NEPAL COUNTRY ECONOMIC MEMORANDUM

CLIMBING HIGHER:
TOWARD A MIDDLE-INCOME NEPAL

May 2017

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South Asia Region

WORLD BANK GROUP

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ABBREVIATIONS

BRICS	Brazil, Russia, India, China, South Africa
CGE	computable general equilibrium
EM-DAT	Emergency Events Database
FAO	Food and Agriculture Organization
FDI	foreign direct investment
FS	feasibility study
FY	fiscal year
FNNTE	Federation of Nepalese National Transport Entrepreneurs
GDP	gross domestic product
GFCF	gross fixed capital formation
GNI	gross national income
ICOR	incremental capital output ratio
LIC	low-income country
M&E	monitoring and evaluation
MOF	Ministry of Finance
MW	megawatt
NASA	National Assessment of Student Achievement
NER	Net Enrollment Rate
NPC	National Planning Commission
PDA	Project Development Agreement
PIM	Public Investment Management
SAM	Social Accounting Matrix
SLC	School Leaving Certificate
SPS	Sanitary and Phytosanitary Standards
TEA	Trucking Entrepreneurs' Association
TFP	total factor productivity
UN	United Nations
US$	United States dollar
VAT	value-added tax
WB	World Bank
WDI	World Development Indicators

TABLE OF CONTENTS

BOXES

FIGURES

TABLES

EXECUTIVE SUMMARY

Nepal's recent history of development is marred by a paradox. Many countries in the world have experienced rapid growth but modest poverty reduction, as income has increasingly concentrated in the hands of the wealthy. Nepal, however, has the opposite problem—modest growth but brisk poverty reduction. The country has halved the poverty rate in just seven years and witnessed an equally significant decline in income inequality. Yet, Nepal remains one of the poorest and slowest-growing economies in Asia, with its per capita income rapidly falling behind its regional peers and unable to achieve its long-standing ambition to graduate from low-income status.

Unfavorable starting conditions have meant that Nepal's development path was never going to be easy. First, historical and natural endowments make development challenging. The country's geography—landlocked externally and challenging topography internally—represents a natural barrier to its development. Its history of extractive political regimes left Nepal with extremely low levels of physical and human capital and illiteracy rates of 90 percent in 1951. Second, a propensity for natural disasters, which most recently included two devastating earthquakes in 2015, contributed to the destruction of physical assets and near continuous setbacks. Third, Nepal is uniquely exposed to India and its pace of economic development, both for good and bad. Fourth, during the past two decades, the country has been undergoing a prolonged period of political transition, from a monarchy to a multiparty democracy, marked by armed conflict, ethnic protests, and frequent changes in government. Put simply, Nepal has faced enormous obstacles on its path to development.

Challenging development constraints have been further compounded by unsupportive policy choices. The economic history of Nepal over the past 45 years provides important lessons. The resulting current state of Nepal's economy not only reflects the challenging constraints to development, but also policy choices that have resulted in weak performance of the large agricultural sector, low public investment and capital accumulation, and low productivity growth. During the past 45 years (1970–2014), Nepal grew at an average annual rate of 4 percent, while the growth rate of per capita income was the lowest in South Asia, averaging just 2 percent during this period.

Given this backdrop, it is not surprising that outward migration has grown in importance, especially in the post conflict period. In FY1996, approximately one in four Nepali households received some form of remittances. This became one in

three by FY2004 and more than one in two by FY2011. Not only did more households start receiving remittances, but the amount of remittances received also increased over the years. The first half of the 2000s saw a drastic increase in remittances, from 2 percent of gross domestic product (GDP) in FY2000 to 15 percent in FY2005, 22 percent in 2010, and as much as 30 percent in FY2016, making Nepal the second highest recipient in the world among countries with a population of over 1 million and measured as a share of the economy. Given the phenomenal rise in remittances, they are likely the primary engine behind the improvements in living standards witnessed in Nepal, both directly (households receiving remittances) and indirectly (increased labor income of those that remained).

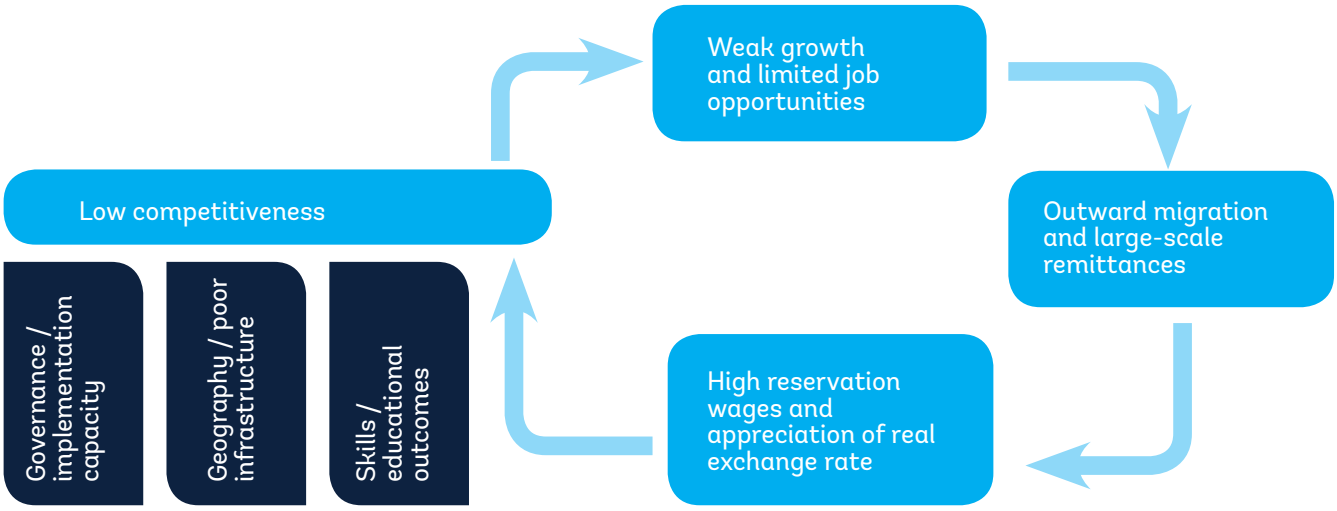
Despite the successful and rapid reduction in poverty, there is an urgent need to change Nepal's development model. Large-scale migration is not a sign of strength, but a symptom of deep, chronic problems. Remittances are providing a safety net so people do not fall into poverty, but are not being used to leverage rapid growth and greater opportunity. Large-scale migration is rapidly, and in many cases, permanently, depleting the country's stock of human capital. And while remittances are helping boost household expenditure, they are doing little directly to improve public service delivery. Consequently, the quality of education, health care, and infrastructure remains abysmal.

Further, the current development path is not aiding Nepal's escape from the low-growth trap it is in. Historically, low economic growth led to a shortage of employment opportunities at home, which is fueling labor outmigration. Labor outmigration has resulted in a large flow of remittances (in per capita terms and as a share of GDP). However, large-scale migration and the ensuing remittances have also contributed to the steady loss of competitiveness (through appreciation of the real exchange rate) and have enabled the growth of low-productivity services. Further, they have reduced pressure to generate more productive employment at home. Consequently, this cycle compounds existing and longstanding challenges that hamper Nepal's competitiveness, furthering weak growth and limited domestic opportunities. All these factors combined mean that Nepal—home to some of the world's most industrious and adventurous people—could be stuck in a low-growth, high-migration equilibrium for years to come (Figure ES.1).

Perhaps the most detrimental aspect of large-scale migration is that it relieves the pressure on policy makers to be more accountable and to deliver results. Large-scale migration solves several problems for Nepal. It alleviates unemployment; enables greater consumption; and leads to higher tax collection, given the high dependency of taxation on imports (currently generating half of all revenues). At the same time, it lessens the pressure on the political class to break with the long history of trading favors for patronage. Frequent change of governments has become a long-established norm; the country has had 22 governing coalitions in the last 26 years. This political instability has hampered the country's development and disillusioned its citizens, contributing to further migration (Figure ES.2).

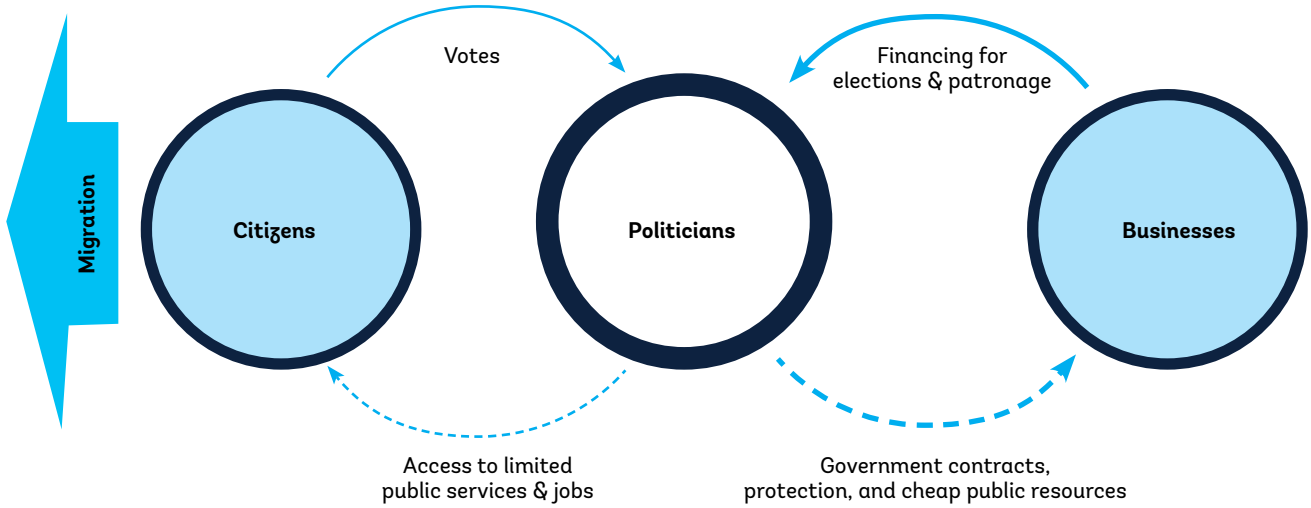
Without comprehensive reforms to address its long-standing challenges, Nepal will probably not become a lower-middle-income country before 2030. To determine the growth rate of potential GDP going forward

Figure ES.1 Nepal's low-growth, high-migration trap



Source: World Bank staff.

Figure ES.2 Political vicious cycle



Source: World Bank staff adapted from Rajan (2014).
Note: Thickness of arrows approximates the size of relationships.

in a business-as-usual scenario, we keep key variables—investment-to-GDP, growth of human capital, growth of productivity—at recent historical averages and complement them with United Nations (UN) population projections. As a result, potential or trend rate of growth slows to 3 percent from the current 4 percent. At this trend rate of growth, per capita income would reach US$958 in 2030. At present, the World Bank defines lower-middle-income countries as those with a per capita income in excess of US$1,025. However, under a reform scenario where, for example, both investment and productivity improve until 2021 and then level off, Nepal's trend rate of growth accelerates to 4.3 percent and graduation from lower-income-country (LIC) status occurs in 2027.

Consequently, a systematic assault is needed to break the vicious cycle and create the right balance between job creation at home and exports of labor. Marginal interventions are unlikely to help break the self-reinforcing dynamics that have kept Nepal in a low-growth, high-migration trap. Nepal needs a comprehensive approach that will both boost investment and accelerate productivity by carrying out the following:

1. *Breaking down policy barriers:* To tackle the persistent challenges of low investment and weak productivity, Nepal needs to dramatically restructure its public investment program; intensify the level of competition in the domestic market in sectors such as transport, logistics, and telecommunications; reduce the cost of doing business; and steadily integrate the economy with the rest of the world (see Part III).
2. *Building new sources of growth:* Unleashing large investments in hydropower would be a game changer for Nepal. It would not only lead to massive new investments and improved productivity, but it has the potential to lift wages significantly and help to partially reverse migration and increase competitiveness in downstream industries (see Part IV).
3. *Revitalizing existing sources of growth:* Reforms in agriculture, which account for one-third of GDP and two-thirds of the labor force, are key to further poverty alleviation, improving productivity and releasing labor for new sources of growth (see Part V).
4. *Investing in people:* Nepal is in the midst of a demographic transition. As a result of lower fertility rates, the share of the population that is working age is now greater than the share of the population that is not. This is the demographic dividend. To fully capture the benefits of the demographic dividend, investing in the skills of Nepali youths is imperative. Putting more human capital to productive use in Nepal is critical for a stronger and more sustainable growth path in the future (see Part VI).

History also teaches us that Nepal has undertaken bold and sweeping reforms before, and it can do so again. Between 1986 and 1996, Nepal instituted broad-based reforms that had a positive effect on the economy. Growth during this period averaged 5 percent, and was the highest in Nepal's modern history, while growth of per capita income increased to 2.4 percent. The economy became more open and diversified as the share of trade in GDP and exports, and the share of manufacturing, nearly doubled. These reforms were underpinned by the political transition to democratically elected governments that also gave the people a sense of new purpose. Today, they serve as a stark reminder that bold and challenging reforms in Nepal are indeed possible.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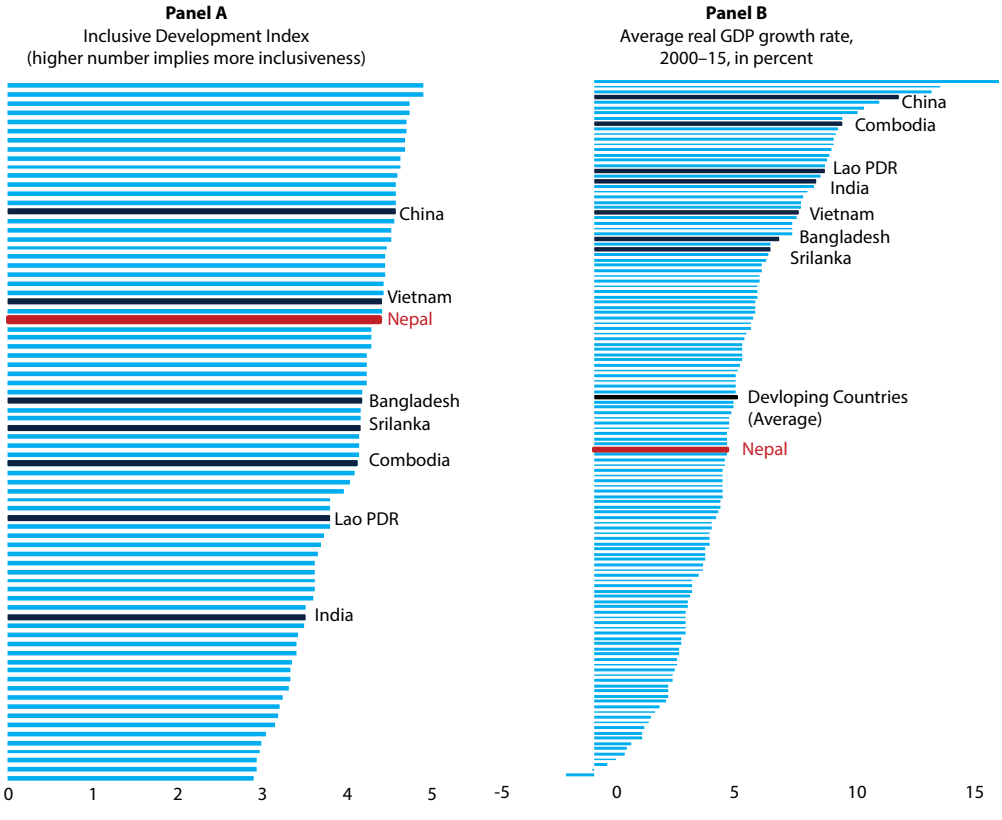
CHAPTER ONE
A LEADER IN POVERTY REDUCTION, BUT A LAGGARD IN GROWTH

1. **Nepal's development progression has both admirers and detractors.** The country has witnessed a remarkable reduction in poverty and an equally significant decline in income inequality in recent decades. It has a relatively low unemployment rate and strong female labor force participation, a rarity in the South Asia region. Nepal is ranked 27th among developing countries in the Inclusive Development Index of the World Economic Forum (2017), well ahead of several BRICS countries such as Brazil, India, and South Africa (panel A, Figure I.1). Yet, Nepal remains one of the poorest and slowest-growing economies in Asia, with its per capita income rapidly falling behind

Figure I.1 Nepal is simultaneously praised for its poverty reduction record and pilloried for its weak growth performance



Source: World Economic Forum.

Source: World Development Indicators.

its regional peers (panel B, Figure I.1). Some observers are concerned that the country is hurtling toward becoming a fragile state, while others fear that Nepal is trapped in a low-investment, low-growth equilibrium (IMF 2015).

2. The country's steady progress in poverty reduction is even more impressive once its structural constraints are considered. Nepal's geography—landlocked externally and challenging topography internally—poses a natural barrier to its development. This has been exacerbated by a series of natural disasters including two devastating earthquakes in 2015 (Box I.1). The country has been undergoing a prolonged period of political transition, from monarchy to a multiparty democracy, marked by armed conflict, ethnic protests, and unstable governments during the past two decades. Against this backdrop, Nepal has met most Millennium Development Goal targets ahead of schedule, and the Multidimensional Poverty Index has steadily declined. Data from the Nepal Living Standards Survey fielded in FY2011 puts consumption-based poverty in the country at 25.2 percent. The headcount poverty rate declined by an average annual rate of 2.2 percentage points per year between FY1996 and FY2011—one of the fastest rates regionally (Figure I.2).

3. Nepal's sluggish growth rate, however, is unacceptable in a neighborhood that is home to some of the fastest-growing countries in the world. Starting from a low level, national income during the past 45 years (1970–2014) grew at an average of 4 percent, while the growth rate of per capita income was the lowest in South Asia, averaging just 2 percent during this period (Figure I.3). In recent years, Nepal's economy has grown at a slower rate than Afghanistan's, Bhutan's, and Lao PDR's, all three landlocked countries in the region. It has grown at the same or slower rate as Sri Lanka and Pakistan, two countries that have been severely affected by armed conflict and terrorism, respectively. And even Myanmar, a country significantly poorer and internationally isolated until recently, has grown at twice the rate of Nepal in recent years. Nepal is clearly punching significantly below its weight when it comes to overall economic performance.

4. Nepal's unusual development achievement can be explained largely by its high and sustained flow of remittances. Many countries in the world have experienced rapid growth but modest poverty reduction, as income has increasingly concentrated in the hands of the wealthy. But Nepal has the opposite problem—modest growth but brisk poverty reduction—thanks to its large-scale exports of human capital and the money remitted home. In FY1996, approximately one in four Nepali households received some form of remittances. This became one in three by FY2004 and more than one in two by FY2011 (World Bank 2016a). Consequently, the rapid increase in remittance receipts occurred at every spectrum of the consumption distribution. Not only did more households start receiving remittances,

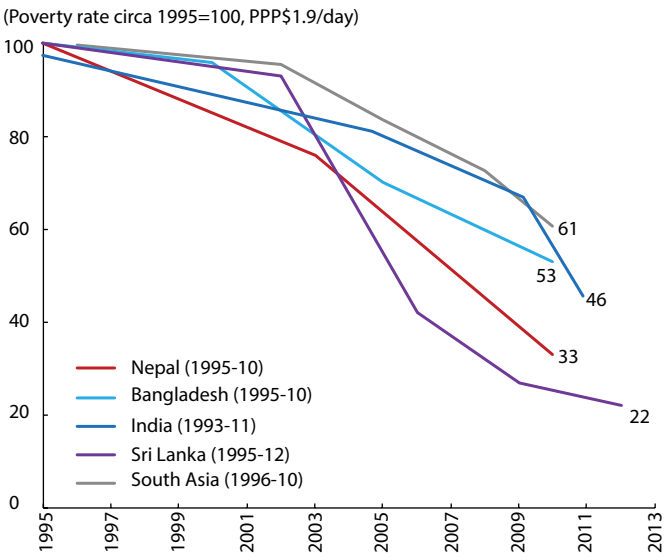
BOX I.1 The debilitating shocks of 2015 may have further set back development and growth potential

During 2015, in a span of six months, Nepal was hit by two major shocks. The first shock was the April 2015 earthquake, followed by over 400 aftershocks, which caused huge losses of life and assets. The earthquake not only caused physical destruction, but also severely impacted the record rate of poverty reduction. Simulations suggest that the earthquakes pushed an additional 700,000 to 1 million Nepalis into poverty during FY2015 and FY2016.

The second shock followed in September 2015 in the form of a near-complete disruption in cross-border trade with India. Acute shortages of fuel, raw materials, and essential supplies across the country caused prices to soar and industry and businesses to curtail economic activity. As a result, Nepal experienced its lowest growth in the last 14 years, barely avoiding a recession. While the effects of the trade disruptions may be temporary, they obstructed earthquake reconstruction efforts, dampened economic momentum and delayed a post-earthquake reconstruction recovery.

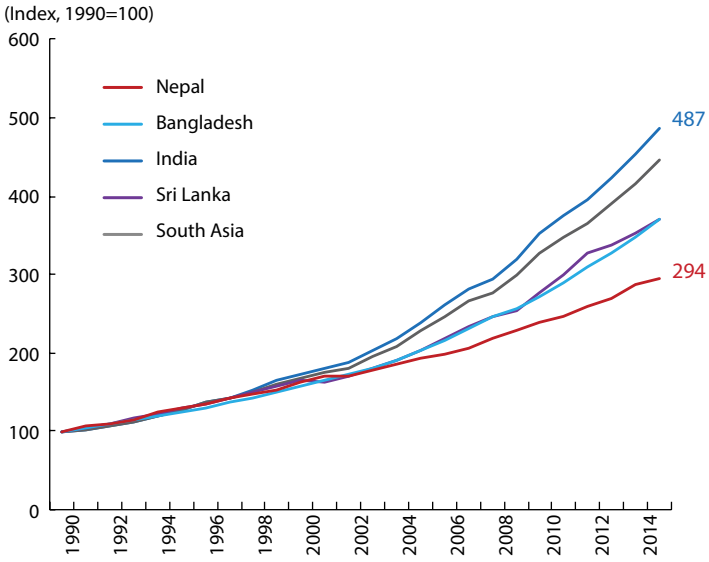
As a result of the shocks, Nepal's potential growth may be permanently lower. Standard growth theory posits that if a natural disaster destroys part of a country's capital stock, then the production possibility frontier shifts inward, leading to lower total output per capita. Subsequently, increased investment replenishes the capital stock again and returns it to its steady state level. In terms of growth rates, theory predicts growth to be lower than trend on impact and, under the right institutions, higher than trend thereafter. Before the earthquakes hit, actual growth appeared to be at potential and Nepal's output gap close to zero, given that output fluctuated around its trend growth of 4 percent. Boosting the economy's potential to achieve faster rates of growth in the future will hinge on the speed and quality of reconstruction efforts in rebuilding the destroyed capital stock. However, should the recovery effort falter, the medium-term path of Nepal's potential growth may be permanently affected by the events of 2015.

Figure I.2 Pace of poverty reduction in South Asia



Source: WB staff calculations.

Figure I.3 Growth of countries in South Asia

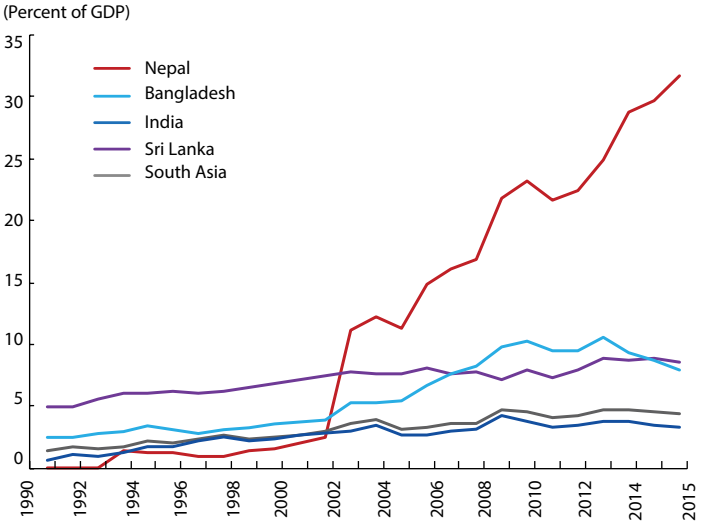


Sources: WDI and WB staff calculations.

but the amount of remittances received also increased over the years. Given the phenomenal rise in remittances, they are likely the primary engine behind the improvements in living standards witnessed in Nepal, both directly (households receiving remittances) and indirectly (increased labor income of those that remained).

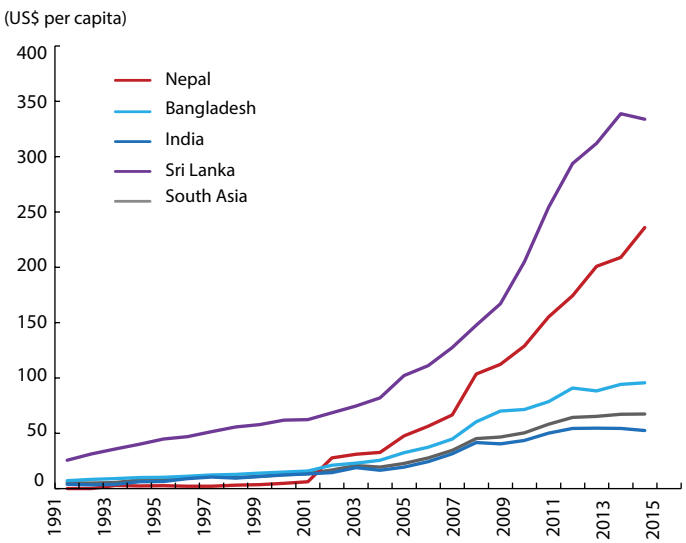
5. Remittances have increased in Nepal at a nearly unprecedented pace. Until the late 1990s, personal remittances received were less than 1 percent of GDP, lower than Bangladesh and India. The first half of the 2000s saw a drastic increase in this share, from 2 percent in 2000 to 15 percent in 2005, 22 percent in 2010, and as much as 30 percent in 2015, making Nepal the second highest recipient in the world among countries with a population of over 1 million and measured as a share of the economy (Figure I.4). The neighboring countries experienced an increase at a much more modest rate. Expressed in per capita terms in current U.S. dollars, on average, Nepal received less than US$5 of remittances from abroad in 2000. That amount reached US$205 by 2014, the second highest in South Asia and more than twice as much as Bangladesh (US$94) (Figure I.5) (World Bank 2016a). Remittances in Nepal are 10 times larger than foreign aid and 2.5 times larger than total exports. The annual flow of remittances is nearly as large as the entire stock of foreign reserves.

Figure I.4 Remittances as a share of GDP



Sources: WDI and WB staff calculations.

Figure I.5 Remittances per capita



Sources: WDI

CHAPTER TWO

THE STATUS QUO IS NEITHER SUSTAINABLE NOR DESIRABLE

6. Despite the successful and rapid reduction in poverty, there is an urgent need to change Nepal's development model. Large-scale migration is not a sign of strength, but of deep structural problems. Remittances are providing a safety net so people do not fall into poverty, but are not being used to leverage rapid growth and greater opportunity. Large-scale migration is rapidly, and in many cases, permanently, depleting the country's stock of human capital. And while remittances are helping boost household expenditure, they are doing little directly to improve service delivery. Consequently, the quality of education, health care, and infrastructure remains abysmal.

7. Despite many positive effects of remittances, there are at least five reasons why the status quo is neither sustainable nor desirable:

1. Nepal's pace of development is increasingly driven by exogenous factors. Historically, growth in Nepal depended on exogenous factors, such as a good monsoon for a bountiful harvest. Since the turn of the century, growing migration has resulted in ever higher remittances, which are now as large as agriculture and are again completely dependent on conditions outside of Nepal's control. This is a perilous strategy in a world that is becoming increasingly insular, with a significant backlash against foreign workers. Therefore, the need for a domestic engine of growth that complements and de-risks the economy from exogenous factors has never been more important.

2. Large-scale migration and remittances are compounding—not resolving—long-standing challenges. Remittances are fueling consumption that in turn sustains low-productivity agricultural activity and growth of low-skilled services. As employment in services has grown, it has had a positive relocation effect, with workers moving out of agriculture and finding more productive jobs in the urban service sector. However, declining productivity in the urban service sector may have a negative dynamic effect; that is, these jobs are only marginally better and thus do not reflect a major transformation. As such, this atypical structural transformation is a constraint on boosting aggregate productivity, a key determinant of faster growth in the long run.

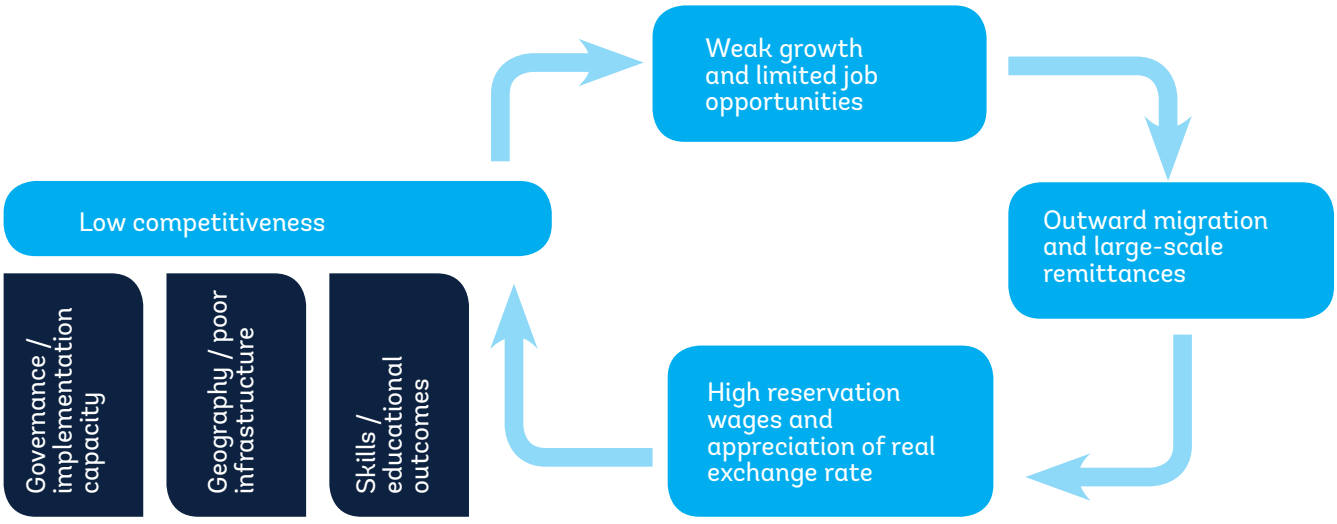
3. Remittances are contributing to the loss of competitiveness and to an anti-export bias of tariff policies. Consumption fueled by remittances raises imports and appreciates the real exchange rate. Analysis suggests that an increase in remittances by 10 percent leads to a 0.5 percent appreciation of the real exchange rate in the long run (Portugal 2017). In turn, the appreciation of the real exchange rate further favors imports and hampers exports. The impact is possibly largest on low-value, low-margin manufactured goods, which account for a large share of Nepal's export bundle. Furthermore, rising imports are an attractive tax base and prompt increased reliance on import taxes. This aggravates the anti-export bias, because exporters rely on imported, intermediate goods as key inputs for production.

4. Large-scale migration has reduced the pressure to generate more productive employment at home. Out of a total workforce of 14 million, some 4 million (28 percent) are believed to be working abroad. This is around twice the entire population of Kathmandu, Nepal's capital and largest city. Since the end of the conflict in 2007, the labor force has increased, on average, by about 330,000 new entrants each year. Registered outward migration exceeded the increase in labor force each year, averaging 375,000 during this period. This is leading to a sharp reduction of labor supply inside Nepal. In addition, remittances are causing recipient family members to increase leisure, work less, and to further reduce supply of labor and increase reservation wages. The increase in real wages is a double-edged sword, because it can add to exchange rate appreciation and erode external competitiveness by raising production costs.

5. Large-scale migration has lowered the potential for urbanization to serve as an engine of growth. Increasing urbanization can foster productivity through the concentration of economic activity in cities. So-called agglomeration economies can improve productivity and spur employment creation, particularly in manufacturing and services. These potential forces may be subdued by large labor outmigration.

8. Consequently, Nepal appears stuck in a low-growth, high migration trap. Historically, low economic growth led to a shortage of employment opportunities at home, which is fueling labor outmigration. Labor outmigration has resulted in a large flow of remittances (in per capita terms and as a share of GDP) contributing to rapid poverty reduction. However, large-scale migration and ensuing remittances are also contributing to the steady loss of competitiveness (through appreciation of the real exchange rate) and have enabled the growth of low-productivity services. Further, they have reduced pressure to generate more productive employment at home. This cycle compounds existing and long-standing challenges that hamper Nepal's competitiveness, furthering weak growth and limited domestic opportunities. All these factors combined mean that Nepal—home to some of the world's most industrious and adventurous people—could be stuck in a low-growth, high-migration equilibrium for years to come (Figure II.1).

Figure II.1 Nepal's low-growth, high-migration trap



Source: World Bank staff.

Why has growth been persistently low?

9. First, historical and natural endowments in Nepal make development challenging. In addition to being landlocked, Nepal has a difficult topography that rises sharply from the southern plains in Tarai to the Middle Hills and to the Himalayan range in the north, which hampers domestic connectivity. In addition, for more than a century after 1846, Nepal was ruled by the dynastic Prime Ministerial Rana family. Their principal objective was to extract resources from the country; government expenditures were mainly devoted to supporting their lavish lifestyle and repressing political and economic threats. Until 1951, there was no modern administration, and practically no public education, which resulted in very low levels of physical and human capital and illiteracy rates exceeding 90 percent (World Bank 1964).

10. Second, Nepal is prone to natural disasters such as earthquakes. Because Nepal lies toward the southern limit of the collisional boundary where the Indian Plate underthrusts the Eurasian Plate, United Nations Development Programme estimates that Nepal is the 11th most earthquake-prone country in the world (UNDP 2004). The last great earthquake, with a magnitude 8.4, was in 1934, taking over 10,000 lives and destroying most of the infrastructure. Earthquakes causing severe human and physical loss occurred in 1980, 1988, 2011 and, most recently, in 2015. A 7.6 magnitude earthquake on April 25, 2015, claimed around 9,000 lives and destroyed or damaged assets worth US$5.2 billion, approximately one-quarter of the country's FY2014 GDP. As Box II.1 explains, empirical research finds that natural disasters hurt growth.

11. Third, Nepal is uniquely exposed to India and its pace of economic development. India is Nepal's largest trading partner, accounting for 65 percent of Nepal's total trade, and the principal transit route, with more than 85 percent of all imports entering through India irrespective of their country of origin. The two countries share 1,750 kilometers of open border, which means that, in addition to formal trade, there is a considerable volume of unrecorded trade in goods, exchange of labor, remittances and, consequently, a close correlation of inflation. The Nepalese rupee is pegged to the Indian currency, giving the central bank's limited scope to undertake independent monetary policy. The fact that India itself remains a relatively closed economy by global standards adds a layer of delicateness to this economic symbiosis.

12. Fourth, Nepal suffered a prolonged episode of conflict followed by a drawn out political transition. In addition to the direct suffering wrought by the violent insurgency that occurred from 1996 to 2006, it was a major drag on growth and development. However, even after the end of the conflict, much-anticipated peace dividends did not materialize, as the country embarked on a 10-year process of drafting a new constitution. This has, in effect, led to a 20-year period of instability and political transition that has lasted to this day. During this period, the country went from being a Hindu

BOX II.1 Empirical research on the effects of large disasters on growth

Since the early 2000s, a new strain of empirical research has emerged that evaluates the macroeconomic impact of disasters and that has found a negative relationship between disasters and growth. The main source of disaster data for these studies tends to be the Emergency Events Database (EM-DAT), which captures outcomes of disasters (number of people affected, damage caused, state of emergency declared, and so forth) and the impact on various macroeconomic variables. Two recent studies (Klomp and Valckx 2014; Lazzaroni and van Bergeijk 2014) summarize results from over 60 studies using a meta-analysis approach. They find that, on average, there is a negative relationship between natural disasters and economic growth.

This finding is further confirmed using a data set that captures the physical intensity of disasters. Instead of capturing just the outcomes of disasters, Felbermayr and Gröschl (2014) use a data set on physical intensity (that is, the Richter scale, Volcanic Eruptions Index, wind speed, precipitation and temperature, and so forth) and find that natural disasters also reduce growth of GDP per capita. This approach has an advantage of capturing more disaster events than those reported in the EM-DAT. They estimate that the impact of stronger disasters (top 1 percentile in strength) lowers growth per capita by 6.8 percent on average. In addition, looking at the length of impact, they do not find that disasters lead to a temporary boom, on average, in the subsequent five years. Consequently, they argue that "natural disasters harm development, period." In addition, they find strong evidence that higher institutional quality, higher openness to trade, and higher financial openness improve the ability of countries to cope with the costs of the natural disasters.

monarchy to a federal republic, with 20 prime ministers and as many governments. Because large sections of the population are dissatisfied with certain provisions of the new constitution, the remaking of a highly centralized country into a functioning federal country is yet to start in earnest and has already proven to be a contentious process.

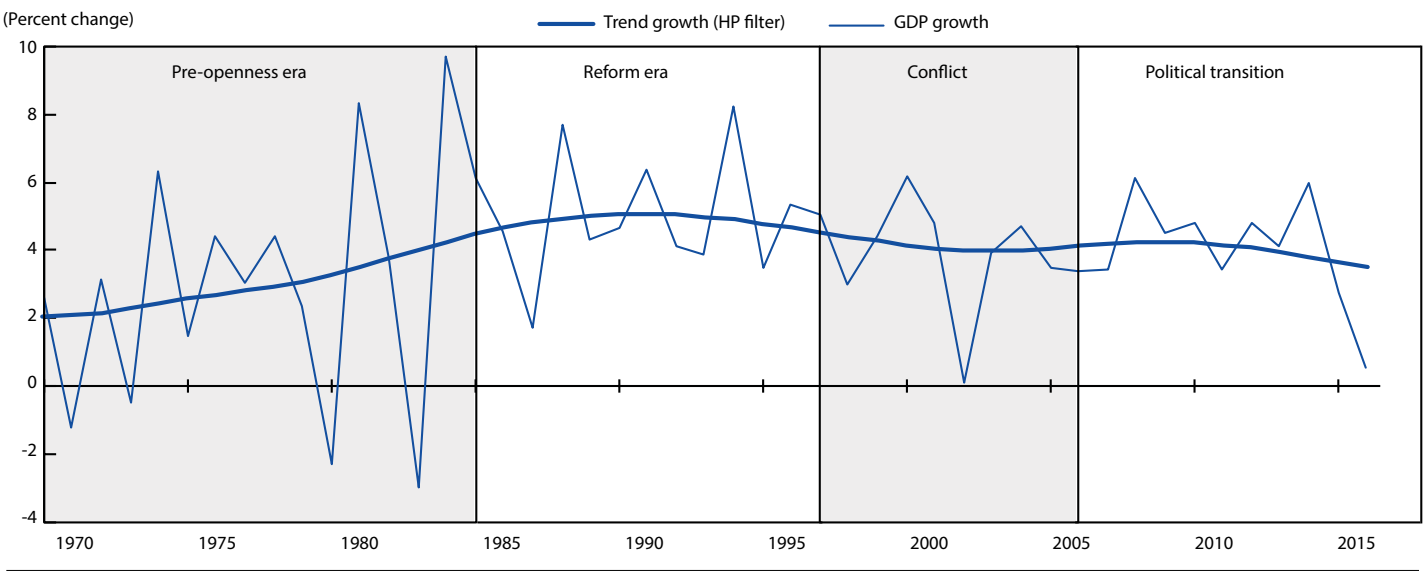
Contemporary economic history points to weak institutions and poor policy choices

13. Contemporary economic history of Nepal teaches us that weak institutions and unsupportive policy choices have compounded Nepal's challenges. We divide Nepal's economic history into four distinct periods to examine the policies that have shaped development (Figure II.2 and Figure II.3).

14. The first period, from 1970 to 1985, was a pre-openness era of slow and volatile growth. Nepal's difficult initial conditions were further compounded by policies that Nepal followed from 1970 to 1985. Based on development thinking at the time, the policies were interventionist, protectionist, and state-led, resulting in a large public sector, dominance of state-owned corporations, and a closed economy. This ultimately led to low levels of investment and meagre productivity growth. As a result, between 1970 and 1985, the growth rate of national income averaged 3 percent and that of per capita income just 0.8 percent. On the one hand, restrictive economic policies, such as an overvalued exchange rate, led to a decline in the performance of industries and exports, which put pressure on the external accounts. On the other hand, expansionary fiscal policies in the early 1980s failed to stimulate the economy and resulted in a large fiscal deficit, which led to a full-blown macroeconomic crisis. The overall budget deficit rose from 6.1 percent of GDP in FY1981 to 12.3 percent in FY1983, while the current account deficit more than doubled between FY1981 and FY1983, reaching almost 9.2 percent of GDP. Gross foreign reserves fell from the equivalent of eight months of imports to three months by the end of FY1985 (World Bank 1989).

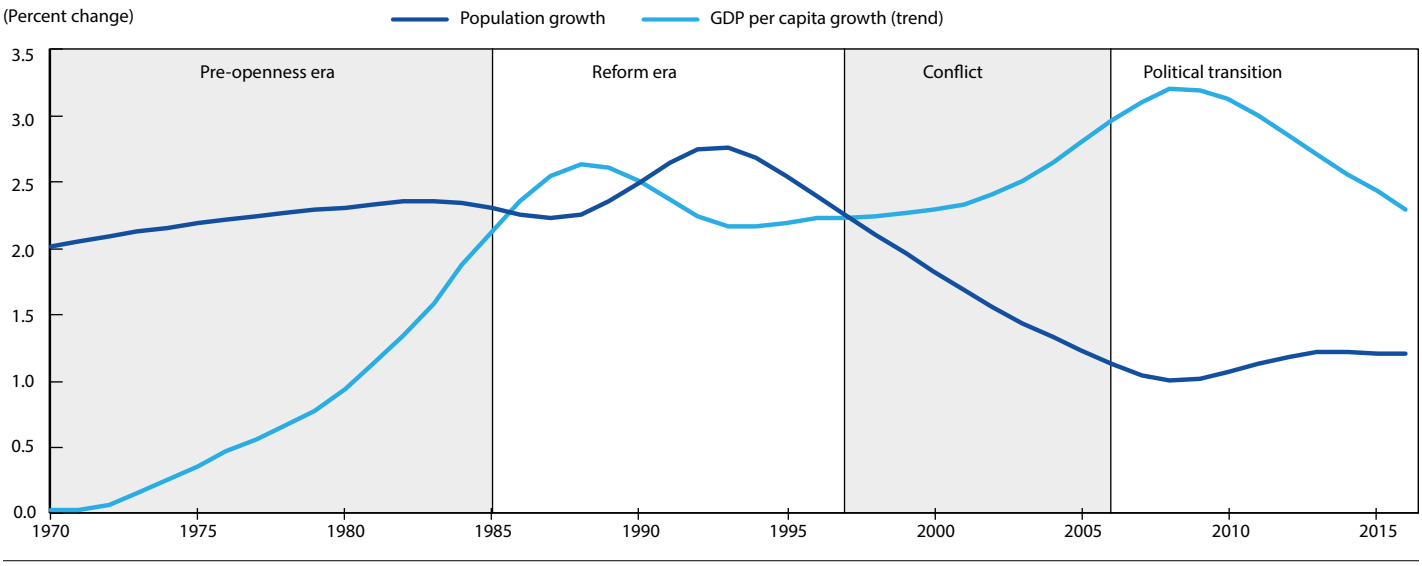
15.The second period, from 1986 to 1996, was an era of openness, reforms, and the highest average rate of growth. The precarious macroeconomic situation of the mid-1980s threatened the viability of Nepal's development. As a result, beginning in 1985, the government took steps to implement stabilization and adjustment programs supported by the IMF and World Bank aimed at restoring prudent fiscal and monetary policies and setting the economy on a sustainable growth path. By the late 1980s, Nepal was not only out of the stability crisis, but liberalization of the trade and industrial regime had begun. The end of the party-less Panchayat system, followed by the democratically elected government in 1991, gave further impetus to the reforms. The government began implementing a broader set of reforms aimed at reducing poverty through market-oriented reforms and investments in social sectors to develop human capital. Reforms in the early 1990s included initiatives to ease the entry of firms, increase trade and current account transactions, and liberal-

Figure II.2 History of economic growth in Nepal, 1970–2015



Sources: WDI and WB staff calculations.
Note: HP = Hodrick-Prescott filter.

Figure II.3 Population and GDP per capita growth, 1970–2015



Sources: WDI and WB staff calculations.

ize financial sector policies. By the mid-1990s, reforms were deepened, such as liberalization of the agricultural sector, introduction of a value-added tax, and promulgation of local governance laws (World Bank 2005). These reforms had a positive effect on the Nepalese economy. Growth accelerated and income volatility decreased markedly. Average growth between 1986 and 1996 was the highest in Nepal's modern history, averaging 5 percent, with growth of per capita income increasing to 2.4 percent. The economy became more open and diversified, as the share of trade in GDP and exports doubled (exports of goods and services rose from 11.5 percent of GDP in 1985 to 23 percent of GDP in 1996)[1]. The share of manufacturing also nearly doubled from 5 percent of GDP in 1985 to 9 percent of GDP in 1996.

16. The third period, from 1997 to 2006, was an era of conflict and political turmoil, which resulted in slower growth. Despite the progress made in the previous period, Nepal's development was fragile and fraught with deficiencies. Most importantly, not all regions or groups were able to participate equally in growth and human development gains. The Western and Far Western regions (about 22 percent of the population) and Dalits (lowest caste or "untouchables") and indigenous nationalities (Adivasi Janjatis) (about 46 percent of the population), particularly, lagged behind.[2] In addition, despite the relative progress, per capita growth barely kept up with population growth, largely explaining the persistence of poverty. Further, starting in the mid-1990s, a succession of unstable coalition and minority governments ruled for 12-month periods each, on average. The resulting political instability undermined the ability of nascent institutions to implement their own policies. All these factors sowed the seeds for a Maoist insurgency, which started in 1996, and intensified after 2001, leading to a serious deterioration of security, and disruption in development and governance in large parts of Nepal. Democratic institutions were progressively suspended, and in February 2005, King Gyanendra assumed direct rule. The turmoil resulted in large war costs and slow progress in reforms, leading to a marked slowdown in growth during this period. Industry was also hampered by labor unrest and work interruptions due to the civil conflict. Furthermore, an increasingly competitive global environment, brought about by the phasing out of the quota that was guaranteed under the Multi-Fiber Arrangement, resulted in a steady loss in the market share of Nepali exports.[3] By 2006, exports of goods and services as a share of GDP had declined to 13 percent of GDP and manufacturing to 7.8 percent of GDP. However, despite these challenges, broad macroeconomic stability was maintained.

17. The fourth period, from 2007 to 2014, was the post conflict period, with a focus on the new political compact, which overshadowed economic issues. The political compact around the new interim Constitution endorsed the devolution of power, social and political in-

[1] Mostly driven by garments and carpets.
[2] However, there is significant disparity both between and within categories. For example, while Brahmans and Chhetris (upper castes) have the highest HDI ranking on average, they also have some of the highest poverty rates in the country in remote geographic regions such as the Mid- and Far-Western hills and mountains.
[3] The Multi-Fiber Arrangement ended in 1995, but the quota system for trade in textiles was gradually phased out over the next 10 years, formally ending in 2005.

clusion, democratic elections, and political accountability. However, the peace dividend that many had anticipated has largely failed to materialize, and the economy sputtered forward at an average growth rate of 4.7 percent during this period. The sharp increase in investment that was expected did not materialize, while Nepal's investment climate may have been worsened by the prolonged period of political transition and uncertainty.

Growth decomposition indicates persisting challenges

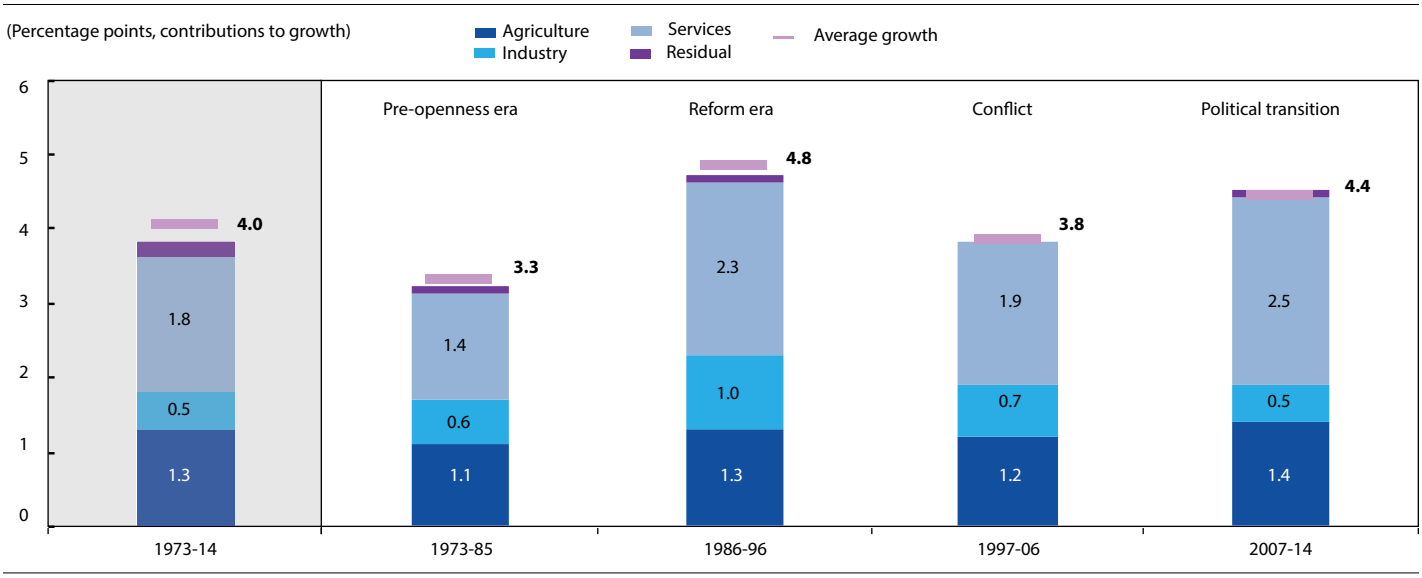
18. Decomposing economic performance over the past 45 years reveals several key stylized trends. Three broad trends can be discerned from Nepal's historical economic performance: weak performance of the large agricultural sector, low public investment and capital accumulation, and low productivity growth.

19. Agricultural performance has been weak. Although declining as a share of GDP, agriculture plays a large role in Nepal's economy—starting at two-thirds of value added in 1970 and averaging 50 percent through the entire period. While the economy grew at an average rate of 4 percent, agriculture grew at 2.8 percent, barely faster than population growth of 2 percent. Given its large relative size, slow growth rates in agriculture have dragged down growth overall, especially in per capita terms. In addition, agriculture has absorbed a large share of labor—starting at 86 percent at the beginning of the period and declining to 66 percent at present. Consequently, growth of value added per worker employed has averaged just 0.7 percent per year (Figure II.4).

20.Low public investment and capital accumulation. Gross fixed capital formation (GFCF) hovered at an average of 18 percent of GDP during 1970–2014. GFCF increased and averaged 20 percent of GDP from 1985 to 1996 but could not be sustained. The stagnation of investment after 1996 can be attributed to the conflict. However, even after the end of conflict, there has not been a boom in investment. As a result, investment contributed just 1 percentage point to the average growth of 4 percent for the entire period (Figure II.5).

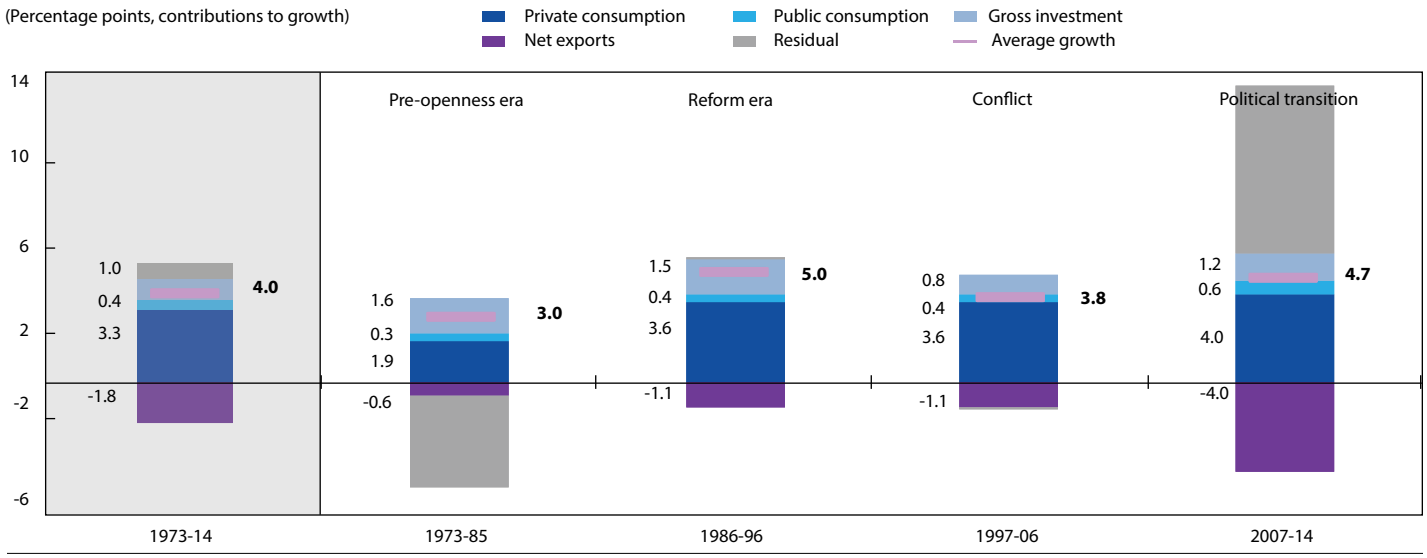
21. Low aggregate productivity growth. Throughout the period, productivity did not improve as it zigzagged between periods of negative and positive growth. For the first decade and a half, productivity declined. After liberalization reforms started in 1985, productivity growth picked up, registering a positive contribution to economic growth. This was also the period with the highest contribution to economic growth from capital formation. Not surprisingly, the contribution of capital inputs and total factor productivity (TFP) significantly dropped during the conflict period (1996–2006). While TFP growth improved in the post conflict period, capital accumulation has not and is still contributing less to growth compared to the pre-conflict period (Figure II.6).

Figure II.4 Contribution to value-added growth by sector



Source: WB staff calculations based on national data.

Figure II.5 Contribution to GDP growth by expenditure



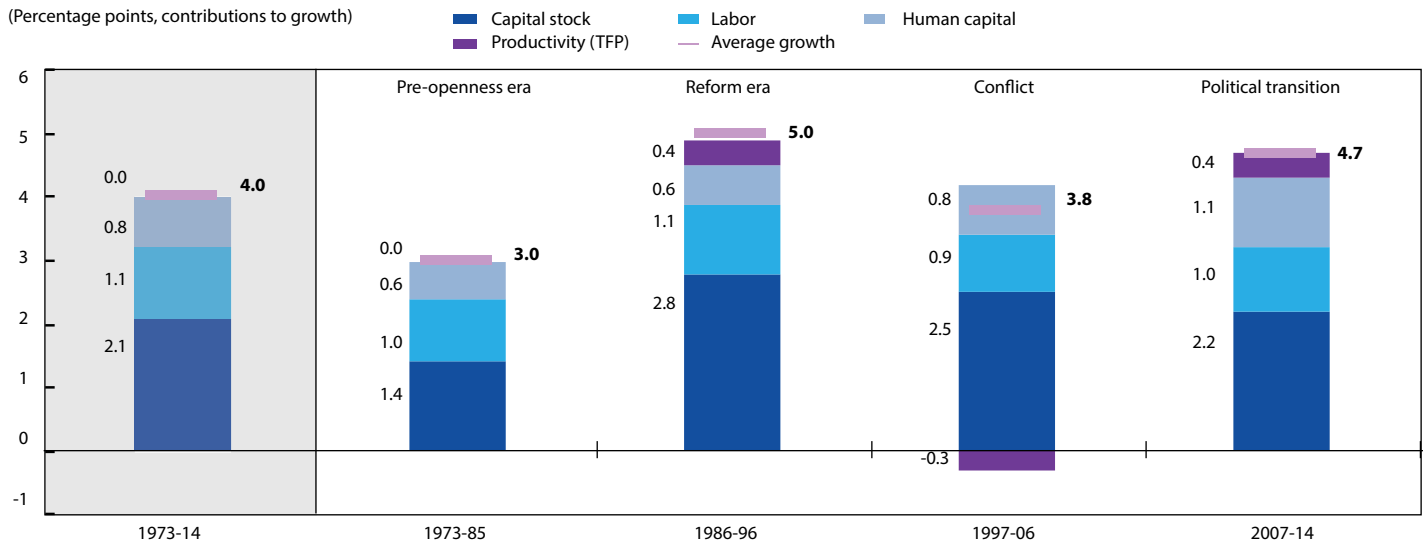
Source: WB staff calculations based on UN data.

Atypical economic transformation is stifling the country's development aspirations

22. The Government of Nepal has continuously strived to achieve economic development through a series of national plans, with graduation from low-income status being a recent goal. From 1956 to 2007, the government executed 10 five-year plans aimed at increasing production and living standards. Following the abolition of the monarchy and adoption of the Interim Constitution in 2007, plans were shortened to three years. Currently, the Fourteenth Plan (2015–2017) has set a goal of attaining middle-income status by 2030.

23. Migration and remittances have supported atypical structural transformation. Atypical structural transformation occurs when workers leave rural low-productivity agriculture for jobs in urban high-productivity manufacturing. These cities act as engines of growth, leading to further transformation to even greater value addition in a service-based economy. While the share of agriculture in Nepal's economy has declined rapidly to 34 percent, the movement of labor out of agriculture was not triggered by new jobs in emerging Nepali industries, but by foreign employment opportunities.

Figure II.6 Contribution to GDP growth by factor



Source: WB staff calculations based on national data.

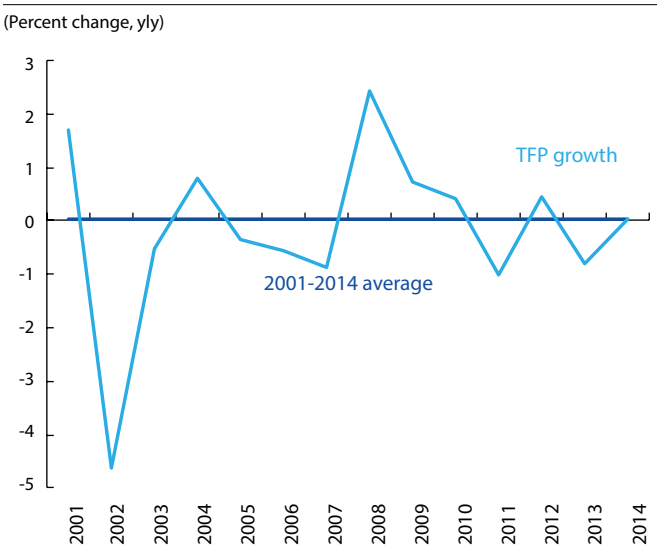
Nonetheless, low-productivity agriculture remains the largest employer in the country. Remitted foreign earnings have fueled an expansion of services in Nepal, such as banking, education, restaurants, trade, and real estate, which now account for over 50 percent of GDP, while industry has declined in relative terms, accounting for the remaining 16 percent.

24. Atypical transformation is, in turn, limiting productivity growth. One side effect of "premature graduation" to services has been that the skills content of all wage-earning jobs in the economy has not increased during 1995–2010. While there are greater numbers of professional services and manufacturing jobs, they are low-skilled jobs. This has led to a positive relocation effect, that is, workers moving out of agriculture have found better jobs in urban services. However, declining productivity in urban services reflects a negative dynamic effect; that is, these jobs are only marginally better and thus do not constitute a sustainable transformation. As such, this atypical structural transformation is a constraint on boosting aggregate productivity, a key determinant of faster growth in the long run.

25. Using neoclassical growth theory, a long-term growth model is applied to Nepal to analyze what it would take for the country to graduate from low-income-country (LIC) status. Based on the seminal work of Solow (1956) and Swan (1956), and more recent application by Hevia and Loayza (2012), we model future potential or trend growth rate of Nepal's economy. This model enables us to calculate a future path of trend growth based on a set of inputs, such as assumptions on the time path of investment-to-GDP ratio, growth rates of human capital, TFP, population growth, labor force participation, and other key drivers of growth. The World Bank classifies countries into various income groups based on gross national income (GNI) per capita calculated using the Atlas method. For 2016, lower-middle-income countries were defined as countries with GNI per capita of more than US$1,025. The GNI per capita in 2016 for Nepal was US$730.

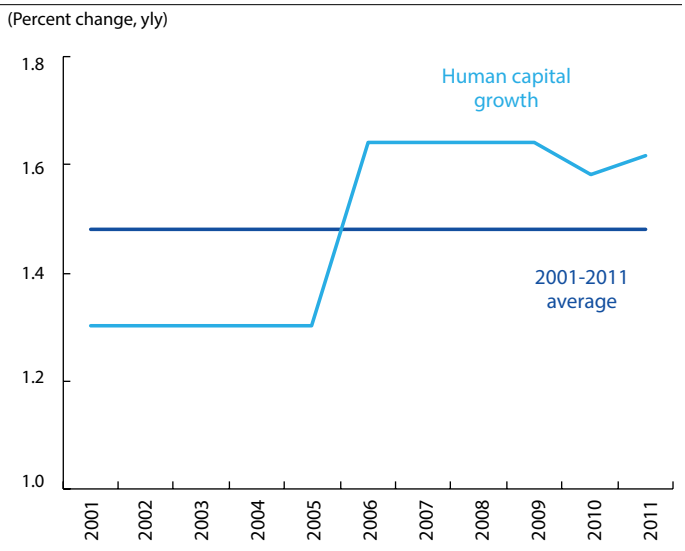
26. Without comprehensive reforms to address its long-standing challenges, Nepal will probably not become a lower-middle-income country before 2030. To determine the growth rate of potential GDP going forward in a business-as-usual scenario, we keep key variables—investment-to-GDP, growth of human capital, growth of productivity—at recent historical averages and complement them with UN population projections. For example, based on WB estimates, from 2001 to 2014, productivity grew at just 0.04 percent, on average, (Figure II.7), and human capital grew, on average, at 1.5 percent per year (Figure II.8), while the investment-to-GDP ratio averaged around 21 percent of GDP (Figure II.9). If nothing were to change, the potential or trend rate of growth would slow and average 3 percent from 2017 to 2030. At this trend rate of growth, per capita income would reach US$958 in 2030 (Figure II.10).

Figure II.7 Historical productivity growth



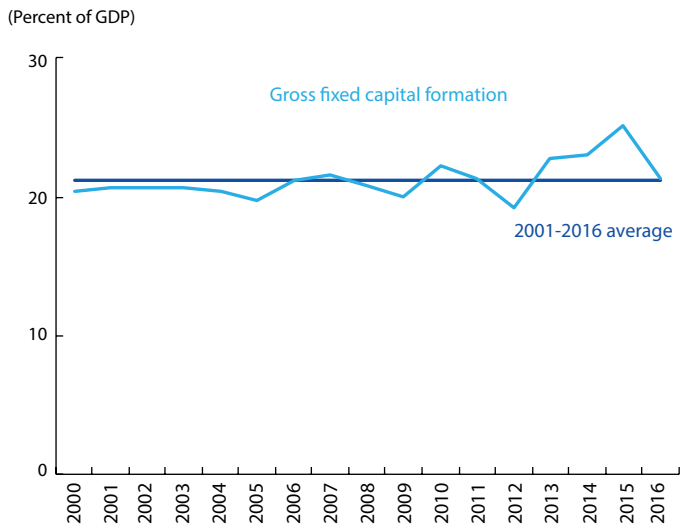
Source: WB staff calculations based on national data.

Figure II.8 Historical human capital growth



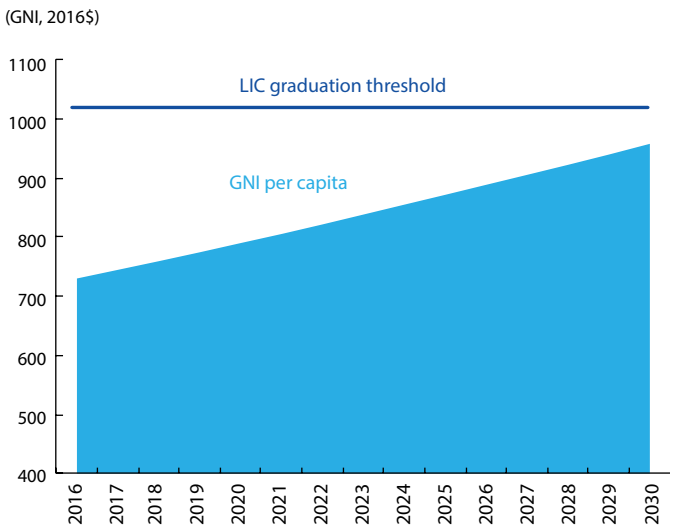
Source: Penn World Tables 8.1

Figure II.9 Historical investment-to-GDP ratio



Source: Central Bureau of Statistics.

Figure II.10 GNI per capita growth (business as usual)

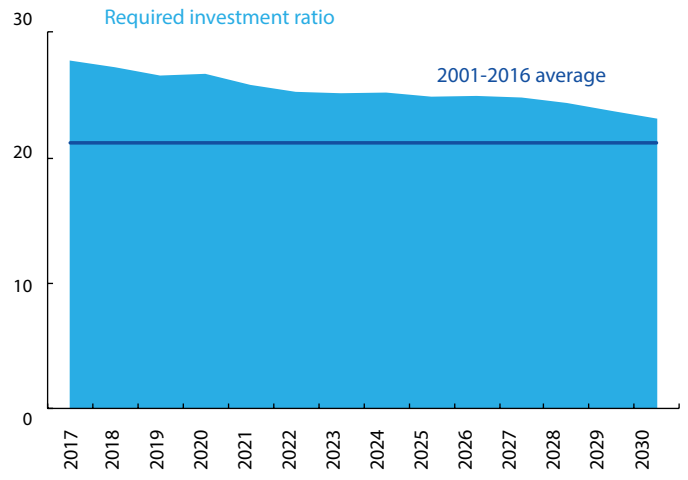


Source: WB staff calculations.

A systematic assault is needed to break Nepal out of the vicious cycle

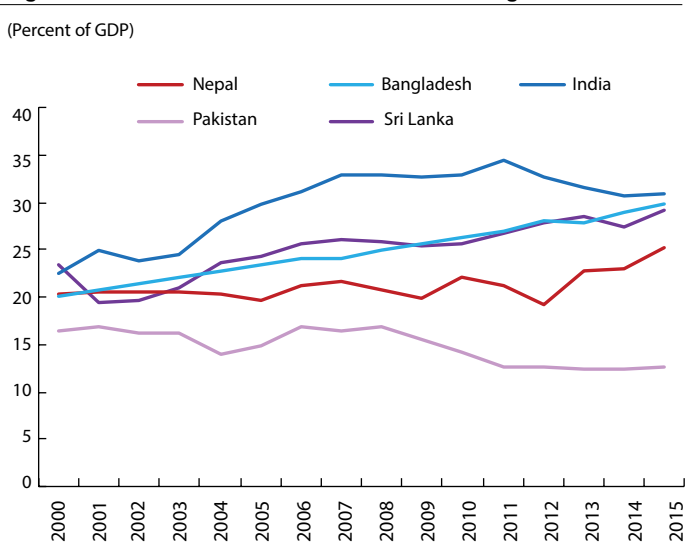
27. What would it take for Nepal to graduate from LIC status by 2030? Using the same model, we solve for the required investment rate that delivers a specified path of GNI per capita, while keeping other inputs at their historical averages. To conduct this exercise, it is assumed that GNI per capita increases by a constant amount each year such that it reaches US$1,026 by 2030. This amounts to a per year increase of approximately US$22. The model estimates that to grow GNI per capita by US$22 each year, the required investment-to-GDP ratio needs to increase by more than 10 percentage points from the average investment-to-GDP ratio the country achieved during the 15 years from 2001 to 2016. The required investment-to-GDP ratio for the entire period 2017–30 averages above 25 percent of GDP (Figure II.11). The required ratio declines marginally over time as the growth rate required to add US$22 in subsequent years declines due to a rising level of GNI per capita. In this scenario, potential or trend growth averages 3.5 percent. While achieving an investment-to-GDP ratio in excess of 25 percent is feasible, especially in the context of other countries in South Asia (Figure II.12), it is not realistic to achieve nearly 10 per-

Figure II.11 Investment need for LIC graduation



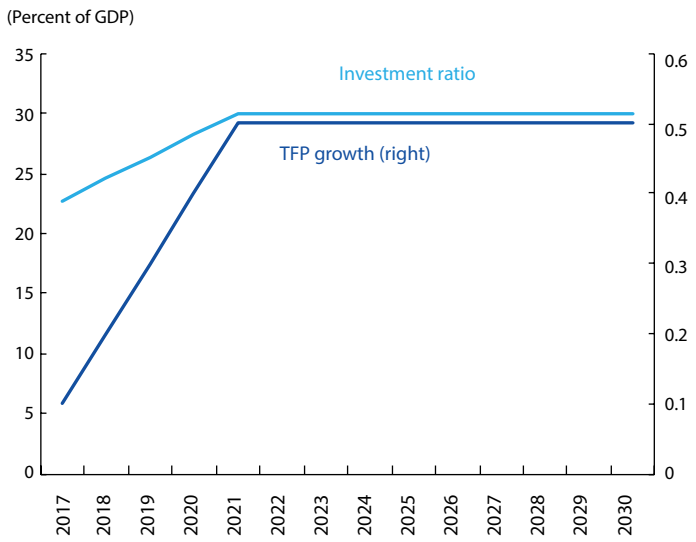
Source: WB staff calculations.

Figure II.12 Investment rates in the South Asia region



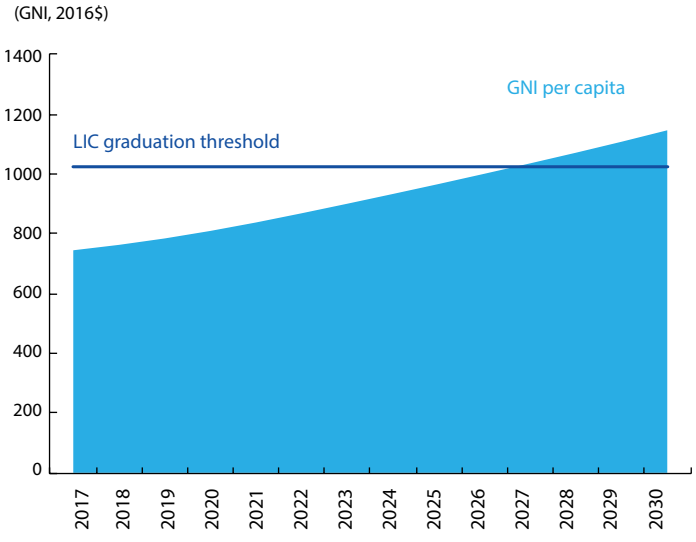
Source: WDI

Figure II.13 Reform scenario assumptions



Source: WB staff calculations.

Figure II.14 GNI per capita growth (reform scenario)



Source: WB staff calculations.

centage points increase overnight. Since 2000, India, Sri Lanka, and Bangladesh have all achieved a 10 percentage point increase in investment ratio, but it took them 7, 14, and 15 years, respectively, to do so.

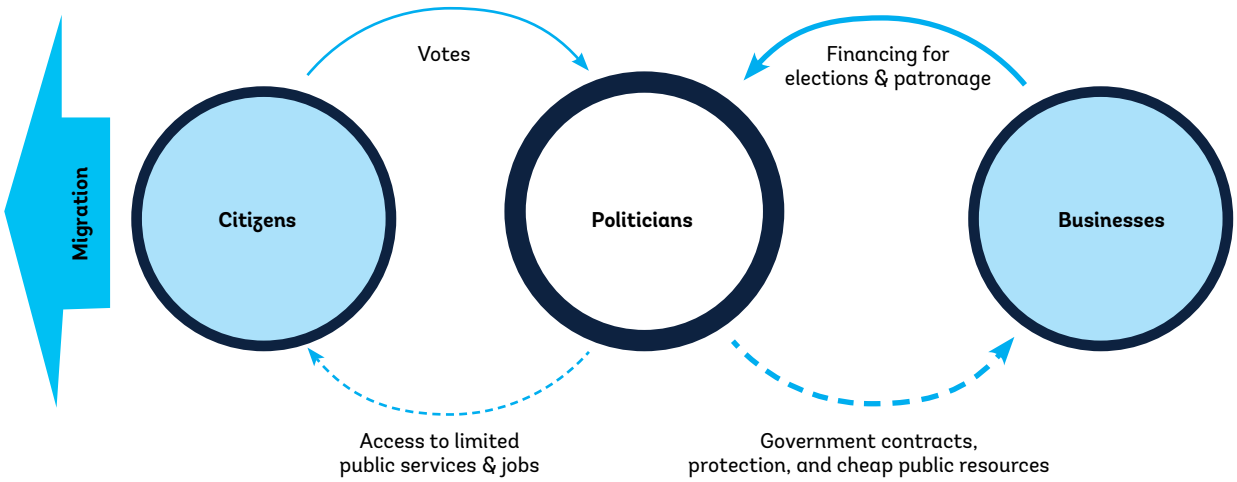
28. A more comprehensive strategy—boosting investments and productivity—would not only enable graduation from LIC status, but would enable it to happen even faster. Nepal's economic history illustrates that there are two key bottlenecks that have constrained faster growth—weak productivity and low investment. A more comprehensive strategy would address both. The focus should be on both accumulation of assets (the neoclassical growth framework) and faster productivity growth (the endogenous growth framework). Such a growth strategy would emphasize higher investment rates, increases in human capital, and adoption of new technology. For example, raising public savings rates leads to a one-time rise in potential income via more investment. Combining such policies with micro-level policies required to push firms to be more innovative by adopting better technology would lead to improvements in productivity. Such a reform scenario—where productivity growth improves gradually to 0.5 percent by 2020 and the investment-to-GDP ratio improves to 30 percent by 2021 (Figure II.13)—would result in faster potential or trend growth averaging 4.3 percent and graduation from LIC status by 2027 (Figure II.14).

29. However, a frank acknowledgment of the constraints emanating from the political process is needed. Perhaps the most detrimental aspect of large-scale migration is that it relieves the pressure on policy makers for greater accountability and development results. Large migration solves several problems for Nepal. It alleviates unemployment, enables greater consumption, and leads to larger tax collection, given the high dependency of taxation on imports (currently generating half of all revenues). At the same time, it lessens the pressure on the political class to shift from the long history of trading favors for patronage toward greater public service delivery. Frequent change of governments has become a long-established norm; the country had 22 governing coalitions in the last 26 years. This political instability has hampered the country's development and disillusioned its citizens, contributing to further migration (Figure II.15). Writing on India's political process, Rajan (2014) notes:

"So the circle is complete. The poor and the underprivileged need the politician to help them get jobs and public services. The crooked politician needs the businessman to provide the funds that allow him to supply patronage to the poor and fight elections. The corrupt businessman needs the crooked politician to get public resources and contracts cheaply. And the politician needs the votes of the poor and the underprivileged. Every constituency is tied to the other in a cycle of dependence, which ensures that the status quo prevails."

30. No country has grown unless its political elites want it to grow. Policy makers and political elites must consciously choose growth as an overarching goal. Critical insights from Acemogulu and Robinson's influential work show that the nature of political institutions determines the nature of economic institutions. In their framework, poor countries are not poor because their policymakers or citizens are uninformed about what good poli-

Figure II.15 Political vicious cycle



Source: World Bank staff adapted from Rajan (2014).
Note: Thickness of arrows approximates the size of relationships.

cies or institutions are. According to them, "Poor countries are poor because those who have power make choices that create poverty. They get it wrong not by mistake or ignorance but on purpose." (Acemoglu and Robinson 2012, 86).

31. Therefore, neither history nor geography need be destiny. The first step for Nepal to break out of its current low-growth trap is for its political leaders to decide to break the status quo though the upcoming implementation of the new federal constitution to build inclusive political institutions and initiate broad reforms to build corresponding inclusive economic institutions. This is not impossible for Nepal, as it has been attempted at least twice before, in both instances motivated by imperatives to counter challenges to political legitimacy with performance legitimacy. In the late 1980s and early 1990s, and later in the early 2000s, groups of capable technocrats coalesced around the effort to drive key reforms. Importantly, in both cases, these "champions" were provided the space by the powers that be. Difficult endowments can be overcome to deliver greater prosperity for its people. The remainder of this report shows how.

32. A systematic assault is needed for Nepal to break the vicious cycle and to create the right balance between job creation at home and exports of labor. Marginal interventions are unlikely to help break the self-reinforcing dynamics that have kept Nepal in a low-growth, high-migration trap. Nepal needs a comprehensive approach that will both boost investment and accelerate productivity by carrying out the following:

1. Breaking down policy barriers: To tackle the persistent challenges of low investment and weak productivity, Nepal needs to dramatically restructure its public investment program; intensify the level of competition in the domestic market in sectors such as transport, logistics, and telecommunications; reduce the cost of doing business; and steadily integrate the economy with the rest of the world (see Chapter III).

2. Building new sources of growth: Unleashing large investments in hydropower would be a game changer for Nepal. It would not only lead to massive new investments and improved productivity, but has the potential to lift wages significantly, and help to partially reverse migration, and increase competitiveness in downstream industries (see Chapter IV).

3. Revitalizing the existing sources of growth: Reforms in agriculture, which accounts for one-third of GDP and employs two-thirds of the labor force, are key to boosting productivity and releasing labor for new sources of growth (see Chapter V).

4. Investing in people: Nepal is in the midst of a demographic transition. As a result of lower fertility rates, the share of the population that is working age is now greater than the share of the population that is not. This is the demographic dividend. To fully capture the benefits of the demographic dividend, investing in the skills of Nepali youths is imperative. Putting more human capital to productive use in Nepal is critical for a stronger and more sustainable growth path in the future (see Chapter VI).

CHAPTER THREE
BREAKING DOWN BARRIERS TO FACILITATE GREATER INVESTMENTS AND IMPROVED PRODUCTIVITY

Unfavorable endowments and poor policy choices have contributed to low investment and weak productivity

33. Nepal's unfavorable initial conditions have been compounded by unsupportive policy choices. The list of development constraints is long: a challenging geographic environment, poor endowment of human capital, continued political uncertainty following a decade of conflict and a prolonged quest toward agreeing a constitution, and lack of quality infrastructure and connectivity. However, the resulting current state of Nepal's economy not only reflects those constraints, but also policy choices that have resulted in relatively low levels of investment and weak productivity.

34. Most countries accelerate their growth by increasing national savings in order to fund investments, and by increasing exports. In 2006, the World Bank convened the Growth Commission, which attempted to highlight the common characteristics of countries that grew rapidly (at 7 percent or more per year for at least 25 years), something achieved by only 13 countries since 1950. Growing at 7 percent doubles a country's real GDP in a decade. Taken in totality, the list of ingredients emphasizes savings and accumulation; sustainable public finances; provision of public goods in health, education, and infrastructure; strong leadership; trade openness; and a private sector orientation (Table III.1).

Table III.1 Five common ingredients in policies of rapidly growing countries

Common ingredients for sustained and rapid growth	
1. Macroeconomic stability	Characterized by modest inflation and sustainable public finances
2. Future orientation	Manifested in high savings and high public and private investment rates
3. Strong leadership and governance	Characterized by stability in the rules of investment, a focus on inclusive growth, and an effective government that is pragmatic and acts in the interest of all its citizens
4. Trade openness	Necessary to import knowledge and leverage global demand
5. Market incentives	Due emphasis is given to market incentives and decentralization

Source: Commission on Growth and Development 2008.

35. Nepal does relatively well only on macroeconomic stability, while other ingredients for faster growth are missing. While there are ample savings, Nepal has underinvested, resulting in a substantial infrastructure gap that manifests itself in poor connectivity and insufficient power supply (ingredient 2). Prolonged political instability and poor governance undermined public investments and de-incentivized private investment as well (ingredient 3). Furthermore, high tariffs and appreciating real exchange rates have accentuated an anti-export bias, and Nepal's export performance has worsened over time (ingredient 4). The existence of syndicates and cartels has limited competition in the economy and slowed the adoption of new technologies and upgrading of skills, resulting in weak productivity growth (ingredient 5).

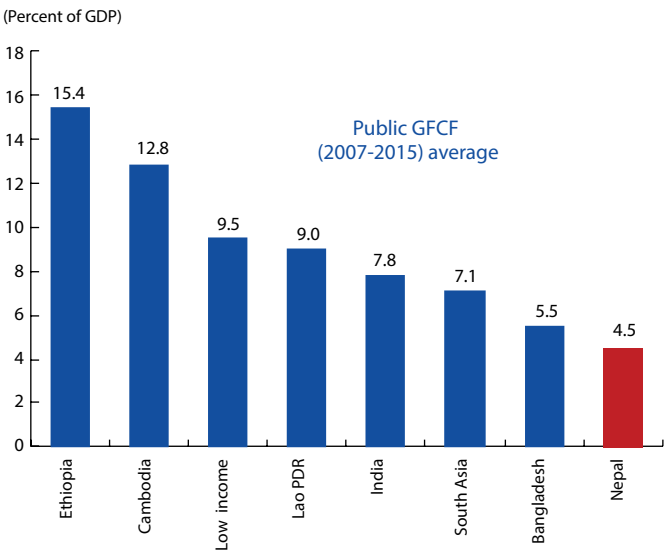
Breaking down barriers to greater investment—both public and private

36. While Nepal has the savings necessary for high growth rates, it has been unable to mobilize them fully for investment. Over the past 16 years, gross national savings have averaged 34 percent of GDP and have exceeded capital formation in each year, which has averaged 22 percent of GDP. This is unusual for a low-income country, because most are not able to mobilize adequate national savings needed to generate investments. The result of this underinvestment is lower growth. Cross-country evidence suggests that countries aiming to grow at 7 percent or more annually, and double their real GDP every 10 years, require savings rates of around 35 percent of GDP.

a) Reforming the public investment process

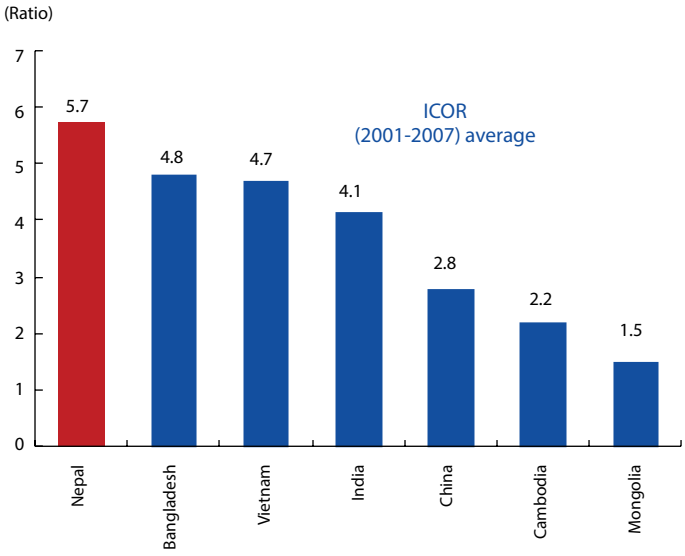
37. The level of public investment has been historically very low in Nepal, but even more concerning is the low efficiency of investment. Nepal's public investment has averaged 4 percent of GDP, which is below average among both the South Asian and low-income countries (Figure III.1). With a low (public) investment rate and capital stock, the return on marginal investment should be high, with many projects expected to have a high return. But this is not the case for Nepal, as exemplified by the incremental capital output ratio (ICOR), or the units of capital required to increase output by 1 additional unit. In other words, the higher the ICOR, the more inefficient is public investment. From 2001 to 2007, the ICOR for Nepal was 5.7, the highest among comparator countries (Figure III.2). The ICOR has not improved is recent years, and the approach paper of the Fourteenth Plan estimates the ICOR to be 5.2 between FY2016 and FY2019, with an unacceptable level of 29 for energy and 9 for transport.

Figure III.1 Average level of public investment, 2007–15



Source: WDI

Figure III.2 Average Incremental Capital Output Ratio, 2001–07



Source: Taguchi and Lowhachai 2014

Table III.2 Projects take a very long time to complete in Nepal

Sectors	Average length of time needed to complete a project (years)	Length of longest-lasting project (years)
Roads	12	31
Irrigation	16	38
Power	9	18

Sources: World Bank staff calculations based on NPC 2016a and NPC 2016b.

38. Inefficiency is manifested in the public investment process, which fails to deliver completed productive assets and infrastructure. The system runs into chronic underspending of the capital budget, with underspending averaging 70 to 80 percent of the amount budgeted for capital spending in recent years. There have been several challenges that have led to project delay, incompleteness, and cost and time overruns. According to the list of projects compiled from the Annual Development Plans of the National Planning Commission, projects on average have been ongoing for more than 11 years. When further disaggregated, roads, irrigation and power projects on average have been ongoing for more than 12, 16, and 9 years, respectively (Table III.2). This is a conservative estimate because the projects are unlikely to have been fully completed on time, as stated in the Planning Commission's document. Some road and irrigation projects have even been ongoing for more than 30 years. To address the problems faced by various national-level projects, in FY2012, the government even initiated "national pride projects," and every government since then has announced the timely completion of these pride projects. However, national pride projects on average are not implemented more swiftly than other projects, and have been ongoing for more than 13 years, on average, with the longest project ongoing since 1988.

39. Using a standard World Bank assessment, none of the eight "must-have" institutional features of an effective public investment management system (PIM) are present in Nepal. A standard World Bank assessment of the PIM system, as elaborated on by Rajaram et al. (2010), identifies eight

Table III.3 Cross-country PIM performance

Stages of PIM	Nepal	Vietnam	Cambodia	China	Brazil	Belarus	Chile	Ireland	Korea, Rep.
Investment guidance & project screening									
Formal project appraisal									
Independent review of appraisal									
Project selection & budgeting									
Project implementation									
Project adjustment									
Facility operation									
Evaluation									

Source: Country PIM reports.
Note: Color scale goes from dark red (nonexistent) to green (best practice).

key institutional features that countries need to adopt to ensure that public investments support growth and development. The missing features in Nepal include the critical functions such as project selection and budgeting, project implementation, adjustment of projects in construction, and ex-post evaluation (details can be found in the Annex). As a result, a snapshot of the PIM performance in Nepal shows it is among the weakest when compared with selected developing and developed countries (Table III.3).

40. Given the results, it is difficult to speak of a public investment management system as such. The public investment process in Nepal represents a paradoxical mix of formal rules on the one hand, and the long-standing lack of application of the same rules at various stages of the process on the other. In the upstream stages, the formal institutional delegation of responsibility and the supporting procedural arrangements have been put in place to guide project development, and planning and selection for financing. In execution, the new procurement law and legislation, as well as the institutions governing monitoring project execution, do exist. It is evident, however, that the formal procedures are not being complied with in practice. There is a complete disconnect between planning, policy, and budgeting. Project appraisal and prioritization are ineffective. Value for money cannot be guaranteed. Various sectors may develop their own guidance for technical screening and appraisal of projects, but the process has not been uniform and—more importantly—does not form an integral part of financing decisions. Monitoring of project execution has been weak and does not link to any onward financing decision. The parallel functioning of the National Planning Commission (NPC) and the Ministry of Finance (MOF), without an overarching framework of a Medium-Term Expenditure Framework, leave the capital and recurrent budgets functionally and procedurally fragmented, and perpetuates the missing link between multiyear investment and annual needs for maintenance and operation of assets. Spending agencies—as well as central planning and financial agencies—do not exercise a real sense of hard budget constraints. These issues have been magnified by the frequent change in government, leading to a shifting of priorities and de-incentivizing all levels of government (ministries, departments, and agencies) to invest in building capacity and planning a capital budget with a true long-term vision (World Bank 2017a).

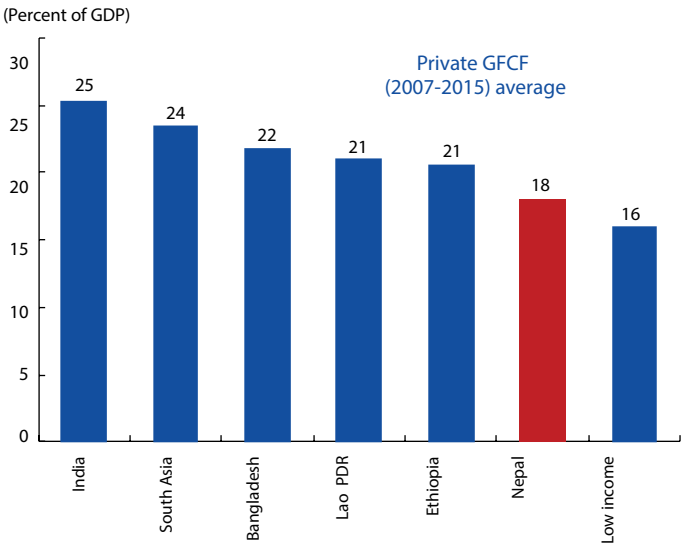
b) Crowding in greater private investment

41. Political instability is the major constraint to private sector investment. Unsurprisingly, numerous studies carried out in recent years have identified political instability leading to policy uncertainty as the major constraint to private sector investment and growth (ADB, DFID, and ILO 2009; MCC 2014; ODI 2014; World Bank 2015). The violent insurgency that occurred from 1997 to 2007 was a major drag on growth and on development in general. However, even after the end of the conflict, a much-anticipated peace dividend did not materialize. This has, in effect, led to a 20-year period of political transition and instability that has lasted to this day. Consequently, the level of private investment in Nepal underperforms compared to its peers (Figure III.3).

42. In addition, political instability is affecting firms of all sizes and in all locations. Two of the most frequently cited obstacles by private firms are political instability and limited access to electricity (World Bank 2013a). Of the total number of firms surveyed, almost 50 percent cited political instability as the major obstacle. Political instability has affected firms of all sizes and in all locations and sectors; however, small and medium firms are most severely affected, and they constitute almost 90 percent of the total private enterprises in Nepal (Figure III.4).

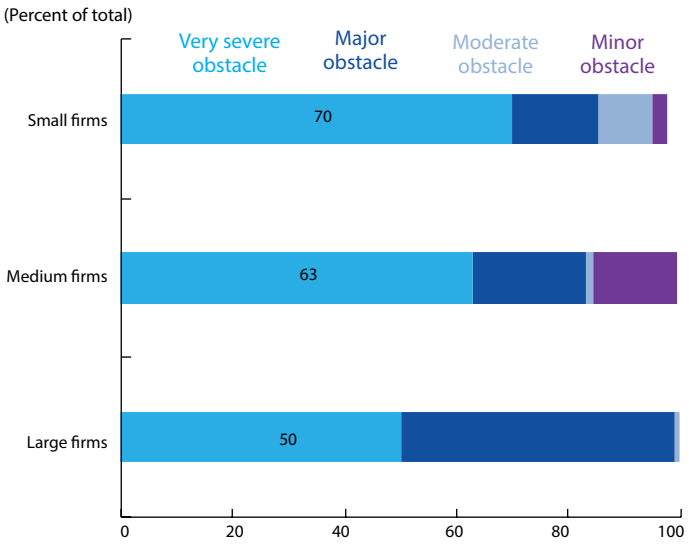
43. Political stability is key to boosting investment, because it reduces risk and raises expected private returns to capital, while also lowering the cost of capital. Political stability is needed to build institutions that reduce corruption and uphold contracts and property rights efficiently, as well as invest in infrastructure like transport and electricity, while reducing tax rates and expanding the tax base through improved tax policy and administration, all of which boost expected private returns to capital. Political stability and domestic harmony also lower country risk, and thereby reduce interest rates and lower the cost of capital. The combination of higher expected returns and lower cost of capital is key to incentivizing the private sector to invest over longer time horizons, and increase the difference between returns to and the cost of capital, thereby boosting investment and spurring growth.

Figure III.3 Average level of private investment, 2007–15



Source: WDI.

Figure III.4 All enterprises have been severely affected by political instability

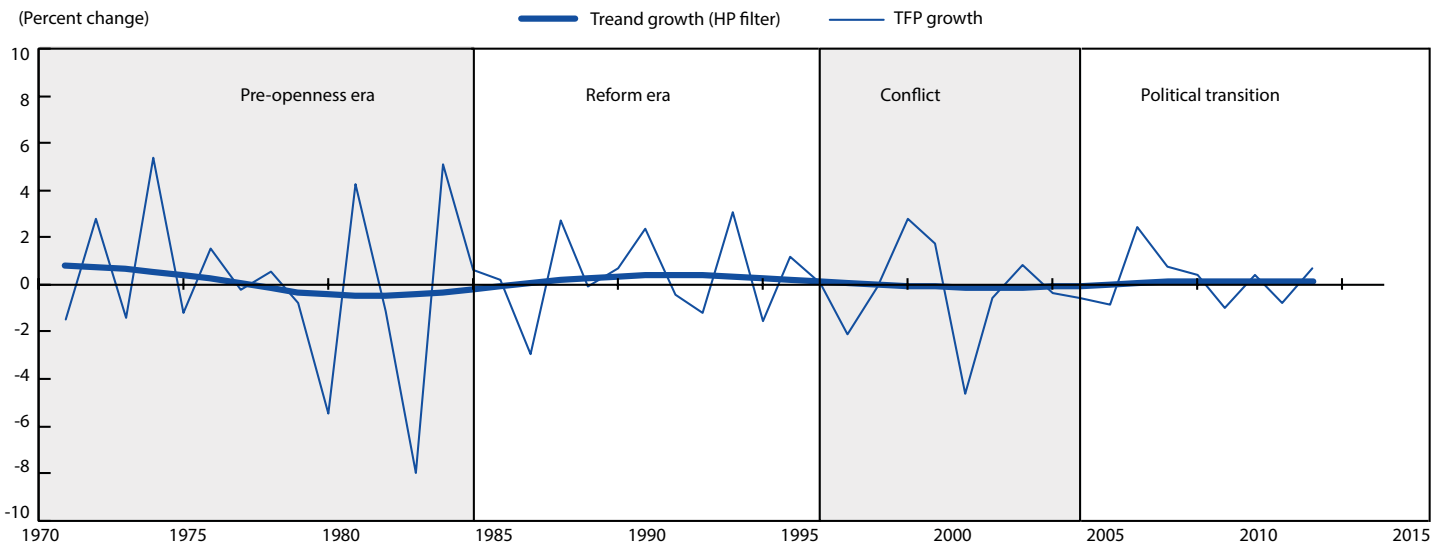


Sources: World Bank (2013a) and WB staff calculations.

Breaking down constraints to greater productivity

44. Faster productivity growth is key to faster long-run growth. Increasing only investments will lead to an increase in the level of potential GDP, but because investment is subject to diminishing marginal returns (that is, an additional unit of input will generate additional output, but at a decreasing rate), it is the improvements in productivity (that is, more output per unit of input) that drives the long-run growth rate. This is the key insight of Solow's seminal work (1957), which found that the bulk of long-run growth per capita comes from rising TFP. Nepal's historical productivity growth oscillated around zero during the entire historical period for which data are available, and contributed nothing to overall growth when adjusted for growth of human capital, employment, and labor force participation rates (Figure III.5).

Figure III.5 History of productivity growth in Nepal, 1970–2015



Source: World Bank staff calculations based on national data.
Note: HP = Hodrick-Prescott filter.

45. Consequently, boosting TFP growth rates is a key growth challenge. As we have seen from growth modeling exercises in part II, gradual acceleration of productivity growth to 0.5 percent from the current trend growth of zero percent from 2017 to 2021—or just a 0.1 percentage point increase per year—speeds up graduation by four to five years. More generally, the faster the productivity growth, the lower the amount of investment needed to attain desired GDP targets.

46. Improving productivity requires micro-level policies to spur innovation by companies. Micro-level policies, or so called micro-foundations to growth, are defined as incentives for firms to innovate, upgrade skills, and adopt new technology that result in faster productivity growth. Countries can innovate at the leading edge (that is, pushing the technological frontier outward) or by imitation and implementation of existing technologies. Growth is determined by the frequency of either type of innovation, while the frequency of such innovations is driven by the actions of profit-maximizing companies. In other words, higher TFP growth runs through agile and efficient firms. In addition, productivity growth can be driven by movement in labor and capital from less productive to more productive firms within the same sectors. When this mechanism does not function as effectively as it could—for example, due to barriers to competition—the economy suffers from a misallocation of resources.

47. However, implementing productivity-enhancing policies is often politically challenging. Necessary micro-foundations for growth could be summed up as policies that foster (a) outward orientation, and (b) competition in the economy (ingredients 3, 4, and 5 in Table 2). In practice, this means opening the country to competition both domestically and from abroad, and not shielding or subsidizing inefficient or failing companies. These are often the hardest things to do because one quickly runs into vested interests and political economy considerations.

48. Available data underscore that firms with an outward orientation are more productive in Nepal. Using data from the National Census of Manufacturing Establishments from 2007 and 2012, the World Bank's Job Diagnostic (World Bank 2017b) notes the following key insights about manufacturing firms in Nepal:

1. Consistently across the years, firms that export are the most productive, and foreign-owned firms are more productive than privately owned domestic and public firms. Worryingly, the share of exporting firms dropped from 13 percent in 2007 to 6 percent in 2012.

2. Larger firms are not more productive. Though productivity does significantly increase with the move from firms with less than 20 to more than 20 employees, the relationship is not applicable for all size categories. In fact, in 2012, for firms with 250 to 499 employees, the productivity level was below that of firms with less than 20 employees.

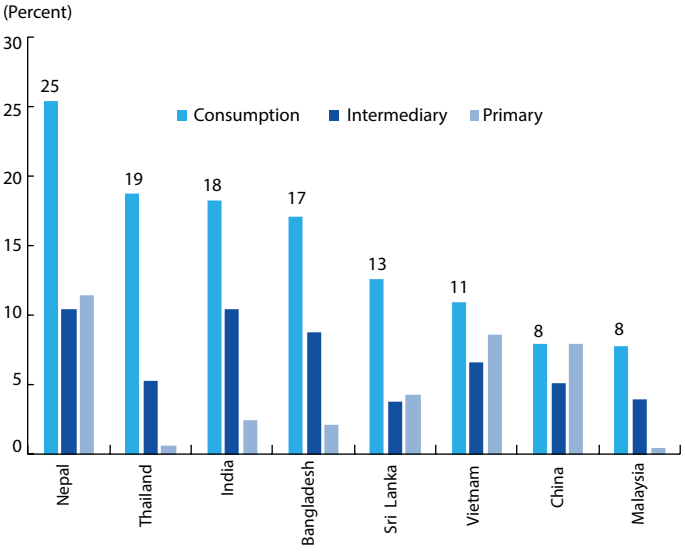
3. Firms that have significant market power are significantly less productive. Results show an inverse relationship between the share of sales and firm productivity. In other words, the greater market power a firm has (that is, the greater its share of sales) the less productive it is.

a) Outward orientation and external competitiveness

49. Integration into the global marketplace is a powerful vehicle for greater productivity, yet Nepal's performance in this area has slipped. As a small economy that is comparatively close to the fastest-growing markets in the world, Nepal's growth prospects are linked to its success in integrating into the regional and global marketplaces. However, Nepal has not been able to take advantage of this proximity, and the situation is worsening. Nepal's overall openness to trade was similar to that of other countries at comparable levels of development during the 1990s (that is, with openness levels above Uganda or Bangladesh), but fell well below the average thereafter. The trade-to-GDP ratio declined from an average of 59 percent between 1995 and 1999, to 46 percent between 2010 and 2014.

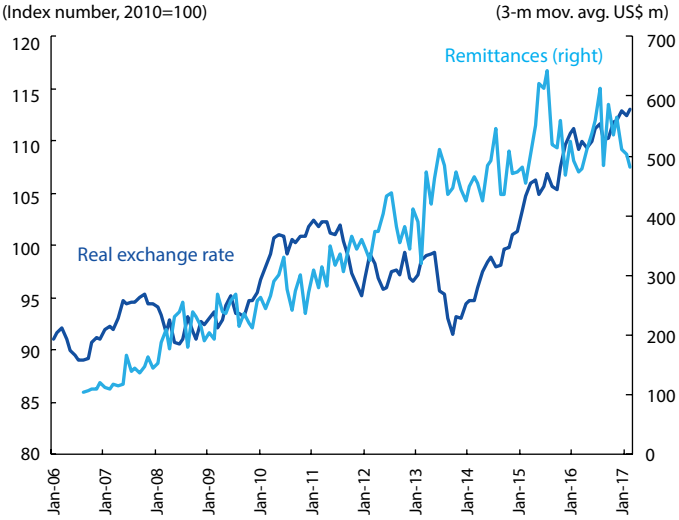
50. Performance in the trade of goods has been particularly poor. Merchandise export growth slowed from an average rate of 19 percent per year in the 1990s to 0.6 percent per year during the subsequent decade. Today, most of Nepal's goods exports are concentrated in a narrow range of agricultural and low-value-added manufactured products, in globally declining market segments,

Figure III.6 Nepal has one of the highest tariff rates



Source: WTO.

Figure III.7 The real effective exchange rate has appreciated considerably since 2006



Source: WB staff calculations.

and in a handful of countries. The stagnation in exports (in 2013 they were barely 10 percent higher than in the 2000s), is in stark contrast to the steep rise in imports, which quadrupled over the same period. The result has been an increasingly large trade deficit (around 30 percent of GDP in recent years), which is mainly financed through remittances.

51. Exports have been hampered by loss of competitiveness and an anti-export bias of tariff policies. From a macroeconomic perspective, remittances are helping finance large trade deficits and moving people out of poverty. However, they are also contributing to an appreciation of the real exchange rate. Analysis suggests that an increase in remittances by 10 percent leads to a 0.5 percent appreciation of the real exchange rate in the long run. With remittances having grown quickly over the last 20 years, pressure on the real exchange rate to appreciate due to this channel is non-negligible (Figure III.7). In turn, the appreciation of the real exchange rate favors imports and hampers exports. The impact is possibly largest on low-value, low-margin manufactured goods, which account for a large share of Nepal's export bundle (Portugal and Zildzovic 2017). Further, from a political economy perspective, rising imports make them an attractive tax base and prompt increased reliance on import taxes. This further aggravates the anti-export bias, because exporters rely on imported, intermediate goods as key inputs for production.

52. Exports are critically dependent on inputs sourced from abroad. In Nepal, as in other countries, imported inputs (both of goods and services) are key for the vast majority of exporters. More than 90 percent of Nepalese exporters import inputs necessary for the production of exports, which is reasonable given the size of the economy. Sourcing inputs at competitive prices, irrespective of their origin, helps firms grow, diversify, and upgrade. Access to a wide variety of inputs relaxes firms' technological constraints, helping firms diversify into new products, and upgrade into better quality. However, import tariffs are extremely high in Nepal (Figure III.6), which makes imports expensive and disadvantages the country's exporters.

53. Attracting and retaining foreign direct investment (FDI) is crucial, but is hampered by restrictive investment policies. Since foreign-owned firms are some of the most productive firms in the country, FDI is vital for accessing new technologies, business practices, and markets. But Nepal barely attracts any FDI inflows, averaging less than 1 percent of GDP. It has significantly trailed the performance even of other small landlocked countries in the region (Bhutan and Lao PDR). Apart from the problems that affect all investment, FDI has been hurt by unclear policies, complex procedures, and inadequate investment facilitation. Entry barriers to foreign investment include foreign ownership limitations, sector caps, a long negative list, and restric-

tions on non-equity modes of investment. Among the other important restrictions affecting foreign investment in the country are the cumbersome processes for the repatriation of funds and the lengthy processes needed to hire foreign workers. Restrictive FDI policies compound the challenges the country faces in attracting foreign investment and need to be reconsidered.

b) Competition in the economy is weak—both within and from abroad

54. There is ample evidence of a lack of competition in the economy. High import tariffs and barriers to foreign investment are shielding domestic firms from competition from abroad. Competition among firms in different sectors is also limited. As mentioned, the largest firms in manufacturing (250 to 499 employees) with the largest concentration of sales tend to be least productive. This is counterintuitive and indicative of potential anticompetitive behavior, since it is more typical for larger firms to tend to be more productive given their economies of scale, easier access to financing, better employees, and tendency to adopt stronger business practices.

55. Business entry or survival of new firms is difficult. Two waves of World Bank Enterprise Surveys were conducted in 2008 and 2012. The data reveal that the average firm age (years of operation) increased from 9.6 to 14.2 between the two surveys. The difference in average age (4.6 years) corresponds with the time elapsed between the two waves of surveys, indicating that either no new firms were formed or that their rate of survival is low. The same conclusion holds for manufacturing companies, the average age of which increased from 11.4 years to 15.6 years between the two surveys. Both cases point to significant barriers faced by new entrants, again indicative of anticompetitive practices.

56. One of the most visible anticompetitive regulations and practices exists in the transport sector. Transport services, a crucial determinant of connectivity, face important and harmful competitive constraints in all segments of the sector. Business associations that operate in the transport industry are exercising various limits on competition. In particular, collective price fixing has been observed as the most prevalent anticompetitive behavior, and has been implemented by many business and trade associations, including regional truck and bus syndicates, air transport associations, and taxi services.

57. The Supreme Court of Nepal has issued three decisions over the past decade that call for an end to cartels (syndicates) in public transport, and to annul any provisions and agreements made earlier that promote anticompetitive behavior (My Republica 2016). Examples of such syndicates include the 39 local Trucking Entrepreneur's Associations (TEAs) in Nepal that dictate the rules of trucking operation for about 30,000 trucks along 429 recognized routes, despite the fact that the TEAs have no legal authority to do so (Poudel 2015). There are more than 250 bus "committees" registered under the Federation of Nepalese National Transport Entrepreneurs (FNNTE) which are actually cartels that want to protect route monopolies at all cost—by threatening the government and new bus companies (Nepali Times 2017). Further, in 2000, the Department of Transport Management stopped registering new taxis in the Bagmati Zone (where Kathmandu is located) and has not lifted the ban. Since 2007, an agreement between the FNNTE and three related government agencies has required a recommendation from the FNNTE for the issuance of route permits for any transportation services (Shresta 2015).

58. Trucking syndicates impose significant costs on the overall economy. Poudel (2015) calculated the deadweight loss or excess burden of the syndicates to be 2.6 percent of GDP in 2014. Furthermore, the study estimated that in 2014, of the 9.1 percent inflation rate of the Kathmandu valley, 11 percent was due to the syndicates (that is, in the absence of the syndicates, the inflation rate should have been 8 percent).

59. This also matters for trade, given that Nepal's top export sectors appear to use more transport services than other manufacturing sectors. For example, 39 percent of the services inputs provided to processed food exports are transport, 30 percent are for leather exports, and 25 percent are for beverage and tobacco exports. In contrast, transport services account for

just 9 percent of all service inputs for manufacturing firms overall. Exports of primary agricultural products also rely heavily on the domestic transport sector, since 45 percent of services inputs are transport services (Hollweg 2016).

60. The current competition policy framework is counterproductive because it increases the cost of doing business while not deterring anticompetitive behavior. First, the absence of effective merger control regulation may prevent efficient mergers or acquisitions while imposing an unnecessary transaction cost on smaller firms. Second, the competition law framework includes several exceptions to specific markets (agricultural products) or types of transactions (procurement of raw materials), while advocacy—a mechanism to strengthen measures to deter anticompetitive product market regulation stemming from government policies—is lacking. Third, competition issues at the sector level are distorting the level playing field and affecting the provision of transport services, in particular.

CHAPTER FOUR
BUILDING NEW SOURCES OF GROWTH

61. Nepal's most abundant and yet vastly underexploited resource is hydropower. Nepal is abundantly endowed with hydropower resources that can both meet domestic electricity needs and enable it to become an important player in regional power markets. Nepal's hydropower potential is estimated at 84,000 megawatts (MW), of which 43,000 MW is deemed economically viable. At present, less than 2 percent of this economically viable potential is being exploited.

62. At the same time, Nepal's households and firms have suffered from power shortages. Only 75 percent of Nepal's population has access to electricity, and households and firms suffer from significant power cuts (up to 17 hours per day during the dry season in the winter of 2016/17) and rationing throughout the year. Unreliable access to power is consistently identified by firms as the greatest obstacle to their operations, and Nepal's manufacturing sector has been performing poorly over the past decade.

63. Given its natural endowments, it is possible to envision an electricity sector in Nepal that could boost growth, poverty reduction, and shared prosperity for the country. Such an electricity sector would not only meet domestic demand reliably, affordably, and cleanly, but would also earn revenue from the export of surplus hydropower through enhanced regional electricity markets to neighboring countries by integrating with the wider South Asia power market.

64. As recent experience has shown, a combination of demand management and greater imports can improve power availability significantly. Since November 2016, the Nepal Electricity Authority has implemented a series of changes in the way it manages demand for electricity, when combined with greater availability of imports from India through recently constructed cross-border high-voltage power lines. At present, Nepal's installed capacity is 800 MW, while hydropower generation is 450 MW, because the water level in most riv-

er basins decreases in the dry season. To bridge the gap, Nepal is currently importing around 380 MW of electricity from India. The country's peak electricity demand hovers at 1,250 MW. The Nepal Electricity Authority has been managing the deficit of 420MW by cutting off power to energy-intensive industries during peak hours. This has resulted in sharply lower power cuts in several large cities in Nepal for the general public, while industry can get electricity for 20 out of 24 hours.

65. Development of hydropower is perceived to be an economic game changer for Nepal; however, few studies exist quantifying the economic impact. Investment associated with the development of new hydropower plants, transmission lines, and distribution networks has the potential to boost economic growth during the construction phase, improve economy-wide productivity through the continuous availability of electricity, and generate new fiscal revenues. The scale of the envisaged hydropower investments implies large annual expenditures as well as future revenues, relative to the size of Nepal's economy. Should investment materialize, substantial capital inflows are likely to add to the inflows from remittances and assistance from development partners, and create challenges for macro-management, as well as drive a reallocation of production across sectors of the economy. However, no solid quantitative basis exists to estimate the magnitude of the expected change, or to systematically analyze its likely repercussions on key economic variables of interest. Here, we aim to do precisely that utilizing a computable general equilibrium model (see Box IV.1).

Identifying the potential investments in hydro energy

66. Investments totaling 120 percent of GDP are in various stages of preparation until 2030. In 2014, Project Development Agreements (PDAs) for two large export-oriented hydropower projects—the Upper Karnali and Arun 3 projects, each with a capacity of 900 MW and an estimated investment cost of around US$2 billion—were signed. However, the shocks of 2015 have already delayed their preparation by a year. There are three additional large projects with a capacity of 2,800 MW and investment costs of about US$5.2 billion that are in various stages of preparation by international companies. These projects are considered export oriented. However, none has reached financial closure or started construction. Furthermore, there are some 3,365 MW (around US$6.4 billion in investments) of large hydro projects that are at different stages of development by private and public companies. In addition, there are also 117 small hydro projects (around US$1.4 billion in investment with a capacity of 1,500 MW) developed by local private companies that have reached financial closure and are in various stages of construction. Taken together, there are currently about 8,500 MW of projects under development, with investment costs of about US$15 billion, or almost 80 percent of GDP. In addition, complimentary investments of US$11.6 billion of new transmission lines and upgrades of the distribution system are required for this new capacity to reach consumers. In total, investments in the hydro sector are identified at US$26.5 billion, or 120 percent of GDP over the next 13 years, or, on average, 9 percent of GDP in additional investments (Table IV.1).

Table IV.1 Identified potential investments in hydro sector, 2017–30

	Number	Capacity (MW)	Investment cost (US$ bn)
Large export-oriented HPPs	5	3,700	7.2
Large domestic HPPs (>100 MW)	9	3,365	6.4
Small domestic HPPs (<100 MW)	117	1,506	1.4
Transmission and Distribution	—	—	11.6
Total	**—**	**8,571**	**26.5**

Source: WB staff calculations based on project level data.
Note: HPP = hydropower plants. — = not available.

Table IV.2 Identified financing of potential investments in the hydro sector, 2017–30

	US$ billion	Share of total (%)
Foreign	**21.2**	**80**
o/w equity	2.3	9
o/w debt	18.9	71
Domestic	**5.3**	**20**
o/w equity	0.4	2
o/w debt	1.3	5
o/w government	3.7	14
Total	**26.5**	**100**

Source: WB staff calculations based on project-level data.
Note: o/w = of which.

67. **At present, most of the financing is expected to come from abroad.** Naturally, this represents an outsized amount of investment for Nepal and raises questions about how it will be financed. Looking at each project's cost and financing structure identified by project developers, the financing sources for complete investments in hydropower can be aggregated. Given the large size, it is not surprising that most of the funding is expected to come from foreign sources. The second-largest contribution is expected to come from the government to cover part of the complimentary investments in transmission and distribution (Table IV.2).

The US$26.5 billion question—what can investment in hydropower do?

68. **We begin by looking at what Nepal's economy might look like under a baseline or business-as-usual scenario.** In this scenario, the historical structure of the economy is maintained, with consumption comprising approximately 82 percent of GDP. Trend growth in the baseline scenario increases slightly over the projection period (2017–30) and averages 3.6 percent, slightly below the long-run historical average of 4 percent, but above the 3 percent trend growth in the business-as-usual scenario

Box IV.1 Analyzing economic impacts of various policy options: a computable general equilibrium approach

Structural reforms have many indirect and complex repercussions on the economic activity of different sectors and on different segments of the population. Computable general equilibrium (CGE) models have emerged as effective tools to assess these effects. The CGE model captures the impact of the reform on a range of macro indicators. It also captures the distributive effects of a policy, because the successful implementation and sustainability of policies depends on the proper management of their distributive effects. A range of scenarios can be simulated using the model to assess the economy-wide effects of different government policies and economic shocks.

The Nepal CGE model built for this exercise is a single-country model drawn from the World Bank's global CGE model (LINKAGE). The model is calibrated on a Social Accounting Matrix (SAM) comprising 27 sectors that produce 27 commodities, three factors of production, and 10 households representing each consumption decile. The Nepal CGE model is a recursive dynamic computable general equilibrium model. This approach links a sequence of static equilibriums with a set of equations, which update, at every period, a selection of macroeconomic variables (that is, population growth, capital stock, and productivity).

A custom-built Social Accounting Matrix (SAM) for Nepal is developed for this model. The SAM is a unifying framework that contains consistent data linking commodity demand and supply, factor incomes, transfers and expenditures, and savings and investment. The data for the SAM comes from FY2012/13 National Accounts, FY2004/05 Supply and Use Tables, FY2010/11 Household Budget Surveys, and FY2012/13 International Trade Accounts. Given the importance of the power sector for this analysis, information from the Nepal Electricity Authority annual reports are used to separately identify the electricity sector in the Nepal SAM. The Nepal Electricity Authority reports are also used to estimate the magnitude of the implicit electricity subsidy.

Table IV.3 Baseline macroeconomic scenario, 2017–30

	2017	2018	2025	2030	Avg. 2017–30
Real GDP growth (percent change)	5.0	4.8	3.5	3.1	3.6
Investment, (percent of GDP)	22.4	21.9	22.1	22.0	22.1
o/w public	4.7	4.7	4.7	4.7	4.7
o/w private, electricity	0.9	0.9	0.9	0.9	0.9
o/w private, non-electricity	16.9	16.4	16.6	16.5	16.6
Current account balance (percent of GDP)	1.2	1.2	0.9	0.8	1.0
Real exchange rate (2016 = 100); Avg. 2017–30 (percent change)	99.1	99.0	99.8	99.8	-0.2
Government budget balance (percent of GDP)	-1.0	-1.4	-1.5	-1.7	-1.5
Public debt (percent of GDP)	24.6	24.8	28.3	31.8	27.7
GDP per capita (US$); Avg. 2017–30 (percent change)	**718**	**744**	**893**	**1,000**	**2.6**

Source: Nepal computable general equilibrium (CGE) model results.
Note: o/w = of which.

Table IV.4 Hydro investments macroeconomic scenario, 2017–30

	2017	2018	2025	2030	Avg. 2017-30
Real GDP growth (percent change)	5.2	4.6	5.3	3.4	4.0
Investment, (percent of GDP)	28.9	28.1	29.9	25.1	30.2
o/w public	10.0	9.5	7.3	6.1	8.4
o/w private, electricity	4.5	4.1	5.2	1.9	5.4
o/w private, non-electricity	14.4	14.5	17.4	17.1	16.4
Current account balance (percent of GDP)	-3.7	-3.5	-5.0	-1.4	-5.0
Real exchange rate (2016 = 100); Avg. 2017–30 (percent change)	96.0	95.4	93.2	94.0	-6.0
Government budget balance (percent of GDP)	-5.2	-5.2	-3.5	-2.9	-4.3
Public debt (percent of GDP)	28.6	32.3	54.6	60.1	47.9
GDP per capita (US$); Avg. 2017–30 (percent change)	**743**	**772**	**973**	**1,109**	**3.1**

Source: Nepal CGE model results.
Note: o/w = of which.

Table IV.5 Hydro investments, productivity, and migrant returns macroeconomic scenario, 2017–30

	2017	2018	2025	2030	Avg. 2017–30
Real GDP growth (percent change)	5.2	4.6	6.9	3.9	4.7
Investment, (percent of GDP)	28.9	28.1	29.9	25.6	30.3
o/w public	10.0	9.5	7.2	6.0	8.3
o/w private, electricity	4.5	4.1	5.1	1.8	5.4
o/w private, non-electricity	14.4	14.5	17.6	17.8	16.6
Current account balance (percent of GDP)	-3.7	-3.5	-5.0	-1.4	-5.0
Real exchange rate (2016 = 100); Avg. 2017–30 (percent change)	96.0	95.4	94.3	97.3	-2.7
Government budget balance (percent of GDP)	-5.2	-5.2	-3.4	-2.9	-4.2
Public debt (percent of GDP)	28.6	32.3	53.9	57.2	46.9
GDP per capita (US$); Avg. 2017–30 (percent change)	**743**	**772**	**983**	**1,178**	**3.6**

Source: Nepal CGE model results.
Note: o/w = of which.

presented in Part II. The reason for the difference is that we account for the recent improvements in availability of electricity by modelling improvements in TFP. Investment stays the same as a share of GDP, as do government deficits, debt, and the current account balance. Nonetheless, the same conclusion holds as previously: Nepal still falls short in graduating from LIC status (Table IV.3).

69. Implementing investments in hydropower significantly boosts outcomes. The investments outlined above are introduced to the baseline scenario. In addition, several complimentary policies are also implemented. For example, electricity subsidies that go to the Nepal Electricity Authority are gradually eliminated from 2017 to 2021. Repatriation of profits and dividends is allowed, as is movement of domestic capital from non-electricity sectors into the electricity sector. Comparing this "hydropower investment" scenario to the baseline scenario gives an estimate of the economy-wide effects of investing in hydropower. As expected, GDP growth is higher than in the baseline scenario and averages 4 percent. By 2030, GDP itself is 4.5 percent higher than would otherwise be the case. Given faster growth, Nepal would be able to graduate from LIC status by 2029 (Table IV.4). The analysis here focuses on 2017 to 2030, which captures the bulk of the investment phase of the projects and approximately five years of exports. The boost in exports is expected to continue well past 2030 and will continue to support GDP.

70. In the long term, the investment expands Nepal's productive capacity and supports export-led growth in the economy. In the first decade, electricity investment becomes a key driver of economic activity. Investment averages 30 percent of GDP during this period, buoyed by increases in private investment in the electricity sector as well as public investments. As the additional generation capacity comes online, Nepal's electricity exports expand to around 5 percent of GDP by 2030. This hydro investment helps lift real wages by around 3 percent per year, on average, between 2017 and 2030. This wage boost is initially supported by higher labor demand, while the hydropower plants are being constructed. Over time, the higher capital stock improves labor productivity, and this is translated into higher real wages.

71. Tradable sectors are adversely affected by the real exchange rate appreciation, in a classic case of Dutch disease. The inflow of foreign funds used to finance the hydro investment leads to an appreciation of the real exchange rate. The appreciation reduces the international competitiveness of Nepal's non-electricity exports. The effect of the appreciation is compounded by the inflow of imported materials used in constructing the hydropower facilities.

72. Government revenues increase as a result of the hydropower investment, but the overall balance deteriorates as the government borrows to fund construction of the transmission and distribution network. The public debt increases to around 48 percent of GDP, on average, in the forecast period. The hydropower investment directly contributes to government revenue. In addition, the increase in imports supports an increase in tariff revenue. Since electricity sales domestically are exempt from the VAT, an expansion of the electricity sector reduces revenue collection from this tax. It is also assumed that some of the additional revenue is used to provide additional government services. Importantly, the deterioration in the government balance moderates over time as the expansion of the economy helps support additional revenue collection.

73. Modelling potential broader impacts reveals even more favorable results for Nepal. The previous scenario treated the investment in hydro energy as a standard investment shock to the economy. However, given that achieving electricity self-sufficiency eliminates one of the key constraints for companies in Nepal, it is not unreasonable to anticipate broader impacts from these investments. In addition to investment, revenue, and subsidy elimination policy, we also model an alternative scenario where there is a sizable improvement in the productivity of all sectors in the economy (approximately an 8 percent boost in productivity by 2030).[4] Given rising real wages, we also model a modest return of migrants to Nepal. The boost in productivity and the labor force leads to even more beneficial outcomes. GDP growth averages 4.7 percent, and by 2030 the GDP level is 18 percent higher than in the baseline, enabling Nepal to graduate from LIC status by 2027 (Table IV.5 and Table IV.6).

Table IV.6 Effects of hydro investment in Nepal in 2030 (percent deviation from baseline)

	Main effects	Broader effects
Real GDP	4.5	14.8
Private consumption	1.2	8.4
Public consumption	4.5	14.8
Investment	8.9	15.6
public	38.0	48.3
private, electricity	122.0	132.3
private, non-electricity	8.4	24.3
Exports	44.8	68.9
non-electricity	-22.0	3.4
Imports	10.7	15.2
Real wages	6.6	16.4

Source: Nepal CGE model results.

74. Interestingly, Nepal might be one of the rare countries in the world that has a virtually unconstrained labor supply. The 1950 Peace and Friendship Treaty between India and Nepal provides for the free movement of people between the two countries. According to the Treaty, Nepalis and Indians can travel and work across the border and are to be treated the same as native citizens. Rural Nepalis, who have long been suffering poverty, unemployment and, more recently, armed conflict, have been the traditional migrants to India. The process of migration is not one-sided though. Indians have been migrating to Nepal for as long as Nepalis have been migrating to India. The process and factors determining migration may be different, but it does take place. Consequently, wage pressures originating from large-scale investments in the hydro sector could be filled either by Nepalis currently in Nepal, Nepalis currently abroad, or Indians currently in Nepal and India. Our CGE model does not distinguish between who will fill these new jobs.

75. Harnessing the opportunities presented by electricity self-sufficiency helps mitigate the effects of Dutch disease. Having reliable access to electricity reduces the production costs of firms across the economy. The lower cost is passed on to consumers in the form of lower prices, and this improves the international competitiveness of Nepal's exports and allows non-electricity exports to also expand. In addition, lower domestic prices encourage substitution away from imports toward domestic production, further supporting Nepal's firms. Notably, the productivity boost enables increases in real wages, which are 16 percent higher on average compared to the baseline scenario.

[4] This magnitude is calibrated based on a study by Allcott, Collard-Wexler, and O'Connell (2014) on the effects of electricity shortages on the productivity of manufacturing firms in India. They found that, in 2005, the nationwide electricity shortage of 7.1 percent led to a 1.6 percent loss in revenue productivity.

CHAPTER FIVE
REVITALIZE EXISTING SOURCES OF GROWTH[5]

Agriculture, vital to the Nepalese economy, is stuck in low investment and low productivity

76. Agriculture remains a large part of Nepal's economy as a key source of employment and income, and as a driver of poverty reduction. Since agriculture contributes one-third of the value added and accounts for two-thirds of employment, improvements in agricultural productivity are essential to boosting aggregate productivity, as well. Agriculture is also an important sector for poverty reduction and shared prosperity. Most of the poverty reduction between FY2004 and FY2011 occurred in rural areas and was driven by rising agricultural incomes (World Bank 2013b). A decomposition of total income growth shows that farm income and agricultural wages rose by 24.4 percent, followed by remittances (23 percent), nonagricultural wages (22.8 percent), and enterprise income (18.3 percent). The impact of agriculture on poverty reduction was highest among the bottom 40 percent, where agricultural incomes contributed about 39 percent of their income gains.

77. However, agriculture in Nepal is characterized by volatility and relatively low yields compared to neighboring countries. Growth in the agricultural sector has been volatile in recent decades, to the extent that the lowest and highest growth rates were recorded in consecutive years, mainly because agricultural output is highly dependent on the monsoon. Agriculture in Nepal, particularly food grains such as rice and wheat that occupy most cultivable land, is characterized by relatively low yields compared to neighboring countries. For example, Nepal's yields in rice are lower than in India and Bangladesh, while wheat yields have been consistently lower than in India, Bangladesh, and Pakistan over the past decade (Figure V.1 and Figure V.2).

[5] This section draws entirely from World Bank (2016b), "Sources of Growth in Agriculture for Poverty Reduction and Shared Prosperity," World Bank, Washington, DC.

Table V.1 Decomposition of changes in crop income between FY2004 and FY2011, percent

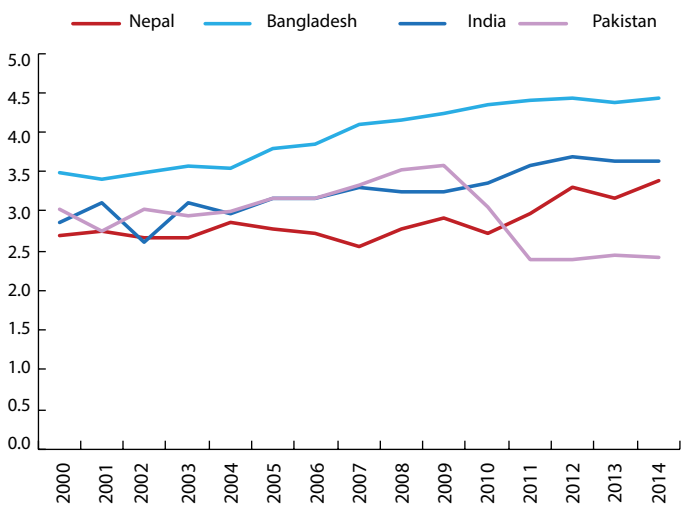
	Total Nepal	Tarai	Hills	Mountains
Change in Crop Income	0.21	0.35	0.07	0.32
Contribution of Land	-0.02	0.00	-0.01	-0.11
Contribution of Yield	0.05	0.14	-0.07	0.23
Contribution of Price	0.18	0.21	0.15	0.19

Source: World Bank 2016b.

78. Much of the increase in agricultural income has come from gains in prices, not yields. Of the total increase in crop income of 21 percent between FY2004 to FY2011, about 18 percentage points was due to increased food prices, while yields contributed only about 5 percentage points, and land contraction decreased crop income by about 2 percentage points (Table V.1). The contribution of land is negative, which indicates that there was a contraction of area under cultivation despite the increased food prices increasing farmers' income. Increased food prices would normally give farmers incentives to employ more factors of production, including putting more land under cultivation. However, food prices were not only high but also volatile, and the volatility became a major source of risk to the food sector. For farmers engaged in primary food production, unstable commodity prices in output markets is a primary concern, and the uncertainty this generates affects investment decisions regarding use of productive factors (Moschini and Hennessy 2001; Sandmo 1971). The finding that area under cultivation contracted in FY2011 relative to FY2004 mirrors global evidence that farmers reduced land allocation to major cereal crops during the recent global food crisis, when prices were high and volatile (Haile, Kalkuhl, and von Braun 2014). Within Nepal, in Mountains and Tarai, both food prices and yields contributed to increased crop income, but in the Hills, crop incomes were driven only by increased prices, as the yields actually declined.

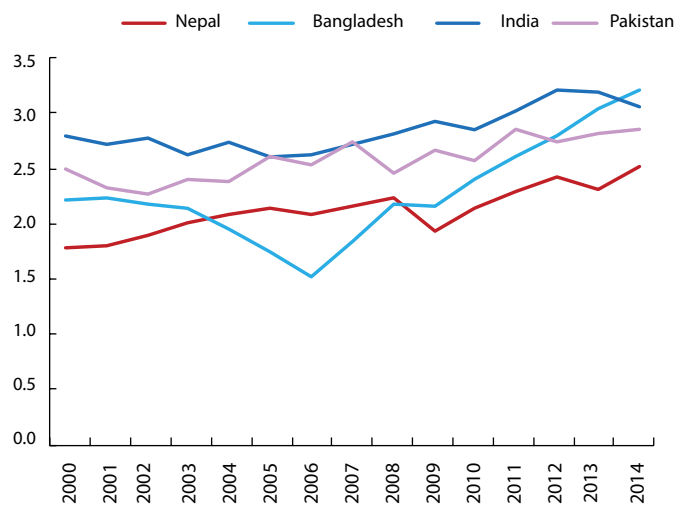
79. Farmers are diversifying away from grain staples to fruits and vegetables, but the trend is unlikely to occur on a larger scale. Nepal has the highest yields in fruits relative to its neighbors, and the second-highest yields in vegetables. But the land currently is disproportionately allocated to grain staples (rice, maize, wheat, millet, barley, and buckwheat), despite fruits and vegetables showing relatively higher yields and higher growth in consumption. While the contribution of grain staples to

Figure V.1 Rice yields in South Asia



Source: FAOSTAT.

Figure V.2 Wheat yields in South Asia



Source: FAOSTAT.

agricultural GDP is only about three times higher than fruits and vegetables, land allocation to grain staples is disproportionately 10 times higher. Therefore, this diversification trend is unlikely to occur on a larger scale unless (a) there are broad-based productivity gains in the main food grains to release land to other crops, and (b) farmers with comparative advantage in fruits and vegetables develop stable expectations that the market could be relied upon to consistently deliver staples foods at low cost.

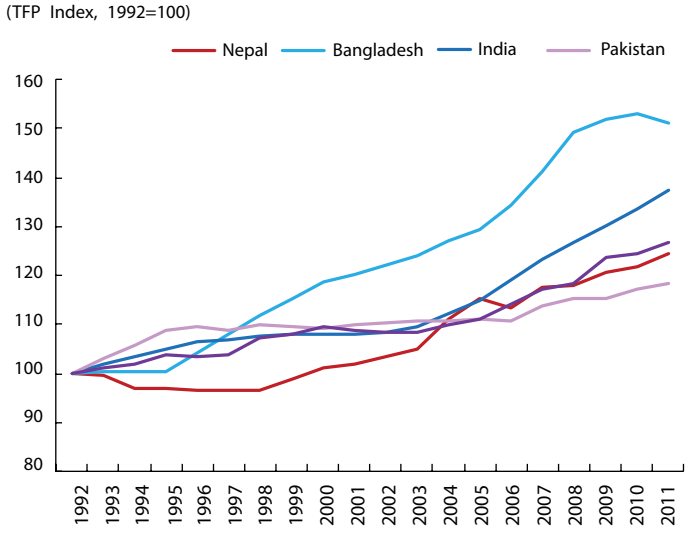
80. As a result, agricultural productivity growth, though modestly increasing, has been one of the lowest in the region. Most estimates of the agricultural TFP have relied on Fugile (2012), who uses data from FAO and applies growth accounting methods to estimate TFP in various countries, including Nepal. The data suggest that TFP in Nepal's agricultural sector has grown steadily since 1998. From 1992 to 2011, TFP in Nepal grew faster than in Pakistan but substantially more slowly than in India and Bangladesh (Figure V.3).

81. Nepal's agriculture has also become less competitive in both domestic and export markets. Nepal used to be a net food exporter, but has become a net food importer. On the demand side, the per capita consumption of food is increasing quickly in Nepal and at a much faster rate than at the regional level. For example, the proportion of the consumption of home-produced foods to total consumption declined faster in Nepal than in India—by about 4 percentage points in Nepal compared to 2 percentage points in India. Food consumption has increased across all food categories and across the rural-urban divide. In addition, households are increasingly relying on food markets to meet their consumption needs. Yet, much of the supply of this marketed food consists of imports, as domestic value chains become less competitive and lose market share in Nepal's domestic food market. Moreover, while exports have faltered across the board, food exports have seen a severe decline (Figure V.4). Nepal is increasingly becoming a net importer of food, both of high-value foods such as fruits and vegetables, and of staples such as rice, potatoes, and maize.

Main factors inhibiting growth in agricultural productivity

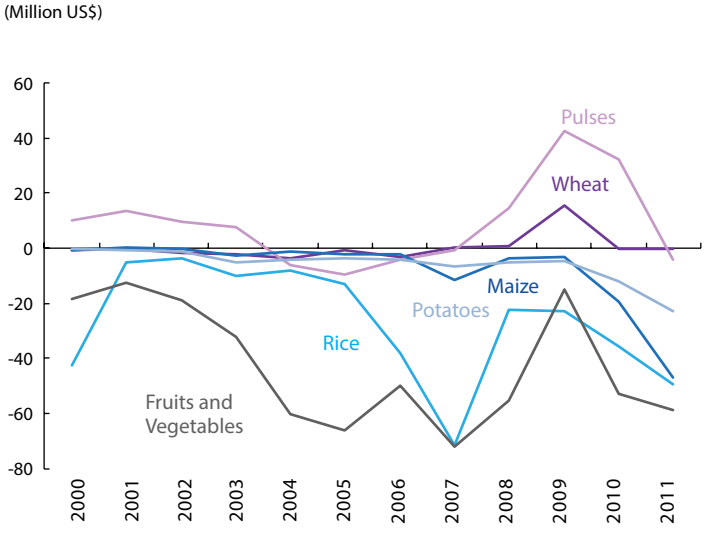
82. The principal factor inhibiting growth in agricultural productivity in Nepal is the low level of technical change and technical efficiency, particularly in the Tarai region, the breadbasket of Nepal. Technical change is associated with the release and application of new technology, while technical efficiency change is about how well existing technologies are used by farmers. Mea-

Figure V.3 Productivity in agriculture



Source: Fugile 2012.

Figure V.4 Net export value of agricultural products



Source: FAOSTAT.

Table V.2 Relative contribution of technical change and technical efficiency to productivity between FY2004 and FY2011 (index, 2004 = 1)

	Mountain	Hills	Tarai
Malmquist Productivity Index	1.22	1.26	0.94
Technical Change	1.26	1.18	1.08
Technical Efficiency Change	0.95	1.06	0.85

Source: World Bank 2016b.

suring productivity through the Malmquist Productivity Index shows that technical change has been the main driver of productivity increase in all regions of the country—and between FY2004 and FY2011, it increased by 26 percent in the Mountains, 18 percent in the Hills, and 8 percent in the Tarai. This means that farmers adopting these technologies are having a relatively large impact in the Mountains, followed by the Hills. The breadbasket of Nepal, however, the Tarai, has had much less impact. This could be because the other regions are starting from a low base, and any new technologies are likely to increase productivity relatively faster. Still, a worrying fact is that the increase in technical change in the Tarai was offset by a decline in technical efficiency, such that the region suffered a decline in overall productivity between FY2004 and FY2011. The poor performance in technical efficiency change suggests that farmers are not efficiently using even the existing technologies and practices (Table V.2).

83. Contrary to conventional wisdom, the large farms are less productive than the small farms, which is incentivizing land fragmentation and stalling mechanization. Due to the distortion in the land tenure system, small farms are the only category with consistent productivity growth across the agroecological zones, and the only category where growth is consistently driven by both technical change and technical efficiency change. In the smallest land size category, productivity increased by 77 percent in the Mountains, 50 percent in the Hills, and 14 percent in the Tarai. There is no other land category where there are gains in all agricultural zones in productivity, technical change, and technical efficiency change. Access to land is affected by many factors, chief among them the functioning of land rental markets. The land rental markets in Nepal are thin mainly because there are tenure laws that impose a risk that rented land may be lost by the landowner if the renter stays there long enough. As a result, on the one hand, owners with relatively bigger land size are keeping it fallow out of fear of losing the land to the renter. On the other hand, rural households that are land-constrained may not be able to rent additional land and are therefore trapped in small-scale agriculture. If the relationship between land size and productivity is positive, small-scale agriculture could become a low-income trap. This is incentivizing land fragmentation and less mechanization, which are unlikely to bring economies of scale in the current agricultural system of Nepal.

84. Fertilizer use is skewed and prohibitive, with insufficient coverage. Fertilizer use is heavily skewed in favor of nitrogen, which is contained in urea and which accounts for some 60 percent of the total inputs covered by the government's fertilizer subsidy program. The program covers phosphorous and potassium-bearing diammonium phosphate and potash fertilizers to a lesser extent, and this helps lead to an imbalanced use of the respective nutrients. It is an imbalance that needs to be addressed in order and to maintain soil nutrients and increase productivity. In addition, the subsidy program itself is expensive and requires improvements in how it is administered to avoid imposing prohibitive costs on the national treasury, which had led to the dismantling of the previous subsidy program in FY1997. Its coverage is insufficient, with only about half of estimated demand being met.

85. Issues related to financial constraints have limited private investment agriculture. Improving producers' technical knowledge about precision farming and the use of modern inputs and varieties would require an initial capital investment, which is difficult for subsistence farmers in Nepal. In addition, making financial resources available to both traditional farmers, and particularly to more innovative farmers, is a practical imperative currently undermined by bank lending policies that require loan applicants to own land and use it as collateral. This has been a major factor dampening private investment in agriculture.

To increase broad-based agricultural productivity, a well-integrated national program is required

86. Development, dissemination, and extension efforts to ensure farmers can use technology appropriately will be extremely important. The findings indicate that technical change as the driver of productivity increase is important for all agroecological zones of Nepal. But further improving producers' technical knowledge about precision farming and the use of modern inputs and varieties would make agriculture in Nepal more attractive to investors. The government is already implementing the Agriculture and Food Security Project, but the project only covers mid-western and far-western hill and mountain districts. The program should be expanded nationally. And since there are important differences across districts in terms of productivity, technical change, and technical efficiency change (or farmers effectively adopting new technology)—even within similar agroecological zones—the proposed national program should be informed by a better understanding of the causes of these differences.

87. Unlocking the constraints in the financial sector not only to traditional farmers but also to returnee migrants will be important in spreading innovation and increasing private investment in agricultural enterprises. Financial issues impose a serious constraint not only to traditional farmers but also to some of Nepal's most innovative and technically skilled farmers—those who have gone abroad to work on farms in Israel, Japan, the Republic of Korea, and Gulf countries, and who have returned with direct knowledge and experience of highly advanced, capital-intensive production systems. Relatively few own land so are unable to meet the collateral requirements of banks. Their investable funds are therefore largely limited to the savings they have accumulated abroad. Yet these returnees are potentially decisive agents of change, many of whom already disseminate the knowledge they have to neighbors and even college students—an activity that is a source of additional income to some. Many of them have also organized; about 80 percent of the 400-member Nepal Commercial Farmers Association are returnees. Enabling them and other farmers to expand their operations through access to formal sources of credit has considerable potential to resolve one of the most basic constraints affecting agriculture in Nepal, and in so doing transform agricultural production. Such a transformation can take place through both improved technical efficiency that allows producers to move closer to an existing production frontier, and through technical change that enables them to shift to a new production frontier by using more modern practices and technologies.

88. Agricultural interventions must be informed by differences in factor productivities across various regions in Nepal. Efforts should also focus on expanding irrigation programs in Tarai and developing skills for producing high-value crops, especially in the Hills and Mountains. The output elasticity of irrigation is relatively higher in the Tarai (0.31) compared to both the Mountains and Hills agroecological zones (0.08). Agricultural output, however, responds better to labor in the Hills and Mountains relative to the Tarai—with an elasticity of 0.33 in the Mountains, 0.20 in the Hills, and 0.06 in the Tarai. In the mountains, highly productive farmers exhibit more intensive use of labor compared to their less efficient peers. And in the Hills, the most productive farmers use relatively more pesticides and labor relative to their less efficient peers. In the Tarai, the most productive farmers operate with higher intensities of capital assets compared to their peers. The main implication of the findings is that while all factors of production are important across the board, a national program for broad-based productivity growth should be informed by these differences in factor productivities.

89. Improving fertilizer use will increase the productivity, profitability, and environmental sustainability of agricultural production in Nepal through reform of the government fertilizer subsidy program. This points to the need for more effective targeting that benefits only farmers who cannot afford their fertilizer inputs without the subsidy. These are often referred to as "smart subsidies," which not only differentiate between those farmers who can and cannot afford fertilizers at market prices, but which can also require beneficiaries to learn about fertilizers and how to use them properly. Smart subsidies can also be delivered through the private sector, using voucher and E-voucher systems that have been successfully introduced in other developing countries such as Burkina Faso, Cote d'Ivoire, Liberia, Nigeria, and Senegal.

90. **Increasing competitiveness in both domestic and international markets is crucial.** It is important to strengthen domestic value chains so domestic products can compete with imports where there are comparative advantages. Similarly, expanding exports would require investments in infrastructure and a conducive regulatory environment to certify that products from Nepal achieve the various sanitary and phytosanitary standards (SPS) required in foreign markets. Recent examples of ginger, tea, and many other agro products being stranded at the borders of Nepal highlight the urgent need to address this issue. One of the first priorities will be to transition growers out of the current practice of using seed materials retained from previous growing seasons. As a result of this practice, for example, only two major types of ginger are grown in Nepal. Addressing this challenge will entail creating a national seed development program that replenishes farmers' supply with improved varieties, something that would likely be part of a larger national program that serves growers of various commodities. Nepal would be well served by also developing an operational plan for detecting contaminants in the value chains of all its major agricultural and horticultural commodities, including pesticide residues, diseases, mycotoxins, microbes, and heavy metals (Codex standards and EU requirements provide an excellent frame of reference for this purpose). This also moves farmers closer to meeting the specific requirements of high-value niche markets in other countries while improving food safety for domestic consumers.

91. **Many of the same factors related to Nepal's ability to comply with international SPS standards also relate directly to the coordination of related information among public institutions within Nepal.** This will mean developing an SPS information management system through which information on emerging risks can be instantly and systematically exchanged among the responsible ministries and agencies. Implementing such a plan would entail both training of monitors and partnerships among private growers, traders, and regulators, as well as establishing channels of regular communication that would enable them to jointly improve traceability. It would also entail greatly improving the capacity of laboratories and testing facilities. Existing laboratories lack both high-precision and basic instruments and equipment. The Central Food Research Laboratory, for instance, is limited to 27 parameters and does not monitor microbial contaminants or heavy metals. The ability to test for these is crucial to complying with various standards in export markets, and is therefore necessary for promoting Nepal's products and ultimately accessing export markets.

92. **In sum, Nepal needs to address several underlying causes of low yields and productivity in its agriculture:** low rates of adoption of improved technology due to subsistence farming, poor access to suitable technology (both on-farm and post-harvest), limited availability of inputs (planting materials, livestock germplasm, fertilizer, animal feed, plant and animal health protection, irrigation, electricity, finance), and limited investment in the sector.

CHAPTER SIX
INVESTING IN PEOPLE

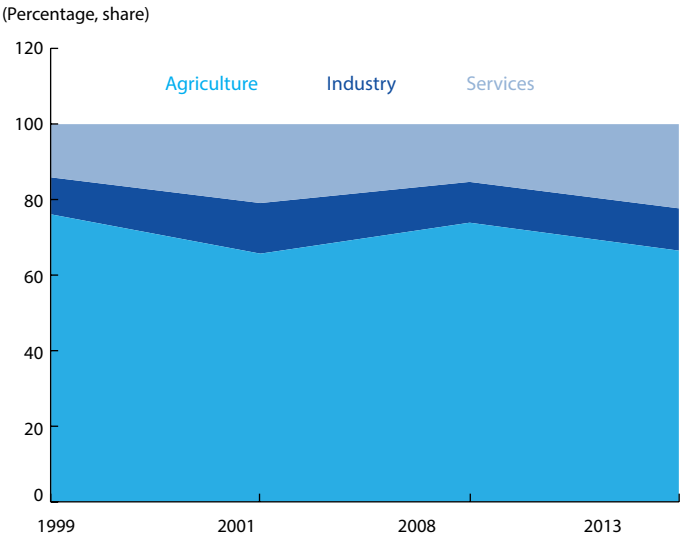
Putting more human capital to productive use in Nepal is critical for a stronger and more sustainable growth path

93. As highlighted in Part II, Nepal appears to be stuck in a low-growth, high migration trap. Historically, low economic growth led to a shortage of employment opportunities at home, which is fueling labor outmigration. Labor outmigration has resulted in a large flow of remittances (in per capita terms and as a share of GDP) contributing to rapid poverty reduction. However, large-scale migration and the ensuing remittances have also contributed to the steady loss of competitiveness (through appreciation of the real exchange rate), and have enabled the growth of low-productivity services. Further, they have reduced pressure to generate more productive employment at home. Consequently, this cycle compounds existing and long-standing challenges that hamper Nepal's competitiveness, furthering weak growth and limited domestic opportunities. These factors combined mean that Nepal—home to some of the world's most industrious and adventurous people—could be stuck in a low-growth, high-migration equilibrium for years to come.

94. While the economy experienced a large shift in value added away from agriculture, this occurred without a commensurate shift in employment. Employment in services grew 5 percent annually between FY1999 to FY2013, while industry and agriculture grew at 2.6 percent and 0.7 percent, respectively. Value added in services accounts for over half of national value added, whereas employment in services accounts for 22 percent of total employment (Figure VI.1). Agriculture remains the largest employer, accounting for 67 percent of total employment, but only one-third of total value added.

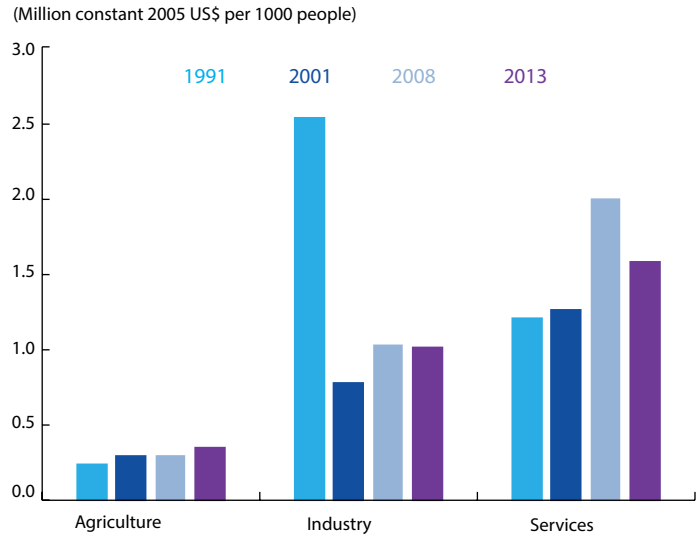
95. The premature graduation to services is constraining economic prospects. One side effect of the premature graduation to services has been that the skills content of wage employment in the economy did not increase from 1995 to 2010. While professional service and manufacturing employment has grown, it tends to be low skilled.

Figure VI.1 Employment share by major sector, 1999–2013



Sources: WDI and WB staff calculations.

Figure VI.2 Value added per worker by sector, 2001–13



Sources: WDI and WB staff calculations.

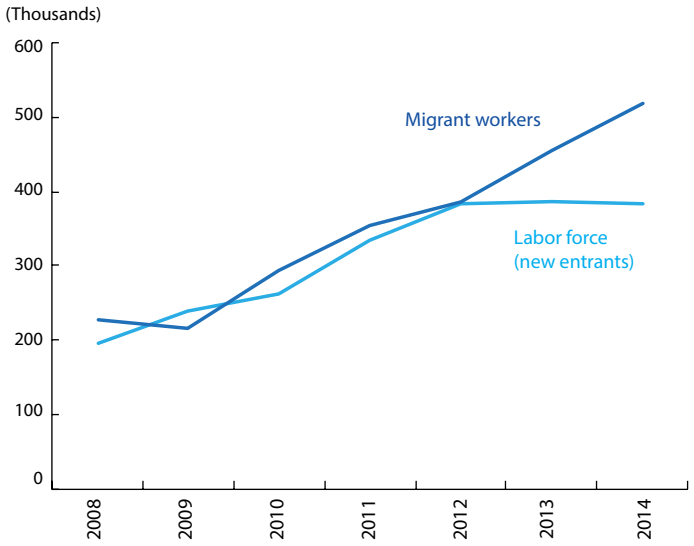
Premature graduation has led to a positive relocation effect, with workers moving out of agriculture and finding more productive jobs in the urban service sector. However, declining productivity in the urban service sector may have a negative dynamic effect; that is, these jobs are only marginally better and thus do not reflect a major transformation (Figure VI.2). As such, this atypical structural transformation may be constraining increases in aggregate productivity, a key determinant of faster growth in the long run.

96. In addition, the large labor migration outflow may have reduced the pressure for more productive employment at home, and for urbanization to serve as an engine of growth. Since the end of the conflict in 2007, the labor force has increased, on average, by about 330,000 new entrants each year. This is the difference between the number of new people turning 16 and 65 (the working-age population). However, labor outmigration has exceeded the increase in the labor force each year, averaging 375,000 during this period, leading to the depletion of human capital inside Nepal (Figure VI.3). Further, the majority of migrants are young people, under 35 years of age (Figure VI.4). Increasing urbanization can foster productivity through the concentration of economic activity in cities. So-called agglomeration economies can improve productivity and spur employment creation, particularly in manufacturing and services. These potential forces may be subdued by large labor outmigration.

Nepal has entered a youth bulge phase—an opportunity for a demographic dividend

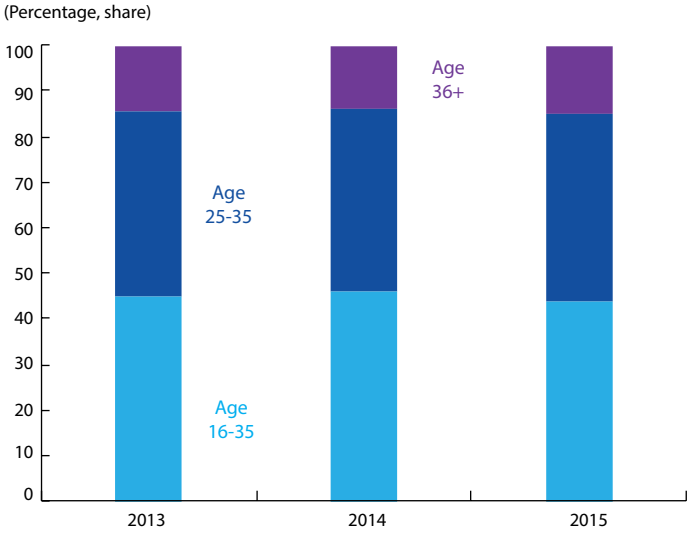
97. Nepal is in the midst of a youth bulge, and a potential demographic dividend that can support growth. Starting in 2004, Nepal has seen a shift in the age structure of its population. The share of the population that is working age is now greater than the share of the population that is not, lowering the dependency ratio. This is a result of a sharp decline in the fertility rate—from 4.97 children per woman of childbearing age in 1995 to 2.32 in 2015. Population growth in Nepal is now among the lowest in the region (Figure VI.5). Countries with the greatest demographic opportunity are those entering a period in which the proportion of young dependents is falling, the share of working-age population is rising, and the proportion of elderly is still small. This is the demographic dividend. It typically lasts for a limited period, because aging in the population then reverses the decline in the dependency ratio (the number of dependents aged zero to 14 and over age 65, to the total population aged 15 to 64) (Figure VI.6).

Figure VI.3 Migration has exceeded new entrants to the labor force



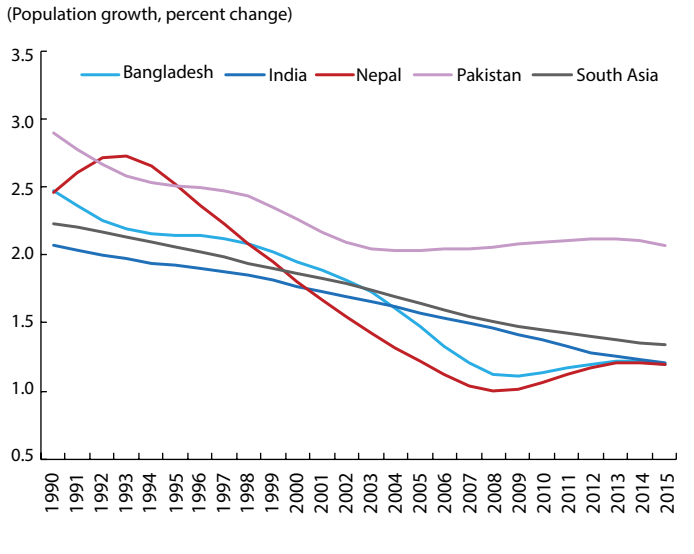
Sources: WDI and Department of Foreign Employment.

Figure VI.4 The majority of migrants are under 35 years of age



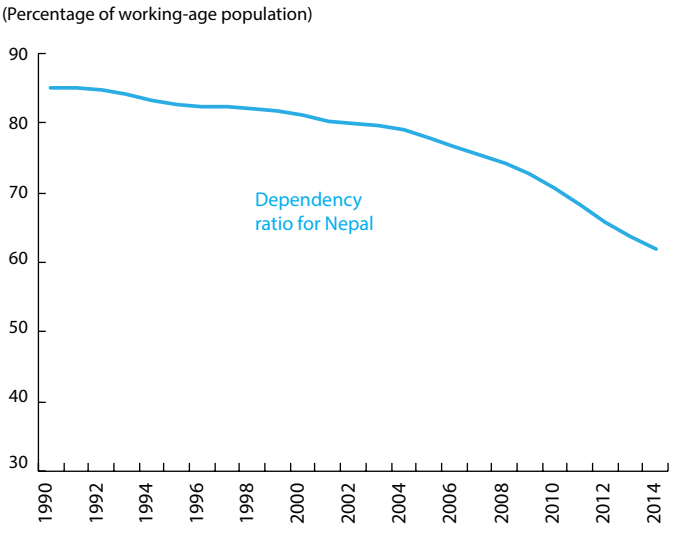
Source: Department of Foreign Employment.

Figure VI.5 Population growth in South Asia



Source: WDI.

Figure VI.6 Age-dependency ratio for Nepal



Source: WDI.

98. During a demographic transition, there are typically two "demographic dividends" that can potentially benefit a country. As the rate fertility declines in a country, the population share of children declines and the share of people of working age increases, while the share of elderly remains small, leading to an increase in labor supply. The magnitude of this benefit will depend on the extent to which additional workers obtain productive employment. This is the so-called "first demographic dividend." Subsequently, as the share of working-age population continues to increase, countries are in a position to realize high rates of savings and investment, building up large stocks of human and physical capital. The contribution of this capital to production, which may be long term, is considered a "second demographic dividend."

99. Nepal is currently classified as an "early-dividend" country from a demographic transition stand-

point. The World Bank's 2015/16 Global Monitoring Report examines demographic change globally. It lays out the typology that defines each country according to its demographic trends. Nepal is classified as an early-dividend country, meaning that "If a country's total fertility is below four births per woman, then it is likely that the country has been progressing through the demographic transition model and will be experiencing rapid reductions in the population share of its youth. These are the early-dividend countries" (World Bank 2016c, 268).

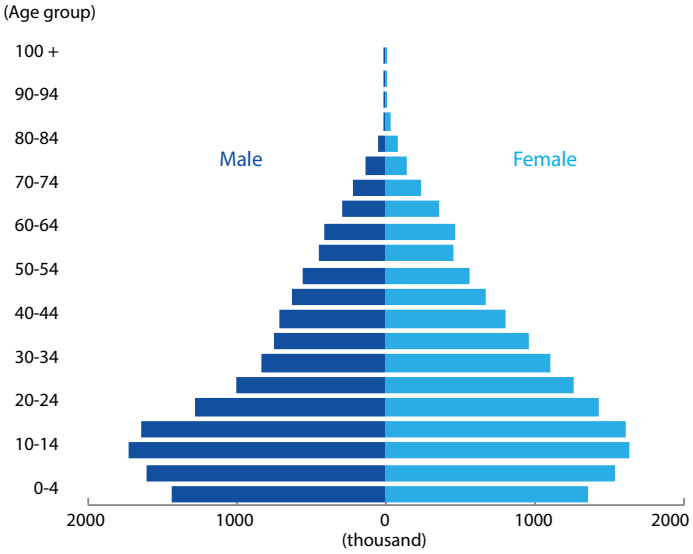
100. It is urgent to implement policies that take advantage of the demographic dividend. The urgency stems from the relatively small window of opportunity to create the conditions needed for the youth bulge to translate into a demographic dividend. During this window, countries traditionally try to accelerate job creation in order to create productive opportunities for the growing share of the working-age population so as to reap the first demographic dividend. Failure to provide these opportunities to a growing young population can have negative repercussions on current and future economic prospects, and strain the social fabric of the country.

101. Because the dependency ratio is projected to start increasing again in 2050, Nepal should implement policies that facilitate the second demographic dividend. Before the population begins to age, Nepal should implement policies that will enable the second demographic dividend in the future. Such policies should encourage savings and their channeling into productive investments in human and physical capital. Such policies would strengthen public services underpinning private sector activity, contract enforcement, financial inclusion, and protection of labor rights.

102. History shows there is a real possibility of countries missing their chance at a dividend. The opportunity to reap a demographic dividend occurs during a finite window that gradually closes as the working generation ages. For example, in the late 20th century there was a demographic dividend in Asia. GDP increased sevenfold, an economic boom that was dubbed the East Asian economic miracle. However, in Latin America around the same time, GDP rose only twofold, reflecting unequal educational investment and other factors hampering gains from the demographic dividend.

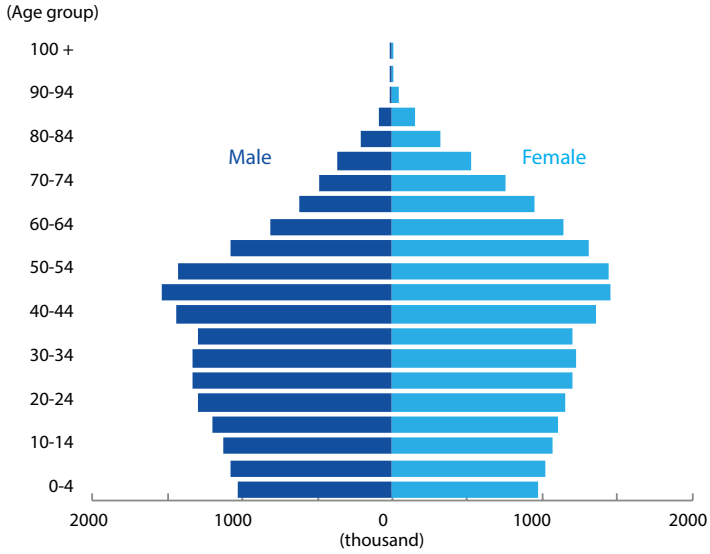
103. In addition to creating domestic opportunities, realizing a demographic dividend requires investments in people. Looking forward from a macro perspective, the demographic change or the increasing share of the working-age population can play an increasingly important economic role in the coming years. The pos-

Figure VI.7 Population by five-year age groups, historical, Nepal, 2015



Sources: UN World Population Prospects and WB staff calculations.

Figure VI.8 Population by five-year age groups, projection, Nepal, 2050



Sources: UN World Population Prospects and WB staff calculations.

itive effect depends on youth being sufficiently educated. Young people need a chance to gain the education and experience required to succeed in a competitive global workplace, which demands more skills, education, and technical expertise than ever before. In addition, Nepal needs to find new drivers of high-quality, productive employment. Parts III, IV, and V offered advice on how to generate greater opportunities for Nepali youth at home.

Deepening of human capital remains a basic condition for brighter economic prospects

104. Youth in Nepal are more educated on average than in the past thanks to significantly expanded access to education. Nepal's Human Development Index increased to 0.55 in 2014 from 0.34 in 1990, and administrative data indicate that the primary Net Enrollment Rate for primary education reached 96.6 percent in 2015. The education system has seen major interventions aimed at improving access. There has been a significant increase in the number of both schools and trained teachers, leading to increased enrollment and inclusion in educational access. In addition, Nepal has introduced reforms, such as decentralization of service delivery to local communities and introduction of demand-side incentives, such as scholarships targeting the poor, girls, and children belonging to marginalized groups.

105. Average wage premiums from education continue to be sizable in Nepal, especially for post primary education. When the potential private gains to education are aggregated, they translate into significant poverty reduction. In addition, education can lead to other important nonpecuniary benefits, such as greater agency for women, improved health and education outcomes for the next generation, reduced risky behaviors, and increased civic engagement among youth. Furthermore, productive education and employment can aid social cohesion and political stability in Nepal.

106. However, the education sector is falling short in delivery, as reflected in low learning outcomes and skills attainment. Students in the public education system are not acquiring key foundational skills at the rate they should be. Also, large numbers of students are left with severely compromised labor market and higher education prospects. Further, large differences in test scores between public and private school students are feeding a sense of frustration and exclusion among young people who cannot afford private education.

107. The educational system is not producing enough student learning and skills. Student learning at all levels of education—from kindergarten to higher education—remains one of the foremost challenges. According to the Nepal Living Standards Survey 2010/11, 56 percent of females and 28 percent of males aged six or above could not read or write a simple sentence (UNESCO 2015). There appear to be persistent student failures. Dropout and repetition rates are high, even at the primary level, implying that the transition from primary to lower secondary, and from lower secondary to secondary level, remains challenging (UNESCO 2015). For 2013, grade 8 National Assessment of Student Achievement results show that students averaged only 43 percent in mathematics (World Bank 2013c). Furthermore, student learning outcomes vary significantly by geography, school, and individual and household characteristics (World Bank 2016b).

108. Hence, Nepal should focus on improving student learning outcomes and skills attainment. Prioritizing based on local and global evidence, as well as lessons learned from past and ongoing programs, the education strategy should focus on three pillars: (1) aligning performance incentives and accountability at each level of service delivery—central, district, school, and classroom; (2) strengthening systems for improved service delivery; and (3) ensuring a consistent and cross-cutting focus on the labor market.

109. The education-to-employment transition in Nepal is fraught with obstacles that can be significantly eased through better-quality education. Some pressing obstacles include a culture of high-stakes testing, unmet needs for pre-employment training, lack of information, limited migration support, and a centralized mode of academic management in higher education. Some of Nepal's current high-stakes examination systems are undergoing reforms (such as the Secondary Education Examination at the end Grade 10 and the School Leaving Certificate examination at the end of Grade 12). However, technical and vocational

education and pre-employment training remain scarce, and their quality and relevance are questionable (World Bank 2016c). In addition, young people in Nepal have little access to information and guidance. It is estimated that a large share of youth find domestic employment through informal channels, such as by joining family income-generating activities, or asking family and friends for assistance. Only a small share formally apply for employment, and a negligible share use government-run employment offices as part of their job search (Raju and Rajbhandary 2017).

110. Complimentary investments are needed to improve health outcomes in early childhood, particularly to address stunting. In 2014, one in three children under age five in Nepal was underweight (30 percent), more than one-third (37 percent) were stunted, and 11 percent were wasted. There are also differences in nutritional outcomes according to geographic and development regions, class or wealth status, and education status. Children in the Mid-Western Mountains were more likely to be underweight and stunted than other children. In contrast, the percentage wasted is highest in the Central Terai. Children in rural areas were more likely than those in urban areas to be underweight, stunted, or wasted. Fifty-five percent of children in the poorest quintile are stunted compared to 15 percent in the richest quintile (CBS 2015).

111. Improving nutrition contributes to economic development, because economic costs of malnutrition are very high. An estimated 2 to 3 percent of GDP (US$250 million to US$375 million) is lost every year in Nepal due to vitamin and mineral deficiencies alone. The window of opportunity for improving nutrition is narrow—the first 1,000 days—from the first day of pregnancy through the first two years of life. The damage to physical growth, brain development, and human capital formation that occurs during this period is extensive and largely irreversible. Interventions must therefore focus on this window of opportunity and focus on this age group and women of child-bearing age (World Bank 2011).

ANNEX
NEPAL PUBLIC INVESTMENT MANAGEMENT GAP ANALYSIS[a]

Desirable Institutional and Procedural Arrangements in a Public Investment Management (PIM) system	Current Status in Nepal
Strategic Guidance and Preliminary Screening	
Published development strategy or vision statement that has unambiguous authority. Centralized approval by planning or finance ministry (or delegated) for developing proposals/explicit ministry-level justification with strategy. Clarity of project objectives in terms of outputs and outcomes. Consideration of alternative approaches to objectives.	No real links exist among strategic planning, policy, and budgeting. Various strategic national development plans and sector plans have been developed, but their quality needs to be improved. Not all sectors prepare their own strategic plans, while others are prepared with or without costing. Sectors are responsible for preparation of project proposals and, in collaboration with the National Planning Commission (NPC), carrying out the preliminary screening. The form for new project proposals includes all the cost-benefit analysis/cost-effectiveness analysis, and is equivalent to a full-fledged feasibility study (FS). It is unclear whether the sector planning staff or the NPC have sufficient technical capacity and resources to carry out this responsibility, which demonstrates that the screening process is largely a formality. No statistics are kept on project prescreening rejections.
Formal Project Appraisal	
Publicized and transparent guidance, backed by effective training and deployment of staff for project design and appraisal (including stakeholder consultation in project design). Application of guidance in project appraisal.	A "Project Management Directive" exists that is supposed to provide formal project preparation and appraisal guidance. However, it has not been revised since its publication in 2000, and is outdated. Large spending agencies, particularly in infrastructure sectors, also develop their own technical standards to guide the appraisal. However, no differentiation is made in terms of methodologies to be applied to projects of different scales and/or sectors. The guidelines are not backed by qualified staffing in the planning departments of ministries, departments, or agencies. No specific evidence exists on the share of proposals rejected at appraisal.

a. Benchmarking per Rajaram et al. (2010).

Desirable Institutional and Procedural Arrangements in a Public Investment Management (PIM) system	Current Status in Nepal
Independent Review	
Independent checks to ensure objectivity and quality of appraisals. Disciplined completion of project appraisals prior to budget. Identifying and maintaining an inventory of appraised projects ranked by priority for budgetary consideration. Clarity of roles among projects that are minor and may be dealt with at the departmental level, and those requiring additional appraisal.	There is no effective formal independent review of the pre-FS or FS, even though for listing and prioritizing projects, the NPC holds discussions with the MOF and line ministries regarding the projects' technical and financial viability.
Project Selection	
Transparent criteria for selecting projects with reference to policy objectives at the ministerial level. Well-structured budget preparation process with scope to integrate investment and recurrent implications of projects. Effective gatekeeping to ensure that only appraised and approved projects are selected for budget financing. Ensuring adequate financing for selected projects, including recurrent needs on completion.	Consideration for financing is a joint process among the NPC, line ministries, and the MOF. The final decision on project selection and financing rests with the Cabinet of Ministers, formally on the basis of recommendation by the NPC/MOF. No transparent criteria exist to prioritize financing. Sometimes, for example, the broad government policies or targets are used to consider projects for financing. With the discontinuation of a *Medium-Term Expenditure Framework* and parallel budgeting, there is no mechanism for integration of recurrent and capital budgeting.
Project Implementation	
Published guidelines for project implementation. Cost-effective implementation through procurement and contracting. Timely implementation in line with guidelines. Timely implementation reports on major projects. Effective budgeting for selected projects.	There are no standard operational guidelines or manuals at the central government level that can be applied to all sectors. Sectors or their major spending departments may prepare their own guidelines but, as a result, there is no uniformity in the rigor of contract and project management. Project management expertise is scarce and project managers change too frequently. Major progress in procurement has been made with the enactment of the new Public Procurement Act and Regulations (2007). While competitive bidding is by default, legalized loopholes exist, leading to time and cost overruns. Implementation reports are prepared but they have no direct impact on continued financing or implementation of ongoing projects. Annual costing is tracked by sectors, but that does not translate into effective cost control. No threshold for cost overruns has been established that requires management action.
Project adjustment	
Active monitoring. The funding review process should have some flexibility to allow changes in the disbursement profile to take account of changes in project circumstances.	Different levels of monitoring and evaluation (M&E) exist, but the outcomes of the M&E reports do not affect the decision on further financing of project completion. Sectors are allowed to request additional funding to complete projects, which should be presented to and agreed by both the NPC and MOF.

Desirable Institutional and Procedural Arrangements in a Public Investment Management (PIM) system	Current Status in Nepal
Facility Operation	
Asset registry. Asset registers need to be maintained and asset values recorded. Facility Operation.	A system for asset registry exists, but the process for updating and tracking of depreciation and net asset value over time remains limited. Sufficient funding has been provided for routine and recurrent maintenance, but not for periodic maintenance and rehabilitation, which has adversely impacted project performance.
Project Evaluation	
Formal institutional arrangements for ex-post evaluation of projects and programs with feedback into future project designs.	Government budget-financed projects are not subject to ex-post project evaluation. In fact, this function is completely missing.

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