | no | yes | no | yes | no | yes |

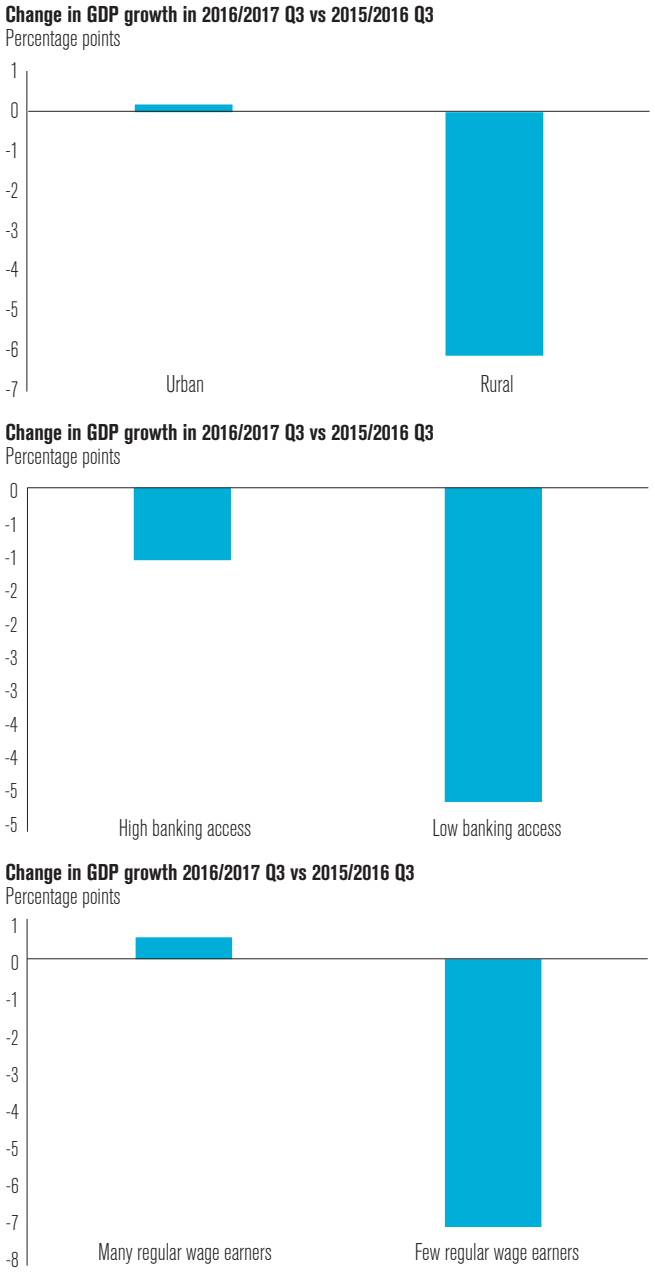
Note: The regression is estimated for Afghan districts. GDP is predicted using night lights as described above. The number of injured and killed is from the CSCW and Uppsala Conflict Data Program.

## Figure 49: The negative impact of demonetization was short-lived at the aggregate level.




Note: In a previous version of this report, we erroneously named 2016/2017 FY2016 and 2016/2015 FY2015.

## Figure 50: The performance of more informal districts was temporarily worse after demonetization.




Note: Quarterly GDP is distributed across districts according to the spatial approach outlined above. The rates reported are the median growth rates among districts. The socio-economic variables are from the South Asia Spatial Database (Li et al. 2015).
In a previous version of this report, we erroneously named 2016/2017 FY2016 and 2016/2015 FY2015.

disagreement on how large the short-term cost of demonetization was, and which population groups were most affected. The shortage of relevant data partly explains why these issues are still being so lively debated. Nightlight data provides interesting insights in this respect.

At the aggregate level, a comparison of nightlight intensity in FY2015 and FY2016 suggests that demonetization had a small and short-lived effect on economic activity in India. There is a dip in nightlight intensity, but it only lasts for about two months.

On the other hand, the local impact was large in more informal districts, where cash must have played a more important role in supporting transactions. Identifying informal areas is not straightforward, but it seems safe to assume that informality is higher in rural districts, in districts with low access to finance, and in those where regular wage workers account for a lower share of total employment. The spatial approach is used to estimate quarterly GDP at the district level, based on local nightlight intensity and rural population. Local GDP levels are then used to compute local growth rates, and to assess how they were affected by demonetization.

In India's case there is evidence that poorer states grow more slowly, and these poorer states may also be characterized by higher levels of informality. If so, just comparing growth rates across formal and informal districts would overestimate the impact of demonetization. To address this possible bias, much the same as in Nepal's case, a "differences-in-differences" approach can be used. The first difference is between the local GDP growth rate in the third quarter of FY2017 and in the previous year (considering the average growth rate of the three previous years instead did not change the results). As before, this first difference represents a growth shock. The second difference is between the growth shocks experienced by more and less informal districts.

The results suggest that more informal districts performed worse. The difference in local growth relative to a normal year was very small in urban districts, as well as in those with greater access to finance and with more prevalent regular wage employment. On the other hand, more informal districts experienced drops in local GDP in the range of 4.7 to 7.3 percentage points. These shocks were temporary, so that their impact on the annual GDP of the affected localities was probably modest. But in the short term the local impact was sizeable.

# Toward stronger statistical systems

**Data on nightlight intensity, and big data more generally, have the potential to improve substantially the measurement and understanding of economic developments.** Nightlight data captures informal economic activity, it is available at high levels of spatial disaggregation, it can be obtained in almost real time, it is relatively cheap to acquire, and it is not subject to politically-motivated interference. The same can be said of other forms of big data, from land classification to cell phone traffic, and from administrative databases to internet scraping. New technologies provide the opportunity for a qualitative jump in the amount and type of data that can be processed. Integrating "old" and "new" sources, as was done in the analyses above, provides new insights, and could support a greater emphasis on evidence-based decision making. This is an especially promising prospect in developing countries, where capturing the informal sector is very challenging.

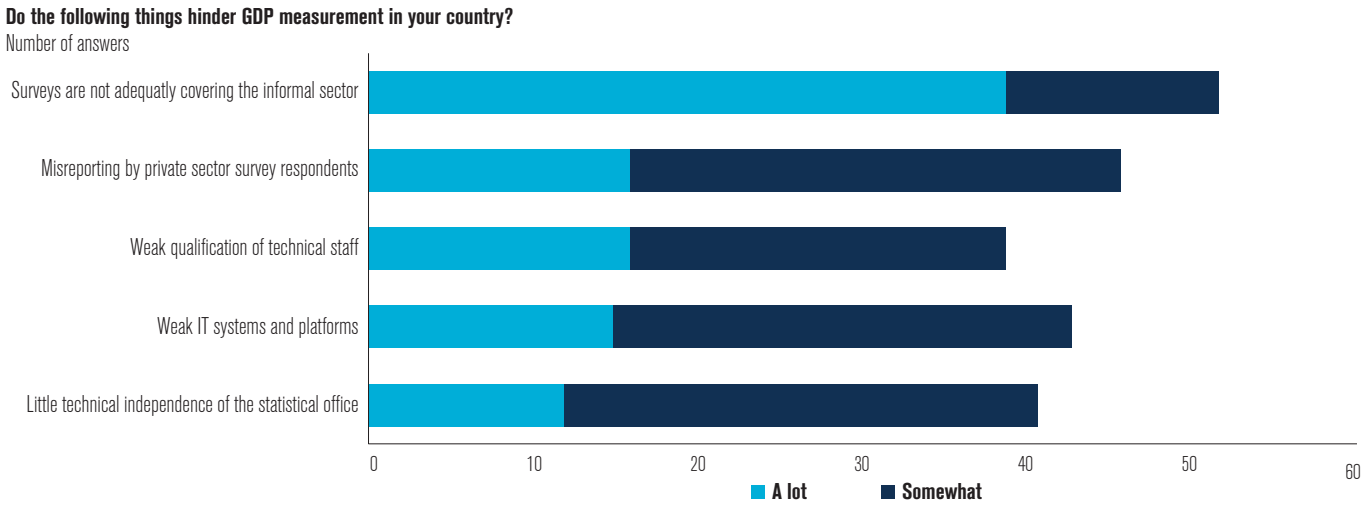
**However, the "data revolution" under way requires more than just a good grasp of technology: it is, above all, an institutional reform agenda.** Statistical agencies are a much more central part of the service delivery machinery than is generally acknowledged. The availability of high-quality data, which can be easily accessed without impinging on privacy or breaching confidentiality, is an extremely valuable public good. Tech-savvy private sector players are an important part of the data architecture of a country. They help push the frontier with their innovations, and develop new products for subsets of customers who can afford them. But the provision of reliable high-quality data as a public good is likely to remain with statistical agencies for the foreseeable future. The "data revolution" requires their institutional and technological upgrading, so that they can play this role effectively.

**There is a long tradition of economic measurement based on censuses and surveys, and South Asian economists and statisticians were at the forefront of this approach.** As of late, efforts to modernize statistical systems have mostly emphasized a deepening of this model: more frequent surveys, standardized definition of variables, piloting of new questionnaires, capture of responses through tablets rather than paper questionnaires… There has generally been less emphasis on other potential upgrades, including the systematic geo-referencing of data, or the linking of government databases. It is as if new rooms were being piled up on top of an old building to accommodate new functions, rather than a new modern building being designed with its updated functions as the organizing principle.

**Researchers and practitioners in South Asia are well aware of the challenges faced by statistical agencies in their countries.** In a survey conducted for this report, views were sought on the obstacles GDP measurement faced in their country. The inadequacy of survey instruments to capture the formal sector was seen as the most important challenge, closely followed by misreporting by survey respondents in the formal sector. Technological challenges were mentioned, but they did not come at the top of the list. Constraints which are more institutional in nature, such as the poor qualification of technical staff and the limited independence of their offices, were also seen as key obstacles. These responses suggest that an integrated response is needed to make statistical measurement more credible, and that technology is not the silver bullet that will solve all problems.

**In developing countries, the upgrading of statistical agencies has often been approached in an**

Figure 51: GDP measurement faces challenges that can be overcome.




Source: World Bank South Asia Economic Policy Network.

## South Asians were pioneers in economic measurement

From the 1960s to the 1980s, distinguished economist and statisticians from the region were at the forefront of statistical development and the adoption of new metrics. Instruments and indicators which are widely used by now are connected to South Asia to a much greater extent than is generally recognized. Indeed, the priority given these days to the fight against poverty and the improvement of living standards more broadly could be easily taken for granted. But it was not always this way. A few South Asians were instrumental in articulating this agenda, and developing the measurement tools needed to make it operational.

Mahbub ul Haq (1934-1988) was a Pakistani economist. He studied at Cambridge University – where he developed a lifelong friendship with Indian economist Amartya Sen, a Nobel-Prize winner – and subsequently at Yale and Harvard Universities. In the 1960s, while still in his 20s, he became the Chief economist of Pakistan. He had a keen interest in the distribution of income and wealth, conducting research on how two dozen family groups had come to dominate Pakistan's economy.

In the 1970s, ul Haq served as the chief economic adviser to Robert McNamara, the President of the World Bank. There he influenced the World Bank's development philosophy for several decades to come. Ul Haq helped convince McNamara that development should focus on raising living standards and that poverty alleviation could be a cause, rather than a consequence, of economic development. This view was embraced by McNamara in his watershed "Nairobi address", in 1973.

In 1988, after having served as Finance Minister of Pakistan, ul Haq worked with the United Nations Development Program, where he led the establishment of the Human Development Report. In the process, he articulated the now-popular Human Development Index (HDI), a measure of economic and social development that combines monetary and non-monetary dimensions of wellbeing. The HDI is arguably the precursor of modern Multidimensional Poverty Indices.

Prasandra Chandra Mahalanobis (1893-1972) was an Indian scientist and statistician. Born in what is nowadays Bangladesh, he did his undergraduate courses in Calcutta and then studied at the University of London. In 1932, together with two other university professors, he created the Indian Statistical Institute (ISI), registered as a non-profit learned society. After India's independence, ISI was declared as an institute of national importance, with the rank of a university.

At ISI, Mahalanobis conducted pioneering studies in anthropometry, examining the role of caste in stunting. In the process he developed a new multidimensional distance metric, nowadays known as the Mahalanobis distance. But his best-known contribution was the development of the modern household survey. Mahalanobis was keen to produce a credible snapshot of living standards at the district level, and this at a time when many Indian districts did not even have a road connecting them.

In the words of Angus Deaton, another Nobel Prize-winner, India became "the motherland of household surveys". The approach developed by Mahalanobis was subsequently scaled up by the World Bank, under the Living Standards Measurement Project. It did not take long to realize that surveys of this sort could provide the basis for reliable poverty measurement. Another distinguished Indian economist who was by then working with the World Bank, Montek Singh Ahluwalia, contributed to the development of the seminal "one-dollar-a-day" metric.

In all these ways, distinguished South Asians shaped the notion that living standards could be credibly measured even in poor countries with very large informal sectors. Their approaches shaped statistical development for several decades. It can only be hoped that a new generation of South Asian economists and statisticians will play a similar role now, when new technologies and the availability of big data pave the way to revamping economic measurement.

**"extractive mode", rather than with a reform mindset.** Quite often a donor or an international organization is interested in a specific metric, a trust fund is mobilized to cover the cost, and a new survey is conducted. The Sustainable Development Goals, with their long list of policy-relevant indicators, represent an important step forward, as they implicitly benchmark the statistical systems in terms of what they are expected to deliver. But in other development areas the international community has been more ambitious. Entire programs have been designed to help developing countries liberalize international trade, unbundle infrastructure sectors, or revamp social security systems. These programs combine policy dialogue, technical assistance and sizeable financial resources under the

form of a long-term engagement. But such programs have been the exception more than the rule when it comes to statistical upgrading.

**Building trust in citizens that official statistics do not come "out of the blue" is an integral part of the development agenda, but this requires a clear strategy.** The first step is upstream, by enshrining the technical independence of statistical agencies and by clarifying their reporting lines to the rest of the government. Also upstream is the adoption of rules striking the right balance between access to information and the protection of privacy. Then comes the statistical development strategy of the country, a compact that needs to be brokered at a high level, as an integral part of the country's overall growth strategy. The next step concerns business process engineering, designing an institutional form that brings together the multiple sources of data available, including big data, in a way that ensures their alignment with the strategy. Caricaturing slightly, technology is the final step in this chain; a very important step, but not the driver of the process.

# References


Armstrong, J. S. (Ed.). (2001). Principles of Forecasting: a Handbook for Researchers and Practitioners (Vol. 30). Springer Science & Business Media.

Bhandari, L., & Roychowdhury, K. (2011). Night lights and economic activity in India: A study using DMSP-OLS night time images. Proceedings of the Asia-Pacific Advanced Network, 32, 218-236.

Bundervoet, T., Maiyo, L., & Sanghi, A. (2015). Bright Lights, Big Cities: measuring national and subnational economic growth in Africa from outer space, with an application to Kenya and Rwanda. World Bank Policy Research Working Paper 7461.

Chand, T. K., Badarinath, K. V. S., Elvidge, C. D., & Tuttle, B. T. (2009). Spatial characterization of electrical power consumption patterns over India using temporal DMSP-OLS night-time satellite data. International Journal of Remote Sensing, 30(3), 647-661.

Chanda, A. & Kabiraj, S. (2016). Local Growth and Convergence in India. Unpublished manuscript.

Deaton, Angus (1997). The Analysis of Household Surveys: A Microeconometric Approach to Development Policy. Baltimore MD: The Johns Hopkins University Press.

Doll, C. N., & Pachauri, S. (2010). Estimating rural populations without access to electricity in developing countries through night-time light satellite imagery. Energy Policy, 38(10), 5661-5670.

Ebener, S., Murray, C., Tandon, A., & Elvidge, C. C. (2005). From wealth to health: modelling the distribution of income per capita at the sub-national level using night-time light imagery. International Journal of Health Geographics, 4(1), 5.

Ellis, P., & Roberts, M. (2015). Leveraging urbanization in South Asia: Managing spatial transformation for prosperity and livability. World Bank Publications.

Elvidge, C. D., Baugh K. E., Zhizhin, M., Chi, F., & Ghosh, T. (2017). VIIRS night-time lights. International Journal of Remote Sensing, 38(21): 5860-5879.

Elvidge, C. D., Baugh, K. E., Kihn, E. A., Kroehl, H. W., & Davis, E. R. (1997). Mapping city lights with nighttime data from the DMSP Operational Linescan System. Photogrammetric Engineering and Remote Sensing, 63(6), 727-734.

Elvidge, C. D., Baugh, K. E., Zhizhin, M., & Hsu, F. C. (2013). Why VIIRS data are superior to DMSP for mapping nighttime lights. Proceedings of the Asia-Pacific Advanced Network, 35, 62-69.

Elvidge, C. D., Ziskin, D., Baugh, K. E., Tuttle, B. T., Ghosh, T., Pack, D. W., & Zhizhin, M. (2009). A fifteen-year record of global natural gas flaring derived from satellite data. Energies, 2(3), 595-622.

Galdo, V., Kitzmueller, M., & Rama, M. (2017). Using nightlights data to assess the impact of economic shocks: Nepal's earthquakes and trade blockade in 2015. Unpublished manuscript. The World Bank.

Ghosh, T., Elvidge, C., Sutton, P. C., Baugh, K. E., Powell, R., & Anderson, S. (2010b). Shedding light on the global distribution of economic activity. The Open Geography Journal. 3, 147-160.

Ghosh, T., Powell, R. L., Anderson, S., Sutton, P. C., & Elvidge, C. D. (2010a). Informal economy and remittance estimates of India using nighttime imagery. International Journal of Ecological Economics and Statistics, Volume 17, No. P10.

Gibson, J., Datt, G., Murgai, R., & Ravallion, M. (2017). For India's Rural Poor, Growing Towns Matter More than Growing Cities. World Development.

Henderson, J. V., Storeygard, A., & Weil, D. N. (2012). Measuring Economic Growth from Outer Space. American Economic Review, 102(2), 994-1028.

Li, X., Xu, H., Chen, X., & Li, C. (2013). Potential of NPP-VIIRS nighttime light imagery for modeling the regional economy of China. Remote Sensing, 5(6), 3057-3081.

Li, Y., & Galdo, V. (2017). Identifying Urban Areas Combing Data from the Ground and Outer Space: An Application to India. Unpublished manuscript. The World Bank.

Li, Y., M. Rama, V. Galdo, and M. F. Pinto (2015). "A Spatial Database for South Asia". Unpublished manuscript. The World Bank.

Ma, T., Zhou, C., Pei, T., Haynie, S., & Fan, J. (2014). Responses of Suomi-NPP VIIRS-derived nighttime lights to socioeconomic activity in China's cities. Remote Sensing Letters, 5(2), 165-174.

Mahmood, K.H., Majid, H., & Chaudhry, M.A. (2017). Quantifying economic and urban growth of Pakistan: sub-national analysis using nighttime lights data. Punjab Economic Research Institute Discussion Paper.

Min, B. (2011). Electrifying the poor: distributing power in India. Ann Arbor, 1001(1), 48109-41045.

Pandey, B., & Seto, K. C. (2015). Urbanization and agricultural land loss in India: Comparing satellite estimates with census data. Journal of environmental management, 148, 53-66.

Pandey, B., Joshi, P. K., & Seto, K. C. (2013). Monitoring urbanization dynamics in India using DMSP/OLS night time lights and SPOT-VGT data. International Journal of Applied Earth Observation and Geoinformation, 23, 49-61.

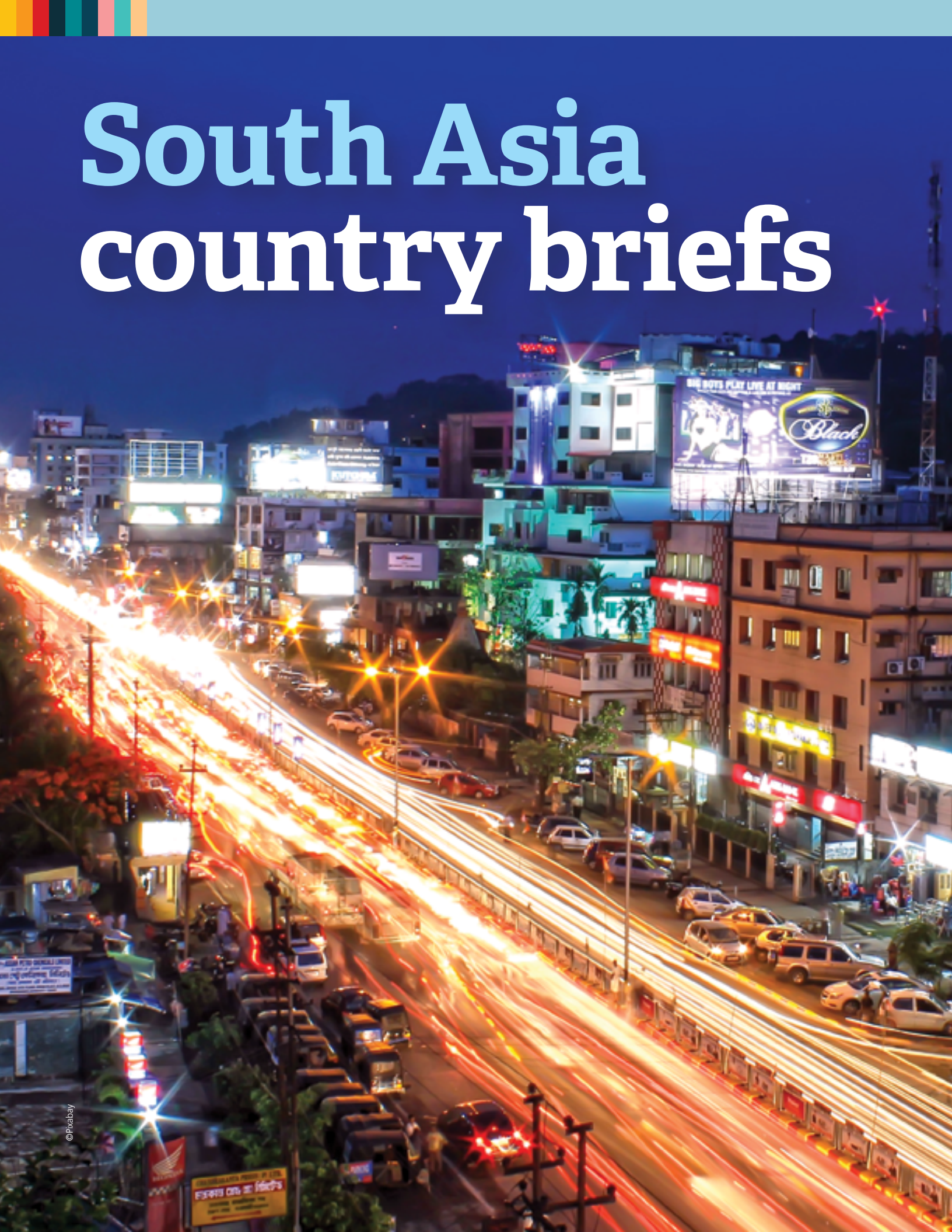
Proville, J., Zavala-Araiza, D., & Wagner, G. (2017). Night-time lights: A global, long term look at links to socio-economic trends. PloS one, 12(3), e0174610.

Sapre, A., & Sengupta, R. (2017). An analysis of revisions in Indian GDP data. IGIDR Working Paper. WP-2017-015

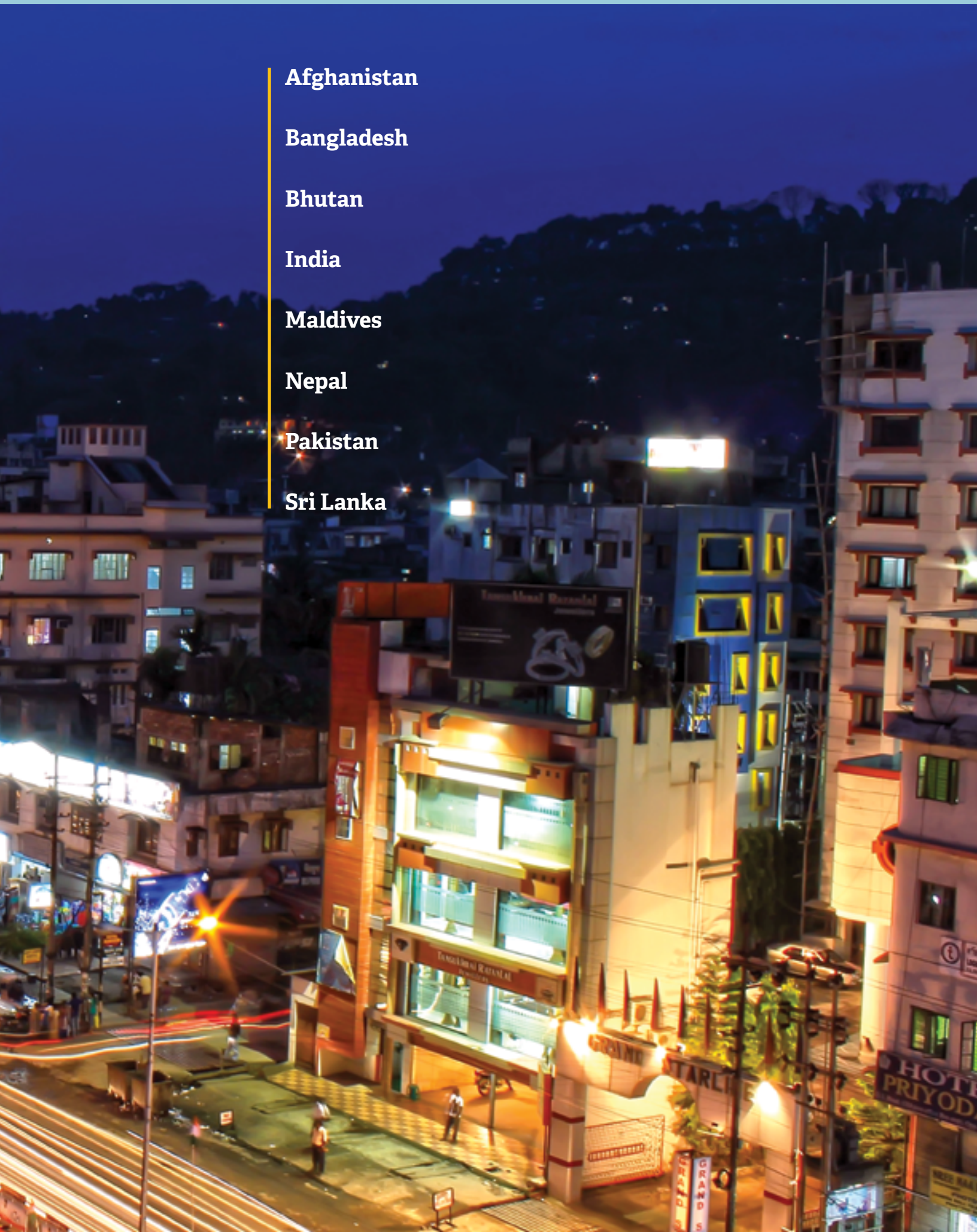
Sutton, P. C., Elvidge, C. D., & Ghosh, T. (2007). Estimation of gross domestic product at sub-national scales using nighttime satellite imagery. International Journal of Ecological Economics & Statistics, 8(S07), 5-21.

Tewari, M., & Godfrey, N. (2016). Better Cities, Better Growth: India's Urban Opportunity. Unpublished Manuscript.

# South Asia country briefs




©Pixabay



Afghanistan

Bangladesh

Bhutan

India

Maldives

Nepal

Pakistan

Sri Lanka

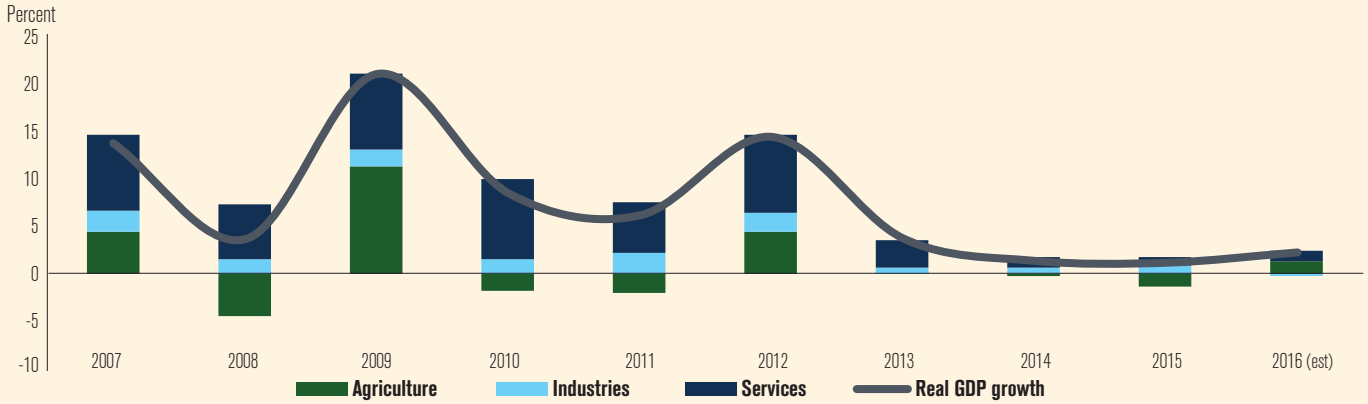
# Afghanistan

*The political and security context continues to shape Afghanistan's economic outcomes. With insecurity intensifying, the number of conflict-induced displaced persons has increased to highest levels, putting pressures on humanitarian assistance. Economic recovery from the impact of the political and security transition in 2014 has been weak, as business sentiment continued to be suppressed. Stronger revenue performance, however, has led to an improved fiscal position in the past two years.*

| | 2016 |
|---|---|
| Population, million | 33.4 |
| GDP, current US$ billion | 19.6 |
| GDP per capita, current US$ | 588 |

Source: World Bank WDI.

## Contributions to real GDP growth




Source: Central Statistics Organization and World Bank staff estimates.

## Recent developments

The security situation continues to exacerbate. Civilian casualties have reached the highest levels since 2002, with the number of conflict-induced displaced persons increasing to unprecedented levels. In 2017 alone, so far more than 202,000 Afghans have been internally displaced due to conflict. There has also been a surge in the number of returnees, leading to mounting pressures on humanitarian assistance.

Insecurity and violence took a heavy toll on private investment and consumer demand. Data approximating economic activity points toward sluggish growth in economic activity and private investment in the first half of 2017. The number of new firm registrations in the first half of the year was slightly below the level in the same period last year. While the number of new firm registrations cannot show the trend in overall private investment, particularly business fixed investments by existing firms, it is a good proxy for new investment activities and the overall sentiment of the private sector. The subdued business sentiment is confirmed by the quarterly business perception surveys undertaken by the Afghanistan Chamber of Commerce and Industries. While the survey indicates a slight improvement in business sentiment in the second quarter of 2017 over the first quarter, it remained lower than in the same quarter in previous year.

Growth is projected at 2.6 percent in 2017, only slightly higher than the 2.2 percent growth achieved in 2016. With agricultural output expected to remain constant this year, manufacturing and services are expected to be the major contributors to economic growth.

Inflation slightly rose in the first half of 2017, edging up to 5.1 percent in July up from 4.5 percent in December 2016, driven by higher food prices – particularly for fruits and vegetables.

Exports declined by 3 percent while imports increased by around 15 percent (y-o-y) in the first half of 2017. The annual trade deficit is projected at around 33 percent of GDP, which is financed by foreign aid inflows. Gross foreign exchange reserves remained unchanged at around USD 7 billion, which is equivalent to nearly 10 months of imports.

The fiscal position remained strong, with the donor grants being disbursed as planned and domestic revenues maintained around targeted levels. Revenue collection reached nearly AFN 77 billion over the first six months, which is about 10 percent higher than over the same period last year. Expenditures remained close to the level attained last year during the same period.

## Outlook

Growth is expected to moderately increase from a projected 2.6 percent in 2017 to around 3.4 percent in 2018, assuming political stability and no further deterioration in the security environment.

Inflation is projected at 6 percent toward the end of 2017, which is moderately higher than in the previous year (4.4 percent). Over the medium-term, prices are expected to remain in a moderate range.

The current account surplus is projected to shrink from 4 percent of GDP in 2017 to around 1 percent by 2019. Declining foreign aid inflows expected over the next few years will shrink the capital account surplus.

Domestic revenues are projected to reach 10.8 percent of GDP by the end of the year– only marginally higher than the 10.5 percent reached in 2016. With a predictable flow of donor grants and more prudent expenditure management, a nearly balanced fiscal budget is expected this year. Over the medium-term, domestic revenues are projected to reach 11.5 percent of GDP by 2019, while total expenditures are forecast to increase to 29.2 percent, with the remaining deficit expected to be financed by donor grants.

## Risks and challenges

Over the medium-term, fiscal space will face growing challenges. Development spending needs and security costs are expected to increase over the medium term, yet resources are likely to remain tight. A strategic allocation and efficient use of resources will remain critical.

Fiscal outcomes are highly sensitive to the modality of aid. While around USD 3.7 billion per year in development assistance was pledged by donors for the next four years, delays or shortfalls in the disbursement of pledged amounts would strain fiscal positions. To fully meet Afghanistan's development spending needs, at least 50 percent of the donor grants will need to be channeled through the budget by 2020. Currently, only 35 percent of donor grants are delivered on-budget.

The recent large influx of returnees and internally displaced persons pose serious challenges to host communities already experiencing difficult economic conditions and a deteriorating security situation, with scarce physical capital, and a job creation lagging far behind the growth of the working age population. Lack of local absorptive capacity – particularly in the absence of meaningful livelihoods, land and shelter as well as access to other basic services – could exacerbate pre-existing causes of conflict.

Long-term, sustained economic growth in Afghanistan requires a structural transformation of the economy. New sources of growth are needed to increase government revenues (currently funding less than 40 percent of total on-budget expenditures) and to generate foreign exchange needed to finance the large import bill. Increased human capital investment and improved agriculture productivity could provide significant economic growth and increase employment opportunities. Development of the extractives sector would also offer important opportunities to generate domestic revenues and foreign exchange earnings against a possible decline in aid flows in the future.

| | 2014 | 2015 | 2016 (est) | 2017 (f) | 2018 (f) | 2019 (f) |
|---|---|---|---|---|---|---|
| Real GDP growth, at constant market prices | 1.3 | 1.1 | 2.2 | 2.6 | 3.4 | 3.1 |
| Private Consumption | 3.4 | 2.5 | 1.2 | 1.5 | 1.8 | 2.0 |
| Government Consumption | 3.2 | 3.0 | 6.4 | 9.3 | 6.5 | 4.9 |
| Gross Fixed Capital Investment | -4.3 | 3.0 | 5.8 | 2.6 | 2.8 | 2.6 |
| Exports, Goods and Services | -19.7 | -2.5 | 5.0 | 7.0 | 8.0 | 8.0 |
| Imports, Goods and Services | -4.2 | 5.0 | 5.0 | 8.0 | 5.0 | 5.0 |
| Real GDP growth, at constant factor prices | 1.8 | 0.8 | 2.0 | 2.6 | 3.4 | 3.0 |
| Agriculture | -0.1 | -5.7 | 6.0 | 1.5 | 2.5 | 2.0 |
| Industry | 2.4 | 4.2 | -0.8 | 2.0 | 3.0 | 2.5 |
| Services | 2.2 | 1.6 | 1.9 | 3.3 | 3.8 | 3.7 |
| Inflation (Consumer Price Index) | 4.6 | -1.5 | 4.4 | 6.0 | 5.0 | 5.0 |
| Current Account Balance (percent of GDP) | 8.0 | 6.2 | 5.0 | 4.0 | 3.4 | 1.1 |
| Financial and Capital Account (percent of GDP) | .. | .. | .. | .. | .. | .. |
| Net Foreign Direct Investment (percent of GDP) | 0.6 | 0.9 | 0.3 | 0.2 | 0.2 | 0.2 |
| Fiscal Balance (percent of GDP) | -1.8 | -1.2 | -0.7 | -0.5 | 0.2 | -0.4 |
| Debt (percent of GDP) | 6.5 | 6.2 | 6.4 | 6.3 | 6.0 | 5.9 |
| Primary Balance (percent of GDP) | -1.7 | -1.2 | -0.6 | -0.4 | 0.3 | -0.4 |

Note: est = estimate, f = forecast.
Source: World Bank.

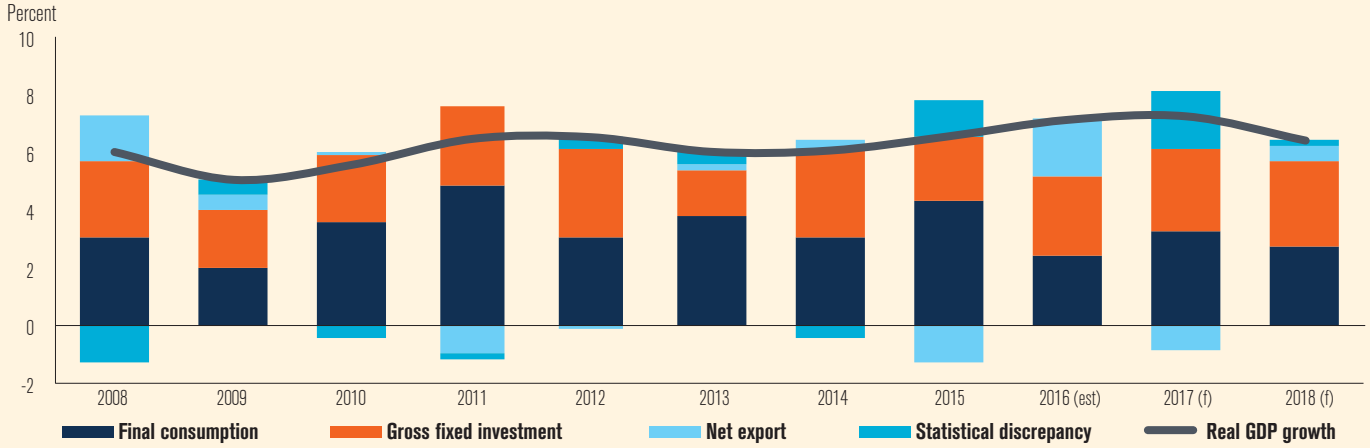
# Bangladesh

*Industrial production accelerated and services remained resilient. The current account balance turned to a large deficit as export growth weakened significantly, remittances plummeted and import payments picked up. The financial sector has remained stressed, fiscal outturns below original budget targets and monetary policy has been accommodative. Growth is predicted to remain robust at 6.4 percent in FY2018. Downside risks are associated with the upcoming elections elevating policy uncertainty and political instability.*

| | 2016 |
|---|---|
| Population, million | 162.9 |
| GDP, current US$ billion | 2,214 |
| GDP per capita, current US$ | 1,359 |

Sources: World Bank WDI.

## Contributions to real GDP growth




Source: Bangladesh Bureau of Statistics (BBS) and World Bank staff estimates.

## Recent Developments

Bangladesh sustained healthy output growth. Officially reported output growth rose to 7.2 percent in FY2017 from 7.1 percent in the preceding fiscal year, driven by both services and manufacturing growth. On the demand side, private consumption and public investment contributed, while weak exports and strong imports dragged growth. Private investment as a percentage of GDP stagnated. A large contribution of "statistical discrepancy" reveals the glaring inadequacies of expenditure accounting. FY2017 growth appears to be somewhat overestimated based on the high frequency indicators as well as undercounting of losses due to floods.

Macroeconomic stability has been maintained, though vulnerabilities have increased. At 5.4 percent in FY2017, inflation was at its lowest level in five years. Monetary growth (10.9 percent in FY2017) fell short of the estimated 12.9 percent nominal GDP growth. Large excess liquidity in the banking system led to declining deposit and lending rates, but non-performing loans remain a major concern for financial stability. Foreign exchange reserve growth has slowed with the current account balance turning from over USD 4.3 billion surplus in FY2016 to USD 1.48 billion deficit in FY2017. Consequently, the nominal Taka-US Dollar rate has depreciated in recent months. The FY2017 fiscal outturn differed markedly from the original budget, but underperformance for both revenue and spending kept the deficit near the 5 percent of GDP target. Public debt has been stable, at around 33 percent of GDP.

## Outlook

Robust economic growth will continue to drive poverty reduction. Output growth in FY2018 is expected to be around 6.4 percent, driven by industry and services. This is slower than last year since growth in FY2017 is overestimated because of undercounting of agricultural and services income losses due to floods and some of the windfalls, such as the large pay increases in the public and related sectors, that boosted services growth in FY2016 have tapered off. Exports are projected to grow faster with recovery in global trade, remittances growth to turn around as GCC economies benefit from higher oil prices, and private investments to pick up in response to lower interest rates and improvements in trade logistics infrastructure.

The macroeconomic stability will likely be challenged. Inflation is projected to increase as global commodity prices

pick up combined with an expansionary fiscal policy and supply disruptions due to natural disasters. Investment-related imports combined with low single digit export and remittance growth can be expected to keep the current account in deficit over the medium-term as well. Despite a shortfall in revenue, the fiscal deficit could be below the 5 percent budget target if expenditure adjustments beyond the usual implementation shortfall are made.

## Risks and Challenges

Downside risks are primarily domestic. The downside risks to the outlook include a revival of political unrest in the run up to elections, a protracted slowdown in key export markets (particularly the EU and US), a further weakening of remittances, and corporate governance issues in the banking system. Excess liquidity also presents a latent risk to macroeconomic stability. However, slower deposit growth resulting from negative real deposit rates combined with a pick-up in domestic credit growth could dry out excess liquidity. At the same time, export demand and remittances could surprise on the upside.

Progress notwithstanding, the country faces significant challenges in reducing poverty further and boosting shared prosperity. Moving forward, a key near-term challenge is to accelerate the reform momentum while stemming reversals as seen recently in the case of the financial sector (Banking Companies Act) and taxation (VAT Law). Given the mounting risks ahead as election gets closer, a promising policy strategy is to take advantage of the prevailing tailwinds (low international commodity prices, comfortable foreign exchange reserves) to build greater economic resilience. This means rebalancing policy towards structural reforms raising the economy's jobs potential.

Exchange rate flexibility is needed to mitigate external risks. The Bangladesh economy will continue to remain exposed to global uncertainties and external shocks. It is therefore essential that the Bangladesh Bank (BB) maintains sufficient foreign exchange reserves. Even modestly weaker than projected remittances growth, export demand, or commodity price spikes could reduce coverage considerably. This calls for the BB to continue its flexible approach to exchange rate management, actively allowing the level of the nominal rate to adjust as needed to preserve reserve buffers.

Expenditure prioritization is needed as well. The revenue projections and capital spending targets in the budget are overambitious, with the realized shortfalls for both likely to partially offset each other. There is scope to improve the credibility of the budgeting process. The public debt to GDP ratio is projected to increase but remain below 40 percent of GDP. This favorable debt outlook is sensitive to the assumption of continued revenue gains. The postponement of the 2012 VAT Law implementation means that the expected higher tax revenues from the measure will also be delayed. Additional sources of revenue and expenditure saving will be needed. The usual expenditure shortfall may not suffice to maintain fiscal prudence, particularly when rising NPLs in the state-owned banks create pressure for repeated recapitalization.

| | 2014 | 2015 | 2016 (est) | 2017 (f) | 2018 (f) | 2019 (f) |
|---|---|---|---|---|---|---|
| Real GDP growth, at constant market prices | 6.1 | 6.6 | 7.1 | 7.2 | 6.4 | 6.7 |
| Private Consumption | 4.0 | 5.8 | 3.0 | 4.7 | 4.1 | 4.9 |
| Government Consumption | 7.9 | 8.8 | 8.4 | 5.3 | 4.4 | 6.6 |
| Gross Fixed Capital Investment | 9.9 | 7.1 | 8.9 | 8.8 | 9.1 | 8.6 |
| Exports, Goods and Services | 3.2 | -2.8 | 2.2 | -0.6 | 9.8 | 7.2 |
| Imports, Goods and Services | 1.2 | 3.2 | -7.1 | 4.0 | 5.4 | 4.9 |
| Real GDP growth, at constant factor prices | 6.1 | 6.5 | 7.2 | 7.3 | 6.8 | 6.7 |
| Agriculture | 4.4 | 3.3 | 2.8 | 3.4 | 2.5 | 3.1 |
| Industry | 8.2 | 9.7 | 11.1 | 10.5 | 10.2 | 8.7 |
| Services | 5.6 | 5.8 | 6.2 | 6.5 | 6.0 | 6.5 |
| Inflation (Consumer Price Index) | 7.3 | 6.4 | 5.9 | 5.4 | 5.9 | 6.2 |
| Current Account Balance (percent of GDP) | 0.8 | 1.5 | 1.9 | -0.6 | -0.4 | 0.4 |
| Financial and Capital Account (percent of GDP) | -0.2 | 1.2 | 0.7 | 1.4 | 0.7 | -0.9 |
| Net Foreign Direct Investment ( percent of GDP) | 1.1 | 0.9 | 0.9 | 1.0 | 0.9 | 1.0 |
| Fiscal Balance (percent of GDP) | -3.6 | -3.9 | -3.8 | -5.0 | -5.4 | -5.0 |
| Debt (percent of GDP) | 31.9 | 31.5 | 31.2 | 32.5 | 35.7 | 37.6 |
| Primary Balance (percent of GDP) | -1.5 | -2.1 | -1.9 | -3.2 | -3.4 | -2.7 |

Note: est = estimate, f = forecast.
Source: World Bank.

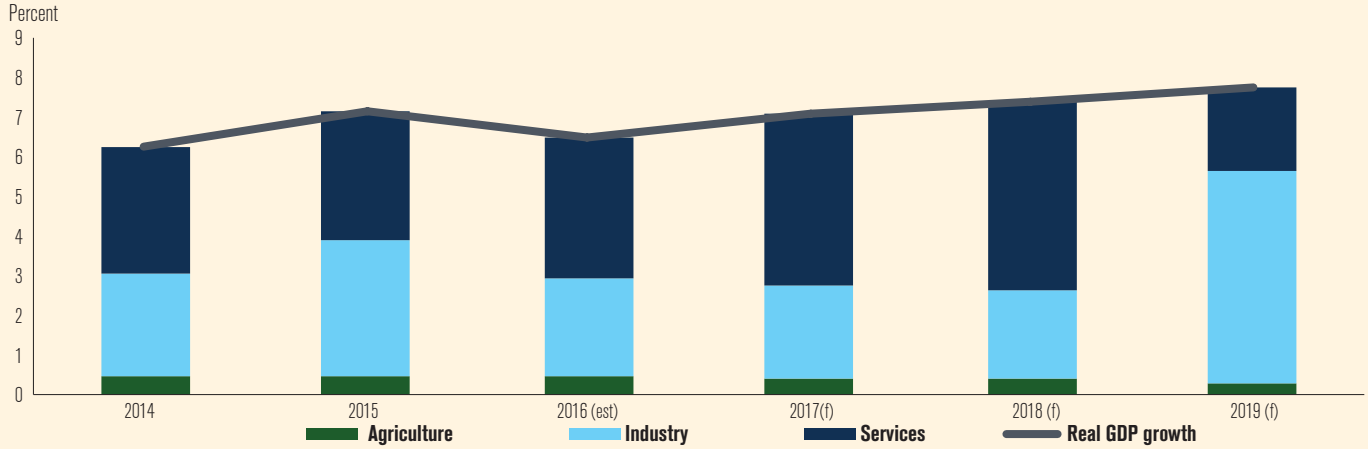
# Bhutan

*Bhutan maintained solid growth and macroeconomic stability in the second half of FY2016. However, delays in hydropower construction cloud macroeconomic prospects in the coming years. Given the size and importance of hydropower projects in the economy, delays are likely to have significant negative impact on growth, revenues and exports. Therefore, growth projections have been scaled back, although the economy is still expected to expand by 6.9 percent in FY2018.*

| | 2016 |
|---|---|
| Population, million | 0.8 |
| GDP, current US$ billion | 2.4 |
| GDP per capita, current US$ | 3143 |

Source: World Bank WDI.

## Contributions to real GDP growth




Source: National Statistics Bureau and World Bank staff estimates.

## Recent developments

GDP growth is estimated at 6.6 percent in FY2016 and is driven by hydropower construction. A good agriculture harvest in the first half of the year and a strong services sector (especially transportation and communication) also supported growth. On the demand side, government consumption and gross fixed capital formation drove growth. However, in early 2017, bad weather led to an increase in food prices. The Consumer Price Index (CPI) increased from 3.9 percent in November 2016 to 4.9 percent in June 2017. The Bhutanese Ngultrum: pegged to the India Rupee, has been stable since the second half of 2016. The financial sector remained sound. The risk weighted capital adequacy ratio increased from 16.4 percent in March 2016 to 17.8 percent in March 2017. The current account deficit remained high at 23 percent of GDP in FY2016 due to capital goods imports for hydropower projects. The deficit was almost fully financed by loans from India. Therefore, as of May 2017, gross international reserves exceeded USD 1 billion, equivalent to 10 months of imports of goods and services. Fiscal policy has become expansionary to support the last year of the implementation of the 11th Five-Year Plan. The fiscal deficit increased from 1.1 percent of GDP in FY2015 to 4.0 percent in FY2016. The total public external debt was 99 percent of GDP in March 2017, of which hydropower debt was 77 percent of GDP.

## Outlook

Hydropower construction will support growth during the projection period. However, the completion of two hydropower projects will be delayed by 1-2 years resulting in lower growth than previously estimated during 2017–2019. In addition to hydropower, agriculture and tourism are expected to grow steadily with continued investment initiatives in these sectors. The implementation of the 2016 Economic Development Policy and the 2017 Fiscal Incentives Bill are expected to stimulate economic activities given their emphasis on streamlined taxes and non-tax incentives for the private sector. Once food prices become stable, CPI is expected to consolidate at around 5 percent over the medium-term. Although the current account deficit will remain high, it is expected to come down to less than 10 percent by FY2019 due to hydro-exports from the newly operationalized Mangdechhu hydropower project. According to the Government's medium-term expenditure framework, fiscal deficits are projected to be around 3 to 4 percent of GDP. However, due to the delays in hydropower construction, financing sources of fiscal deficits remain unidentified.

## Risks and challenges

There are four downside risks to growth: (a) further delays in hydropower construction, (b) a financing resource gap (i.e. sum of budget deficit and net financing) in the budget, (c) impact of India's Goods and Services Tax (GST) and (d) natural disasters. Given the size of hydropower projects relative to the size of the economy, any further delay in hydropower construction will negatively affect the economy through lower growth, exports and revenues. The FY2017 budget left financing sources for a resource gap (2.7 percent of GDP) unidentified. Unless financing sources are identified, the resource gap will lead to cuts in expenditures, which will negatively affect growth and development. India accounts for 80-90 percent of Bhutan's international trade. So far, the introduction of India's GST has caused disruptions in trade between the two countries. Bhutan is vulnerable to natural disasters such as floods and landslides. Heavy rains have resulted in landslides and domestic connectivity has been affected. Also, adverse weather would negatively affect the economy through reduced electricity generation from existing hydropower plants. Bhutan remains largely rural with its rural population share estimated at 61 percent in 2015. The urban-rural gap remains in many dimensions, including poverty, health and access to services. Children in rural areas are 60 percent more likely to be stunted than those in urban areas. Vulnerability to falling back into poverty is a concern for many, especially among rural residents with informal jobs or low education. In the absence of a vibrant private sector, public-sector jobs are highly coveted among the educated youth, leading to increased urban youth unemployment (21 percent in 2010, 23 percent in 2013 and 28 percent in 2015).

| | 2014 | 2015 | 2016 (est) | 2017 (f) | 2018 (f) | 2019 (f) |
|---|---|---|---|---|---|---|
| Real GDP growth, at constant market prices | 6.1 | 6.7 | 6.6 | 6.7 | 6.9 | 7.6 |
| Private Consumption | 18.1 | 0.5 | 2.0 | 2.0 | 3.3 | 5.0 |
| Government Consumption | 6.3 | 9.1 | 6.7 | 6.5 | 4.9 | 8.8 |
| Gross Fixed Capital Investment | 19.0 | 12.5 | 6.2 | 1.2 | -2.9 | 3.5 |
| Exports, Goods and Services | -5.2 | -1.8 | -1.5 | -1.5 | 2.0 | 6.0 |
| Imports, Goods and Services | 3.3 | 2.9 | -2.7 | -9.0 | -13.0 | -2.0 |
| Real GDP growth, at constant factor prices | 6.5 | 7.5 | 6.8 | 7.3 | 7.5 | 7.8 |
| Agriculture | 3.5 | 3.9 | 3.9 | 3.6 | 3.6 | 2.8 |
| Industry | 6.0 | 7.7 | 5.7 | 5.4 | 5.2 | 12.1 |
| Services | 8.3 | 8.3 | 8.9 | 10.5 | 11.1 | 5.0 |
| Inflation (Consumer Price Index) | 8.2 | 4.5 | 6.0 | 5.0 | 5.0 | 5.0 |
| Inflation (Consumer Price Index) | 8.2 | 4.5 | 6.0 | 5.0 | 5.0 | 5.0 |
| Inflation (Consumer Price Index) | 8.2 | 4.5 | 6.0 | 5.0 | 5.0 | 5.0 |
| Inflation (Private Consumption Deflator) | -0.9 | 14.0 | 11.9 | 8.3 | 8.5 | 1.4 |
| Inflation (GDP Deflator) | 5.4 | 5.9 | 5.9 | 5.7 | 4.6 | 0.6 |
| Inflation (Consumer Price Index) | 5.4 | 5.9 | 5.9 | 5.7 | 4.6 | 0.6 |
| Current Account Balance (percent of GDP) | -28.3 | -29.0 | -22.9 | -18.5 | -13.0 | -8.3 |
| Financial and Capital Account (percent of GDP) | -6.7 | -20.9 | 1.2 | -0.5 | -5.6 | -3.7 |
| Net Foreign Direct Investment (percent of GDP) | 0.5 | 0.4 | 0.5 | 1.0 | 1.2 | 1.4 |
| Fiscal Balance (percent of GDP) | 1.5 | -1.1 | -4.0 | -2.4 | -4.2 | -1.9 |
| Debt (percent of GDP) | 96.0 | 113.0 | 103.6 | 98.6 | 96.3 | 94.6 |
| Primary Balance (percent of GDP) | 3.1 | 0.4 | -2.7 | -1.3 | -2.3 | 0.0 |

Note: est = estimate, f = forecast.
Source: World Bank.

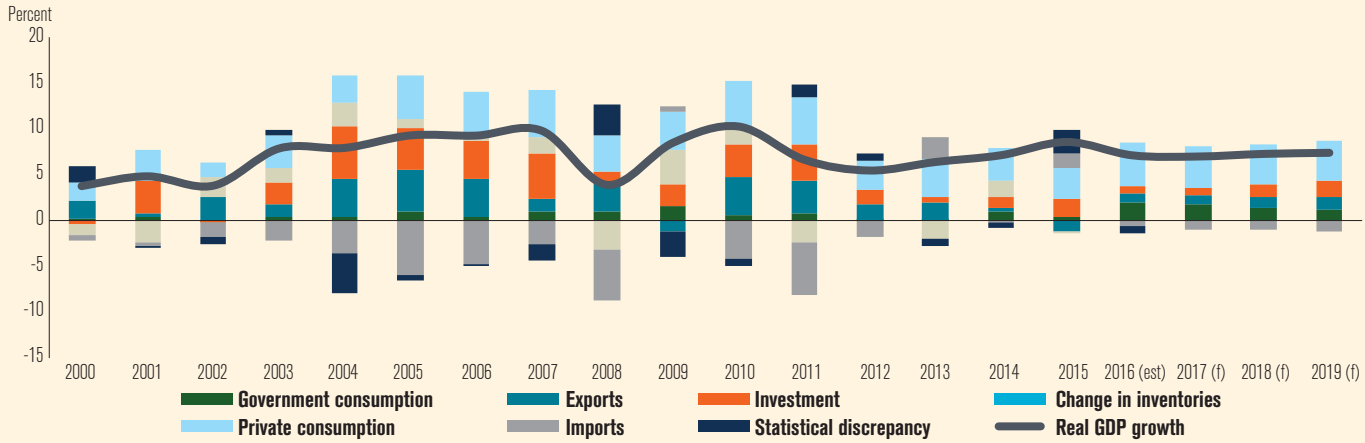
# India

*Disruptions from demonetization and events surrounding the implementation of GST led to a setback in economic activity and a potentially larger negative effect on the poor and vulnerable. Looking ahead, return to business as usual and subsequent rebalancing of growth drivers towards investment could support acceleration of GDP growth to 7.4 percent by FY2019. As in the past, sustained growth is expected to translate to continued poverty reduction, albeit with heightened uncertainty because of the effects on the informal economy.*

| | 2016 |
|---|---|
| Population, million | 1324.4 |
| GDP, current US$ billion | 2292.4 |
| GDP per capita, current US$ | 1731 |

Source: World Bank WDI.

## Contributions to real GDP growth




Source: Central Statistics Office and World Bank staff estimates.

## Recent developments

One-time policy events – disruptions from demonetization and uncertainty surrounding GST – slowed India's economic momentum in FY2016. Real GDP growth slowed to 7.1 percent in FY2016, from 8 percent in FY15/16, and further to 5.7 percent in Q1 FY2017. On the one hand, public and private consumption gained pace: (i) after implementation of the 7th central pay commission recommendations; and (ii) due to the revival in rural demand after normal monsoon and agricultural impetus. On the other hand, overall demand slowed as public investments started to wane. Excluding agriculture, output growth experienced a slowdown decelerating to 6.9 percent in FY2016, from 9.4 percent in the previous year. Construction, real estate and manufacturing activity were particularly affected by both policy events. Manufacturing production decelerated sharply pre-GST as producers ran down inventories.

Inflation remained in check and in alignment with weak global prices, slowing demand and moderate revisions in administered food prices. In FY2016, RBI adopted an inflation target of 4 (+/-2) percent and established a monetary policy committee, boosting its credibility. Inflation has since moderated to an average 4.1 percent.

External accounts remain robust. Export growth turned positive in FY2016, due to a reversal in commodity prices and improvements in global trade. Imports recovered and the merchandise trade deficit rose. Remittances have declined for two successive years due to unfavorable external factors. However, overall capital flows gained momentum, partly due an easing of FDI policies and increasing global investor's appetite, and foreign reserves rose to USD 386 billion or 8.6 months of imports. The currency appreciated by 5 percent in 2017, also due to a weakening of the US dollar.

Public finances remained stable, but contingent liabilities rose. The Centre stuck to its fiscal targets in FY2016, at 3.5 percent of GDP, reaffirming credibility. However, subnational fiscal deficits have risen in recent years – primarily because of the conversion of contingent liabilities to direct debt (particularly from public sector enterprises). Simultaneously, capital expenditures at the general government level have increased by an average 0.2 percent of GDP during the recent three years and supported productive infrastructure development and overall growth. Current expenditures (especially subsidies) were rationalized and declined marginally by 0.7 percent of GDP.

## Outlook

GST is expected to disrupt economic activity in early FY2018, but momentum to pick-up. Evidence suggests that post-GST manufacturing and services contracted sharply. However, activity is expected to stabilize within a quarter – maintaining the annual GDP growth at 7.0 percent in FY2018. Growth is projected to increase gradually to 7.4 percent by FY2020, underpinned by a recovery in private investments, which are expected to be crowded-in by the recent increase in public capex and an improvement in the investment climate (partly due to the passage of GST and Bankruptcy Code, and measures to attract FDI).

Inflation and external conditions are expected to remain stable. Two consecutive years of normal monsoon are expected to further stabilize prices and offset the increase in global oil prices. The rupee appreciated vis-à-vis the US Dollar and is expected to remain resilient. The current account deficit is expected to remain below 2 percent of GDP and fully financed by FDI inflows.

Fiscal consolidation is expected to continue, driven more by the Centre. The Union government adopted a neutral fiscal policy stance in FY2017, where most of the consolidation is predicated on privatization receipts. The implementation of GST may provide an additional impetus to revenue collections in the medium term. States' fiscal deficit could rise in the near-term due to increasing pressures from contingent liabilities.

## Challenges

The most substantial medium-term risks are associated with private investment recovery, which continues to face several domestic impediments such as corporate debt overhang, regulatory and policy challenges, along with the risk of an imminent increase in US interest rates. If the internal bottlenecks are not alleviated, subdued private investment would put downside pressures on India's potential growth. Downside risks to the global economy – and accordingly to export growth and capital flows – are also substantial given the possibility of monetary policy normalization in the USA and risks of protectionism.

| | 2014 | 2015 | 2016 (est) | 2017 (f) | 2018 (f) | 2019 (f) |
|---|---|---|---|---|---|---|
| Real GDP growth, at constant market prices | 7.1 | 8.6 | 7.1 | 7.0 | 7.3 | 7.4 |
| Private Consumption | 6.2 | 6.1 | 8.7 | 8.0 | 7.8 | 7.5 |
| Government Consumption | 9.6 | 4.0 | 20.8 | 15.6 | 11.2 | 10.0 |
| Gross Fixed Capital Investment | 3.4 | 6.5 | 2.4 | 2.8 | 5.3 | 6.7 |
| Exports, Goods and Services | 1.8 | -5.3 | 4.5 | 5.0 | 5.8 | 6.9 |
| Imports, Goods and Services | 0.9 | -5.9 | 2.3 | 4.9 | 5.3 | 6.4 |
| Real GDP growth, at constant factor prices | 7.2 | 8.1 | 6.7 | 6.7 | 7.1 | 7.3 |
| Agriculture | -0.2 | 0.7 | 4.9 | 3.6 | 2.8 | 2.7 |
| Industry | 7.5 | 8.8 | 5.6 | 5.8 | 6.5 | 6.8 |
| Services | 9.7 | 10.1 | 7.9 | 8.2 | 8.5 | 8.7 |
| Inflation (Consumer Price Index) | 5.9 | 4.9 | 4.5 | 4.0 | 4.0 | 4.0 |
| Current Account Balance (percent of GDP) | -0.3 | -0.3 | -0.7 | -0.9 | -1.2 | -1.4 |
| Financial and Capital Account (percent of GDP) | 1.0 | 0.8 | 0.1 | 0.5 | 0.8 | 1.1 |
| Net Foreign Direct Investment ( percent of GDP) | 1.6 | 1.7 | 1.6 | 1.5 | 1.7 | 1.9 |
| Fiscal Balance (percent of GDP) | -6.7 | -7.4 | -6.4 | -6.2 | -6.0 | -5.8 |
| Debt (percent of GDP) | 68.0 | 70.2 | 69.9 | 69.5 | 68.3 | 66.8 |
| Primary Balance (percent of GDP) | -1.8 | -2.7 | -1.5 | -1.4 | -1.3 | -1.3 |

Note: est = estimate, f = forecast.
Source: World Bank.

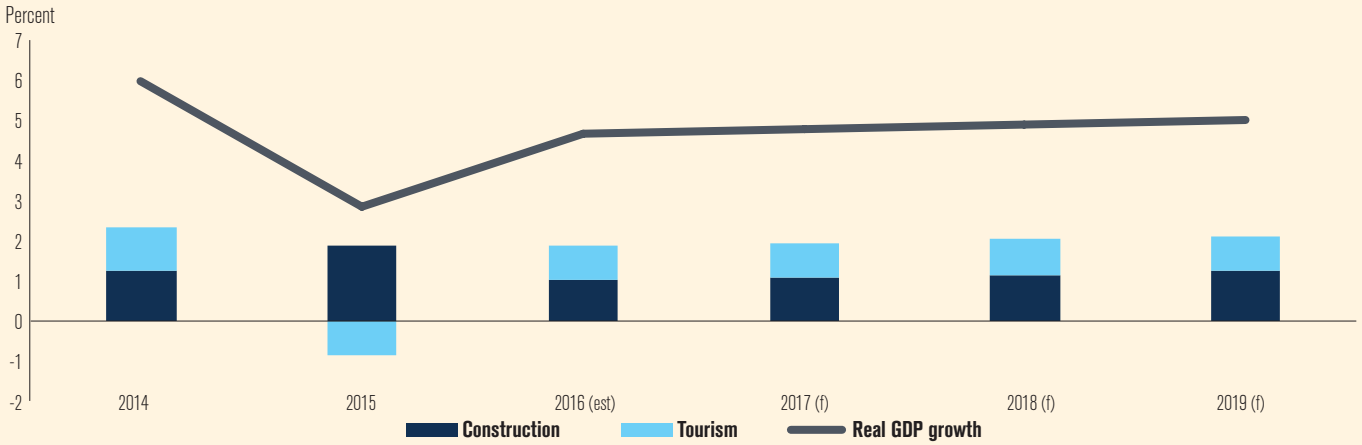
# Maldives

*The Government started several large infrastructure projects to allow the population to move from small, vulnerable islands to Greater Malé. To make space for these investments, the government is reducing current expenditure. As a result, in the medium term, construction is expected to remain the main driver of growth with large current account deficits financed by investment and infrastructure loans.*

| | 2016 |
|---|---|
| Population, million | 0.4 |
| GDP, US$ billion[a] | 3.6 |
| GDP per capita, current US$[a] | 8,695 |

Note: (a) GDP with 2003 base year. It is expected that the Government will release GDP numbers with 2014 base year shortly, which would increase nominal GDP
Source: World Bank WDI.

## Contributions to real GDP growth




Source: National Bureau of Statistics, World Bank staff estimates.

## Recent developments

Overall GDP growth remained around an estimated 4.7 percent in 2016. Construction for housing and large investment projects has taken over as the main driver of growth since late 2014, while tourism has been slowing down due to an economic slowdown in key countries. Inflation fell further to 0.5 percent in 2016, thanks to continued low global food and fuel prices and a stable exchange rate, as most products are imported.

Foreign reserves dropped in late 2016 due to the settlement of a long-running court case between the state-owned airport and an Indian engineering company in the amount of USD 271 million. Despite a modest recovery in tourism income and fish exports and the continued low global commodity prices, the current account deficit widened sharply from 8.6 percent in 2015 to 23.2 percent of GDP in 2016, driven by the large increase in investment and the one-off impact of the settlement. FDI inflows were not sufficient to cover the current account deficit unlike in previous years. Gross official reserves fell to USD 467 million towards the end of 2016, although usable reserves – after netting out short-term foreign currency liabilities to the banking sector – were only USD 200 million (1.1 months of imports). The exchange rate to the USD remains at 15.4, the low end of the currency band.

The fiscal deficit in 2016 widened to 11.2 percent of GDP, after accounting for unpaid bills. New revenue measures proposed in the budget did not materialize and existing revenue sources underperformed slightly, as tourism was lower than projected. Total expenditure was 44.3 percent of GDP due to the sharp increase in public infrastructure investment around Malé, while electricity subsidy cuts were offset by higher than expected expenditure on health care. Public debt grew from 63.3 to 69.2 percent of GDP in 2016, driven by the wide primary deficit. In 2017 the Government issued a USD 200 million Eurobond.

Despite the highly successful tourism sector, youth unemployment remains high, as the sector attracts many migrant workers. More than a quarter of women are either unemployed or not looking for a job and the share of unemployed among young females is even higher. Almost a quarter of Maldivian youth is not in employment, education, or training (NEET). The NEET rate is particularly high for the female youth because of inactivity mostly due to family reasons, while the driver for the high male NEET rate is (involuntary) unemployment. Moreover, the employment share of Maldivians in construction, the other main driver of growth, is relatively low as this sector employs mainly migrant workers as well.

## Outlook

Maldives is expected to continue to expand the number of resorts, attracting substantial FDI inflows of around 9 percent of GDP a year. Construction is expected to remain a key growth driver, while tourism sector growth is likely to recover slowly.

As food subsidies are being gradually phased out in 2017, inflation is expected to spike due to a direct impact and knock-on effects on other food items. The Government has put in place a targeted cash transfer program to protect vulnerable households from its impact. This program will be revised in the coming months as the take-up of the cash transfers has been limited so far.

The current account deficit is likely to become narrower gradually but to remain well above 10 percent of GDP, financed by FDI, external loans and one-off income sources. Usable reserves are expected to gradually increase, assuming a recovery of exports and further income from leasing out new lagoons and islands for development.

The World Bank projects a fiscal deficit of 9.4 percent of GDP for 2017, gradually narrowing until 2020, reflecting high capital expenditure of around 15 percent of GDP on average and decreasing current expenditure relative to GDP. The level of public debt is expected to increase but taper off towards 2020, as the large investment projects will have been completed. Despite mostly concessional external debt and domestic debt issued at low, fixed rates, and relatively high revenue collection, the risk of external debt distress is high, reflecting the refinancing risk from the Eurobond with a low level of reserves and fiscal risks through guarantees, while the vulnerability of the overall debt portfolio remains elevated, due to its short maturity.

## Risks and challenges

The main macroeconomic risks are shocks to tourism, a faster than expected recovery of global commodity prices, fiscal slippages, especially delays to controlling current expenditure, and the realization of contingent liabilities through guarantees.

The immediate challenge is to improve fiscal sustainability and budget credibility. It is important to contain current expenditure while implementing the large and necessary infrastructure program. The following measures are crucial: seeking efficiency improvements in the health system, updating and strengthening its targeted social protection system replacing the food and electricity subsidies, avoiding large hikes in wages and pensions, and improving investment project selection, maintenance budgeting and implementation to increase the value-for-money of public investment. These measures would also make the budget more flexible and reduce the exposure to global commodity price shocks. Maldives needs to preserve its tax base and avoid relying on unrealistic revenue sources in the budget. To preserve debt sustainability and reduce fiscal risks, it is important to increase the maturity of domestic debt, seek the most concessional terms from external lenders and issue guarantees prudently.

While construction and resort tourism are expected to drive growth in the medium term, these sectors do not create sufficient jobs for Maldivians. The consolidation of population from vulnerable islands and atolls to larger islands in Greater Malé, while also reducing pressure on Malé is a country priority. If successful, it may eventually allow for new forms of economic activity in line with the aspirations of Maldivian youth and provide employment, improve the quality of public services such as health and education, and make the country more resilient to climate change.

| | 2014 | 2015 | 2016 (est) | 2017 (f) | 2018 (f) | 2019 (f) |
|---|---|---|---|---|---|---|
| Real GDP growth, at constant market prices | 6.0 | 2.8 | 4.7 | 4.8 | 4.9 | 5.0 |
| Real GDP growth, at constant factor prices | 5.5 | 3.8 | 4.7 | 4.8 | 4.9 | 5.0 |
| Agriculture | 0.2 | -0.5 | 2.6 | 2.6 | 2.6 | 2.7 |
| Industry | 12.9 | 18.3 | 8.5 | 8.7 | 8.9 | 9.1 |
| Services | 4.6 | 1.6 | 4.1 | 4.1 | 4.2 | 4.2 |
| Inflation (CPI) | 2.1 | 1.0 | 0.5 | 2.4 | 2.8 | 3.0 |
| Current Account Balance (percent of GDP) | -3.8 | -8.6 | -23.2 | -21.1 | -15.3 | -13.8 |
| Net Foreign Direct Investment (percent of GDP) | 10.8 | 9.0 | 12.4 | 9.5 | 9.0 | 8.6 |
| Fiscal Balance (percent of GDP) | -8.2 | -8.5 | -11.2 | -9.4 | -7.3 | -6.4 |
| Debt (percent of GDP)[a] | 65.9 | 63.4 | 69.2 | 74.0 | 75.9 | 76.6 |
| Primary Balance (percent of GDP) | -4.6 | -5.9 | -9.0 | -6.9 | -4.8 | -3.9 |

Note: GDP with 2003 base year. It is expected that the Government will release GDP numbers with 2014 base year shortly, which would increase nominal GDP
(a) Excluding outstanding guarantees and arrears
Source: Ministry of Finance and Treasury, National Bureau of Statistics, Maldives Monetary Authority, World Bank staff estimates

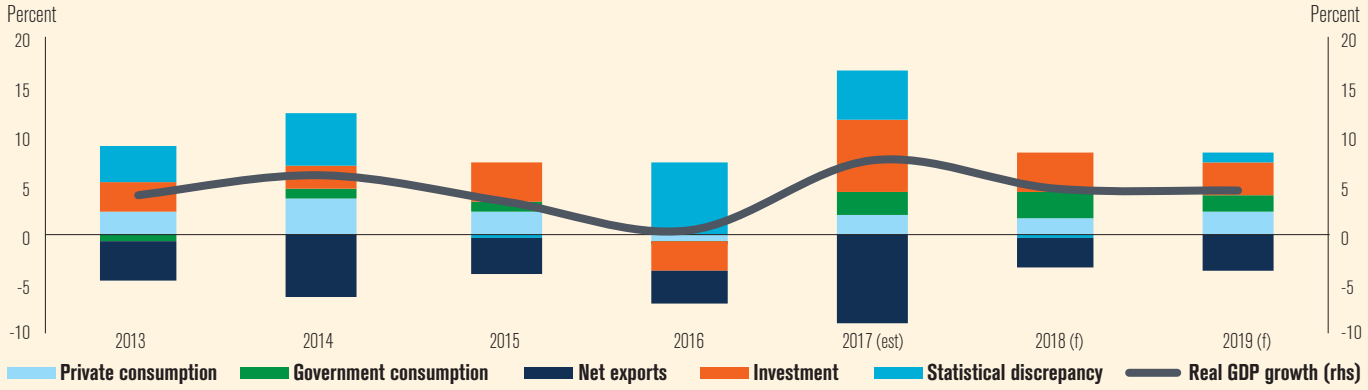
# Nepal

*In FY2017, Nepal saw a broad-based recovery as economic activity rebounded, inflation moderated, government revenue and spending picked up and remittances grew, albeit more slowly than ever before. Growth is expected to moderate in FY2018 on account of the heaviest floods in decades. A slow recovery of exports, an increase in lending rates, a continued decline in departures of migrant workers going abroad and a fluid political environment will continue to pose challenges during the forecast period.*

| | 2016 |
|---|---|
| Population, million | 28.9 |
| GDP, current US$ billion | 21.1 |
| GDP per capita, current US$ | 732 |

Source: World Bank WDI.

## Contributions to real GDP growth




Source: Central Bureau of Statistics and World Bank staff estimates.

## Recent developments

Economic activity in Nepal, which rebounded strongly in FY2017 and reached 7.5 percent (y-o-y) following two challenging years, has once again been disrupted by floods affecting more than one-third of the country.

On the supply side, all three major sectors grew at above-trend rates in FY2017. Rice production reached a record high at 5.2 million tons, as a result of one of the best monsoon in recent years, boosting agricultural output. Industrial growth was high as well, with a record-high addition of hydropower capacity in the electricity subsector, and construction as earthquake reconstruction gathered speed. Growth in the service sector was aided by the wholesale/retail trade and hotels subsectors fully normalizing from the shocks of the previous two years. Tourist arrivals rebounded strongly and reached a record high in FY2017. On the demand side, gross investments contributed the most to headline growth. Gross fixed capital formation is estimated to have reached 25 percent of GDP in FY2017 with both private and public investment rebounding strongly. Consumption, however, slowed, most likely due to slowing remittances.

High inflation in the last two years induced by disruptions moderated sharply by early 2017. Due to moderating inflation in India it slowed further and reached decade-low levels by the end of FY2017. Credit growth soared during the first half of FY2017 but, coupled with a simultaneous slowdown in deposit mobilization and government's revenue collection exceeding spending, resulted in a squeeze on the availability of loanable funds at commercial banks. The situation reversed in the second half of the FY2017 as the government spending dramatically exceeded revenue collection, while commercial banks offered higher interest rates to attract new deposits. As the spread between deposit and lending rates did not shrink much, interest rates on loans went up as well, which slowed credit growth.

As imports continue to surge and exports to falter, the trade deficit has further increased. Remittances, which financed almost all imports in previous years, have continued to slow. Consequently, the current account has reversed from a surplus of 6.2 percent of GDP in FY2016 to a deficit of 0.4 percent of GDP in FY2017. Migrant worker outflow has declined further, and stagnated to a five-year low in FY2017.

Annual revenue growth has been robust, with the government exceeding the revenue target due to a one-off improvement in the collection of outstanding taxes, in addition to a continuing growth in trade taxes. Public spending has picked up significantly, with capital spending reaching a record high at almost 8 percent of GDP despite significant underspending of planned budget. The era of positive fiscal

balances has ended, and the fiscal deficit reached 3.3 percent of GDP in FY2017.

## Outlook

Economic activity, which was expected to progress well in FY2018, has been affected by the worst floods in decades. Severe floods in mid-August, the third major shock in three consecutive years, has caused significant disruptions and damages especially in the southern plains.

Growth for FY2018 is hence expected to be lower than earlier forecasted and moderate thereafter, in line with potential growth averaging 4.5 percent in the forecast period. This is an outcome of reduced agricultural output due to the recent floods. In addition, an impact of the floods on the industrial sectors is expected, albeit temporarily. Construction is likely to remain strong driven by post-earthquake and post-flood reconstruction. Activity in the remaining sectors is expected to be affected by uncertainty stemming from transition to the federal structure, several rounds of upcoming elections, and the possibility of a further slowdown in remittances. Inflation, particularly food inflation, is expected to rise temporarily in the first half of FY2018 as a result of the recent floods in Nepal and India, but is expected to remain within the Central Bank's target. With increased government spending due to a new federal structure and earthquake and flood-related spending, the fiscal deficit is expected to widen in FY2018 to 4.3 percent of GDP. Financing is not expected be a problem, due to ample fiscal space with a low debt-to-GDP ratio of 27.6 percent in FY2017, and a large cash balance at hand.

Meanwhile, the current account, which turned into a marginal deficit in FY2017, is expected to widen as import growth is expected to remain strong, while remittances and exports are expected to grow slowly. The persistence of a large trade deficit and a continued slowdown in remittances will likely put pressure on Nepal's foreign reserves, which are currently adequate.

## Risks and challenges

Both domestic and external risks are substantial and are on the downside. The political environment remains fluid as the term of the new government – which was sworn-in July 2017 as part of the power-sharing agreement among the coalition partners – will come to an end in early 2018, after the provincial and federal elections.

Implementation of a new federal structure and smooth service delivery are also going to be real challenges. Several laws are yet to be passed and several institutions established in accordance with the new constitution. Human resources and capacity in the newly created subnational bodies are going to be key constraints.

Despite improvements, the overall pace of earthquake reconstruction remains modest, which is now compounded by flood recovery as the government needs to manage response to two separate natural disasters. The slow disbursements of the second and third tranche of the housing reconstruction grant has meant that fewer than 10,000 households have received all three tranches of government subsidy for housing reconstruction more than two-and-a-half years after the earthquake.

The external environment is likely to pose a risk, as well. The decline in migrant workers' outflow has been compounded by Qatar's political woes, which may pose a further threat. Remittances account for more than 30 percent of GDP, and further slowdown remains an imminent risk.

| | 2014 | 2015 | 2016 | 2017 (est) | 2018 (f) | 2019 (f) |
|---|---|---|---|---|---|---|
| Real GDP growth, at constant market prices | 6 | 3.3 | 0.4 | 7.5 | 4.6 | 4.5 |
| Private Consumption | 4.2 | 2.9 | -0.8 | 2.4 | 2 | 3 |
| Government Consumption | 10 | 7.4 | -0.4 | 21.5 | 20.9 | 12.8 |
| Gross Fixed Capital Investment | 11.4 | 19.6 | -12.3 | 34 | 15.1 | 10.5 |
| Exports, Goods and Services | 18.8 | 6.8 | -13.7 | 16.9 | 10.1 | 6.3 |
| Imports, Goods and Services | 20.9 | 9.6 | 2.8 | 22 | 8 | 8 |
| Real GDP growth, at constant factor prices | 5.7 | 3 | 0 | 6.9 | 4.6 | 4.5 |
| Agriculture | 4.5 | 1.1 | 0 | 5.3 | 2.7 | 3 |
| Industry | 7.1 | 1.4 | -6.3 | 10.9 | 5 | 3.2 |
| Services | 6.1 | 4.8 | 2 | 6.9 | 5.8 | 5.8 |
| Inflation (Consumer Price Index) | 9.1 | 7.2 | 9.9 | 4.5 | 5.5 | 6.5 |
| Current Account Balance (percent of GDP) | 4.6 | 5.1 | 6.2 | -0.4 | -2 | -2.8 |
| Fiscal Balance (percent of GDP) | 0.6 | -1.1 | -0.4 | -3.3 | -4.3 | -4.6 |
| Debt (percent of GDP) | 28.3 | 25.5 | 28 | 27.6 | 29.4 | 31 |
| Primary Balance (percent of GDP) | 1.3 | -0.6 | -0.1 | -2.8 | -3.8 | -4.1 |

Note: est = estimate, f = forecast.
Source: World Bank.

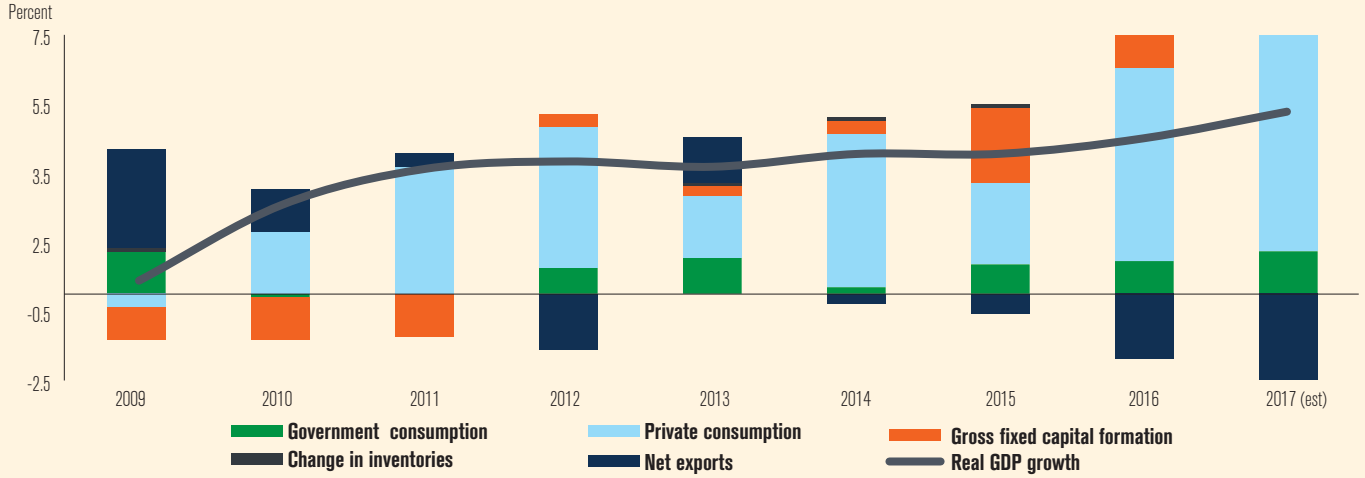
# Pakistan

*Pakistan's growth outlook continues to improve and inflation remains contained. However, growing fiscal and external imbalances pose an immediate challenge to this outlook. Efforts to reverse the current imbalances and continued implementation of structural reforms will be needed for sustaining and accelerating growth and improving welfare.*

| | 2016 |
|---|---|
| Population, million | 192.8 |
| GDP, current US$ billion | 279.2 |
| GDP per capita, current US$ | 1448 |

Source: World Bank WDI.

## Contributions to real GDP growth




Source: Pakistan Economic Survey.

## Recent developments

Pakistan's GDP growth continued to increase and was 5.3 percent in FY2017. This performance fell short of the government's growth target of 5.7 percent for FY2017 as the industrial sector performed worse than expected. After a weak performance in FY2016, the agricultural sector picked up during FY2017 and grew at 3.5 percent due to better cotton, sugarcane, and maize crops. The services sector, which accounts for approximately 60 percent of the economy, grew 6.0 percent in FY2017 surpassing the target of 5.7 percent. On the demand side, growth was again dominated by domestic consumption, which accounted for an overwhelming 92 percent of GDP in FY2017, and contributed 8.4 percentage points towards GDP growth (moderated by a negative contribution of 3.7 percent from net exports). Strong aggregate demand and improving business sentiments were evident in private sector credit growth of 18.2 percent, expanding by PKR 748 billion in FY2017 compared to PKR 446.5 billion in FY2016. Low inflation and low interest rates also contributed to higher credit growth. An increase in foreign investment flows from China (to fund CPEC projects) has also contributed to growth.

Pakistan's external account and international reserves came under stress at the end of FY2017 because of a high and widening current account deficit. The current account deficit for FY2017 has swelled to 4 percent of GDP (USD 12.1 billion), compared to 1.7 percent of GDP in FY2016. The key driver is a very large trade deficit, which swelled to USD 26.9 billion (8.9 percent of GDP) due to declining exports and high import growth. Imports have grown partly because of CPEC related projects. External borrowing helped keep reserves at relatively comfortable levels in FY2017, despite the large trade deficit. The external account pressure has persisted in FY2018, but despite this pressure the PKR has remained stable against the USD. The current external situation can become unsustainable in absence of adequate policy response.

The fiscal deficit widened significantly in FY2017. Provisional data for FY2017 shows that the fiscal deficit stood at 5.6 percent of GDP, 2.1 percentage points higher than the budgeted estimate for FY2017. Lower-than-expected revenue, falling Coalition Support Funds (recorded as non-tax revenues), and an inability of provinces to generate surpluses drove this deterioration. As a result, the public debt to GDP ratio is expected to stay close to last year's level of around 68.6 percent.

## Outlook

The outlook until FY2019 is for moderately higher growth. This outlook is contingent upon continued macroeconomic

and political stability, as well as steady progress in implementing the main pillars of the Government's medium-term reform program, which tackles key constraints to growth. The outlook assumes that oil prices will increase moderately but remain low.

On the supply side, impetus to growth is projected to come from the services and the industrial sectors. On the demand side, acceleration would be driven by public and private consumption, aided by a moderate increase in investment.

The pressure on the current account is expected to persist as the trade deficit will remain elevated during FY2018 and FY2019. This situation can potentially become unsustainable in absence of corrective policy measures. However, exports are expected to recover during FY2018 and FY2019 due to an easing of supply side factors. Imports, after strong growth of 17.7 percent in FY2017, are expected to grow at a slower pace in FY2018 and FY2019. Remittances will continue to partly finance the current account deficit. It is also expected that FDI flows will strengthen due to the accelerated implementation of CPEC projects. However, capital and financial flows during FY2018 and FY2019 will only partly finance the current account deficit, which will result in a drawdown of reserves during these two years.

Fiscal slippages are expected to continue through the election cycle, which will result in a widening of the fiscal deficit during FY2018. This increase in the fiscal deficit is primarily driven by a slower increase in government tax revenues (both federal and provincial) and a sharper increase in expenditures. An adjustment in the fiscal position in FY2019 after the election will help in curtailing the fiscal deficit.

Inflation, after remaining moderate during FY2017, is expected to rise in FY2018 and FY2019. Inflation is expected to rise due to higher domestic demand pressures and a slight increase in international oil prices.

## Challenges

Macroeconomic risks have increased substantially during FY2017. The external balance is particularly vulnerable given the persistent current account deficit, affecting the country's reserve position. Improving the external balance hinges upon a revival in exports, a slowdown in imports, and stable remittance flows. In absence of any of these factors, the persistent current account deficit will put further pressure on already dwindling reserves. The fiscal position is also expected to deteriorate during the election cycle, which would affect debt trends and maintain debt at the current high level. The quitting of ex-Prime Minister Nawaz Sharif has enhanced political risks and created some policy uncertainty. The upcoming national election in 2018 may affect the reform momentum and macroeconomic policy. Slower progress in much-needed structural reforms would weaken growth prospects and discourage private investment.

| | 2014 | 2015 | 2016 | 2017 (est) | 2018 (f) | 2019 (f) |
|---|---|---|---|---|---|---|
| Real GDP growth, at constant market prices | 4.7 | 4.7 | 5.5 | 5.7 | 5.5 | 5.8 |
| Private Consumption | 5.6 | 2.9 | 6.9 | 8.6 | 4.8 | 5.0 |
| Government Consumption | 1.5 | 8.1 | 8.2 | 10.7 | 9.8 | 5.4 |
| Gross Fixed Capital Investment | 2.5 | 15.8 | 6.7 | 8.3 | 8.5 | 8.8 |
| Exports, Goods and Services | -1.5 | -6.3 | -1.6 | -0.2 | 1.4 | 5.2 |
| Imports, Goods and Services | 0.3 | -1.6 | 11.7 | 24.0 | 4.5 | 3.5 |
| Real GDP growth, at constant factor prices | 4.1 | 4.1 | 4.5 | 5.3 | 5.5 | 5.8 |
| Agriculture | 2.5 | 2.1 | 0.3 | 3.5 | 2.9 | 3.3 |
| Industry | 4.5 | 5.2 | 5.8 | 5.0 | 7.0 | 7.7 |
| Services | 4.5 | 4.4 | 5.5 | 6.0 | 5.8 | 5.9 |
| Inflation (Consumer Price Index) | 8.6 | 4.5 | 2.9 | 4.2 | 6.0 | 7.0 |
| Current Account Balance (percent of GDP) | -1.3 | -1.0 | -1.7 | -4.0 | -4.0 | -3.9 |
| Financial and Capital Account (percent of GDP) | 3.0 | 2.0 | 2.5 | 3.3 | 3.3 | 3.3 |
| Net Foreign Direct Investment (percent of GDP) | 0.6 | 0.3 | 0.8 | 0.8 | 1.0 | 1.0 |
| Fiscal Balance (percent of GDP) | -4.7 | -5.2 | -4.5 | -5.6 | -5.9 | -5.8 |
| Debt (percent of GDP) | 64.4 | 64.3 | 68.6 | 68.6 | 68.2 | 66.7 |
| Primary Balance (percent of GDP) | -0.2 | -0.5 | -0.2 | -0.8 | -1.5 | -1.9 |

Note: est = estimate, f = forecast.
Source: World Bank.

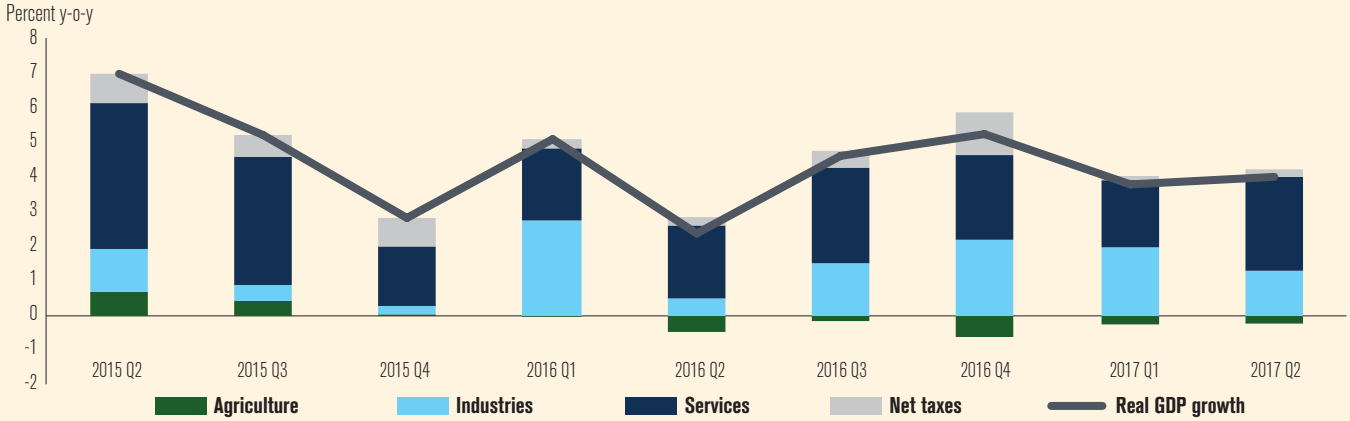
# Sri Lanka

*Policy measures supporting fiscal consolidation and monetary tightening contributed to an improved outlook, against the backdrop of the IMF program. Despite a high budget deficit and high public debt, public finance improved and official reserves rose. Frequent natural disasters, however, continue to weaken macroeconomic performance and are likely to increase poverty. The pace of implementation of an ambitious reform agenda was less than desirable in a challenging political environment. Expediting the reforms to promote competitiveness and governance, and continued fiscal consolidation is critical to ensure sustained growth and development.*

| | 2016 |
|---|---|
| Population, million | 21.2 |
| GDP, current US$ billion | 81.3 |
| GDP per capita, current US$ | 3835 |

Source: World Bank WDI.

## Contributions to real GDP growth




Source: Department of Census and Statistics, Sri Lanka and World Bank staff estimates.

## Recent Developments

Sri Lanka's macroeconomic performance remained broadly satisfactory in the first half of 2017, despite natural disasters and challenges posed by a complex political environment. Floods in the month of May in the South and West as well as continued drought in the rest of the country took a toll on macroeconomic performance. Growth decelerated to 3.9 percent (y-o-y) in the first half of 2017, although construction, financial services and trade made significant contributions. Despite supply disruptions and changes in VAT, inflation hovered around mid-single digit level thanks to low international commodity prices.

On the external front, the benefit of low oil prices was offset by greater imports of food and petroleum due to the drought, while the impact on agricultural exports was masked by increased tea prices. Nonetheless, weak external liquidity received a boost from the proceeds of sovereign bonds and syndicated loans, as well as purchases made by the monetary authority in the forex market. Official reserves increased to a level equivalent to 4.0 months of merchandise imports by June 2017, after bottoming out in April at 3.0 months. However, the current account deficit and continuously low FDI inflows remain key challenges to raise foreign exchange in a structural manner.

Recent fiscal and monetary policy measures helped the successful completion of the second review of the IMF-supported program in July 2017; allowing the disbursement of the third tranche. The revenue-led fiscal consolidation was strengthened with the changes to the VAT Law and improved revenue administration. The Cabinet approved a new Inland Revenue Law to make the tax system more efficient and equitable, and generate resources for social programs. Monetary policy was further tightened to dampen continued monetary growth and support external sector stability.

Labor market indicators improved between the first quarter of 2016 and the first quarter of 2017. Female labor participation rose 1.3 percentage points, and the share of workers working 40 or more hours rose nearly half a percentage point. The share of workers engaged in agriculture continued to fall during this time, from 28.5 to 27 percent, partly in response to the drought. These positive trends in labor market outcomes suggest continued progress in reducing poverty.

## Outlook

The government is progressing on an ambitious reform agenda, albeit at a slower pace, aimed at improving competitiveness, governance and public financial management that would bring long-term benefits. Continuation of reforms along with the IMF program will add to the confidence while helping reform the tax system to pursue a revenue led fiscal consolidation. The monetary authority has confirmed that it stands ready to take appropriate action in the direction of stability. These factors have contributed to an improved outlook.

The economy is projected to grow by 4.6 percent in 2017 and marginally exceed 5.0 percent in the medium-term, driven by private consumption and investment. Inflation will remain at mid-single digits, supported by low international commodity prices. The external sector is poised to benefit from the reinstatement of GSP+ preferential access to European Union and rapidly growing tourism, although the drought could adversely impact exports and increase petroleum imports. The deceleration of previously stable remittances flow will also be a strain on the external sector. Nevertheless, external buffers are projected to improve, with emphasis placed on purchasing foreign exchange, maintaining a more market-determined exchange rate and the sale or leasing of selected government assets, including Hambantota seaport. Supported by a small primary balance, the overall fiscal deficit will fall to 5.2 percent in GDP for 2017, thanks mainly to the implementation of revenue measures.

## Risks and challenges

External risks include disappointing growth performances in key countries that generate foreign exchange inflows to Sri Lanka either through exports, tourism, remittances, FDI, or other financing flows. Tighter than expected global financial conditions would increase the cost of debt and would make rolling over the maturing Eurobonds from 2019 more difficult. A faster than expected rise in commodity prices would increase pressure on the balance of payments and make domestic fuel and electricity price reforms more difficult.

On the fiscal and debt management front, risks include the delay in implementing revenue and liability management measures; and a slower than expected improvement in tax administration. The increasing occurrence and impact of natural disasters could have an adverse impact on growth, the fiscal consolidation path, the trade balance and poverty reduction. Finally, the complex political environment could delay important reform implementation in competitiveness and governance.

Sri Lanka faces several challenges that increasingly put its future economic growth and stability at risk. They must be addressed through determined policy actions in the following four areas: (1) stay on the fiscal consolidation path by broadening and simplifying the tax base and aligning spending with priorities; (2) change to a private investment-tradable sector-led growth model by improving trade, investment, innovation and business environment; (3) improve governance and accountability by implementing the Right to Information Act for citizens engagement and improve SOE fiscal performance and service delivery; and (4) reduce vulnerability and risks in the economy by dealing proactively with the Eurobonds maturing from 2019 onwards, mitigating the impact of reforms on the poor and vulnerable with targeting spending, and enhancing disaster preparedness.

| | 2014 | 2015 | 2016 (est) | 2017 (f) | 2018 (f) | 2019 (f) |
|---|---|---|---|---|---|---|
| Real GDP growth, at constant market prices | 5.3 | 4.5 | 4.4 | 4.6 | 5.0 | 5.1 |
| Private Consumption | 3.7 | 8.6 | 0.7 | 4.0 | 5.1 | 5.2 |
| Government Consumption | 5.9 | 10.1 | 2.4 | 3.1 | 1.5 | 1.5 |
| Gross Fixed Capital Investment | -1.7 | 4.3 | 8.4 | 6.3 | 7.1 | 7.0 |
| Exports, Goods and Services | 4.3 | 4.7 | -0.7 | 7.9 | 6.5 | 5.0 |
| Imports, Goods and Services | 9.6 | 10.6 | 7.9 | 4.6 | 5.4 | 4.6 |
| Real GDP growth, at constant factor prices | 5.1 | 4.4 | 4.1 | 4.4 | 5.0 | 5.1 |
| Agriculture | 4.6 | 4.8 | -4.2 | -1.1 | 3.0 | 3.0 |
| Industry | 4.7 | 2.1 | 6.7 | 5.5 | 5.5 | 5.5 |
| Services | 5.3 | 5.4 | 4.0 | 4.5 | 5.0 | 5.1 |
| Inflation (Consumer Price Index) | 3.3 | 0.9 | 4.0 | 5.2 | 5.2 | 5.2 |
| Current Account Balance (percent of GDP) | -2.5 | -2.3 | -2.4 | -2.4 | -2.5 | -2.5 |
| Financial and Capital Account (percent of GDP) | 2.0 | 2.9 | 2.6 | 2.4 | 2.5 | 2.5 |
| Net Foreign Direct Investment (percent of GDP) | 1.0 | 0.8 | 0.8 | 1.7 | 1.7 | 1.0 |
| Fiscal Balance (percent of GDP) | -5.7 | -7.6 | -5.4 | -5.1 | -4.4 | -4.1 |
| Debt (percent of GDP) | 71.3 | 77.6 | 79.3 | 79.2 | 77.4 | 75.5 |
| Primary Balance (percent of GDP) | -1.5 | -2.8 | -0.2 | 0.5 | 1.1 | 1.4 |

Note: est = estimate, f = forecast.
Source: World Bank.

# South Asia at a glance

| | | | AFG | BGD | BTN | IND | MDV | NPL | PAK | LKA | SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| BALANCE of PAYMENTS | Real GDP Growth | 2014 | 1.3 | 6.1 | 6.1 | 7.1 | 6.0 | 6.0 | 4.7 | 5.3 | .. |
| | | 2015 | 1.1 | 6.6 | 6.7 | 8.6 | 2.8 | 3.3 | 4.7 | 4.5 | 7.1 |
| | | 2016 (est) | 2.2 | 7.1 | 6.6 | 7.1 | 4.7 | 0.4 | 5.5 | 4.4 | 7.5 |
| | | 2017 (f) | 2.6 | 7.2 | 6.7 | 7.0 | 4.8 | 7.5 | 5.7 | 4.6 | 6.7 |
| | | 2017 Q1 | .. | .. | .. | 5.7 | .. | .. | .. | 3.8 | 6.1 |
| | | 2017 Q2 | .. | .. | .. | .. | .. | .. | .. | 4.0 | 5.6 |
| | Inflation (Consumer Price Index) | 2014 | 4.6 | 7.3 | 8.2 | 5.9 | 2.1 | 9.1 | 8.6 | 3.3 | 7.0 |
| | | 2015 | -1.5 | 6.4 | 4.5 | 4.9 | 1.0 | 7.2 | 4.5 | 0.9 | 4.5 |
| | | 2016 (est) | 4.4 | 5.9 | 6.0 | 4.5 | 0.5 | 9.9 | 2.9 | 4.0 | 4.9 |
| | | 2017 (f) | 6.0 | 5.4 | 5.0 | 4.0 | 2.4 | 4.5 | 4.2 | 5.2 | 3.5 |
| | | 2017 Jul | .. | 5.6 | .. | 2.4 | .. | .. | 2.9 | 4.8 | 2.9 |
| | | 2017 Aug | .. | .. | .. | 3.3 | .. | .. | 3.4 | 6.0 | 3.4 |
| | REER (CY) | 2014 | 97.7 | 97.0 | 99.4 | 96.1 | 98.2 | 99.0 | 104.2 | 96.8 | 96.9 |
| | | 2015 | 97.6 | 103.2 | 99.3 | 103.8 | 106.6 | 101.9 | 112.1 | 97.0 | 104.6 |
| | | 2016 | .. | .. | .. | 105.0 | .. | .. | 113.8 | .. | 105.9 |
| | | 2017 | .. | .. | .. | 109.7 | .. | .. | 112.3 | .. | 109.9 |
| | | 2017 Jul | .. | .. | .. | 111.0 | .. | .. | 110.7 | .. | 111.0 |
| | | 2017 Aug | .. | .. | .. | 111.2 | .. | .. | 109.5 | .. | 111.0 |
| | Current Account Balance (% of GDP) | 2014 | 8 | 0.8 | -28.3 | -0.3 | -3.8 | 4.6 | -1.3 | -2.5 | -2.9 |
| | | 2015 | 6.2 | 1.5 | -29.0 | -0.3 | -8.6 | 5.1 | -1.0 | -2.3 | -3.6 |
| | | 2016 (est) | 5 | 1.9 | -22.9 | -0.7 | -23.2 | 6.2 | -1.7 | -2.4 | -4.7 |
| | | 2017 (f) | 4 | -0.6 | -18.5 | -0.9 | -21.1 | -0.4 | -4.0 | -2.4 | -5.5 |
| | Trade Balance (% of GDP) | 2014 | -33.5 | -7.0 | -23.4 | -3.3 | 18.2 | -31.8 | -8.4 | -8.1 | -7.4 |
| | | 2015 | -36.8 | -5.4 | -24.1 | -3.0 | 10.7 | -25.7 | -7.0 | -7.6 | -6.8 |
| | | 2016 | .. | .. | -26.4 | .. | .. | .. | .. | .. | .. |
| | Import Growth (%, y-o-y) | 2014 | -4.2 | 1.2 | 3.3 | 0.9 | .. | 20.9 | 0.3 | 9.6 | .. |
| | | 2015 | 5 | 3.2 | 2.9 | -5.9 | .. | 9.6 | -1.6 | 10.6 | -4.0 |
| | | 2016 (est) | 5 | -7.1 | -2.7 | 2.3 | .. | 2.8 | 11.7 | 7.9 | 0.2 |
| | | 2017 (f) | 8 | 4.0 | -9.0 | 4.9 | .. | 22 | 24.0 | 4.6 | 5.2 |
| | Export Growth (%, y-o-y) | 2014 | -19.7 | 3.2 | -5.2 | 1.8 | .. | 18.8 | -1.5 | 4.3 | .. |
| | | 2015 | -2.5 | -2.8 | -1.8 | -5.3 | .. | 6.8 | -6.3 | 4.7 | -5.2 |
| | | 2016 (est) | 5 | 2.2 | -1.5 | 4.5 | .. | -13.7 | -1.6 | -0.7 | 1.2 |
| | | 2017 (f) | 7 | -0.6 | -1.5 | 5.0 | .. | 16.9 | -0.2 | 7.9 | 4.9 |
| | | 2017 Jul | .. | -21.8 | .. | -2.0 | .. | .. | 11.7 | .. | .. |
| | | 2017 Aug | .. | .. | .. | -2.8 | .. | .. | 8.6 | .. | .. |
| | Foreign Reserves, months of import cover (CY) | 2014 | 10.3 | 5.6 | 11.9 | 6.6 | 2.4 | 8.4 | 3.1 | 3.9 | 6.5 |
| | | 2015 | 9.7 | 6.9 | 9.5 | 8.0 | 2.2 | 12.5 | 4.5 | 3.5 | 7.8 |
| | | 2016 | .. | | 9.5 | .. | .. | .. | .. | .. | .. |
| | | 2017 Jul | .. | 7.4 | .. | 11.8 | .. | 11.4 | .. | 4.0 | 10.4 |
| | | 2017 Aug | .. | .. | .. | 11.2 | .. | .. | .. | .. | 10.1 |

| | | | AFG | BGD | BTN | IND | MDV | NPL | PAK | LKA | SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| BALANCE of PAYMENTS | Personal remittances, received (US$ Million) (CY) | 2014 | 268 | 14,988 | 14 | 70,389 | 3 | 5,889 | 17,244 | 7,036 | 115,831 |
| | | 2015 | 301 | 15,388 | 20 | 68,910 | 4 | 6,730 | 19,306 | 7,000 | 117,658 |
| | | 2016 | 312 | 13,680 | 34 | 62,745 | 4 | 6,276 | 19,847 | 7,252 | 110,149 |
| | | 2017 Q1 | .. | 3,028 | .. | 8,459 | .. | .. | 4,599 | 1,734 | .. |
| | | 2017 Q2 | .. | 3,575 | .. | 8,976 | .. | .. | 5,246 | 1,621 | .. |
| GOVERNMENT FINANCES | Fiscal Balance (% of GDP) | 2014 | -1.8 | -3.6 | 1.5 | -6.7 | -8.2 | 0.6 | -4.7 | -5.7 | .. |
| | | 2015 | -1.2 | -3.9 | -1.1 | -7.4 | -8.5 | -1.1 | -5.2 | -7.6 | .. |
| | | 2016 (est) | -0.7 | -3.8 | -4.0 | -6.4 | -11.2 | -0.4 | -4.5 | -5.4 | .. |
| | | 2017 (f) | -0.5 | -5.0 | -2.4 | -6.2 | -9.4 | -3.3 | -5.6 | -5.1 | .. |
| | Public Debt (% of GDP) | 2014 | 6.5 | 31.9 | 96.0 | 68.0 | 65.9 | 28.3 | 64.4 | 71.3 | .. |
| | | 2015 | 6.2 | 31.5 | 113.0 | 70.2 | 63.4 | 25.5 | 64.3 | 77.6 | .. |
| | | 2016 (est) | 6.4 | 31.2 | 103.6 | 69.9 | 69.2 | 28 | 68.6 | 79.3 | .. |
| | | 2017 (f) | 6.3 | 32.5 | 98.6 | 69.5 | 74.0 | 27.6 | 68.6 | 79.2 | .. |
| CONSUMPTION and INVESTMENT | Private Consumption Growth (%, y-o-y) | 2014 | 3.4 | 4.0 | 18.1 | 6.2 | .. | 4.2 | 5.6 | 3.7 | .. |
| | | 2015 | 2.5 | 5.8 | 0.5 | 6.1 | .. | 2.9 | 2.9 | 8.6 | 5.4 |
| | | 2016 (est) | 1.2 | 3.0 | 2.0 | 8.7 | .. | -0.8 | 6.9 | 0.7 | 8.4 |
| | | 2017 (f) | 1.5 | 4.7 | 2.0 | 8.0 | .. | 2.4 | 8.6 | 4.0 | 7.3 |
| | Gross Fixed Capital Investment Growth (%, y-o-y) | 2014 | -4.3 | 9.9 | 19.0 | 3.4 | .. | 11.4 | 2.5 | -1.7 | .. |
| | | 2015 | 3 | 7.1 | 12.5 | 6.5 | .. | 19.6 | 15.8 | 4.3 | 5.5 |
| | | 2016 (est) | 5.8 | 8.9 | 6.2 | 2.4 | .. | -12.3 | 6.7 | 8.4 | 4.6 |
| | | 2017 (f) | 2.6 | 8.8 | 1.2 | 2.8 | .. | 34 | 8.3 | 6.3 | 3.7 |
| | Net Foreign Direct Investment (% of GDP) | 2014 | 0.6 | 1.1 | 1.5 | 1.6 | 10.8 | 0.2 | 0.6 | 1.0 | 1.6 |
| | | 2015 | 0.9 | 0.9 | 0.5 | 1.7 | 9.0 | 0.2 | 0.3 | 0.8 | 1.8 |
| | | 2016 (est) | 0.3 | 0.9 | 0.4 | 1.6 | 12.4 | .. | 0.8 | 0.8 | .. |
| | | 2017 (f) | 0.2 | 1.0 | .. | 1.5 | 9.5 | .. | 0.8 | 1.7 | .. |
| | Net Portfolio Investment (US$ million) (CY) | 2014 | 131 | -968 | .. | -37,740 | 17 | .. | -3,836 | -2,065 | .. |
| | | 2015 | 85 | -300 | .. | -9,487 | -123 | .. | -909 | -689 | .. |
| | | 2016 | 91 | -101 | .. | 4,725 | .. | .. | -154 | -993 | .. |
| | | 2017 Q1 | 33 | .. | .. | -10,799 | .. | .. | 131 | 275 | .. |

# Notes:

| | |
|---|---|
| est | Estimate |
| f | Forecast |
| CY | Series for Calendar Year |
| FY | Series for Fiscal Year |
| | Afghanistan's fiscal year runs from July 1st to June 30th. |
| | Bangladesh's fiscal year runs from July 1st to June 30th. |
| | Bhutan's fiscal year runs from July 1st to June 30th. |
| | India's fiscal year runs from April 1st to March 31st. |
| | Maldives's fiscal year is the calendar year. |
| | Nepal's fiscal year runs from July 16th to July 15th. |
| | Pakistan's fiscal year runs from July 1st to June 30th. |
| | Sri Lanka's fiscal year is the calendar year. |
| Real GDP Growth | Note: Real GDP growth rates (percent change, y-o-y) at Market Prices, measured in Constant 2010 US$.<br>Source: World Bank MFM, DEC GEM, and DEC GEP. |
| Inflation (Consumer Price Index) | Note: Period average percent change in CPI inflation.<br>Source: World Bank MFM, DEC GEM, and Sri Lanka Department Of Census And Statistics. |
| REER (CY) | Note: Real effective exchange rate is the nominal effective exchange rate (a measure of the value of a currency against a weighted average of several foreign currencies) divided by a price deflator or index of costs. An increase in REER implies that exports become more expensive and imports become cheaper.<br>Source: World Bank DEC GEM and DECPG. |
| Current Account Balance (% of GDP) | Note: Does not include grants unless otherwise stated.<br>Source: World Bank MFM and staff calculations. |

| | |
|---|---|
| Trade Balance (% of GDP) | Note: Trade balance in goods and services is derived by offsetting imports of goods and services against exports of goods and services as ratio to GDP.<br>Source: World Bank WDI and staff calculations. |
| Import Growth (%, y-o-y) | Note: Annual (respective) fiscal year percent change of goods and non-factor services (GNFS) imports.<br>Source: World Bank MFM and DEC GEP. |
| Export Growth (%, y-o-y) | Note: Annual (respective) fiscal year percent change of goods and non-factor services (GNFS) exports.<br>Source: World Bank MFM, DEC GEM, and DEC GEP. |
| Foreign Reserves, months of import cover (CY) | Note: For the annual data, this item shows reserves expressed in terms of the number of months of imports of goods and services they could pay for [Reserves/(Imports/12)]. For the monthly data, gross reserves expressed in terms of number of months of import coverage in goods.<br>Source: World Bank WDI, DEC GEM, and Nepal Rastra Bank. |
| Remittances (US$ million) (CY) | Note: Personal remittances including personal transfers and compensation of employees in Current US$.<br>Source: World Bank WDI and Haver Analytics/National Authorities. |
| Fiscal Balance (% of GDP) | Note: Does not include grants unless otherwise stated.<br>Source: World Bank MFM. |
| Public Debt (% of GDP) | Note: Gross public debt stock including domestic and foreign liabilities, End of Period.<br>Source: World Bank MFM. |
| Private Consumption Growth (%, y-o-y) | Note: Annual (respective) fiscal year percent change in gross consumption expenditure.<br>Source: World Bank MFM and DEC GEP. |
| Gross Fixed Capital Investment Growth (%, y-o-y) | Note: Annual (respective) fiscal year percent change in gross fixed capital expenditure.<br>Source: World Bank MFM and DEC GEP. |
| Net Foreign Direct Investment (% of GDP) | Note: Net balance of Foreign Direct Investment assets and liabilities as ratio to GDP.<br>Source: World Bank MFM and WDI. |
| Portfolio Investment (US$ million) | Note: Net balance of Foreign Portfolio Investment assets and liabilities in Current US$.<br>Source: World Bank WDI and Haver Analytics/National Authorities. |


WORLD BANK
IBRD • IDA | WORLD BANK GROUP