


TAJIKISTAN

PROMOTING EXPORT DIVERSIFICATION AND GROWTH

COUNTRY DIAGNOSTIC STUDY



ASIAN DEVELOPMENT BANK

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Abbreviations

ADB	Asian Development Bank
DRS	Districts of Republican Subordination
FDI	foreign direct investment
GBAO	Gorno-Badakhshan Autonomous Oblast
GDP	gross domestic product
GHI	Global Hunger Index
IMF	International Monetary Fund
km	kilometer
MW	megawatt
OECD	Organisation for Economic Co-operation and Development
PRC	People's Republic of China
PRODY	sophistication level of individual products
RCA	revealed comparative advantage
REER	real effective exchange rate
SPI	Social Protection Index
TWh	terawatt-hour
TALCO	Tajik Aluminium Company

TAJIKISTAN FAST FACTS

(as of 2014 or latest available year)

ECONOMY

GDP current $9.24 billion
GDP per capita $1,099
Real GDP growth 6.7%
2005-2013 Average Sector Shares in GDP(%)

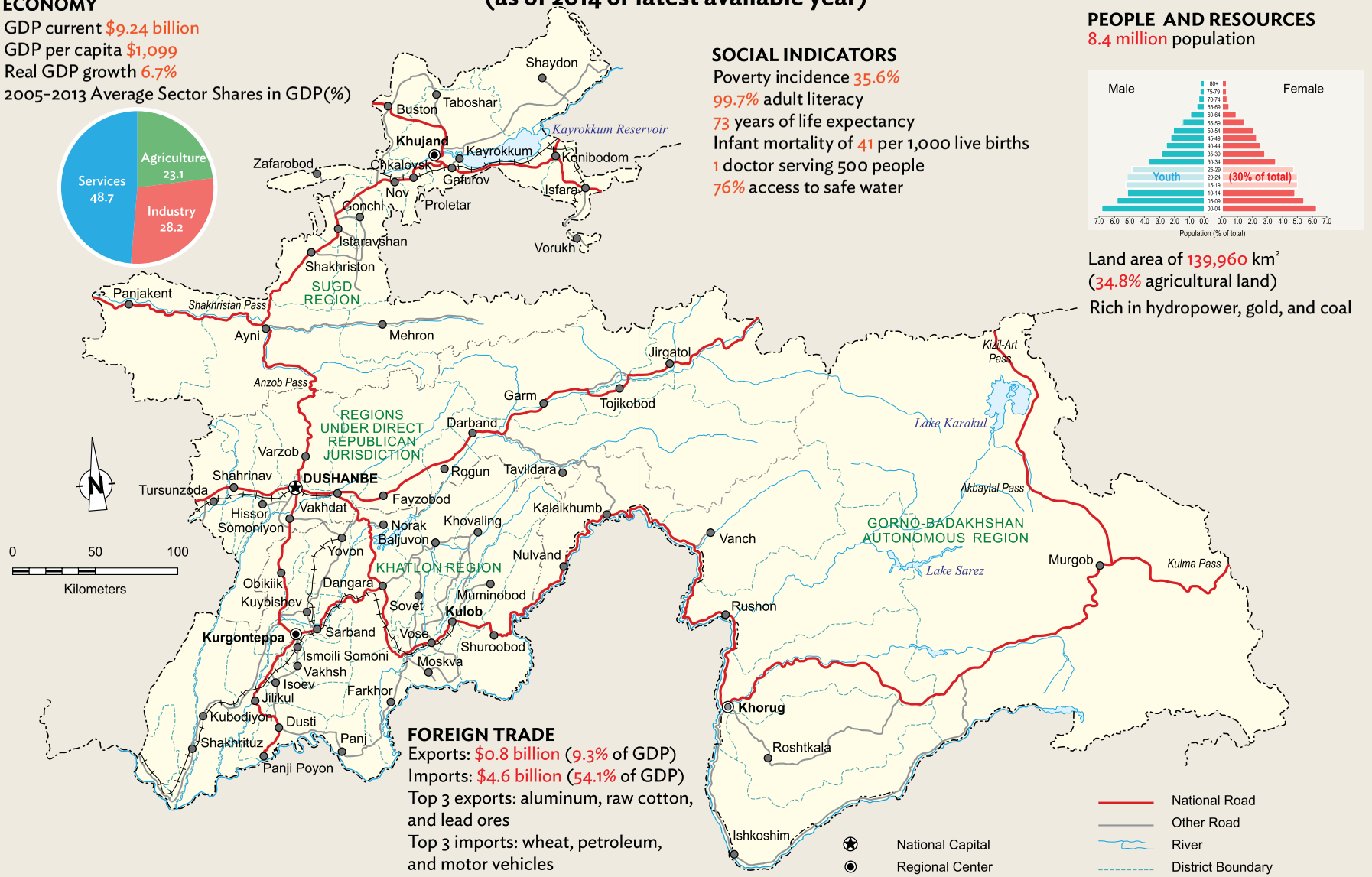
SOCIAL INDICATORS

Poverty incidence 35.6%
99.7% adult literacy
73 years of life expectancy
Infant mortality of 41 per 1,000 live births
1 doctor serving 500 people
76% access to safe water

PEOPLE AND RESOURCES

8.4 million population

Land area of 139,960 km²
(34.8% agricultural land)
Rich in hydropower, gold, and coal



FOREIGN TRADE

Exports: $0.8 billion (9.3% of GDP)
Imports: $4.6 billion (54.1% of GDP)
Top 3 exports: aluminum, raw cotton, and lead ores
Top 3 imports: wheat, petroleum, and motor vehicles
Top 3 export trading partners: Turkey, People's Republic of China, and Russian Federation

Boundaries are not necessarily authoritative.

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Foreword

This report comes at a very opportune time for our country as we seek solutions to move Tajikistan onto a more sustainable growth footing. Illuminating the critical development constraints we confront and recommending solutions can help us maintain the strong growth momentum our people have worked hard to regain and—more importantly—get the economy onto an inclusive growth path.

We envision doubling gross domestic product (GDP) in 10 years. The economy has indeed grown substantially, with real GDP expanding at an annual average of 7.2% between 1997 and 2015. We realize, nonetheless, that to sustain this pace, growth must rely on more than the existing growth drivers. It is necessary to create a national system of export promotion that helps improve business attractiveness, enhance investment and support the sustainable growth of high value added exports. By diversifying the industrial base and finding other stable drivers of growth, we can reduce vulnerability to economic shocks.

This report identifies critical constraints to sustained high and inclusive growth in Tajikistan and offers practical ways to address some of these key bottlenecks. We particularly appreciate the recommendations of the study, emphasizing the importance of industrialization and export diversification and upgrading.

To sustain high growth, Tajikistan needs to revive its industrial sector, which will create more decent jobs for skilled workers. Dynamic export industries will help attract productive investment, generate employment opportunities, and boost foreign exchange reserves to help maintain macroeconomic stability and absorb external shocks. The country also needs to foster more regionally balanced and equitable growth. This report suggests that the country must improve its business and investment climate and increase the quality of its infrastructure, education, and health services to achieve these goals.

The Government of Tajikistan welcomes this report and its central findings. We appreciate the analysis and policy suggestions to help materialize our goals for sustained high growth and better employment outcomes. The report will be an important input for formulating National Development Strategy 2030 and implementing the State Program on Export Promotion and Import Substitution in the Republic of Tajikistan for 2016–2020. Through our development strategy, the findings of the report will also guide our progress toward regionally balanced and equitable growth.

Nematullo Hikmatullozoda
Minister
Ministry of Economic Development and Trade

Preface

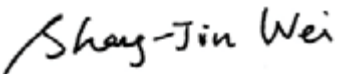
Tajikistan has enjoyed robust economic growth since the end of its civil war in 1997, maintaining for 18 years an average annual growth rate of over 7%. It targets doubling its gross domestic product within a decade so the country has to sustain its 7%-a-year growth for another 10 years to attain that goal. This will be a major challenge as the country currently has a narrow economic base that heavily relies on inward remittances from Tajik workers abroad and on its exports of aluminum and cotton—revenue sources that are both highly vulnerable to adverse external developments. Compounding the situation is the fact that the economy has been unable to create an adequate number of decent jobs for the growing labor force. Employment opportunities in the industrial sector declined between 1997 and 2014 and those in the services sector have remained flat. This left the low-productivity agriculture sector to absorb nearly 66% of the country's labor force.

This country diagnostic study conducted by the Asian Development Bank (ADB) employs an inclusive growth diagnostic framework for analyzing the various factors that have hampered private investment and productive employment in Tajikistan. Five major challenges have been identified: (i) improving access to finance and reducing its cost, (ii) providing stable and uninterrupted power supply, (iii) improving the quality of transport infrastructure and logistics, (iv) strengthening governance and the rule of law, and (v) addressing market imperfections that constrain new investment and economic activities. High-quality health and education services as well as strong social protection will also be essential to the country's more inclusive growth.

The study shows that Tajikistan will need to explore more productive business and investment opportunities beyond its existing drivers of growth to be able to sustain its high economic growth in the long term. To significantly augment revenues from its aluminum and cotton exports, it has to diversify into other export products while improving the quality of its other current exports. For this, the country's domestic production capabilities need to be strongly enhanced and its industrial structure upgraded from low-value, low-skilled production to a high-value, high-skilled one.

The success of this development effort will need (i) strong policy backing, including infrastructure, from the Tajikistan government, (ii) more systematic ways of supporting industries that promise not only higher growth but also have high potential for speeding up the country's structural transformation, (iii) stronger incentives to entrepreneurs involved in new product innovation, (iv) continuing efforts to identify and provide public inputs that can significantly raise a sector's productivity, and (v) setting up several free economic zones to attract more foreign investors. In sum, this report highlights the country's needs to dramatically broaden its industrial base and improve its performance in agriculture and services to a level that can sustain high growth and generate full and productive employment.

We would like to thank the Government of Tajikistan for extending support throughout the study and for providing valuable insights. We at ADB look forward to continued and productive dialogue and engagement with the government as it pursues its agenda for Tajikistan's inclusive growth and sustained development.



Shang-Jin Wei
Chief Economist and Director General
Economic Research and Regional Cooperation Department

Acknowledgments

The Tajikistan country diagnostic study was prepared by Asian Development Bank (ADB) under Research and Development Technical Assistance 8266: Country Diagnostic Studies in Selected Developing Member Countries (DMCs). The report posits that for Tajikistan to continue its strong economic growth in the long run, it needs to modernize its economy through structural transformation and export diversification. The study identifies some of Tajikistan's major development challenges and suggests policy measures and economic reforms needed to speed up the process of structural transformation.

The study was undertaken by a team of professionals from the Economic Analysis and Operational Support Division (EREA) of ADB's Economic Research and Regional Cooperation Department, under the supervision of Cyn-Young Park, former director, EREA, and her successor, Edimon Ginting. Kaukab Naqvi led the study team which includes Kee-Yung Nam, Maria Rowena Cham, Lilibeth Poot, David Raitzer and Paulo Rodelio Halili. The study benefited from comments and inputs from ADB's Central and West Asia Department. The team also acknowledges valuable comments and contributions from Jesus Felipe. Utsav Kumar, who initially led the study, also provided useful comments and suggestions in finalizing the report.

Research work and assistance were provided by Regina Baroma, Amador Foronda, Ma. Concepcion Latoja, Marymell Martillan, and Lotis Quiao. The study team also appreciates the contributions and insightful inputs of consultant Tanju Yurukoglu. The study was edited by Eric Van Zant and proofread by Tuesday Soriano, with layout, cover design, and typesetting by Michael Cortes. Lilibeth Poot and Ricasol Cruz-Calaluan provided publication and printing support.

The study drew extensively from a series of consultative processes with the Government of Tajikistan and key stakeholders, including civil society, the private sector, and development partners. The team is grateful for the support of the Government of Tajikistan. We particularly value the keen interest and guidance from Hon. Saidrahmon Nazrizoda , First Deputy Minister of Economic Development and Trade. In addition, the study team appreciates the help and cooperation extended by the Office of the President as well as the valuable comments and suggestions from other government officials.

Finally, we wish to acknowledge the excellent support of the Tajikistan Resident Mission (TJRM) in facilitating dialogue and fostering collaboration with the government and other stakeholders. The study would not have been complete without the insightful inputs and guidance provided by Chang Ching Yu, Country Director, TJRM. We also thank Kakhorjon Aminov, Muhammadi Boboev, Firuza Dodomirzoeva, Tatiana Evstifeeva and Farrukh Nuriddinov for their generous assistance and cooperation.

Executive Summary

Tajikistan has sustained high economic growth since its civil war ended in 1997. Real gross domestic product (GDP) during 1997–2015 grew at an average 7.2% a year, driven mainly by agriculture and services. The post-conflict recovery was strong, aided by significant increases in remittance inflows and a favorable external environment particularly from rapid economic development in the Russian Federation. Macroeconomic stabilization and surging international prices of aluminum and cotton—the country's dominant exports—also contributed.

However, this high growth has not yet been translated into correspondingly high private investment and employment opportunities. Tajikistan aims to double GDP within a decade, for which it needs to sustain its 7%-a-year growth. Although recent growth has been sufficient to hit that target, the external environment has become less favorable now than in the early 2000s and the potential for catch-up growth from the depths of the 1990s recession is now largely exhausted. Remittances have played a significant role in poverty reduction, but they are subject to external factors that affect the countries hosting Tajik migrant workers, so relying on them to sustain high growth is a significant risk. Another important drawback is that the economy has remained largely agrarian, with the agriculture sector—itself suffering from low productivity—absorbing 66% of the labor force.

Tajikistan needs to deepen its industrial base and improve performance in agriculture and services to achieve its goal. The major challenges it faces in its quest to become a modern and vibrant industrial economy are generating more private investment, diversifying and upgrading exports, and creating nonfarm employment opportunities. The country can meet these challenges by addressing underlying reasons for low private investment and improving the business climate.

The lack of decent employment opportunities for a growing labor force must be also decisively addressed if economic growth is to be made socially inclusive. Job creation in the formal sector has been low and counts among the key factors responsible for the lack of inclusivity. Employment opportunities in the service sector have remained flat, and those in industry have declined. This has left the low-productivity agriculture sector to absorb a majority of labor.

Threats to sustained high growth. This study, which uses an inclusive growth diagnostic framework, analyzes the constraints that hinder private investment growth and employment generation and thereby pose a threat to Tajikistan's sustained high growth. It identifies the following as the most critical constraints: (i) limited access to finance and its high cost; (ii) unstable and seasonally interrupted electric supply; (iii) insufficient quality transport infrastructure and logistics; (iv) inadequate control over corruption and weak rule of law; and (v) market failures resulting in highly concentrated exports.

Progress in making growth inclusive is also inhibited by lack of quality health services and a weak and ineffective social protection system. Literacy remains high in Tajikistan, but the quality of the education system has deteriorated. Government can stimulate private investment and improve the industrial base—and spur the creation of decent employment opportunities and more diverse economic sectors—by overcoming the constraints identified in this study. Success will mean greater inclusiveness and it will enable Tajikistan to better mitigate and absorb external shocks.

Moving beyond existing drivers of growth. The empirical analysis presented here underscores the idea that if Tajikistan can explore new business and investment opportunities beyond the existing drivers of growth, then it will significantly improve its chances of sustaining high economic growth in the long run. This means moving away from the low-value, low-skilled industries that are dominant now toward high-value, high-skilled sectors. One successful development strategy would be to improve the quality of its exports and to diversify its export products.

The study identifies high-potential products that Tajikistan can diversity into as part of its industrial development strategy to help accelerate the structural transformation. Chief of them are agro-food processing, crop farming, textile and garments, mining and quarrying, basic precious metals and nonferrous metals, and animal farming. The government can encourage proactive private sector engagement in these products by helping address major constraints to their production. Some of these high-potential products may not be easily applicable now given the country's existing capabilities, but they may have positive technology spillovers and targeted policy support for them could be considered in the country's long-term industrial development plans.

Need for public–private dialogues. In practice, a series of public–private dialogues can help identify the gaps in public inputs that are needed to overcome the critical constraints to private sector investment. This will help both parties to agree on how to supply them through greater policy attention, legislative time, and better allocation of fiscal resources. To provide these missing public inputs, the government needs to identify as many obstacles and opportunities as possible and then make informed choices afterward.

Tajikistan could also consider a few "strategic bets" on industrial development that would be difficult without major public involvement, considering that the market on its own is unable to resolve coordination problems. The success of these bets will hinge on the quality and depth of the public–private dialogue. The idea is not about "picking winners," but rather opening dialogue with the private sector to help identify new economic opportunities in structural transformation and address obstacles to exploiting these opportunities. The many possible "no-regret" options need to be considered first.

Imperatives for sustained high growth. A vigorous industrial sector that generates sufficient decent employment opportunities is the key to Tajikistan's future growth. The country particularly needs to achieve sufficient export dynamism to induce productive investment, create adequate and decent jobs, and manage healthy foreign exchange reserves to help maintain macroeconomic stability and absorb external shocks.

In addition, while agriculture is still the main employment provider, there is great potential for improving its output and productivity. Strong productivity growth in agriculture would help release its excess labor to the growing industry and service sectors while keeping wage pressure under control for the emerging new sectors. With strategic and targeted policy interventions to support innovative business models on a competitive basis, the Tajikistan government can meet the real challenge of promoting productive industry and service sectors. This will in turn help absorb workers released from a more productive agriculture sector and those generated by population growth.

Facilitating private sector dynamism and competition. Economic history suggests that successful industrial policies are those that evolve alongside the stage of economic development. In the early stage when the private sector is weak, government may play a more active role in prioritizing sectors for investments. However, as the economy develops and a strong entrepreneurial class emerges, the private sector can take the lead in investment decisions and assume more responsibility for industrial development.

This would make the government more of a facilitator. Its more important task is to maintain a sense of competition and private sector dynamism. When implementing industrial policy to promote certain economic activities, the government should consider designing specific programs that are directly relevant to the problem at hand, whose effects are measurable, and where support is time bound. To encourage new economic activities, the government and the private sector need to join forces to identify and address market failures that impede the desirable structural transformation.

This study emphasizes the importance of traditional development policies that seek to enhance human capital, improve infrastructure, and provide basic inputs like electricity. However, more targeted incentive schemes may be helpful for diversifying and upgrading the industrial base and for increasing the sophistication of exports, while such incentive schemes have to be supplemented by an effective monitoring and evaluation mechanism.

CRITICAL CONSTRAINTS TO HIGH AND INCLUSIVE GROWTH

This study has identified a number of critical constraints to sustain high and inclusive growth, many of which are interlinked. Government efforts to address them therefore need to be holistic, with a view to creating a business-enabling environment and to helping attract entrepreneurs to invest in new and high-value-added products.

The following measures are recommended to help address these critical constraints to high and inclusive growth in Tajikistan:

1. Address the high cost of finance and limited access to financial services.

Tajikistan's financial sector has remained underdeveloped and unable to play the role of an effective intermediary in channeling the resources, including significant remittance flows, for productive investment. To improve financial intermediation, the study makes the following policy recommendations:

- Strengthen the National Bank of Tajikistan to equip it with the monetary policy tools and capacity to fulfill its mandate, enable it to conduct effective monetary policy, and enhance its capacity for supervision and regulation of the banking system.

- Strengthen the financial intermediation capacity of banks and foster an environment that mobilizes domestic savings with greater efficiency, increases lending particularly in rural areas, and improves availability of and access to financial information.

- Encourage and incentivize banks and nonbank financial institutions to create a diversified range of viable and affordable rural credit products and introduce a comprehensive financial literacy program for the general public.

2. Diversify and upgrade exports.

To help revive private investment and diversify and upgrade exports, the government can encourage private investors to discover new and high-value-added products by addressing market and information failures. The following measures would help facilitate this:

- Provide incentives for entrepreneurs who will be engaged in new economic activities or producing new products. However, the private sector should be willing to invest its own funds in these sectors so that the investment passes a market test. In this context, cofinancing may be a good signaling mechanism that real demand exists for the requisite inputs.

- Interventions should be focused on identifying and providing public inputs that raise a sector's productivity rather than subsidizing low productivity sectors. Interventions need to have clear criteria for success, accountability, and sunset clauses. Untargeted subsidies should be eliminated.

- Develop an effective monitoring and evaluation mechanism and simplify the industrial policy. To this end, the government should establish clear benchmarks for the successes and failures of its industrial support programs. This could be facilitated by a high-level committee or body that continuously monitors the progress of various programs and, through effective public–private dialogue, helps identify the product-specific constraints.

3. Provide an adequate and reliable supply of electricity.

To improve electricity generation capacity and meet the energy deficit particularly during winter, the following measures are suggested:

- Strengthen efforts to reduce the buildup of arrears and minimize the quasi-fiscal deficits of Barki Tojik.[1]

- Implement the rehabilitation program for the aging electricity network.

- Construct micro hydropower plants to improve access to electricity in remote areas and develop other renewable sources of power, particularly solar and wind energy in selected areas.

- Design an energy efficiency program for Tajik Aluminum Company that would include shifting its annual maintenance period from summer to winter to reduce overall winter peak demand, modernizing its processes, and/or switching to new, energy-efficient technology to maximize potential efficiency gains.[2]

- Rationalize tariff structure and eliminate direct and implicit subsidies, to be supplemented by a demand-side management program to save electricity.

4. Improve the quality of transport infrastructure and logistics.

Current transport infrastructure capacity cannot meet the development challenges ahead and will require extensive rehabilitation and continued maintenance. To overcome these challenges, the following action steps are recommended:

[1] Barki Tojik is Tajikistan's national power utility.
[2] Tajik Aluminum Company, headquartered in Tursunzade, Tajikistan, runs the largest aluminum manufacturing plant in Central Asia, and is Tajikistan's chief industrial asset.

- Rehabilitate the road and railway transport network to facilitate the movement of people and goods, prioritizing those sections that are critical to trade networks and economic growth.

- Enhance the planning and asset management capacity of road authorities by adopting modern road management practices and an automated road-data collection and compilation system.

- Create a railways database that includes (i) a comprehensive track inventory and condition surveys; (ii) an inventory of coaches, locomotives, and wagons; (iii) cargo and passenger traffic information; and (iv) cost-accounting information arranged by services and line section.

- Modernize coaches, locomotives, and freight wagons and rehabilitate bridges, particularly those that handle high-volume traffic.

- Strengthen civil aviation by acquiring new freight-handling equipment for Dushanbe and Khujand airports to facilitate transportation of goods by air; rationalizing airport service fees, including landing fees that are considered among the highest in the world; and improving auxiliary airport services such as transit hotels, parking spaces, and other facilities to take advantage of increased air traffic.

- Reduce trade barriers with important trading partners in the region and simplify trade procedures to improve access to other markets.

- Link infrastructure and integrate transport systems with neighboring countries through the Central Asia Regional Economic Cooperation.

- Improve the intermodal transport system and its logistics and draw up plans for intermodal transport facilities, including initially dry ports in Dushanbe and Khujand that are equipped with cargo and container-handling facilities, streamlined customs procedures, and a strict monitoring system.

5. Improve access to education and improve its quality.

Undertake a review of the curricula to upgrade teaching materials in all levels of education and establish a national evaluation system to systemically monitor the progress, outcomes, and efficiency of education programs.

Improve the relevance of vocational and higher education to meet the needs of the labor market in consultation with the private sector, and create a mechanism for partnerships with the private sector to fund formal training of specialists and staff to meet evolving business requirements.

6. Improve the quality of health services.

The following priority initiatives are recommended:

- Increase public spending on health along with the expansion and deepening of health financing reforms.

- Introduce a new employment compensation program that increases the wages of medical personnel, and explore the option of linking their salaries to performance or quality of service provided. More incentives for medical personnel can be provided to encourage them to work in rural areas.

- Encourage private sector participation in the delivery of health services.

7. Improve the provision of social protection programs.

The social protection system suffers from financial imbalances, inadequate coverage, poor targeting, limited information, and poor distribution mechanisms. The system can be improved by instituting the following measures:

- Improve the selection of beneficiaries by developing a credible targeting mechanism that gives priority to the poor and the vulnerable and that increases coverage to protect them.

- Establish a unified information database system that includes the registry of applications, beneficiaries, and payment for easier administration of social protection benefits.

- Provide capacity-building programs for social welfare personnel in conducting poverty targeting, and set up a system that will monitor the efficiency of social assistance.

Chapter 1
Development Performance

Tajikistan's economic growth has been robust since the end of its civil war in 1997, riding on post-conflict recovery, significant increases in remittance inflows, and a favorable external environment largely brought about by economic development in the Russian Federation.

Despite rapid growth, however, private investment has remained low, potentially limiting the room for increased productive capacity. More importantly, the country has been unable to structurally transform its economy by not moving from lower to higher productivity sectors. This now threatens the sustainability of its high growth in the long run.

Upon gaining independence from the Soviet Union in 1991, Tajikistan inherited fairly well-developed physical and social infrastructure. However, the 5-year civil war severely damaged infrastructure, disrupted industrial and agricultural production, and caused near-total economic collapse. By 1996, Tajikistan had lost more than two-thirds of its gross domestic product (GDP) and more than half of its budget revenues as a percentage of GDP; economic growth plunged 17.2% per year on average during 1991–1996. On top of much-needed, transition-related policy reforms, the country had to reestablish social cohesion and rebuild infrastructure.[3]

The government initiated various economic and political reforms to restore macroeconomic stability. During the initial phase, in 1992–1997, reforms focused on political stability and on creating basic market mechanisms. With peace in 1997, the political situation improved, enabling the country to lay the foundations for further economic reforms. A series of national development plans and strategies guided these reforms (Box 1.1). Macroeconomic stabilization, a favorable external environment, surging prices for aluminum and cotton, and soaring remittances all contributed to high growth.

The series of first-order structural reforms included, among other things, small-scale privatization, transference of usage rights on almost half of arable land to private farmers and corporatization of state-owned enterprises, while liberalization of most prices also contributed to growth during this period. During the first postwar phase (1997–2004), improving productivity in existing assets and restoration of domestic demand drove growth. As reforms lost steam and receipts from the main export earners started to decline because of external and internal factors, from 2005 onward the country's growth was propelled mainly by significant remittances. Indeed, the second phase of reforms during 2005–2014 was shaped by remittances, which grew in recent years to account for

[3] The war destroyed production capacity and infrastructure, with an estimated replacement cost at that time of $10 billion, according to the Trend News Agency (2011).

almost half of GDP. Tajikistan then faced an expanding labor force owing to its young demographics, but rapid increases in migration to the Russian Federation and other neighboring countries helped absorb the labor surplus.

Box 1.1: Tajikistan's Postwar National Development Plans and Strategies

To shore up postwar stabilization and recovery, the Tajikistan government introduced the Economic Reform Program for 1995–2000 and the Economic Program for Poverty Reduction and Growth for 1998–2001. These strategies focused on structural reforms in the public sector, privatization of state-owned enterprises, and some restructuring in the finance and banking sectors.

Poverty continued nonetheless, prompting the Poverty Reduction Strategy Paper for 2002–2006, a de facto national development plan aimed at increasing real income, achieving fair distribution of the benefits of growth, and ensuring the rise of living standards of the poorest. The plan was to achieve these objectives through (i) export-led growth, (ii) efficient and fair provision of basic social services, (iii) targeted support for the poorest, and (iv) efficient governance. The strategy helped Tajikistan attain average annual gross domestic product (GDP) growth of 9.1% during the period and reduce its external debt from 129% of GDP at the end of 2000 to 31% of GDP by 2005.

Still, progress in improving access to basic social services and implementing reforms toward a market-based economy has remained limited.

In 2006, the government formulated the Public Administration Reform Strategy to more effectively coordinate efforts to foster sustainable economic development and poverty reduction. Then, it laid out the National Development Strategy for 2007–2015 to guide succeeding long-term policies and plans. The priorities of this strategy are (i) public sector reforms for enhanced transparency, accountability, and control of corruption; (ii) private sector development and a better investment climate; and (iii) more and better social services in keeping with the country's Millennium Development Goals.

The government initially implemented the National Development Strategy through the Poverty Reduction Strategy for 2007–2009. This was instrumental in (i) introducing the public debt management strategy in 2008, (ii) amending the Tax Code in 2010, (iii) encouraging development of small investment organizations and structural units of banks in remote areas, and (iv) starting improvements in the investment climate and establishing economic zones. It also made progress in (i) the restructuring of monopolies, (ii) the launching of an export promotion strategy, and (iii) initiating investment projects and reform programs in agriculture and rural development with land reform as focus.

A key overall change under this strategy was the harmonizing of the Public Investment Plan for 2007–2009 with the Poverty Reduction Strategy and the budget framework. This helped ensure more effective and efficient management of resources.

Tajikistan's focus on these reforms and strategies contributed to strong economic growth and poverty reduction, bringing poverty incidence down from 46.7% in 2009 to 35.6% in 2012.

A subsequent initiative, the Poverty Reduction Strategy 2010–2012, aimed at (i) enhancing regional cooperation and better integrating Tajikistan into the global economy, (ii) continuing the facilitation of international trade, (iii) developing infrastructure, (iv) expanding industrial development, (v) improving food security and agriculture sector productivity, and (vi) improving social protection.

In industrial development, this strategy focused on aluminum, construction materials, cotton, minerals and precious stones production, and light industries.

In agriculture, the strategy remained focused on (i) land-use reform, (ii) agriculture-related infrastructure, (iii) implementation of the 2007 freedom-to-farm measures, and (iv) the abolition of a production quota for cotton in 2008. The strategy also focused on the need for preparedness for natural disasters as well as on the effective management of natural resources.

Source: Authors.

Post-crisis recovery efforts did contribute to the resumption of economic growth, with GDP increasing an average of 7.2% a year during 1997–2015 (Figure 1.1). Agriculture and services were the main drivers during this period, while industrial value added remained minimal.

Although impressive, Tajikistan's GDP growth actually originated from a low base. The industrial sector in particular remained weak and was concentrated on just a few products. And while consumption-led growth reduced poverty, it did not create many new jobs. The benefits were also unevenly distributed, leading to regional disparities in poverty reduction. The country's progress on the Millennium Development Goals notwithstanding, these disparities and inequalities across regions and income groups go unaddressed and are a foremost policy concern.

In its Poverty Reduction Strategy Paper 2010–2012, Tajikistan targeted a doubling of GDP by 2020, a goal that requires an annual growth of 7%. The country has been able to maintain this strong pace of growth for the past 18 years, but the current external environment is less favorable than in the early 2000s. Indeed, the potential for catch-up growth from the depths of the recession of the 1990s has been largely exhausted.

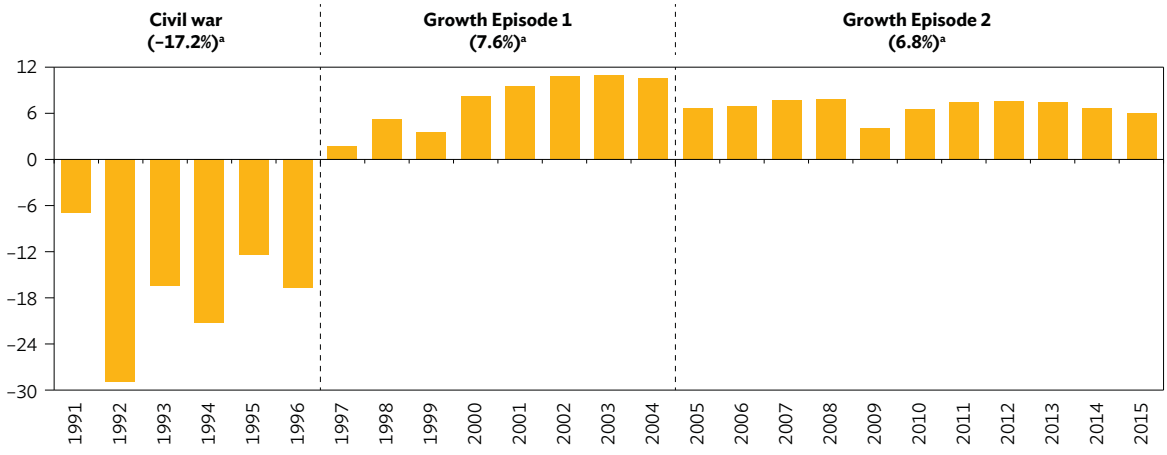
Sustaining high growth in the medium to long term would require new drivers of growth arising from a sound and diversified industrial sector. In this area, Tajikistan faces several challenges: raising private investment from its low level, diversifying and upgrading exports, and creating decent employment in the nonfarm sectors. The country also has to contend with the fragility of tits external balances, which rely heavily on its aluminum and cotton exports and on workers' remittances.

1.1 Two Distinct Episodes of Growth

Tajikistan's postwar growth can be divided into two growth episodes: 1997–2004, when the economy averaged 7.6% growth; and 2005–2015, when it averaged 6.8%. The first episode was characterized by broad-based growth across sectors and was driven by increased use of capacity to catch up after the war-time slowdown. The second episode saw volatility in the international prices of Tajikistan's two main exports, cotton and aluminum; during 2005–2015, large price swings hit both of these commodities, affecting the whole economy and highlighting its vulnerability to the vagaries of commodity prices (Figure 1.2).

During the second growth episode, workers' remittances started flowing in increasingly significant volumes. From an estimated 800,000 to 2.0 million Tajik workers abroad, remittances surged from 6.4% of GDP in 2002 to 41.7% by 2014. This made Tajikistan

Figure 1.1: Real GDP Growth, 1991–2015 (%)

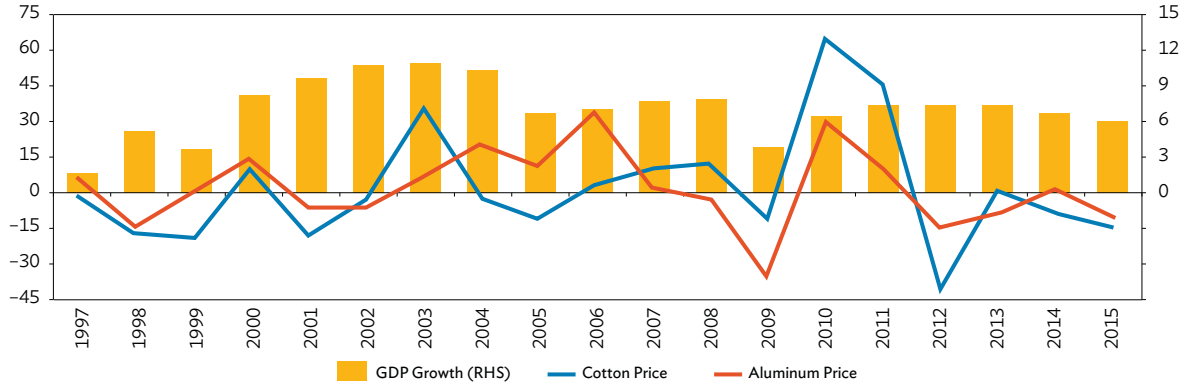


GDP = gross domestic product.
[a] Shows period average growth rates.
Sources: United Nations Statistics Division. http://unstats.un.org/unsd/default.htm (accessed June 2015); Agency on Statistics under the President of the Republic of Tajikistan. TajStat. http://www.stat.tj/en/ (accessed March 2016).

the world's most remittances-dependent economy (Figure 1.3, right panel). Significant increases in workers' remittances in a relatively short span of time mainly fueled private consumption and, to a lesser extent, investment, which has resulted in increasing the demand for imports. More importantly, however, the current drivers of growth have made the economy vulnerable to external demand shocks, particularly to economic development in the Russian Federation.

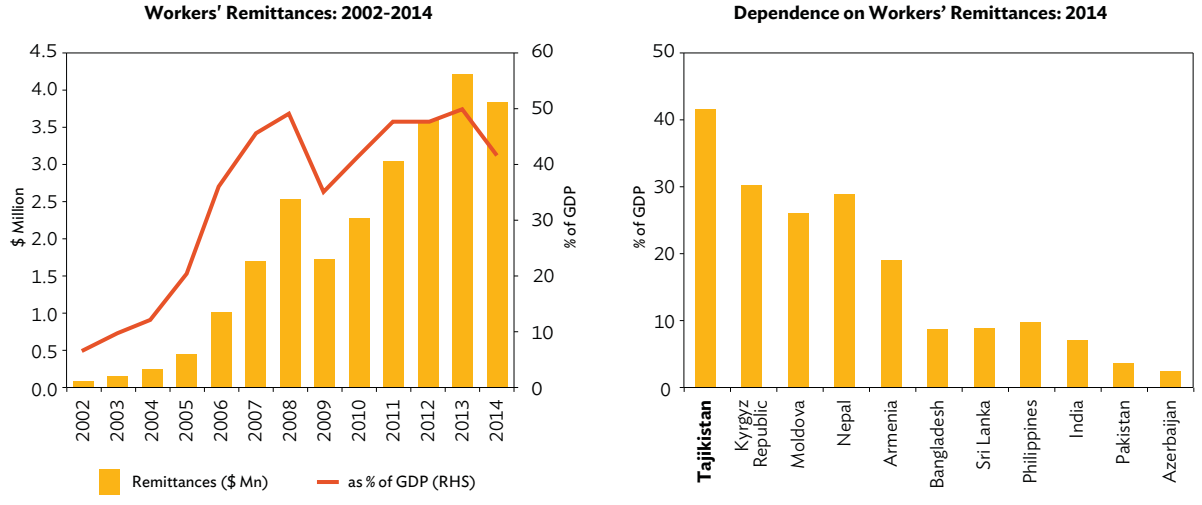
The global economic crisis in 2009 was one such external demand shock. Tajikistan's economic growth decelerated with the sharp decline in the prices of cotton and aluminum and with the deterioration of trade. In that year, the country's exports of aluminum and cotton declined by 46% and 26%, respectively, and remittances dropped 30%, reducing disposable income by 10%. This, in turn, reduced consumption and aggregate demand growth (World Bank 2011b). As a result, GDP growth slowed to 3.9% in 2009. The slowing was short-lived, however, as economic revival in the Russian Federation, timely budget support from development partners, and better macroeconomic management set in. With better macroeconomic management, the country's GDP growth recovered to 6.5% in 2010 and to 7.4% in 2013. However, starting

Figure 1.2: Cotton and Aluminum Prices and GDP Growth: 1997–2015 (%)



GDP = gross domestic product, RHS = right-hand side.
Sources: World Bank. Global Economic Monitor (GEM) Commodities. http://databank.worldbank.org/data/reports.aspx?source=Global-Economic-Monitor-(GEM)-Commodities (accessed March 2016); Agency on Statistics under the President of the Republic of Tajikistan. TajStat. http://www.stat.tj/en/ (accessed March 2016).

Figure 1.3: Workers' Remittances

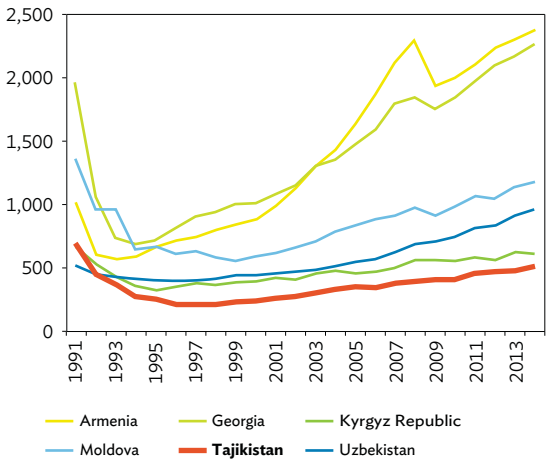


GDP = gross domestic product, RHS = right-hand side.
Source: World Bank. World Development Indicators. http://data.worldbank.org/data-catalog/world-development-indicators (accessed March 2016).

from 2014, the slowdown of the Russian Federation economy has adversely affected Tajikistan, with remittances declining by 33.3%, during December 2015, on year-on-year basis (ADB 2016). This fall in remittances, combined with weak global demand for Tajikistan's main exports, slowed down GDP growth to 6.7% in 2014 and further to 6.0% in 2015.

Despite Tajikistan's high growth during 1997–2014, its real GDP per capita remained well below the comparators used in this study.[4] Per capita GDP during 2014, estimated at $507, was still lower than the $653 in 1991, before the transition (Figure 1.4). By the end of 2011, Tajikistan's GDP was still 3.4% below its 1991 level of $3.54 billion. It has, however, been catching up from 2012 onward, and during 2014 the level of GDP was 19% higher its level in 1991, but it has a long way to go.

Figure 1.4: GDP per Capita, 1991–2014
(constant 2005 $)



GDP = gross domestic product.
Source: World Bank. World Development Indicators. http://data.worldbank.org/data-catalog/world-development-indicators (accessed March 2016).

1.2 Supply-Side Contributors

Services and agriculture have become the main supply-side contributors. Tajikistan's growth experience indicates that the service and agriculture sectors have become the main contributors to its growth, and that the industrial sector's contribution has remained low. During 1997–2014, services accounted for 62.3% of GDP growth; followed by agriculture, 24.6%; and industry, 13.1% (Table 1.1).

During the first growth episode (1997–2004), all sectors contributed significantly to the rapid pace, with services at 43.1%, agriculture at 27.8%, and industry at 29.1%. After peaking in 2003, GDP growth started slowing down the following year as productivity began to stagnate. However, with the increasing remittance inflows from 2005, the contribution of services rose further to 79.4% during 2005–2014. In the service sector, the share of the transport, storage, and communication subsectors, which remained at around 16.3% during the first growth episode, increased further to 26.5% during 2005–2014. The share of wholesale and trade remained stable at around 36% during both growth episodes (Figure 1.5).

Agriculture contributed 27.8% to GDP during 1997–2004 and grew by 9.3% annually, but its contribution shrank to 21.7% and growth slowed to 6.4% during

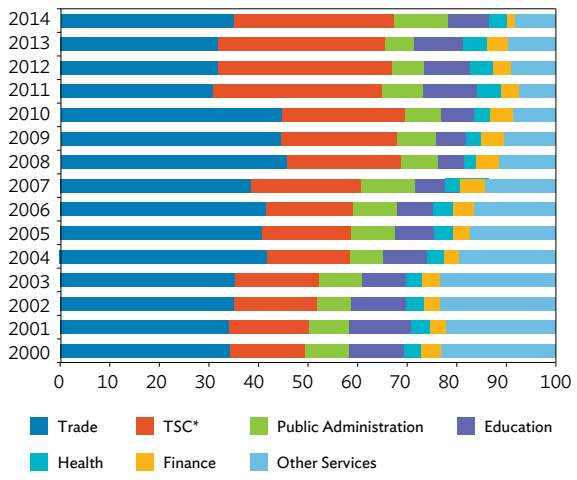
Table 1.1 : Sectoral Contributions to GDP Growth, 1997–2014 (%)

		Agriculture			Industry			Services		
Time Period	GDP Growth Rate	Growth Rate	Share to GDP	Percent Contribution	Growth Rate	Share to GDP	Percent Contribution	Growth Rate	Share to GDP	Percent Contribution
1997–2004	7.7	9.3	22.9	27.8	7.0	31.8	29.1	7.3	45.2	43.1
2005–2014	6.9	6.4	23.4	21.7	(0.4)	22.3	(1.1)	10.1	54.3	79.4
1997–2014	**7.2**	**7.6**	**23.2**	**24.6**	**3.6**	**26.5**	**13.1**	**9.0**	**50.2**	**62.3**

( ) = negative, GDP = gross domestic product.
Source: Computations based on ADB. 2015. *Key Indicators for Asia and the Pacific 2015*. Manila; and United Nations Statistics Division. National Accounts Main Aggregates Database. http://unstats.un.org/unsd/snaama/selCountry.asp (accessed March 2016).

[4] Growth diagnostic studies use cross-country comparisons and international benchmarks. But it is important that comparator countries have similar economic and social structures and, where necessary, similar political backgrounds. For the Tajikistan growth diagnostic, the Kyrgyz Republic and Uzbekistan in Central Asia, Armenia and Georgia in the Caucasus, and Moldova in Eastern Europe are proposed as comparators.

Figure 1.5: Share of Service Subsectors
(% of total services)

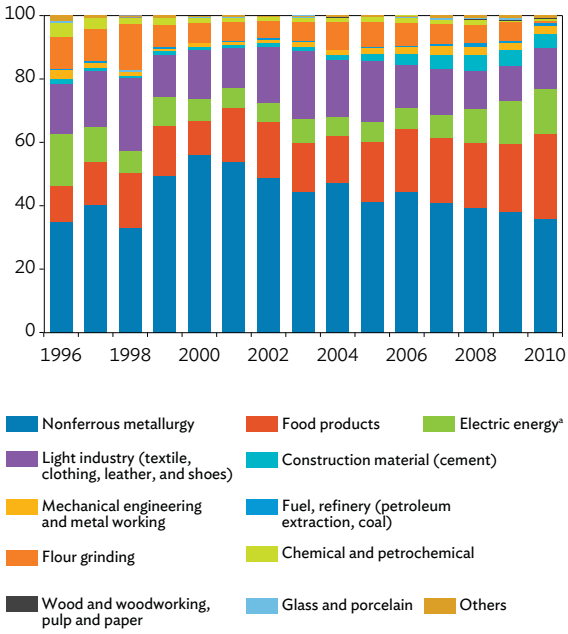


*TSC = transportation, storage, and communication.
Source: United Nations Statistics Division. http://unstats.un.org/unsd/default.htm (accessed March 2016).

2005–2014. As the supply chain in the former Soviet Union collapsed, there was a significant shift from cash crops like cotton and feed corn to food crops like grains, potatoes, and vegetables. Crop substitution and high food prices helped agriculture recover, allowing agricultural value added to grow at an annual average of 7.6% during 1997–2014.

Industry's share of GDP declined from 31.8% during 1997–2004 to 22.3% in 2005–2014. During the second period, the sector's growth remained stagnant and its contribution to GDP growth declined substantially. Overall, the industrial sector remained subdued and its contribution to GDP growth contracted sharply from 29.1% during 1997–2004 to –1.1% during 2005–2014. Within the sector, aluminum retained the largest share in total industrial output, although it declined from 41% in 2005 to 36% in 2010. Light manufacturing, which includes textiles, leather, and fabrics, declined from 20% to 13%. Although the National Development Strategy identified both food and light industry as a priority, agricultural diversification appears to have taken precedence over it, as can be seen from the rising share of food products from 19% in 2005 to 27% by 2010 (Figure 1.6).

Figure 1.6: Industrial Output by Subsector, 1996–2010
(% share in industrial value added)



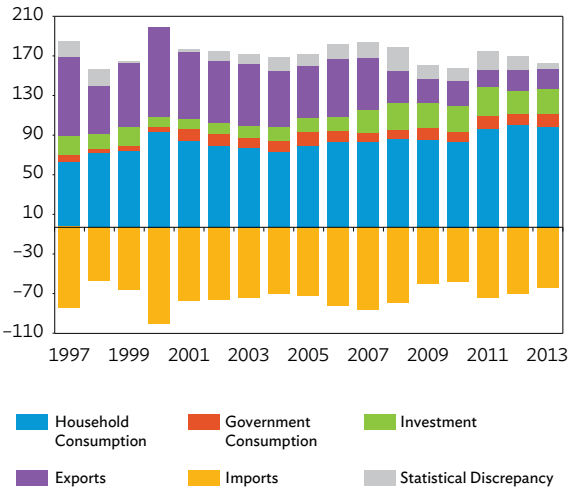
Notes:
1. Estimates are based on constant 1998 prices.
2. The industrial sector consists of mining, manufacturing, and the electricity, gas, and water sector.
[a] The electricity, gas, and water sector.
Source: Agency on Statistics under the President of the Republic of Tajikistan. TajStat. http://www.stat.tj/en/ (accessed March 2016).

1.3 Demand-Side Contributors

Household consumption dominated the demand-side contribution. Substantial increase in remittances changed the demand structure of the economy, particularly after 2004. The share of household consumption in GDP rose sharply, from 78% in 1997–2004 to 90% in 2005–2013. The remittances inflows have been used mainly for consumption, and because of the poor business environment and weak financial intermediation, they could not be channeled into productive investment. This means that they contributed little to the productive capacity of the economy. Thus, consumption rather than investment has become the main driver of the country's growth, resulting in a growing demand for non-traded goods, such as services, and of imports, both of which have

risen sharply particularly from 2004 onward. Exports did not perform well, their share in GDP declining substantially from 2004 onward (Figure 1.7). Among other factors, this highlights Tajikistan's narrow export basket and the weaker demand for its major global exports.

Figure 1.7: Expenditure Components
(% share of GDP)



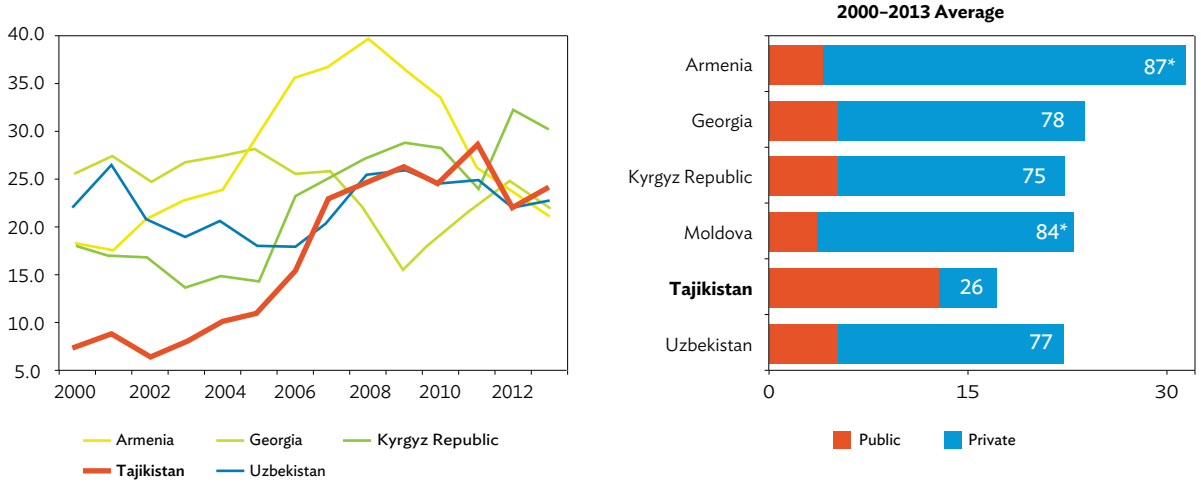
GDP = gross domestic product.
Source: ADB. 2015. *Key Indicators for Asia and the Pacific 2015*. Manila.

Private investment remains low, with negative implications for the productive capacity and sustainability of economic growth. During the first growth episode (1997–2004), the country's large stock of capital remained underutilized, and demand for new investment was minimal. Consequently, total investment (public plus private) remained low and averaged around 9.3% of GDP during this period. In the second episode, total investment grew from 11.6% of GDP in 2005 to 19.7% in 2013, largely reflecting a rise in public investment. Total investment during 2005–2013 averaged around 22.2% of GDP, generally lower than those of Tajikistan's peer group, except Georgia. Overall, net capital formation was barely enough to offset the depreciation of the existing capital stock.

Tajikistan's poor business environment has discouraged investors and the country has the lowest share of private investment to total investment, 26% during 2000–2013, among the comparator countries where it ranges from 75% to 87% (Figure 1.8).

Domestic investment has been largely dominated by public investment. Public investment averaged 17.7% of GDP during 2005–2013, up from 4.5% during 1997–2004, largely reflecting expenditure on roads and transmission lines financed by loans from the People's

Figure 1.8: Gross Fixed Capital Formation, 2000–2013 (% of GDP)



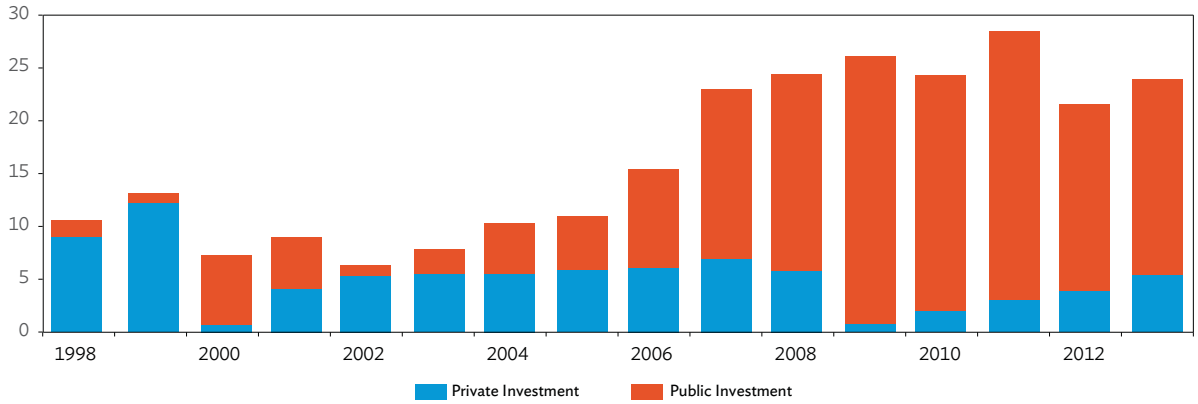
*Average for Armenia is only for 2005–2013 and for Moldova, 2000–2012.
Note: On the right panel, the number on the right-hand side shows the percentage of private investment in total investment.
Sources: ADB. 2015. *Key Indicators for Asia and the Pacific 2015*. Manila for Tajikistan (left panel); and World Bank. World Development Indicators. http://data.worldbank.org/data-catalog/world-development-indicators (accessed March 2016) for all others.

Republic of China (Figure 1.9). As of March 2013, more than three-quarters of public investment was in large infrastructure and energy projects with long gestation periods.

Private investment during 1997–2004 remained at around 4.4% of GDP, although there are signs that it has been picking up in recent years, and during 2005–2013 averaged around 6.3% of GDP.

During 2006–2009, only a small fraction of capital expenditure went to agriculture, ranging from 1% to 3% of the total, confirming the view that agriculture has been among the country's underinvested sectors. About 86% of total investment went to buildings, while investment in machinery and equipment has declined from 17% in 2006 to 7% by 2012 (Table 1.2).

Figure 1.9: Public and Private Fixed Investment (% of GDP)



GDP = gross domestic product.
Source: United Nations Statistics Division. National Accounts Main Aggregates Database. http://unstats.un.org/unsd/snaama/selCountry.asp; and World Bank. World Development Indicators. http://data.worldbank.org/data-catalog/world-development-indicators (accessed March 2016).

Table 1.2: Fixed Investment by Sector and Source of Financing (%)

	2006	2007	2008	2009	2010	2011	2012
				by sector			
Agriculture	1.6	1.5	3.8	2.0	1.3	1.1	1.1
Industry	40.0	35.2	54.9	64.7	41.2	35.7	36.2
Transport and communications	15.6	17.0	12.8	11.6	13.8	14.3	14.1
Housing	13.0	6.0	12.6	9.2	15.1	14.1	15.0
Communal services	3.2	11.1	1.3	2.0	2.3	2.7	2.2
Education	4.6	3.3	3.8	5.5	5.0	5.2	5.9
Health	2.8	1.7	1.2	2.7	0.7	2.8	2.5
Other branches	19.2	24.3	9.5	2.4	20.7	24.1	23.0
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
				by type			
Buildings	75.7	79.0	82.1	84.1	88.4	83.3	85.8
Machinery and equipment	16.8	14.8	13.7	11.4	6.7	11.0	6.8
Other	7.6	6.2	4.2	4.5	4.9	5.7	7.4
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
				by source of financing			
Government budget	35.3	19.4	23.4	31.3	35.9	49.9	44.5
Households	9.8	3.9	5.0	7.2	7.6	9.1	9.4
Enterprises	54.9	76.8	71.7	61.5	56.4	40.9	46.1
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source: Agency on Statistics under the President of the Republic of Tajikistan. TajStat. http://www.stat.tj/en/ (accessed June 2015).

1.4 Macroeconomic Management

Macroeconomic management brought mixed results. At the end of the civil war, significant progress was made in creating a legal and institutional framework to improve macroeconomic management and to implement structural reforms in Tajikistan. However, the financial crisis in the Russian Federation disrupted macroeconomic stabilization as did the deteriorating terms of trade, drought, and other natural disasters. Although the hyperinflation that characterized the period of the civil strife was brought down to manageable levels by 1998, monetary expansion resulting from directed credit to state-owned enterprises and deficit financing led to the resurgence of high inflation in 2000 and 2001. Lapses in policy implementation and noncompliance with performance criteria derailed a number of International Monetary Fund (IMF) programs during the first growth episode.

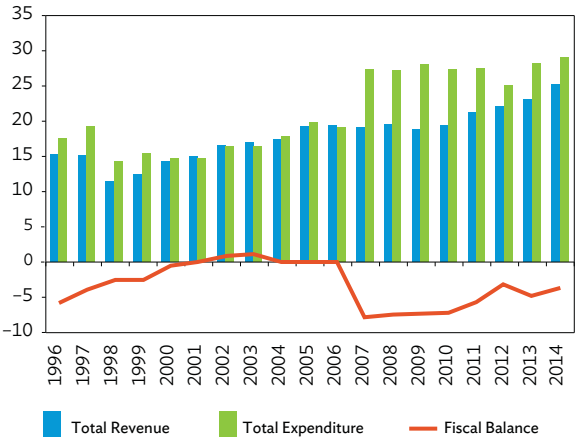
One major problem with macroeconomic management was the loss of credibility of the National Bank of Tajikistan, the central bank, which had contracted and concealed large-scale guarantees and pledges claimed to be for the cotton sector. The demise of Kredit Invest, which was a main actor in the central bank's cotton support measures, created not only a major debt overhang that still haunts the cotton farmers but also added financial sector fragility.[5] During 2004–2007, the central bank granted directed credit to cotton farmers without considering their ability to repay. The majority of farmers were unable to repay these loans and the central bank lost the bulk of its foreign exchange reserves, resulting in a quasi-fiscal deficit in 2008 equivalent to 16% of GDP.

On top of this, Barki Tojik, the state-owned electric utility, provided electricity at low tariffs; that is, below the cost of generation. In 2008, its quasi-fiscal deficit surged to 8% of GDP (World Bank 2011b). In late 2007, the IMF uncovered Tajikistan's misreporting to the organization of the international reserve levels and the net domestic assets of the National Bank of Tajikistan, as well as the central bank's issuance of directed credit over a 6-year period. Tajikistan was therefore asked to make early repayment of three noncomplying disbursements to the IMF, and an IMF-monitored program was put in place.

The recent rise in the fiscal deficit and a reduction in fiscal buffers threaten macroeconomic stability and need monitoring. Tajikistan's fiscal deficits have generally been low, except in the early 1990s and more recently. From 2007 onward, however, the budget deficit has been rising and, during 2007–2014, it averaged around 5.9% of GDP (Figure 1.10). During the first half of the 1990s, central bank borrowings mainly financed large fiscal deficits. Government expenditure during this period remained high and was mainly directed toward the social agenda, particularly education and health. A significant portion of budget expenditure also went to economic sectors and defense, and the government's key priorities at that time were timely payments of wages, social benefits, and external debt obligations (Figure 1.11).

To address the rising fiscal deficit, the government initiated various reforms in the second half of the 1990s. It embarked on the Enhanced Structural Adjustment Facility program in 1998. Under this program, which reduced expenditure and cut subsidies, the deficit

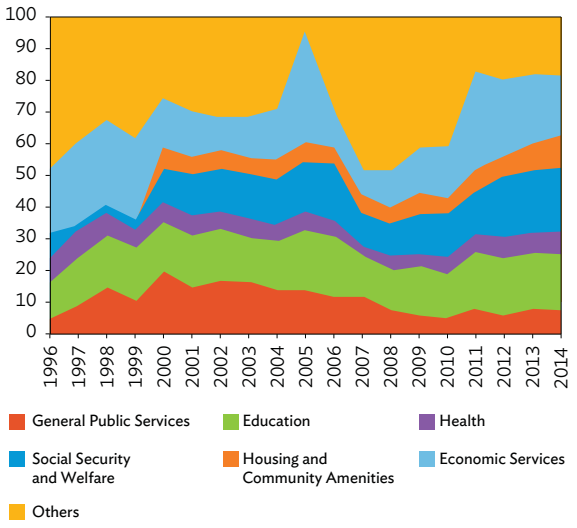
Figure 1.10: Trends in Fiscal Balance
(% of GDP)



GDP = gross domestic product.
Source: ADB. 2015. *Key Indicators for Asia and the Pacific 2015*. Manila.

[5] Kredit Invest is a nonbank financial intermediary and traditional source of cotton financing, with funding mainly from foreign sources.

Figure 1.11: Government Expenditure by Category (%)



Source: ADB. 2015. *Key Indicators for Asia and the Pacific 2015*. Manila.

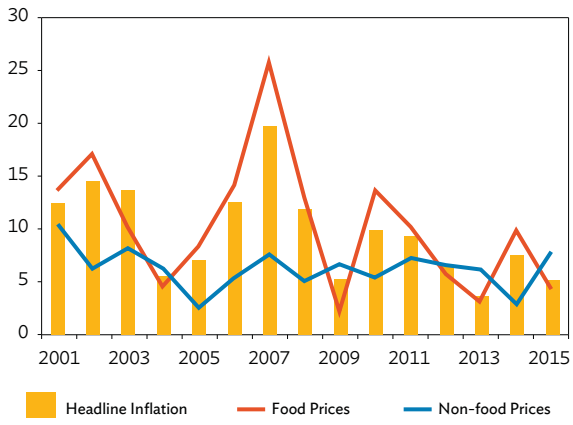
dropped, averaging around 1.4% of GDP during 1998–2001. Supported by the Multilateral Debt Relief Initiative from the Russian Federation and Pakistan in 2004, Tajikistan realized a fiscal surplus of 0.31% of GDP during 2001–2006. In addition, its revenue collection improved with the help of better tax administration and the introduction of better methods for determining value-added tax obligations.

With the rise in public sector investment from 2007 onward, however, the fiscal deficit again started rising. More importantly, the government's deposits held with the National Bank of Tajikistan, which are used as fiscal buffers, declined from about 33% of domestic revenues in 2007 to 11% by 2011 (IMF 2012). On the revenue side, although the tax-to-GDP ratio seems acceptable given Tajikistan's per capita income, tax administration still has room to improve. Tax revenue accounts for more than 90% of government revenues; however, about two-thirds of this is collected from the value-added tax on goods and services, because indirect taxes are easier to administer and collect. Direct taxes remain a small fraction of revenues with a narrow base.

Effectiveness of monetary policy as a tool to contain inflation has remained limited. To maintain price stability at the early stage of transition in the 1990s, the National Bank of Tajikistan reduced credit to the public sector and controlled the money supply through credit ceilings. It mainly used monetary policy to reduce the inflation rate and restore confidence in the national currency. From 2000 onward, open-market operations became one of the main policy instruments for monetary management. But the central bank continued to engage in directed lending, which along with low level of monetization, has further reduced the monetary policy efficacy.

Moreover, high dollarization—around 70% of domestic deposits are in foreign currency— tended to limit the National Bank of Tajikistan's ability to control the money supply. High dollarization also means that commercial banks set their own interest rates based on the demand and supply of their own funds, rather than following the refinancing rate set by the central bank. In the absence of banking sector competition, this has widened the interest rate spread. High dollarization, therefore, has reduced the central bank's control of monetary aggregates, and the link between domestic money and inflation is weak. Figure 1.12 shows the inflation trends in Tajikistan.

Figure 1.12: Inflation Trends in Tajikistan (%)

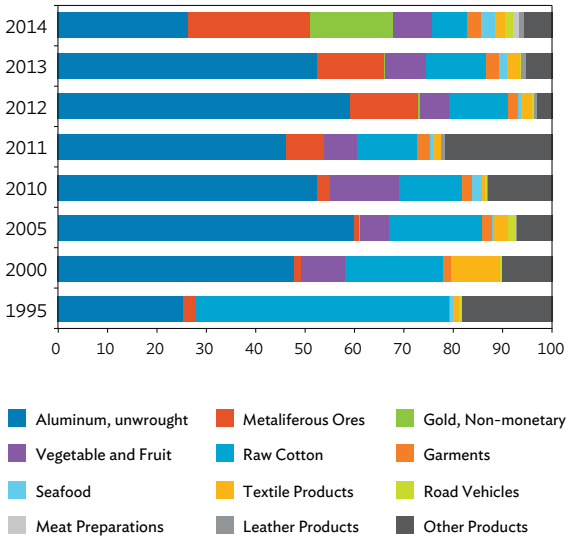


Source: ADB. 2015. *Key Indicators for Asia and the Pacific 2015*. Manila; and Agency on Statistics under the President of the Republic of Tajikistan. TajStat. http://www.stat.tj/en/ (accessed March 2016).

The decline in export receipts and the rapid rise in imports threaten the balance-of-payments position. Weaker external demand for Tajikistan's exports, alongside higher imports, has raised the trade deficit. The trade-deficit-to-GDP ratio surged from 14% in 2005 to 43% by 2014 and, during 2006–2014, averaged around 42% of GDP. The rise in consumer imports and the deterioration of the trade balance is a worrying signal, particularly as export receipts have declined substantially. Although remittances provide some relief, they do not fully compensate for the trade deficit, consequently, the current account deficit remained in double digits during 2010 and 2011. It declined to 3.2% of GDP in 2012, but surged again and reached 8.0% of GDP by 2014 (Table 1.3).

Tajikistan's export basket is highly concentrated and continues to depend on demand for its key exports, such as cotton and aluminum, and their global prices. The combined share of these two commodities in total exports declined from 78% in 1995 to around 66% by 2013. However, with the decline in the exports of cotton and aluminum in 2014 and because of higher exports of other categories, most of which came from the National Bank of Tajikistan's operation (World Bank 2015b) in Switzerland to convert nonmonetary into monetary gold, the share of these two commodities in total exports has declined to 33.4% in 2014. But they still remain the country's major export items. This heavy reliance leaves the economy highly vulnerable to external demand shocks (Figure 1.13).

Figure 1.13: Tajikistan's Major Exports
(% of total)



Note: Estimates based on 4-digit Standard Industrial Trade Classification (SITC) Revision 2.
Source: United Nations Commodity Trade Statistics Database. http://comtrade.un.org/db/default.aspx (accessed March 2016).

Tajikistan's major imports during 2014 were textiles and garments, which accounted for 17% of the import bill, followed by road vehicles 6.8%, cereals products 6.6%, and iron and steel with a share of 5%. For its heating and industrial needs, the country depends on imported natural gas. The Tajikistan Aluminium Company and Tajik Cement also depend on gas

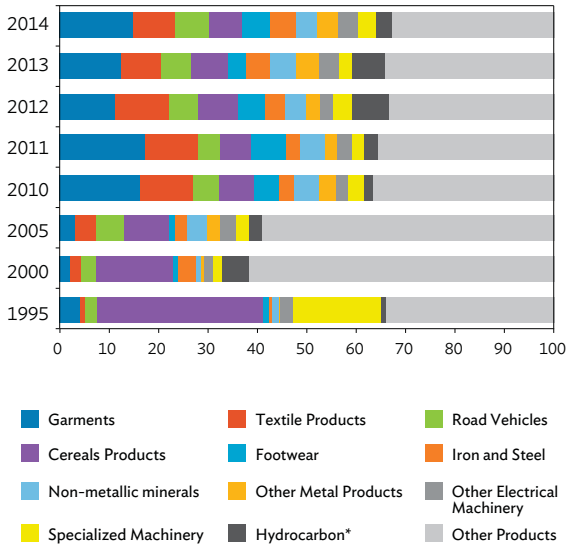
Table 1.3: Summary of the Balance of Payments ($ million)

	1996	2000	2005	2010	2011	2012	2014
Exports	770.0	838.9	1,108.1	459.1	592.9	825.9	526.9
Imports	786.0	920.5	1,430.9	3,320.5	4,163.9	4,382.7	4,508.9
Trade balance	**(16.0)**	**(81.5)**	**(322.8)**	**(2,861.4)**	**(3,571.0)**	**(3,556.8)**	**(3,982.0)**
(% of GDP)	(1.5)	(9.5)	(14.0)	(50.7)	(54.8)	(46.6)	(43.1)
Current account balance	**(75.0)**	**(61.9)**	**(18.9)**	**(894.4)**	**(767.1)**	**(247.6)**	**(739.9)**
(% of GDP)	(7.2)	(7.2)	(0.8)	(15.9)	(11.8)	(3.2)	(8.0)
Gross international Reserves	3.2	94.3	188.9	403.4	532.4	628.5	504.6
(in months of imports)	0.1	1.3	1.7	1.6	1.7	1.9	1.4

( ) = negative, GDP = gross domestic product.
Sources: ADB. 2015. *Key Indicators for Asia and the Pacific 2015*. Manila; World Bank. World Development Indicators. http://data.worldbank.org/data-catalog/world-development-indicators; and International Monetary Fund. IMF Data. http://www.imf.org/en/Data (accessed March 2016).

imports.[6] Uzbekistan has been the only supplier (and transit country) for Tajikjistan's gas imports. The share of hydrocarbon fuels (petroleum products and natural gas) remained at 3.3% in 2014 (Figure 1.14).

Figure 1.14: Tajikistan's Major Imports
(% of total)

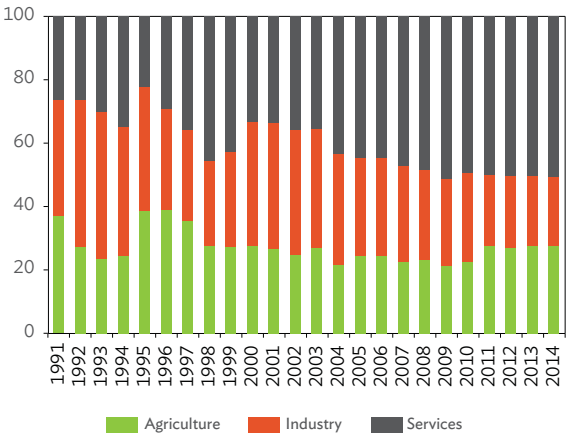


* Hydrocarbon includes petroleum, petroleum products, and related materials; and natural and manufactured gas.
Note: Estimates based on 4-digit Standard Industrial Trade Classification (SITC) Revision 2.
Source: United Nations Commodity Trade Statistics Database. http://comtrade.un.org/db/default.aspx (accessed March 2016).

To meet its cereal consumption needs, Tajikistan depends heavily on imports to cover more than half of its populations's food needs. For its annual requirement of 1.5 million tons of wheat, domestic production meets only 20% of demand. The remainder therefore has to be imported, 95% from Kazakhstan and 5% from the Russian Federation. Thus, in the past, droughts and subsequent sharp price increases among the Eurasian grain producers would raise food security concerns and worsen poverty in Tajikistan.[7]

High economic growth has changed the structure of output, with limited success in transferring resources toward high-value-added sectors. As a result of high economic growth associated with the recovery from the transition period, the structure of Tajikistan's output has changed. On the output side, the country has become a service economy but, in structure of employment, it remains agrarian. Services increased from 26.4% of GDP in 1991 to 50.8% by 2014, while the output share of industry declined from 36.9% to 21.7%. The share of agriculture also declined, from 36.6% to 27.4% (Figure 1.15).

Figure 1.15 : Tajikistan's Output Shares in GDP
(%)



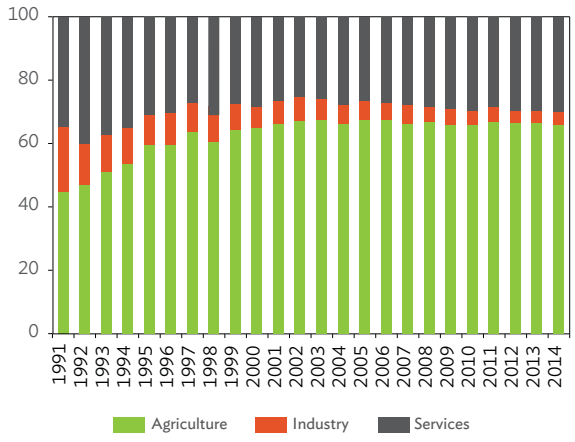
GDP = gross domestic product.
Source: World Bank. World Development Indicators. http://data.worldbank.org/data-catalog/world-development-indicators (accessed March 2016).

This structural change, however, has had little impact on net job creation, particularly in the formal labor market. The absorption capacity of services has remained flat and that of industry has declined. In the absence of growing employment opportunities in these sectors, agriculture has become the main sector for absorbing the bulk of the labor force. The share of industry in total employment has declined from 20.5% in 1991 to 4.1% by 2014, while that of services declined from 34.8% to 30.3%. On the other hand, the share of agriculture in total employment increased from 44.7% in 1991 to 65.5% by 2014 (Figure 1.16).

[6] The Tajik Aluminum Company (TALCO), with headquarters in Tursunzade, is the largest aluminum manufacturing plant in Central Asia and Tajikistan's chief industrial asset. The country has been exporting aluminium since 1975. The plant, a Soviet relic, was located in Tajikistan because of the proximity to the source of electricity. Other inputs (such as aluminium and coke) are imported and output is exported by rail. While the transport of inputs and the output was a lesser problem within the former Soviet Union, it now involves crossing several international borders.

[7] The 2009 Household Survey showed that expenditures on food accounted for about 60% of total household expenditures.

Figure 1.16: Tajikistan's Employment Shares
(%)



Source: ADB. Statistical Database System. https://sdbs.adb.org/sdbs/ (accessed March 2016).

Tajikistan's lackluster performance in economic restructuring and of expanding decent employment opportunities for the growing labor force, particularly in the nonfarm sectors, threatens strong long-run growth. The experience of successful economies in Asia, such as the People's Republic of China, the Republic of Korea, Malaysia, and Singapore, has shown two distinct features—economic growth accompanied by fast and successful structural transformation. The latter not only boosts GDP, but also significantly changes the composition of output and employment, wherein resources move to higher-value-added sectors, production is diversified, and exports become more sophisticated and technologically advanced (Felipe 2010). Development of modern industry and export diversification thus becomes crucial to speeding structural transformation.

In this context, Tajikistan's current production and export structure may present a significant challenge to sustainable long-run growth. The next sections will therefore examine the composition of its exports and its potential for speedy structural transformation.

1.5 Export Competitiveness in Tajikistan

Tajikistan's export competitiveness has deteriorated. An examination of Tajikistan's external sector will help us understand the likely direction of its economic growth and its sustainability.[8] Tajikistan's current account deficit is a reflection of the underperformance of its exports, a situation that ultimately points to the country's export competitiveness problems. In 1995, the country had 48 commodities with a revealed comparative advantage, while this number increased to 60 by 2010, it has declined to only 47 by 2014 (Figure 1.17).[9] This decline and lack of diversification into new export products as well as the country's continuing reliance on cotton and aluminum now appear to be a constraint on its long-run growth.

The sustainability of its trade, along with growing current account deficits, becomes even more precarious considering that Tajikistan's foreign exchange reserves are low, hardly enough to cover 1.4 months of imports, during 2014, against the safe level of 3.0 months of imports (Olivier and Rancière 2006). The country's poor export performance in nontraditional export products is largely because of poor export quality despite the fact that the price competitiveness of these products has improved due to a real depreciation of Tajikistan's currency

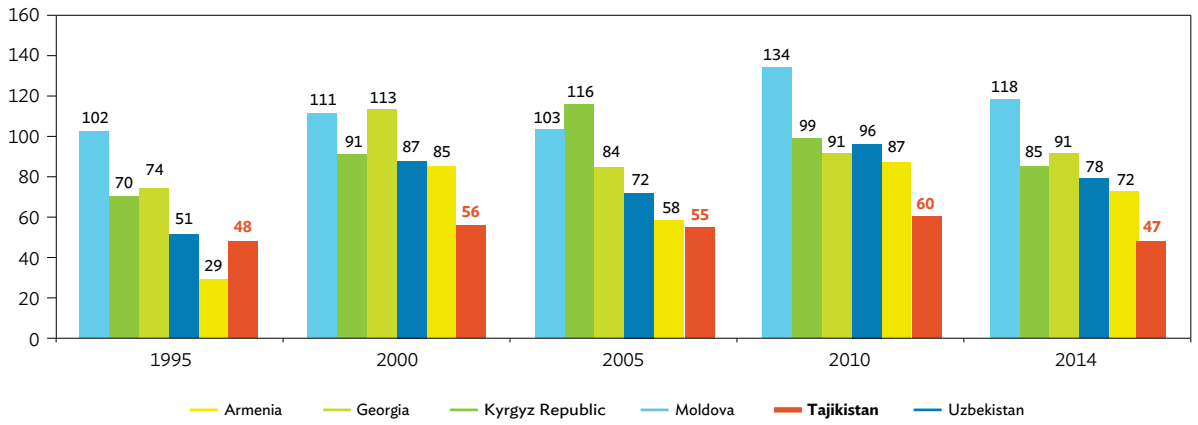
[8] Chapter 4 discusses in more detail the composition and sophistication of exports and its implications for future economic growth.

[9] Hidalgo et al. (2007) propose using the number of products exported with revealed comparative advantage as a measure of diversification. Revealed comparative advantage (RCA) is defined, based on Balassa (1965), as:

$$RCA_{ci} = \frac{xval_{ci} \Big/ \sum_{i} xval_{ci}}{\sum_{c} xval_{ci} \Big/ \sum_{i,c} xval_{ci}}$$

where $xval_{ci}$ is the value of the exports of country c in the product i. a country with RCA larger than one has revealed comparative advantage in that commodity.

Figure 1.17: Number of Products with Comparative Advantage (Revealed Comparative Advantage >1)

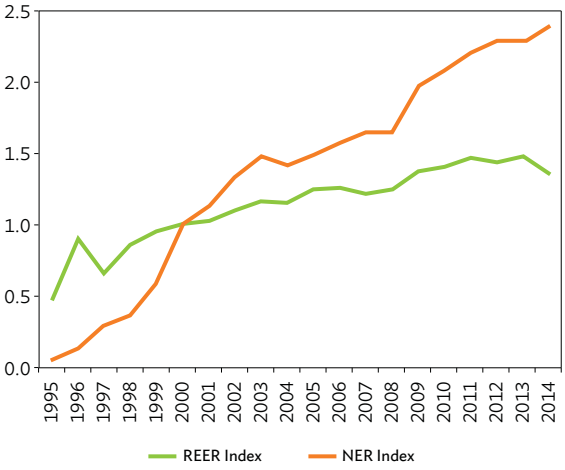


Source: Computations based on dataset from United Nations Commodity Trade Statistics Database. http://comtrade.un.org/db/default.aspx (accessed January 2016).

during 2000–2014. While the nominal exchange rate depreciated by 57.9% during 2000–2014, the real effective exchange rate[10] (REER) depreciated by 26.9%. Thus, higher remittances into the country have increased demand for non-tradable goods, resulting in inflation that partly erodes the cost competitiveness of Tajikistan's exports (Figure 1.18).

Aside from price competitiveness, we also need to look at the quality of products being exported and their demand in the international market. Indeed, non-price competition—which includes elements such as quality, design, delivery times, distribution network, and after-sales services—becomes a more important variable in international trade than price competitiveness alone. In this study, non-price competiveness has been captured through export demand elasticities[11] and their evolution. These estimated elasticities reflect the changes in demand for Tajikistan's exports for a given change in the income per capita of its major trading partners.

Figure 1.18: Tajikistan's Nominal and Real Effective Exchange Rates



NER = nominal exchange rate, REER = real effective exchange rate.
Source: Computations based on World Bank. World Development Indicators 2015. http://data.worldbank.org/data-catalog/world-development-indicators/wdi-2015 data with base year = 2000 (accessed March 2016).

The empirical evidence suggests that Tajikistan has been unable to improve the quality of its products and create other high-value-added exports. The heart of the problem thus lies in focusing on just a few products with low export elasticity, which can become a cause for concern in sustaining a country's long-run growth (Box 1.2).

[10] REER is the weighted average of the nominal exchange rate of Tajikistan vis-à-vis its major trading partners' currencies, adjusted for the change in prices in Tajikistan with respect to prices in its trading partners weighted by trade shares. The combined share of these trading partners in Tajikistan's exports during 2012 was about 77%. An upward trend in the REER is an indication of the depreciation of the domestic currency against the basket of currencies of Tajikistan's major trading partners in the real term.

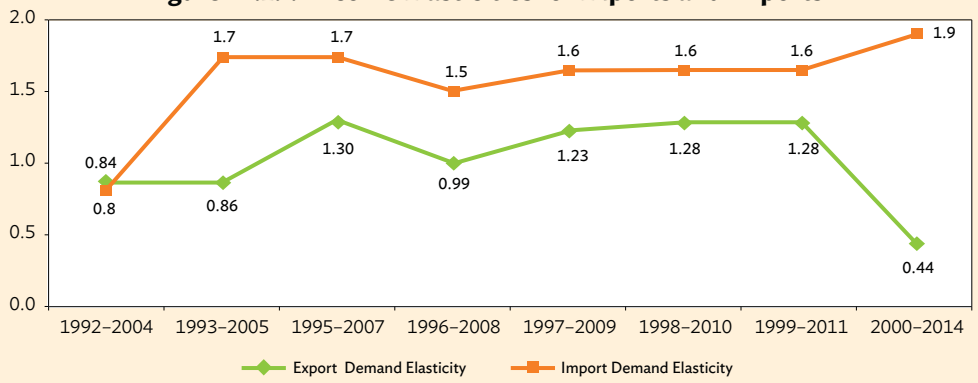
[11] Export demand elasticity is the ratio of the percentage change in quantity exported to the percentage change in the GDP of Tajikistan's major trading partners. Likewise, import demand elasticity is the ratio of the percentage change in quantity imported to the percentage change in domestic GDP.

Box 1.2: Export and Import Demand Elasticities

To understand the underlying dynamics of the trade and current account balance, we have estimated both export and import demand functions by employing auto regressive distributive lag models. The estimates were done for different time periods to trace the evolution of export and import demand elasticities.

The estimated income elasticities capture non-price competitiveness and therefore help us understand why demand for Tajikistan's exports has declined while its imports continued to rise. The estimated models show that the price elasticities of demand for exports and imports are quite low and that only import price elasticity is significant. The estimated value of the price elasticities are −0.20 and −0.21 for exports and imports, respectively. The sum of these elasticities is less than unity, implying that Marshal–Lerner conditions have not been satisfied. Thus, even a substantial devaluation of the currency will not be sufficient to correct the trade imbalances. The results of the estimated model show that export demand elasticity declined substantially from its initial value of 0.84 during 1992–2004 to as low as 0.44 by 2000–2014, while import demand elasticity on the other hand increased from 0.80 to 1.9 during the period under review (Figure B1.2.1).

Figure B1.2.1: Income Elasticities for Exports and Imports



Source: Derived from auto regressive distributive lag model for exports and imports based on World Bank. World Development Indicators 2015 data.

The gap between export and import demand elasticities has widened over time, reflecting not only export competitiveness problems, but also the rise in the propensity to import. Export demand elasticity has declined, with an average value for the whole period (1991–2014) estimated at 0.90.

The fundamental reason for the rise in the trade and current account deficit is poor export performance. Disaggregated analysis further reveals that during the period, the share of cotton, textiles and garments, and aluminum, in total exports declined. This poor performance resulted from the lack of export sophistication and the fact that over time, the export structure has not been upgraded.

Import elasticity, on the other hand, remained high and even increased, reflecting higher demand for imports as domestic gross domestic product increased.

This empirical evidence suggests that non-price competition is far more important than price competition alone. Given low-price demand elasticities and to reiterate an important point in this study, Tajikistan will have to improve the quality and sophistication of its exports and move toward products that carry high-income elasticity in the international market.

Source: Authors.

1.6 Economic Growth and Remittance Inflows

Tajikistan's growth has become balance-of-payments constrained. In an open economy, the current account in the medium to long run has to be kept in equilibrium, setting an upper limit on growth. In Tajikistan, which relies heavily on inflow of remittances and the prices of its key exports, growth becomes constrained ultimately by the rate of growth of capital and remittance inflows. Tajikistan faces a declining income elasticity of its exports. As such, unless there is an increase in remittance growth, the GDP growth rate will have to fall to be

consistent with a sustainable balance-of-payments position.

Using the balance-of-payments–constrained model, it has been estimated that if the share of remittances in GDP declines from 42% in 2014 to 20%, then the long-run equilibrium GDP growth declines to 4.3%. A further reduction in remittances likewise would reduce GDP growth even more. But once the impact of remittances is included, the long-run growth consistent with balance-of-payments equilibrium works out to be 7.3%. This growth rate for the sample period 1997–2014 is remarkably close to Tajikistan's actual growth of 7.2% during this period, corroborating the robustness of the estimated growth rate (Box 1.3).

The findings of the model suggest that Tajikistan is faced with a trade-off between remittances and improving its export demand elasticity. If there is a drop in remittances, then to sustain the current high growth in the long run would require it to enhance the quality and competitiveness of its exports. That is, in the face of a threat of lower future remittances, Tajikistan needs to move beyond its current export basket so it can maintain 7% or higher growth and achieve its goal of doubling GDP in the next decade.

Box 1.3: Balance-of-Payments–Constrained Growth Model

Thirlwall (1979) developed the balance-of-payments–constrained model showing that the balance of payments is a crucial constraint on long-term growth. Its basic premise is that in the long run, no country can grow faster than a gross domestic product (GDP) growth rate consistent with balance in the current account, unless it can finance ever-growing deficits.

If imports grow faster than exports, the current account deficit has to be financed by borrowing from abroad by the growth of capital inflows. However, this cannot continue indefinitely (Thirlwall 1979). Consequently, there is a balance-of-payments–equilibrium growth rate that a country cannot exceed for any length of time, as it will otherwise run into balance-of-payments difficulties.

Thirlwall (1979) developed the model, according to which long-run growth rate consistent with balance-of-payments equilibrium is given by the ratio of exports growth to the income elasticity of demand for imports. Thirlwall and Hussain (1982) extended and modified the model to capture the experience of developing countries that run current account deficits for prolonged periods, financed by capital inflows and unilateral transfers. The extended model concluded that long-run economic growth is constrained by the evolution of foreign capital flows, net exports, and the terms of trade.

The starting point in building a balance-of-payments–constrained model is to start with the balance-of-payments–equilibrium condition specifying export and import demand functions and then solving the model for the growth rate that is consistent with long-run balance-of-payments equilibrium. We can express the current account equilibrium in its simplest form by the following equation:

$$PdX = PfME \qquad (1)$$

where X stands for exports, M for imports, Pd is the domestic prices of exports, Pf is the foreign price of imports, and E is the nominal exchange rate expressed as domestic currency per unit of foreign currency. Export and import demand functions are given by the following function form:

$$X = a\,(Pd/PfE)^{\eta}\,Z^{\varepsilon}, \quad \eta<0, \varepsilon>0 \qquad (2)$$

continued on next page

Box 1.3 continued

$$M = b\,(PfE/Pd)^{\psi}\,Y^{\pi},\quad \psi<0\,,\,\pi>0 \qquad (3)$$

where η is the price elasticity of demand for exports, ε is the income elasticity of demand for exports, ψ is the price elasticity of demand for imports, π is the income elasticity of demand for imports, Z is the weighted GDP of Tajikistan's major trading partners and Y stands for domestic GDP of Tajikistan. Following Thirlwall (1979) by assuming that relative prices in international trade remain constant and that trade must be balanced in the long run, and by taking logarithms of equation 2 and 3 and expressing in terms of growth rates, after some algebraic manipulations and solving for the growth of income, yields the following expression:

$$Ybp = \varepsilon(Z)/\pi \qquad (4)$$

Equation 4 is called "Thirlwall's Law," which describes that the long-run growth of an economy that is consistent with its balance on current account is approximated by the ratio of its export-to-import demand elasticities weighted by growth in its trading partners' GDP. However, as Tajikistan depends on the prices of its key exports—cotton and aluminum and the inflow of remittances—growth becomes constrained ultimately by the rate of growth of capital and remittance inflows. The extended model therefore becomes

$$Ybp = [\theta'_x\varepsilon z + (\eta+\theta'_x\psi)(reer) + \theta'_R(r-p_x) + (p_x-p_m)] / \pi \qquad (5)$$

where the variables are defined as Z (weighted growth of trading partners' GDP), x (growth of exports), $r-p_x$ (growth of remittances in real terms), P_x-P_m (growth of terms of trade), reer (rate of change of real effective exchange rate), θ'_x (average export share in foreign currency receipts), and θ'_R (average remittance share in foreign currency receipts).

For this study, both export and import demand functions have been estimated for the period 1997–2014 by employing the autoregressive distributed lag (ARDL) modeling approach. This method is particularly suitable for small samples and takes sufficient number of lags to capture the underlying data-generating process in a general-to-specific modeling framework and avoids the problem of pretesting issues associated with standard cointegration analysis. We started with a general model for which, after testing the significance of the short-run dynamics, the specific model for exports takes the following form:

DLOG(X) = -7.045 - 0.15(DLOG(X(-1)) + 12.15(DLOG(z)* + 5.96(DLOG(z(-2)) - 0.22(DLOG(RE
ER(-2)) - 0.87(LOG(X(-1))* + 0.79(LOG(z(-1))* - 0.14(LOG(REER(-1))* - 0.28(DUMX

This model yields the following elasticities: $\varepsilon = 0.90^{**}$ and $\eta = -0.20$

Similarly, the estimated model for import demand functions takes to the following form:

DLOG(M) = -5.19 + 0.56 (DLOG(M(-1))* - 0.28(DLOG(REER(-1))* - 1.27(DLOG(Y(-1))* - 1.20(LOG(M(-1))* - 0.25(LOG(REER(-1))* + 1.83(LOG(Y(-1))*

The estimates of long-run elasticities are: $\psi = 1.53^{*}$ and $\pi = -0.21^{*}$. In the next step, incorporating the estimated elasticities into equation 5 above yields the estimate of the balance-of-payments–constrained growth for Tajikistan for the period 1997–2014. The long-run growth predicted from equation 5 turns out to be 7.3%, remarkably close to the actual growth of 7.2%, which shows the robustness of our estimates. The fact that the balance-of-payments–constrained growth is remarkably close to the actual growth rate signifies that the growth process in Tajikistan has been externally constrained. The

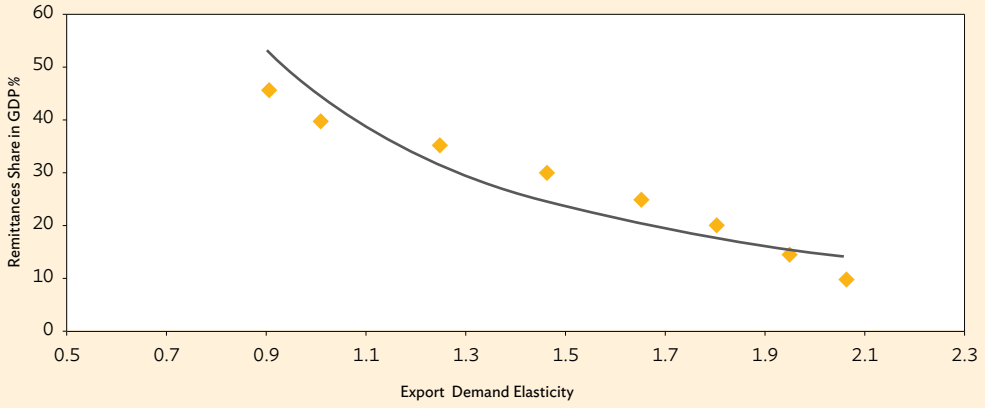
continued on next page

Box 1.3 continued

balance-of-payments–constrained model places emphasis on the growth of exports because it is one of the components of aggregate demand whose growth relaxes the balance-of-payments constraint and enables the economy to grow faster. This approach also focuses the policy maker's attention on the necessity of increasing the export growth, which would require addressing the supply-side constraints. The key determinants of the balance-of-payments–constrained growth rate are income elasticity of exports and imports, changes in the terms of trade, magnitude of the flow of remittances, and economic growth in Tajikistan's major trading partners.

We can make use of the estimated balance-of-payments–constrained model and empirically investigate the issue of sustainability of growth. Figure B1.3.1 shows various combinations of remittances and export elasticity with a view to arriving at the targeted growth of 7%. Tajikistan faces a trade-off between remittance inflows and the quality of its export products. Therefore, if for some reason there is a drop in remittance inflows, then sustaining the growth at 7% would require moving toward more sophisticated exports. For example, if remittance share declines from 45% to around 10%, then to maintain the 7% growth rate, the value of export elasticity will have to be increased from the existing 0.8 to as high as 2.3.

Figure B1.3.1: Trade-Off between Remittances and Export Elasticity



GDP = gross domestic product.
Source: Derived from balance-of-payments–constrained model.

To diversify and upgrade toward high-value-added products that carry high elasticity of demand, Tajikistan needs to speed up the process of structural transformation. This structural change is reflected in improving and diversifying the export basket. The successful development strategy will have to concentrate on improving the quality of exports and on raising the ratio of export-to-import income elasticity. In this context, it becomes crucial to address the supply-side constraints that have impeded private investment and have kept the productive capacity of the economy at a lower level.

Source: Authors.

Tajikistan, as a small, open economy, needs to put emphasis on export competitiveness. External demand is one of the key variables in determining and sustaining high growth. As such, the maximum sustainable growth rate becomes dependent on the dynamics of exports, the behavior of the terms of trade, the continuity in the flow of remittances, and the elasticity of imports with respect to domestic GDP. In this context, identifying supply-side bottlenecks in the production of exports becomes crucial in enhancing export quality.

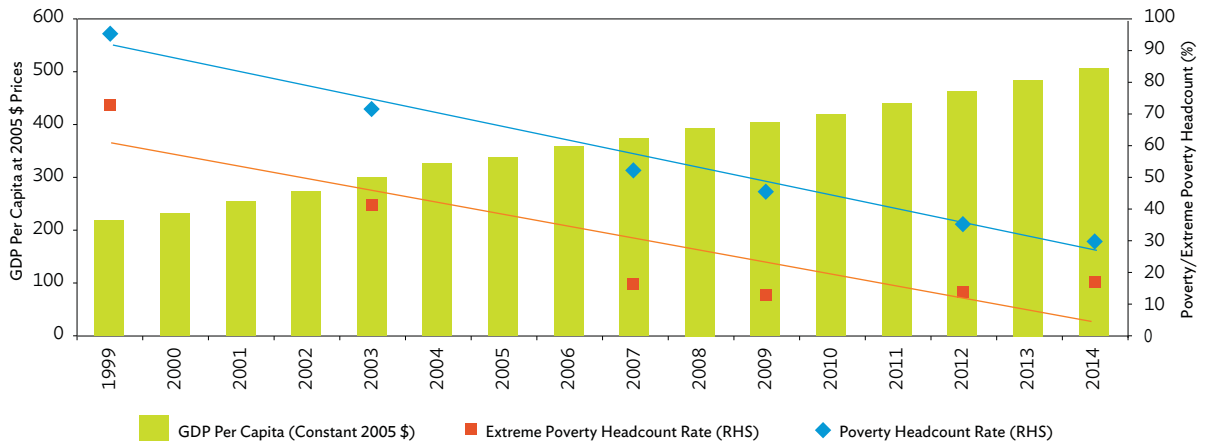
1.7 Poverty and Inequality

High growth has reduced overall poverty, but regional disparities remain a cause for concern. As a result of high growth, per capita income in Tajikistan has increased and poverty incidence has declined. But it remains high compared with others in the region. Poverty incidence fell from 96% in 1999 to 32% by 2014, and the share of the extremely poor population fell from 73% in 1999 to 16.8% by 2014 (Figure 1.19). In addition, while poverty incidence declined, the benefits of growth were not distributed evenly.

Using the $1.90-a-day poverty threshold, poverty incidence has drastically gone down by 49.6 percentage points from 54.3% in 1999 to 4.7% in 2009. A remarkable decline in poverty can also be observed using the $3.10-a-day poverty line—poverty incidence declined from 86.1% in 1999 to 23.4% by 2009. Compared with the comparator countries, Tajikistan has a higher poverty rate than all of them except Georgia in 2013 (Table 1.4).

High economic growth along with macroeconomic policies, including various initiatives reflected in the poverty reduction strategy papers, has helped reduce poverty in Tajikistan. Likewise, rapid and large increases in the remittance inflows since 2004 have been another factor that contributed to reducing poverty. To fight poverty, migration for temporary work abroad has appeared to be the key strategy among poor households. During 2007, 25% of households had at least one member working abroad, and remittances accounted for about 35% of households' income and

Figure 1.19: Growth and Poverty Reduction



GDP = gross domestic product, RHS = right-hand side.
Sources: World Bank. World Development Indicators. http://data.worldbank.org/data-catalog/world-development-indicators/wdi (accessed March 2016); and Agency on Statistics under the President of the Republic of Tajikistan. 2015. *Poverty Measurement in Tajikistan: A Methodological Note.* Dushanbe.

Table 1.4: Poverty Incidence in Selected Countries

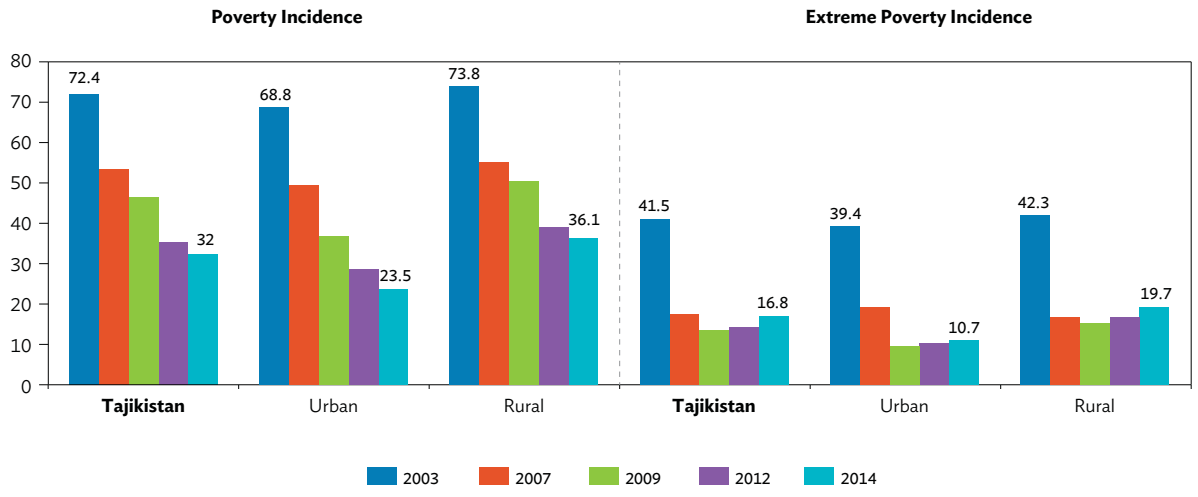
	$1.90-a-Day (PPP) Poverty Line				$3.10-a-Day (PPP) Poverty Line			
	1999	2003	2007	2013	1999	2003	2007	2013
Armenia	16.9	11.4	3.6	2.4	50.0	45.5	21.9	17.0
Georgia	18.7	17.4	16.3	11.5	40.0	40.0	37.2	28.6
Kyrgyz Republic	30.6	28.1	3.9	2.9	51.5	67.7	34.7	20.0
Moldova	39.1	7.8	1.1	0.1	68.4	29.8	7.3	2.0
Tajikistan	**54.3**	**30.9**	**10.4**	**4.7**	**86.1**	**64.8**	**32.7**	**23.4**

PPP = purchasing power parity.
Notes: For the Kyrgyz Republic, 1999 and 2013 figures refer to 1998 and 2012, respectively. For Tajikistan, 2013 data refer to 2009.
Source: World Bank. World Databank. http://databank.worldbank.org/data/home.aspx (accessed March 2016).

an even larger share of income among households in the lower consumption decile (World Bank 2011a). Since remittances primarily finance consumption, their impact on poverty reduction has remained substantial. Remittances account for about 80% of consumption requirement of the poorest rural households, and for about 50% of that of urban households. According to World Bank estimates, a 10% increase in remittances led to a 1% reduction in poverty (World Bank 2009). However, remittance inflows also carry with them an element of uncertainty, thus requiring the government to also fight poverty through other means and, more importantly, by providing decent employment opportunities in the formal labor market. As a large majority of migrant workers come from rural areas and send remittances back to rural areas (70% of remittances), the impact of remittances became more visible in the dramatic decline in extreme poverty (PRSP 2010). Extreme poverty declined from 41.5% in 2003 to 17.1% in 2007 and further to 14.3% in 2012. Similarly, the poverty rate in both urban and rural areas has also declined. Poverty incidence in urban areas has declined from 68.6% in 2003 to 49.4% by 2007. It further declined to 28.5% in 2012. During 2003–2012, urban poverty fell by 40.3 percentage points. During the same period, on the other hand, poverty in rural areas declined by 34.6 percentage points, from 73.8% in 2003 to 39.2% in 2012 (Figure 1.20).

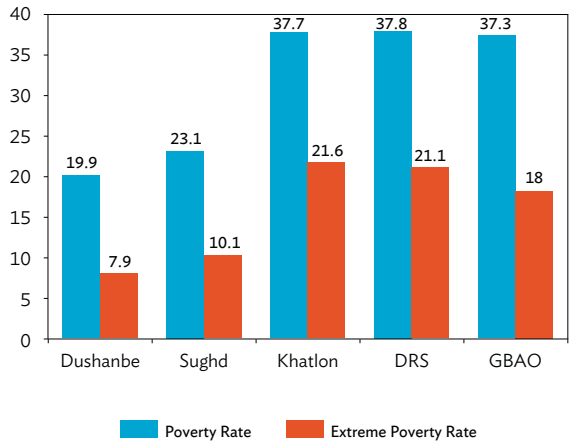
The poverty rate varies across different regions of Tajikistan depending on their respective resource endowments and production capacities (Figure 1.21). According to the latest available estimates, Dushanbe, which has only an urban population, had the lowest poverty and extreme poverty incidences, at 19.9% and at 7.9%, respectively. This is most likely due to the improvements in the delivery of basic services in the capital area. In contrast, poverty in the surrounding regions remains high, ranging from 23% in Sughd to around 38% in Gorno-Badakhshan Autonomous Oblast (GBAO), Districts of Republican Subordination (DRS) and Khatlon.

Figure 1.20: Poverty and Extreme Poverty Incidence, 2003–2014



Sources: Poverty rates for 2003–2009, Republic of Tajikistan; Poverty Reduction Strategy Paper – Progress Report; Poverty rate for 2012; Agency on Statistics under the President of Tajikistan. 2015. Poverty Measurement in Tajikistan: A Methodological Note. Dushanbe.
Notes:
1. For 2003–2009, household expenditure (2009 = 100).
2. For 2012, household expenditure (2012 = 100).
3. Poverty line for 2009 = TJS195 (food, nonfood, and service provision); Extreme poverty line = TJS124 (food). Poverty line for 2012 = TJS146 (food, nonfood and service provision); Extreme poverty line = TJS105 (food). Poverty line for 2014 = TJS158.71 (food, nonfood and service provision); Extreme poverty line = TJS123.57 (food).

Figure 1.21: Poverty Incidence by Region, 2014



DRS = Districts of Republican Subordination, GBAO = Gorno-Badakhshan Autonomous Oblast.
Notes: Poverty line for 2014 = TJS158.71 (food, nonfood, and service provision); extreme poverty line = TJS123.57 (food).
Source: Agency on Statistics under the President of Tajikistan. 2015. *Poverty Measurement in Tajikistan: A Methodological Note.* Dushanbe.

Inequality

Inequality in Tajikistan increased due mainly to drastic cutbacks in the provision of basic social services like education and health and a drop in the minimum wage level as a result of the collapse of the Soviet Union in 1991 and the civil war in 1992. The income Gini index increased from 29.5 in 1999 to 33.6 in 2004. From 2004, however, remittances from workers abroad started to expand, resulting in a decline of the income Gini index to 29.0 in 2014 (Table 1.5).

Table 1.5: Income Gini Index, 1999–2014

Year	Gini
1999	29.5
2003	32.7
2004	33.6
2007	32.2
2009	30.8
2012	31.0
2014	29.0

Sources: Gini coefficients for 1999 to 2009: World Bank. World Development Indicators. http://data.worldbank.org/data-catalog/world-development-indicators (accessed March 2016); Gini coefficient for 2012 and 2014: Agency on Statistics under the President of Tajikistan. 2015. *Poverty Measurement in Tajikistan: A Methodological Note.* Dushanbe.

Comparison of Tajikistan with other regional economies reveals that its income distribution is relatively more equitable. Among the comparator countries, Tajikistan has one of the lowest income Gini coefficients, ranking below Armenia and Moldova (Table 1.6).

Table 1.6: Income Gini Index in Selected Countries, Latest Years

Country	Latest Year	Gini Coefficient	Share of Top 20%	Share of Bottom 20%
Armenia	2013	31.54	40.3	8.5
Georgia	2013	40.03	46.0	5.6
Kyrgyz Republic	2012	27.37	37.3	9.6
Moldova	2013	28.53	37.8	9.1
Mongolia	2012	33.75	41.7	7.7
Tajikistan	**2014**	**29.0**	**39.4**	**8.3**
Uzbekistan	2003	35.30	43.4	7.4

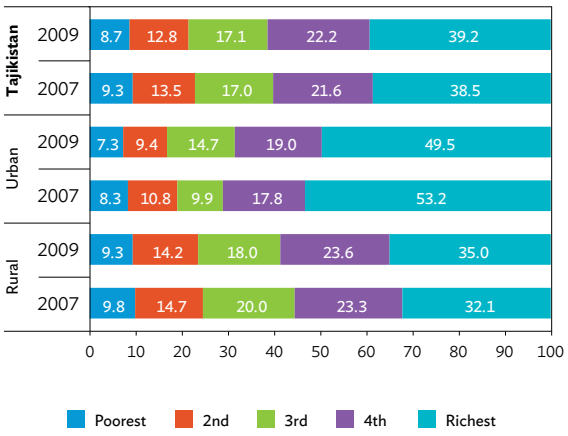
Sources: World Bank. World Development Indicators. http://data.worldbank.org/data-catalog/world-development-indicators (accessed March 2016). Income Gini for Tajikistan was sourced from Agency on Statistics under the President of Tajikistan. 2015. Poverty Measurement in Tajikistan: A Methodological Note. Dushanbe.

However, an analysis based on Tajikistan Living Standard Measurement Surveys suggests that the aggregate inequality masks a notable expenditure inequality dynamics by locality. Although in urban areas, expenditure inequality is more pronounced and has declined along with the Gini index at the national level, in rural areas the expenditure inequality moved in the opposite direction. This is also apparent from the expenditure share of the population by expenditure quintile. The expenditure share of the richest quintile in the urban areas declined from 53% in 2007 to 50% in 2009. In the rural areas, in contrast, expenditures of the population in the richest quintile rose from 32% to 35% during the same period (Figure 1.22).

The improvement in the inequality at the national level is the result of a remarkable decline in the Gini index in Sughd region (Table 1.7).

The growth pattern in Tajikistan is not inclusive; that is, the benefits of the high growth have not been distributed evenly among the different segments of society or across regions.

Figure 1.22 : Expenditure Share by Quintiles, 2009 and 2007 (%)



Note: Per capita consumption based on the monthly per capita consumption adjusted with strata price deflators (pccd) variable.
Source: ADB calculations based on Tajikistan Living Standards Survey, 2007 and 2009.

Table 1.7: Inequality in Consumption per Capita Distribution by Groups

	2007	2009
By location		
Urban	36.3	33.3
Rural	25.5	28.9
By region		
Dushanbe	33.0	34.3
Sughd	36.1	31.7
Khatlon	21.2	26.8
RRS	27.3	29.3
GBAO	25.3	28.9

GBAO = Gorno-Badakhshan Autonomous Oblast, RRS = Region of Republican Subordination.
Note: Per capita consumption based on the monthly per capita consumption adjusted with strata price deflators (pccd) variable of the Tajikistan Living Standards Measurement Survey 2009 raw data.
Source: ADB estimates based on Tajikistan Living Standards Survey 2007 and 2009.

Conclusion

This chapter has analyzed Tajikistan's economic growth during 1997–2014. The findings suggest that despite the country's strong economic performance, its private investment and productive capacity remain low. This poses a potential challenge for the country to maintain its high growth and generate decent employment opportunities.

The analysis shows a decline in the number of products wherein Tajikistan used to have revealed comparative advantage, and that by relying on remittance inflows and on its highly concentrated export basket, the country's growth has become balance-of-payments constrained.

Because Tajikistan has a small domestic market, in the long run, external demand is crucial to determining and sustaining high growth. The development strategy should therefore concentrate on improving the quality of its exports and making them more attractive in the world market.

Chapter 2
Critical Constraints to Growth

This chapter employs the growth diagnostics framework proposed by Hausmann et al. (2005) to identify the critical constraints that have kept private investment low in Tajikistan. Since Tajikistan has witnessed impressive growth in the past 18 years, the main objective of the diagnostic study is to pinpoint constraints to investment that might become binding in the long run and that, if relaxed, would have the largest impact on growth.

In the context of growth diagnostics, the factors that have led to low private investment in Tajikistan need to be analyzed. Is the low private investment due to high costs of financing, to low social returns on investment, to low private appropriability, or to a combination of all these three? The diagnostic tree presented in Box 2.1 lays out the approach used in this chapter to examine the constraints to sustaining Tajikistan's high growth.

Box 2.1: Growth Diagnostic Framework

This study broadly follows the growth diagnostics approach developed by Hausmann, Rodrik, and Velasco (2005) to identify the binding constraints on low private investment. This differs from a laundry-list approach, as implied by the Washington consensus. Instead, it recognizes that the economic and political environment differs a great deal among developing countries; that there is no one-size-fits-all solution to development problems; and that the ordering of policy priorities contingent on country-specific circumstances is critical.

Further, countries at an early stage of development may not have adequate capacity to implement an array of policy reforms at the same time. With the diagnostic approach, reforms can start with easing a few critical areas that truly constrain growth. The approach thus offers a practical tool for policy makers and development planners in formulating country-specific growth strategies.

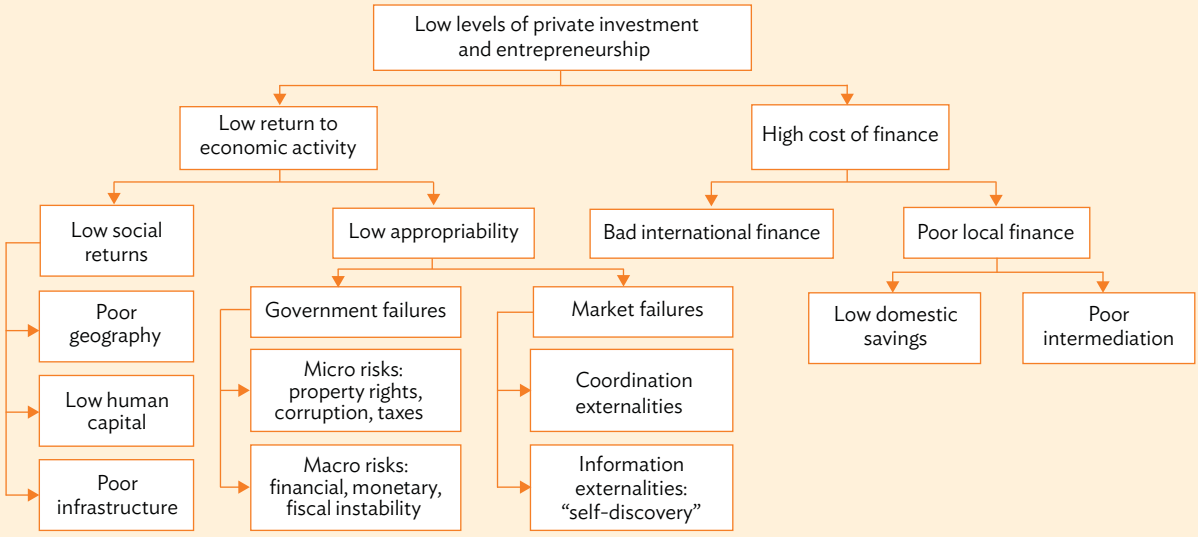
continued on next page

Box 2.1 continued

The growth diagnostics approach starts with a set of proximate determinants of growth, investigates which of these pose the greatest impediments or are the most critical constraints to higher growth, and figures out specific distortions behind the impediments. The point of departure is a standard endogenous growth model in which growth depends on the social return to accumulation, the private appropriability of this social return, and the cost of financing. Each of these three broad determinants of growth is in turn a function of many other factors that can be presented in a problem tree (see the figure below).

The diagnosis starts by asking what keeps private investment and entrepreneurship low. Is it low social return on investment, inadequate private appropriability of the social return, or high cost of financing? If it is low social return, is that due to insufficient complementary factors of production—in particular, human capital, technical know-how, and/or infrastructure? If the impediment is poor private appropriability, is it due to macro vulnerability, high taxation, poor property rights and contract enforcement, labor–capital conflicts, information and learning externalities, and/or coordination failures? If high cost of finance is the problem, is it due to low domestic savings, poor intermediation in the domestic financial markets, or poor integration with external financial markets?

Figure B.2.1 Growth Diagnostic Framework



At each node of the problem tree, the diagnosis looks for signals that would help answer the question. The two types of diagnostic signals one can look for are price signals and non-price signals. Examples of price signals are returns to education, interest rates, and transport costs. For example, if education is undersupplied, returns to skills/education would be high and unemployment of skilled people would be low. If investment is constrained by savings, interest rates would be high and growth would respond to changes in available savings (for example, inflows of foreign resources). If poor transport link is a serious constraint, bottlenecks and high private costs of transport would be evident.

The use of non-price signals is based on the idea that when a constraint binds, the result is activities will be designed to get around it. For example, high taxation could lead to "high informality" (for example, underreporting of income that results in lower tax revenues); poor legal institutions could bring about high demand for informal mechanisms of conflict resolution and contract enforcement; and poor financial intermediation could lead to internalization of finance through business groups. Cross-country and cross-period benchmarking and results of business surveys are useful means to gauge whether particular diagnostic evidence signals a binding constraint.

Sources: Hausmann, R., D. Rodrik, and A. Velasco. 2005. Growth Diagnostics. Cambridge, MA: John F. Kennedy School of Government, Harvard University; Authors.

2.1 Cost of Finance

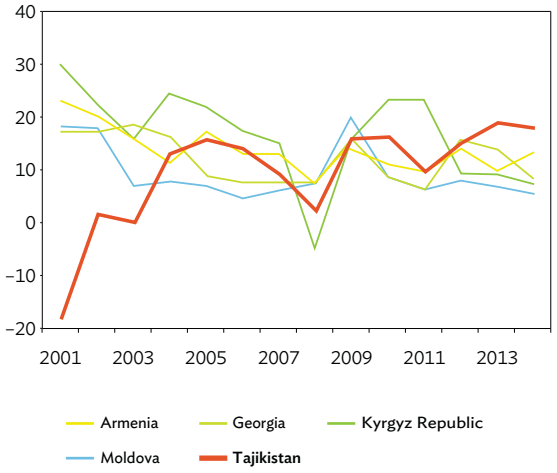
The cost of finance in Tajikistan is higher than in comparator countries. Its real lending rate increased from an annual average of 5.5% in 2001–2007 to 14.2% during 2008–2014, while the real lending rate across comparator countries in those periods declined from 15.5% to 11.2% (Figure 2.1). Lending rates have been kept quite high by banking sector inefficiencies like weaknesses in the risk management systems of banks, deficiencies in the regulatory and supervisory framework and its enforcement by the National Bank of Tajikistan, and poor corporate governance. However, rates for microfinance institutions, which are hampered by their small deposit bases, have been even higher, reflecting transaction costs disproportional to the size of loans (World Bank 2015c). Microfinance lending rates ranging from 20% to 30%, along with limited access to affordable finance, remain a major constraint for a vast majority of small and medium-sized enterprises (SMEs) (OECD 2015).

Limited access to finance and its high cost hamper private investment and impede proliferation of small and medium-sized enterprises.

An International Finance Corporation survey in 2009 found that 25% of enterprises considered access to finance as an obstacle to doing or expanding business, and more than half identified high interest rates as a key constraint. In particular, 45% of individual entrepreneurs, 56% of small and medium-sized enterprises, and 62% of dehkan[12] farms indicated that high borrowing costs had constrained them from expanding their businesses (Figure 2.2).

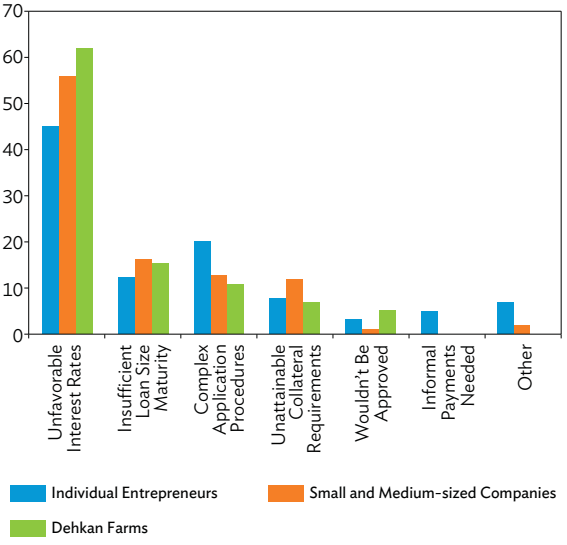
The Global Competitiveness Report 2015–2016 from the World Economic Forum also cited access to finance as a key constraint for firms in Tajikistan (Figure 2.3), while a 2013 survey of small- and medium-sized enterprises in Tajikistan revealed that 92% of loans require collateral valued at up to 165%

Figure 2.1: Real Lending Rates, Selected Countries 2001–2014 *(%)*



Note: Real interest rate is the lending rate adjusted for consumer-price inflation.
Source: Calculations based on World Bank. World Development Indicators. http://data.worldbank.org/data-catalog/world-development-indicators (accessed March 2016).

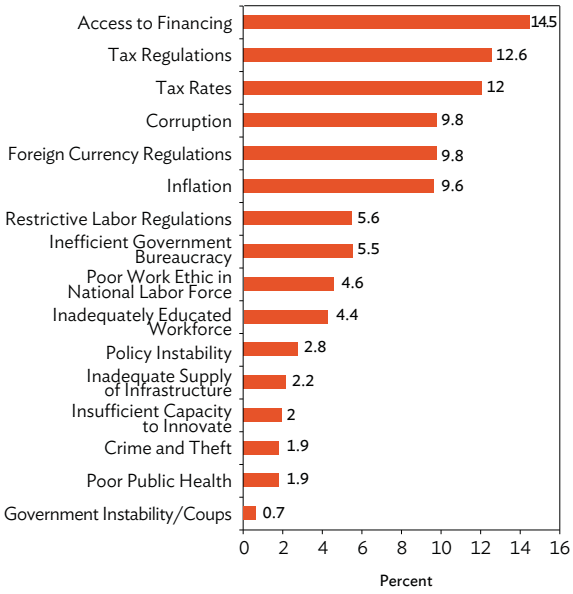
Figure 2.2: Main Reasons Cited for Not Applying for Loans *(%)*



Source: International Finance Corporation. 2009. Business Environment in Tajikistan as Seen by Small and Medium Enterprises. file:///C:/Users/Tuesday%20Soriano/Downloads/TJ_BEE_Survey2009En.pdf

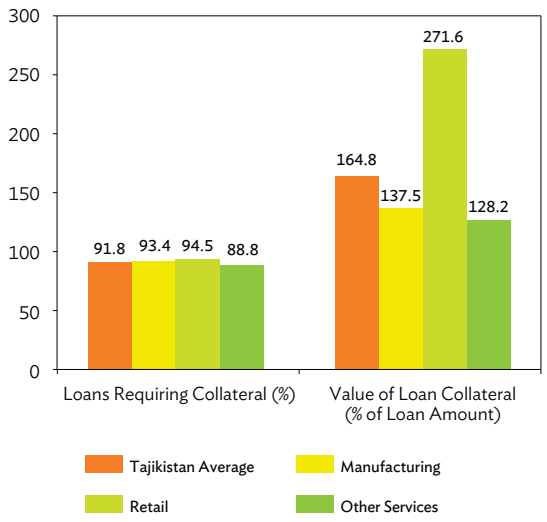
[11] Dehkan is a term for an individual or family farm.

Figure 2.3: Most Problematic Factors for Doing Business in Tajikistan, 2015



Source: World Economic Forum. 2015. *The Global Competitiveness Report 2015–2016*. Geneva.

Figure 2.4: Cost to Firms of Obtaining a Loan, 2013 *(%)*



Source: World Bank Group. Enterprise Surveys: Tajikistan (2013). http://www.enterprisesurveys.org/data/exploreeconomies/2013/tajikistan#finance (accessed April 2016).

of the loan (Figure 2.4). Indeed, the high cost of borrowing also prevents relationships between banks and companies from developing.

Similarly, the World Bank's Doing Business 2016 report shows that Tajikistan ranked 109 out of 189 countries for ease of getting credit, while the respective ranking of its comparators saw Uzbekistan at 42, Georgia at 7, Moldova at 28, Armenia at 42, and the Kyrgyz Republic at 28. Low confidence in banks and the desire to keep their finances off the official radar lead people to minimize their interactions with the formal financial system. This is apparent from the fact that while the number of depositors with commercial banks in Tajikistan quadrupled between 2005 and 2013, there were 703 depositors for every 1,000 adults and only 34 borrowers for every 1,000 adults in 2013 (Table 2.1).

Data from the Global Financial Inclusion database (Global Findex) for 141 countries show that in Tajikistan, only 9.3% of adults in rural areas had accounts with at least one financial institution in 2014,

Table 2.1: Access to and Use of Financial Services, 2014

	Commercial bank branches per 100,000 adults	ATMs per 100,000 adults	Depositors with commercial banks per 1,000 adults	Borrowers from commercial banks per 1,000 adults	Borrowers from MFIs per 1,000 adults
Uzbekistan	37.5	8.5	885.0	49.2	
Georgia	26.7	58.3	978.5	590.3	113.7
Armenia	22.3	58.3			
Moldova	12.2	36.5	1,250.7	52.1	
Kyrgyz Republic	7.8	24.7	362.74	56.0	
Tajikistan	**6.5**	**10.4**	**702.9**	**34.4**	**53.3**

MFI = microfinance institution.
Note: Tajikistan figures refer to 2013.
Source: International Monetary Fund. Financial Access Survey. http://data.imf.org (accessed February 2016).

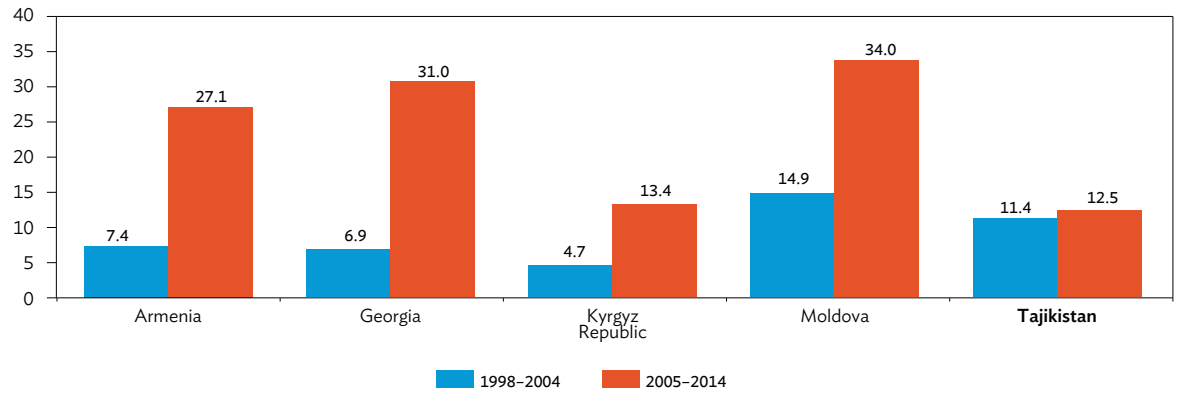
the lowest among the comparator countries, whereas the rate was 61.2% in the Russian Federation, 41.8% in Uzbekistan, 40.1% in Georgia, and 15.2% in Moldova. The rate in Tajikistan was also the 13th lowest in the world. Likewise, the percentage of Tajikistan's urban population[13] with access to financial institutions was estimated at around 9.9% compared with 53% in the Russian Federation, 22.1% in Uzbekistan, 40.7% in Georgia, and 30% in Moldova. As reported in company surveys, lack of access to finance has emerged as a binding constraint for Tajikistan's small and medium-sized enterprises and has also held back private investment.

Credit to private sector has marginally improved while government continues to practice directed lending.

The country's credit-to-GDP ratio has only marginally improved from 11.4% in 1997–2004 to 12.5% in 2005–2014. On the other hand, all the comparators during the same period saw the availability of credit to their private sectors by banks increase substantially (Figure 2.5).

Directed lending to the public sector undermines the governance of banks and poses considerable quasi-fiscal risks (Table 2.2).

Figure 2.5: Domestic Credit to Private Sector by Banks (% of GDP)



GDP = gross domestic product.
Source: World Bank. World Development Indicators. http://data.worldbank.org/data-catalog/world-development-indicators (accessed March 2016).

Table 2.2: Bank and Microfinance Institution Credits by Borrowers (% of total credit)

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
State enterprises	9.6	7.9	6.2	4.8	4.1	11.7	9.2	14.3	12.2	9.5	12.3
Private enterprises	80.4	80	77.7	74.3	76.2	50.1	41.9	38.2	38.3	40.4	42.2
Individuals	8.3	11	15.2	20.4	19.3	34.9	19.2	19.8	21.8	18.4	17.3
Leasing	0.6	0.3	0.4	0.1	0.1	0.1	0.05	0.04	0.04	0.05	0.05
Mortgages	0.0	0.0	0.0	0.0	0.0	0.3	0.7	1.1	1.6	1.4	1.4
Overdraft	0.0	0.0	0.0	0.0	0.0	2.4	3.6	0.4	1.3	0.6	1.0
Entrepreneurs	0.0	0.0	0.0	0.0	0.0	0.0	22.5	26.2	24.9	29.6	25.7
Others	1.2	0.7	0.4	0.4	0.3	0.6	25.3	26.3	0.03	0.0	0.01

Note: For 2015, data are as of August.
Sources: For 2005–2008 data: National Bank of Tajikistan. Statistical Bulletin 4-213; For 2009–2014 data: Statistical Bulletin 12-233; and for 2015 data: Banking Statistics Bulletin 8-241.

[13] The data for urban population are for the year 2011 only, the data for the year 2014 are not available.

Allocation of credit to the private sector (private enterprises plus entrepreneurs) has declined from 80.4% of the total in 2005 to around 67.9% by 2015. Among the factors cited by businesses in describing their difficulty to obtain loans, the most prevalent are their concerns over collateral requirements and unofficial costs (bribes). Present trends in private sector credit can be attributed to inadequate access to finance, low domestic savings, or a combination of both. Poor financial intermediation due to weak financial infrastructure and lack of competition among banks can also raise the cost of finance. The main factors responsible for higher lending rates and other prohibitive funding costs are examined in the sections that follow.

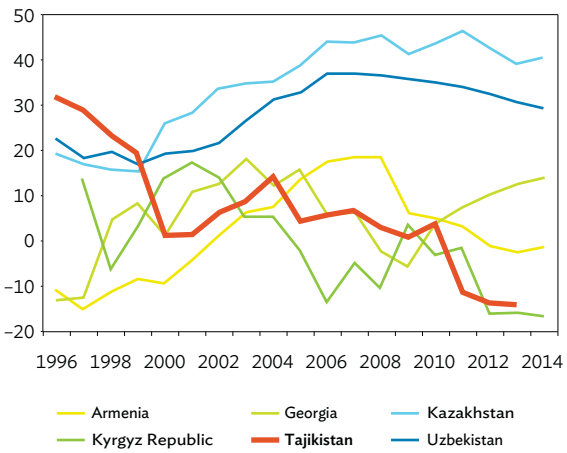
Gross domestic savings have remained low.

During the Soviet period, Tajikistan relied on transfers from the center for funding investment; after the civil war, it availed of external financing, including assistance and borrowing from the international community. It now relies on remittance inflows and to a lesser extent on external borrowing to maintain higher GDP growth. Workers' remittances have been used mainly for consumption purposes and domestic savings have remained low.

Among the former Soviet Union countries, Tajikistan has a low domestic savings rate that is second only to that of the Kyrgyz Republic. Its gross domestic savings have not only remained low but have been very volatile (Figure 2.6). During 2001–2012, the gross domestic savings rate averaged 2.7% of GDP. The ratio of domestic savings to GDP rose from 1.8% in 2001 to 14.2% by 2004, but the ratio dropped again to –10.8% by 2011 and further down to –13.9% in 2013.

Most savings within the private sector are kept outside the formal banking sector, and people prefer to hold cash, a situation that makes financial intermediation very low and inefficient. Low incomes along with a high propensity to consume have kept household

Figure 2.6: Gross Domestic Savings, 1996–2014 (%)



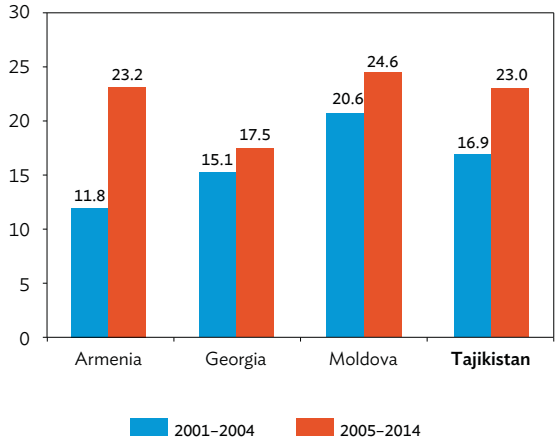
Source: ADB. 2015. *Key Indicators for Asia and the Pacific 2015*. Manila.

savings rates low, and quasi-fiscal deficits incurred by state-owned enterprises have likewise brought down aggregate corporate savings rates. Aside from this, there is a large informal sector in which most small companies hide their surpluses. Its presence further limits the government's ability to generate revenue and may, in fact, account for the part of the negative savings reported above.

Although domestic savings have remained low, the evidence suggests that this has not constrained the ability of banks to provide loans for profitable investment, especially since a decline in deposit rates indicates that they are not competing for loanable funds. Indeed, Tajikistan banks' ratio of liquidity to assets increased from 16.9% in 2001–2004 to 23.0% in 2005–2014. This suggests that availability of funds has not limited their lending (Figure 2.7).

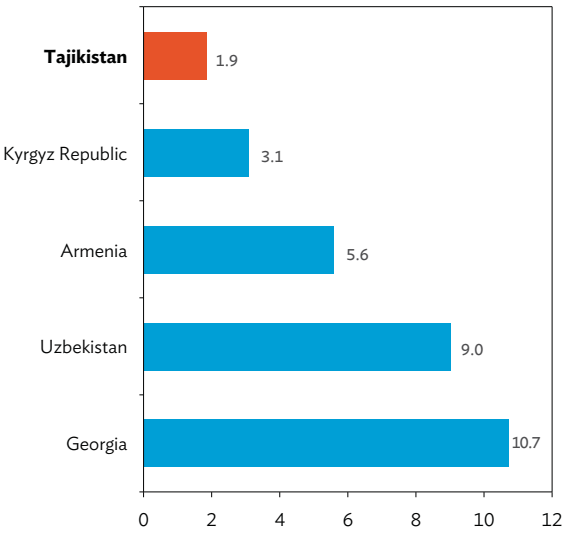
In sum, the banks are neither constrained by a shortage of deposits nor by illiquidity. This suggests that a low domestic savings rate is not the principal cause of the high cost of finance in Tajikistan.

Figure 2.7: Liquid Reserves-to-Assets Ratio (%)



Note: The ratio of bank liquid reserves to bank assets is the ratio of domestic-currency holdings and deposits with the monetary authorities to claims on other governments, nonfinancial public enterprises, the private sector, and other banking institutions.
Source World Bank. World Development Indicators. http://data.worldbank.org/data-catalog/world-development-indicators (accessed March 2016).

Figure 2.8: Foreign Direct Investment Stocks, 2014 ($ billion)

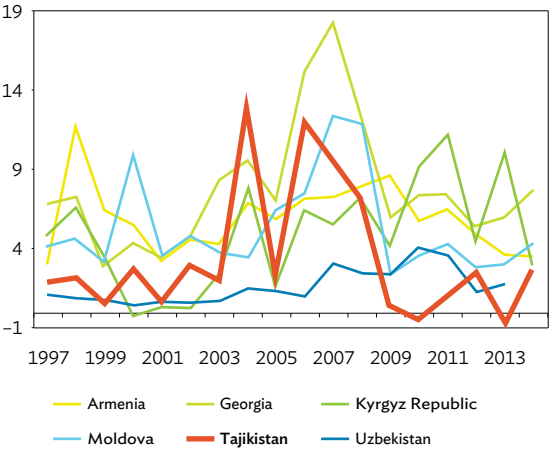


Source: United Nations Conference on Trade and Development. UNCTAD Statistics. http://unctadstat.unctad.org/wds/TableViewer/tableView.aspx (accessed February 2016).

Foreign investment has remained low but private non-guaranteed debt has increased.

For Tajikistan, foreign direct investment (FDI) has been an insignificant source of external finance in recent years. Even when global capital flows were buoyant and exploring new areas, Tajikistan failed to attract as much FDI as the other Central Asian countries did. It had the lowest FDI stock in 2014 (Figure 2.8) and of FDI inflows in terms of a percentage of GDP (Figure 2.9), a reflection of a poor investment climate. Among the reasons for the reluctance of investors to do business in Tajikistan is the perception of corruption and such concerns as uncertainty over the enforcement of contracts and the protection of investor rights. High transaction costs and unreliable logistics are also strong deterrent factors. Moreover, Tajikistan's ranking on the strength of legal rights placed it at the bottom among comparator countries. Its score on the legal rights index is 1, whereas most comparator countries—with the exception of Uzbekistan—scored in the 5–9 range.[14]

Figure 2.9: Net Foreign Direct Investment Inflows, 1997–2014 (% of GDP)

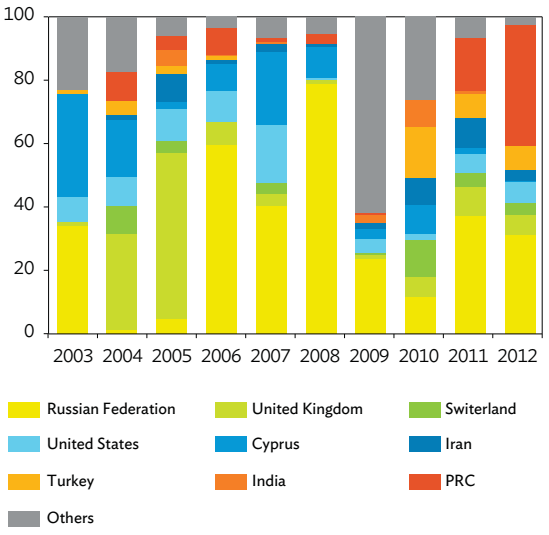


GDP = gross domestic product.
Source: World Bank. World Development Indicators. http://data.worldbank.org/data-catalog/world-development-indicators (accessed August 2015).

[14] The strength of legal right index ranges from 0 to 12, where 0 indicates weak and 12 indicates strong legal rights.

Until the 2008 financial crisis, the Tajikistan construction and energy sectors were receiving relatively large FDIs, mostly from the Russian Federation. A large part of the existing FDI stock was accumulated during 2006–2008. These flows have subsided significantly with the downturn in the Russian Federation. The ratio of FDI to GDP declined to 1.1% during 2010–2014 from 9.6% in 2006–2008. In the post-crisis years, FDI has been limited to transport and communications, mobile telephone services, and financial intermediation. From 2009 to 2012, only 1% of FDI was meant for manufacturing. The Russian Federation has consistently been the top investor, except in 2004 and 2005 when it was overtaken by the United Kingdom; the latter's investments, mostly in the mining industry, accounted for 30% and 52% of total FDI in those 2 years. In 2012, the People's Republic of China (PRC) and the Russian Federation together contributed 70% of FDI to Tajikistan (Figure 2.10).

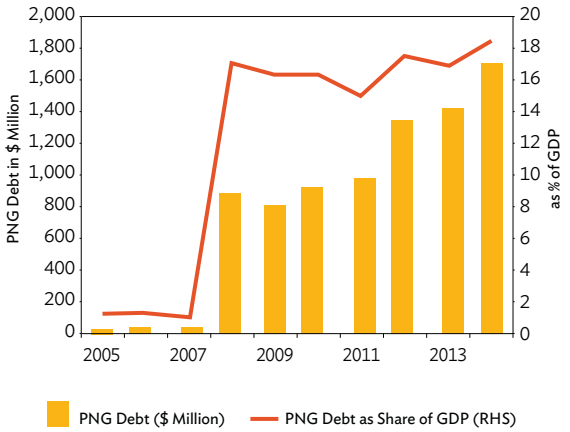
Figure 2.10: Foreign Direct Investment Inflows to Tajikistan by Source Countries
(% in FDI)



PRC = People's Republic of China, FDI = foreign direct investment.
Source: CEIC. https://www.ceicdata.com/en (accessed September 2015).

Whereas domestic savings and FDI remained low, private non-guaranteed debt, on the other hand, increased from $24.2 million in 2005 to $1.7 billion by 2014 (Figure 2.11).

Figure 2.11: Private Non-Guaranteed Debt, 2005–2014



Note: GDP = gross domestic product, PNG = private non-guaranteed, RHS = right-hand side.
Source: World Bank. World Development Indicators. http://data.worldbank.org/data-catalog/world-development-indicators (accessed February 2016).

A sector breakdown shows that by the end of 2014, about 27% of debt was held by the financial sector, 18% by transport and communications, 22% by mining, 16% by the construction sector, and only 11% by manufacturing (National Bank of Tajikistan 2015). Although private non-guaranteed debt stabilized at around 16.8% of GDP from 2008–2014, the government needs to monitor it carefully. Considering the weakness of Tajikistan's banking and financial system, expansion of lending to new areas of business previously not covered might just increase nonperforming loans and create external debt problems.

Inefficient domestic financial intermediation has contributed to the high cost of borrowing.

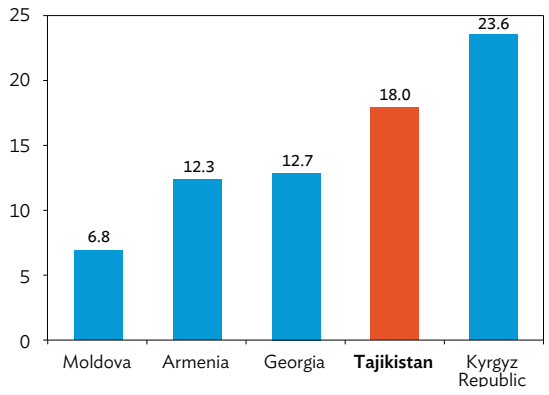
Despite its transition toward a market economy, Tajikistan has an underdeveloped formal credit market that has not been effectively functioning as an intermediary. The spread between deposit and lending rates is a common indicator of banking efficiency; that is, wider spreads point to inefficiencies. Poor financial intermediation and lack of competition among banks would manifest itself in higher lending rates and in wider interest-rate spreads. During 1997–2014, average spreads for Tajikistan were 18.0%, far higher than those in comparator countries, with the exception of the Kyrgyz Republic (Figure 2.12).

Continued high-lending rates and stagnant deposit rates suggest that the high cost of finance is due mainly to weak and inefficient financial intermediation, not to low domestic savings. If low domestic savings were responsible, deposit rates would rise to attract savers and increase the stock of loanable funds. In the case of Tajikistan, however, deposit rates have declined from 9.5% in 2002 to 5.5% by 2014 (World Bank, World Development Indicators).

Poor and inefficient financial intermediation is a reflection of such market frictions as higher transaction costs, risk profiles, lack of competition among banks, and asymmetric information. Most commercial banks in Tajikistan have a reputation for poor services, resulting in long waiting times and even the withdrawal of deposits by disgruntled customers. Also, poor information on borrowers makes evaluation of creditworthiness difficult, often adding to lending risks. The lack of competition among banks in Tajikistan stems from a high degree of concentration of ownership, which leaves scope for oligopolistic behavior. The four biggest banks account for three-quarters of banking assets and over four-fifths of deposits (Figure 2.13).

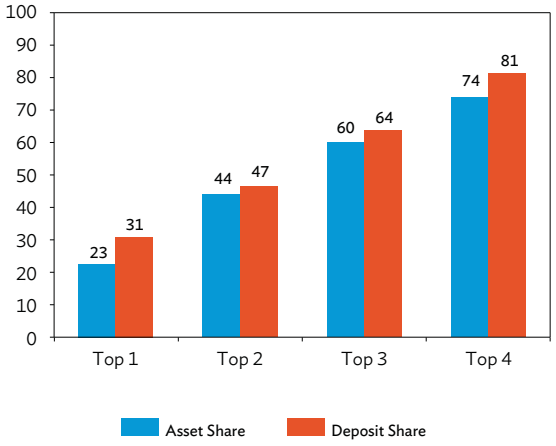
One reason financial services are little used in Tajikistan is the limited range of products made available by banks, resulting in a rigid capital structure and high risk premiums.[15] Government interference

Figure 2.12: Average Interest Rate Spreads, 1997–2014 (%)



Source: World Bank. World Development Indicators. http://data.worldbank.org/data-catalog/world-development-indicators (accessed February 2016).

Figure 2.13: Market Share of Top Banks (%)

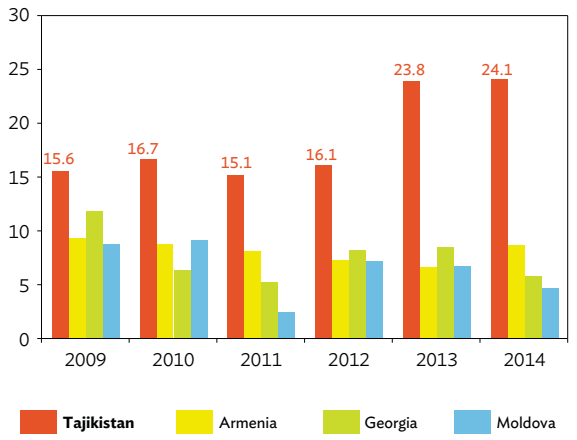


Source: Aisen, A. 2013. Overview of Tajikistan's Financial Sector. A presentation at the roundtable organized by the National Bank of Tajikistan and IMF Representative Office. Dushanbe. 14 February.

[15] Risk premium on lending is the interest rate banks charge on loans to private sector customers minus the "risk free" interest rate at which short-term government securities are issued or traded.

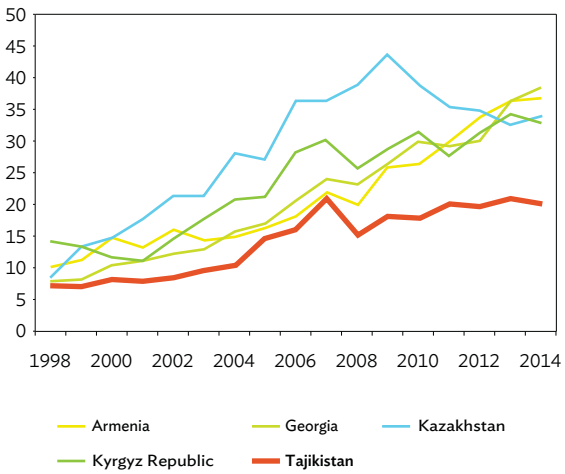
in the form of directed lending to preferential sectors also puts pressure on the proper functioning of the financial markets and restrains commercial lending. Due to high uncertainty associated with risky assets, the risk premium is relatively high and has increased, thus fueling borrowing costs (Figure 2.14).

Figure 2.14: Risk Premium on Lending (%)



Source World Bank. World Development Indicators. http://data.worldbank.org/data-catalog/world-development-indicators (accessed February 2016).

Figure 2.15: Tajikistan Financial Deepening, %
(M2/GDP ratio)



GDP = gross domestic product.
Source: World Bank. World Development Indicators. http://data.worldbank.org/data-catalog/world-development-indicators (accessed April 2016).

The financial sector remains weak and shallow.

Tajikistan's financial sector has grown substantially since 2000, but it remains one of the shallowest in the world for use of domestic currency. While the ratio between broad money (M2)[16] and GDP increased from 8.4% during 1998–2004 to 18.4% in 2005–2014, it is still low compared with those of comparator economies, making the financial sector unable to serve the needs of Tajikistan's economy (Figure 2.15).

Weak governance and poor customer services make most people reluctant to deposit their money in local banks. This has further weakened financial intermediation, which is already inefficient by international standards. The M0/M2 ratio, which is the ratio between narrow money (M0)[17] and broad money, is a measure of liquidity preference where a low or declining ratio reflects public willingness to put more funds into the banking system. This ratio has increased for Tajikistan, averaging around 72.2% during 2009–2014.This average was remarkably higher than the 6% for member countries of the Organisation for Economic Co-operation and Development (OECD) as well as the 22% average for countries borrowing from the World Bank. Such a high rate of liquidity preference is a reflection of the public's lack of confidence in the banking system. Low confidence in the formal banking system means most market transactions are cash-based and a significant portion of deposits and loans are denominated in foreign currencies.

Tajikistan's financial sector comprised 17 banks with 344 branches, 1 nonbank credit organization, 42 microcredit deposit organizations, and 36 microcredit funds as of December 2014. Banks dominate the sector, with banking assets accounting for 83% of the total assets of credit institutions and with the top four banks laying claim to about 84% of total deposits (Aisen 2013). Other financial instruments or markets, such as insurance, pension funds, investment banks, securities, and stock exchanges, are either small or do not exist.

[16] Broad money, M2, is the sum of currency outside banks; demand deposits other than those of the central government; the time, savings, and foreign currency deposits of resident sectors other than the central government; bank and traveler's checks; and other securities such as certificates of deposit and commercial paper.
[17] M0, also called narrow money, includes coins and notes in circulation and other money equivalents that are easily convertible into cash.

Tajikistan's financial system has not been able to meet the increasing demand for financial intermediation and services. Both intermediation costs and lending rates are kept high by inefficiencies among banks and most microfinance institutions, by deteriorating balance sheets, and by poor returns in the banking system. The banks, faced with the combined effects of the 2009 financial crisis and the effect of the cotton debt in the past 5 years, have experienced increases in their nonperforming loans and declines in their returns on assets and equity. This increasing stress on the banking system has translated into high lending rates.

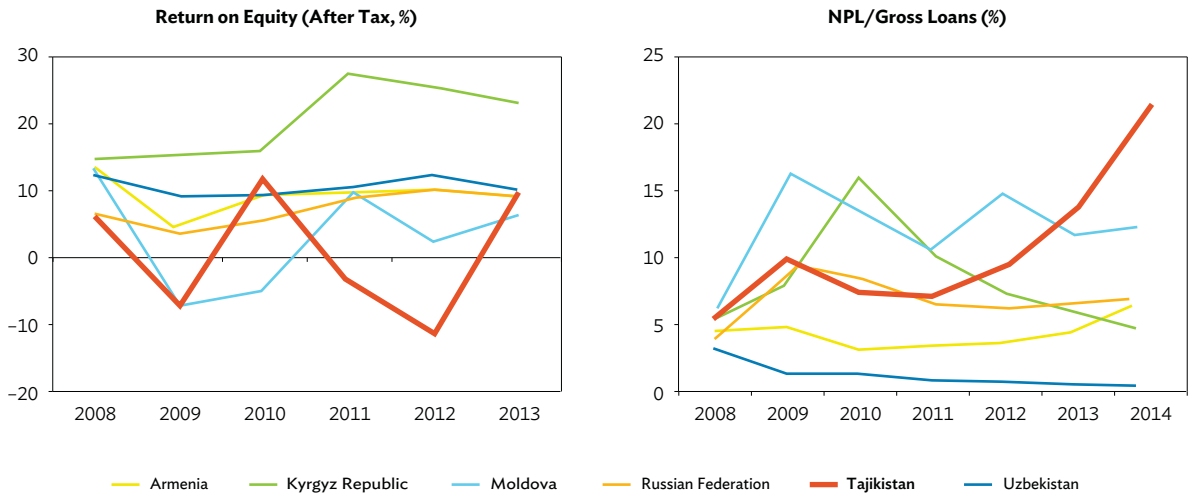
Tajikistan's banking system indicators point to a continuing deterioration in the quality of its assets, with the reported level of nonperforming loans rising from 5.4% in 2008 to 21.2% in 2014. These high rates of nonperforming loans indicate the inability of the banks to price and manage risks adequately, a situation further compounded by the slow improvement in their intermediation capabilities. This has hurt the overall income and profitability of banks as measured by their return to equity, which in itself is quite low relative to those in comparator countries (Figure 2.16).

Besides limited access to formal financial institutions, the economy and banking system have been increasingly dollarized since 2009 (Figure 2.17).

In 2014, about 72% of bank deposits and 60% of loans were in foreign currencies. Unhedged borrowers of foreign currencies who generated somoni incomes—mostly in non-tradable sectors—were exposed to exchange rate risk, significantly so when the somoni depreciated in 2009.[18] Since most deposits are in foreign currency, credit growth has also skewed toward the United States dollar.

Despite improvements in the regulatory framework and supervision, Tajikistan's banking system remains fragile and unable to contribute to the financial deepening of the economy. In 2010, a new "Law on Credit Histories" improved access of banks to credit information by allowing the establishment of a private credit bureau, the Credit Information Bureau of Tajikistan. Set up by several banks and the Association of Microfinance Institutions, the bureau received an operating license from the National Bank of Tajikistan in December 2012 and started operations in June 2013. However,

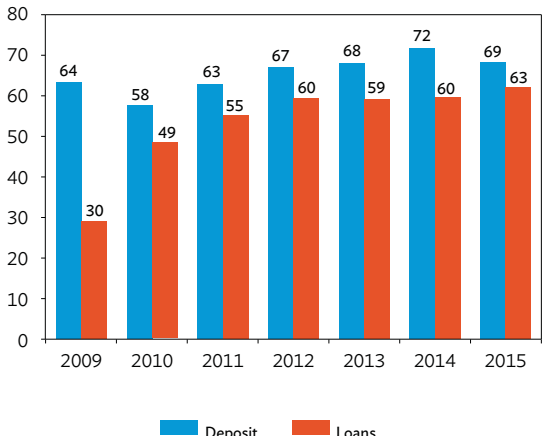
Figure 2.16: Banking Performance Indicators



Note: NPL = nonperforming loan.
Source: World Bank. World Development Indicators. http://data.worldbank.org/data-catalog/world-development-indicators (accessed March 2016).

[19] During the financial crisis of 2009, the somoni depreciated by 17.2% against the US dollar.

Figure 2.17: Deposits and Loans in Foreign Currency (% of total)



Note: For 2015, value is for August.
Source: Computations based on data from the National Bank of Tajikistan. Statistical Bulletin 8 (241). http://nbt.tj/upload/iblock/81a/Bulletin_241.pdf

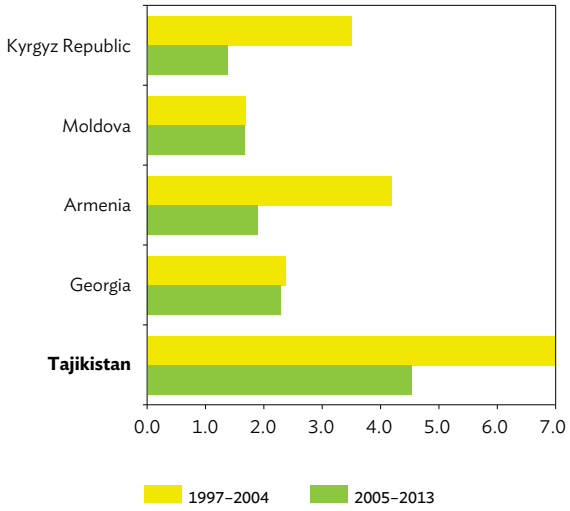
because the previous registry of movable collateral stopped operating in January 2011, use of movable property as collateral became more difficult.

The analysis in this section shows that despite recent progress, Tajikistan's financial sector is plagued with weak governance and that compared with those of other transition economies in the region, it remains inefficient and unable to tap external resources for productive investment. Although domestic savings are low, they are not the principal cause of high interest rates, and banks have more liquidity than counterparts in comparator countries. Thus, it is poor financial intermediation that can explain the high cost of borrowing and wider spreads on interest rates. In sum, lack of access to finance and the high cost of funds appear to be a critical constraint on Tajikistan's ability to expand private investment.

2.2 Social Returns to Investment

Low private investment can be attributed to the poor returns that arise from a lack of complementary factors or to inputs across the economy that an individual private investor cannot provide. Inadequate public goods, including human capital, infrastructure, and other services that complement private investment, can lead to low social returns by dampening productivity and increasing the cost of doing business. The social rate of return[19] on investment in Tajikistan declined from 7% in 1997–2004 to 4.5% in 2005–2013 (Figure 2.18).

Figure 2.18: Social Return to Investment (%)



Source: Estimates based on World Bank. World Development Indicators. http://data.worldbank.org/data-catalog/world-development-indicators (accessed April 2016).

Despite relatively higher social returns compared with comparator countries, Tajikistan has had lower private investment ratios than comparator countries in the past 10 years. To sustain future high growth rates, it will need higher and more of such productive investments.

2.2.1 Physical Infrastructure

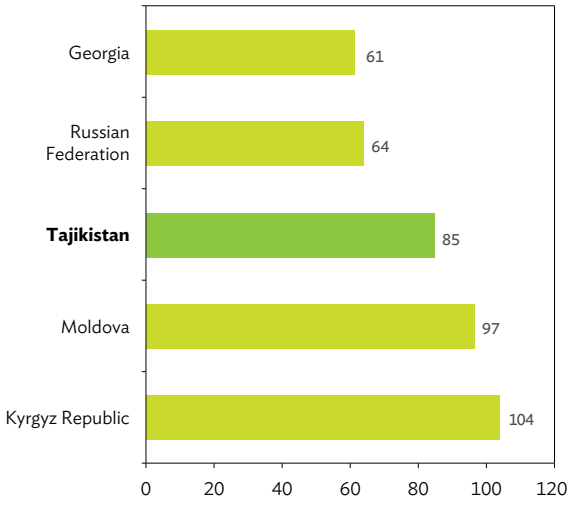
Tajikistan's infrastructure is inadequate to meet the country's development challenges.

Efficient and extensive infrastructure is critical for investment and growth, but with existing infrastructure facilities, the cost of doing business in Tajikistan is considerably higher than in comparator countries, thus eroding its competitiveness. The Global

[19] Social returns to investment have been estimated as the ratio of the real GDP growth rate to the investment rate.

Competitiveness Report ranks the country 85th out of 144 for quality of infrastructure (Figure 2.19). Current capacity is inadequate and will require extensive rehabilitation and continued maintenance to meet development challenges.

Figure 2.19: Quality of Overall Infrastructure (ranking among 140 countries)



Source: World Economic Forum. 2015. The Global Competitiveness Report 2015–2016. Geneva.

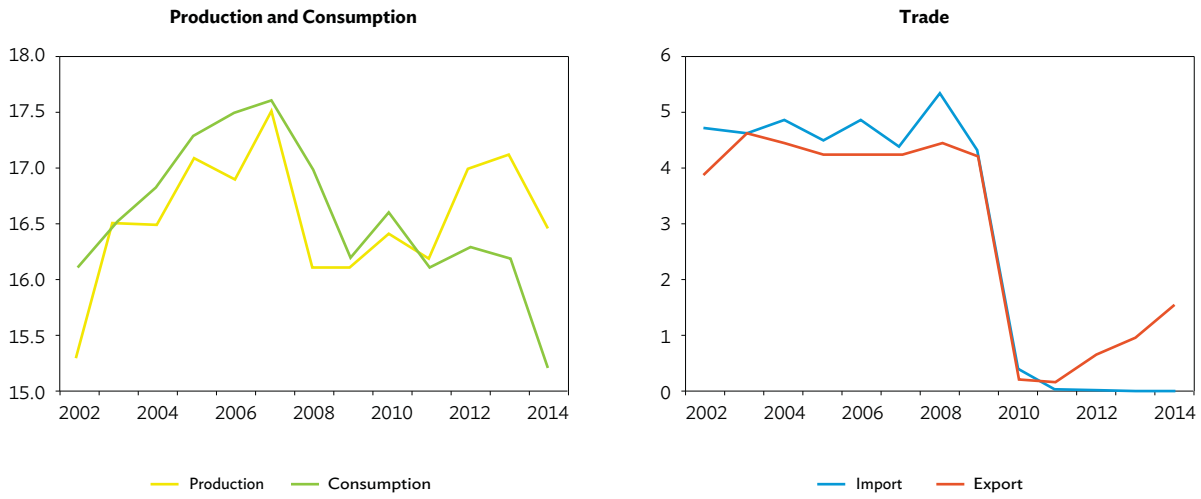
Electricity

Inadequate and unreliable supply of electricity is a critical constraint to private investment.

Tajikistan has a vast supply of water resources, and its electricity system has an installed capacity of 5,055 megawatts (MW). In 2012, the system consisted of eight large hydropower plants and a few small ones with a combined capacity 4,737 MW, and two fossil-fuel–fired combined heat and power plants with a combined capacity of 318 MW (ADB 2012). During 2012-2014, as can be seen in Figure 2.20 (left panel), annual electricity demand has ranged from 16.5 terawatt-hours (TWh) to 17.6 TWh, reaching its maximum in 2007 (World Bank 2012).

Average annual exports during 2002–2009 amounted to 4.25 TWh, but this dropped to 0.49 TWh from 2010 to 2013. To meet the energy deficits, particularly during winter, Tajikistan imported 4.64 TWh of electricity in 2002–2009 and 0.10 TWh in 2010–2014 (Figure 2.20, right panel). However, this met only a small fraction of the winter deficit. Since 2009, trade in electricity has been severely limited by the national grid's isolation from the regional Central Asia Power System. While

Figure 2.20: Electricity Indicators (terawatt-hour)

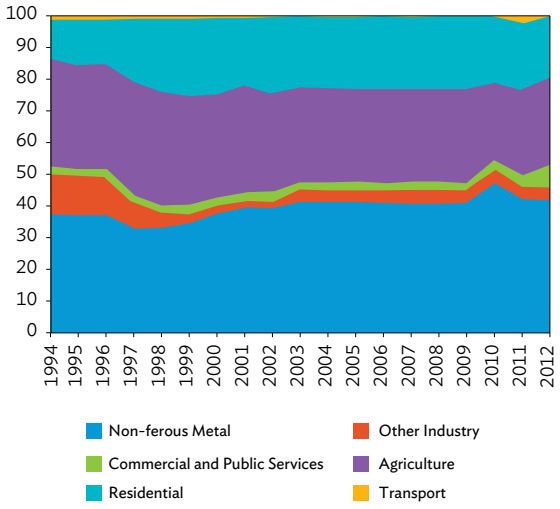


Sources: Agency on Statistics under the President of Tajikistan. TajStat. http://www.stat.tj/en/ (accessed September 2015); Real Sector. http://www.stat.tj/en/analytical-tables/real-sector/; and External Sector. http://www.stat.tj/en/analytical-tables/external-sector/

more than 96% of households are connected to the electricity grid, about 70% of the population suffers winter blackouts.

By economic activity, industry accounted for about 40% of the electricity consumed during 1994–2012, followed by the agriculture sector at 28%, and by households at 19% (Figure 2.21). A complicating factor for the provisioning of electricity is the priority given to the production plant of the Tajik Aluminum Company (TALCO), which at subsidized rates draws about 35%–40% of the electricity generated in the country; the plant is kept supplied with power during shortages while the supply to other consumers are rationed. Agriculture uses electricity for irrigation of cotton but only during the summer season, so during peak winter demand, it neither competes with households nor with TALCO.

Figure 2.21: Share of Electricity Consumption by Sector (%)

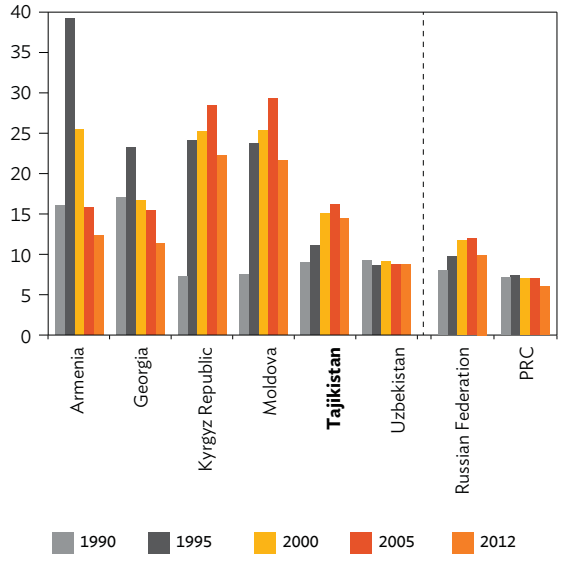


Note: Electricity consumption by nonferrous metal subsector is largely for the production of aluminum.
Source: International Energy Agency. Statistics. http://www.iea.org/statistics/ (accessed 2016).

In 2012, relatively high transmission and distribution losses of 14.4% posed a serious problem, given that the electricity supply already could not meet the demand. As seen in Figure 2.22, 11% was attributable to technical losses related to obsolete infrastructure (ADB 2012).

Also among the factors that resulted in increased network losses were low-quality maintenance and inadequate management.

Figure 2.22: Electricity Network Losses
(% of total supply)



PRC = People's Republic of China.
Source: World Bank. World Development Indicators. http://data.worldbank.org/data-catalog/world-development-indicators (accessed February 2016).

Tajikistan's electricity system is strained financially by low tariffs, poor collection, and large receivables from major consumers, including TALCO. Tajikistan's electricity prices were kept very low until 2007, and while they have gradually increased since then, the prices are still below the cost of supply and remain among the lowest in the world. At $0.023 per kilowatt-hour, the current residential tariff is half that of Uzbekistan's and 20% of Moldova's. Although the Asian Development Bank (ADB) provided significant financial and technical assistance, the needed major rehabilitation of the dilapidated power system and adding of new capacity would require higher tariffs to cover the full cost of expansion.

Electricity is subsidized to the extent that during 2007–2010, it took up 68% of state budget allocations to utility assistance programs (Table 2.3).

Table 2.3: State Budget Allocations to Utility Assistance Program (TJS million)

Year	State Budget Allocation	Allocation to Electricity	Share of Electricity Subsidies in Program
2007	25	17	68.0%
2008	28	19	67.9%
2009	36	25	69.4%
2010	36	25	69.4%

Source: ADB. 2009. *Tajikistan: Trade Facilitation and Logistics Development Strategy Report*. Manila.

These highly subsidized and below cost-recovery tariffs, combined with winter shortages, result in huge economic losses of around $200 million a year or 3% of GDP (World Bank 2012). Shortages have been aggravated by a political rift with Uzbekistan, which has effectively stopped its energy trade with Tajikistan since 2009.

Existing installed generation capacity is insufficient to meet the peak winter demand. Because the Central Asia Power System[20] and irrigation systems were designed for and optimized during the Soviet era, former Soviet countries found themselves with generation units intended to supply power to areas across their borders. Similarly, the upstream countries that had a higher power demand for heating in the winter could not meet peak demand because they had to store water[21] in the winter and release it in the summer for irrigation in downstream riparian countries. In exchange, the downstream countries provided upstream countries with coal and natural gas to meet their energy demands for heating.

While this delicate balance worked under the former Soviet Union, it has led to disagreements with independent states that want to establish energy independence. As a result, adding significant generation capacity has become difficult to achieve without improving relations with downstream riparian states and agreeing on water-sharing arrangements on a more rational footing. The experience of Georgia, for example, could provide valuable insights for Tajikistan's power sector development (Box 2.2).

Through the years, Tajikistan's lack of reliable electricity supply has harmed the business environment. Tajikistan ranked 106th among 140 countries in the 2015–2016 Global Competitiveness Index for the quality of electricity, a measure that captures and takes into account interruptions and fluctuations in power supply. Similarly, in the World Bank's Doing Business Survey 2016, Tajikistan ranked 177th among 189 countries in terms of "ease of getting electricity" (Figure 2.23).

Improvement in the electricity supply is very important for the overall health of the economy and specifically for

Box 2.2: Power Sector Reforms in Georgia

Georgia gained its independence when the Soviet Union broke up in 1991, but it then went into deep recession. The well-developed power system inherited by the new state buckled under economic crisis, political unrest, internal conflict, and corruption. Sakenergo, the state-owned electricity monopoly, encountered serious financial problems due to widespread theft of power, poor collection ra tes, and the discontinuation of Soviet-era subsidies for fuel and power. Its gas imports were cut off by exporting countries for lack of payment, thus shutting down its thermal plants. Countrywide blackouts followed. By 1994, there were 150 disconnections in the transmission system and electricity became available for only 2 to 3 hours a day.

continued on next page

[20] Tajikistan no longer participates in the network after the commissioning of its North–South transmission line that connects the South and North grids.
[21] The Nurek reservoir holds 10.5 km^3 and Kayrakum reservoir holds 4.3 cubic meters of water.

Box 2.2 continued

The political and economic situation began to stabilize in 1995 after Georgia's presidential and parliamentary elections, adoption of its first constitution, and international recognition as an independent state. The new government introduced tax regimes that targeted improvements in administration and reduction of evasion and corruption in taxation services, created the Civil Code, and legalized commercial companies and corporations. It then instituted major reforms in its power sector that were anchored on four principles: (i) unbundling, (ii) establishment of an independent regulatory regime, (iii) commercialization, and (iv) privatization.

The reforms proceeded in two phases. The first phase (1995–2004) saw the issuance in 1997 of presidential decrees[a] and the adoption of the Law on Electricity, which provided the legal basis for a more competitive, market-driven power sector. These initiatives led to these reform milestones: (i) the creation of the Georgian National Electricity Regulatory Commission, (ii) the unbundling of Sakenergo, (iii) the privatization of distribution companies, and (iv) the restructuring of tariffs.

Sakenergo was unbundled in 1996 into three separate and financially independent entities—Sakenergo Generatsia, a joint stock company, for managing power generation; Sakenergo, for power transmission; and 66 assigned municipal companies, for dispatch and distribution. The privatization of distribution and generation companies that followed introduced modern management skills, set up modern systems for metering, billing, and collection, and protected the power sector from undue political influence. In 1998, the Georgian Wholesale Electricity Market was created as a clearinghouse. Still, the benefits from these reforms were confined largely to the capital city of Tbilisi, with most regional power distribution units remaining with the government and continuing to experience financial shortfalls. To improve their commercial viability, these regional distribution units were later merged into a single entity—the United Electricity Distribution Company.

The second phase of reforms (2004 up to the present) followed after Georgia's Parliamentary elections in 2004. The following year, the government made major power sector investments to rehabilitate state-owned generation, distribution, and transmission assets. This resulted in improved reliability of the transmission network, a reduction in technical losses, and a significant decrease in blackouts. In 2006, the single-buyer model of the Georgian Wholesale Electricity Market was replaced by the Electricity System Commercial Operator, which bought and sold balancing power and reserve capacity; this became possible because generators, distribution companies, direct customers, and exporters were now allowed to enter into direct contracts. In April 2008, the operator was given the additional function of negotiating power purchase agreements with new hydropower plants in conjunction with the government.

Clearly, Georgia's general policy of opening up its economy to foreign investments made possible the transformation of its power sector into a largely privatized enterprise. It also enabled the country to build new hydropower plants, greatly reducing its dependence on power imports. Indeed, for 5 years during 2007–2011, Georgia even became a net electricity exporter.

continued on next page

Box 2.2 continued

On 30 July 2014, a new electricity tariff calculation methodology was instituted to make tariff-setting transparent and objective. Despite Georgia's efforts at privatizing its power sector, however, the government still directly or indirectly retains an important financial interest. Moreover, certain anticompetitive structural features remain in the power sector, particularly the banding together of power generation owners, supply and distribution entities, transmission producers, and major consumers to form part of the same vertically integrated company. As to supply reliability, the sector remains vulnerable in two respects. The power system heavily relies on one generating technology, hydropower, which is cyclical and vulnerable to drought. This makes the system dependent on (i) fuel imports to balance out the hydro fluctuations, (ii) electricity imports to balance seasonal fluctuations in hydropower generation, and (iii) gas imports for the thermal generation needed to supplement hydropower.

Despite institutional and structural shortcomings, the reforms have brought remarkable improvement to the power system's efficiency. From 2004 to 2011, rehabilitation combined with improved maintenance of the generation, transmission, and distribution network notably increased the operational capacity of plants and significantly decreased transmission and distribution losses and power blackouts. In 2012, transmission losses fell to 2% from a high of 16% in 1995. In 2013, the distribution companies JSC Telasi and JSC Energo-Pro reported distribution losses of only 7% and 8%, a huge improvement from losses of more than 25% reported for 2007. Even more gratifying, reforms and investments to improve the system have restored 24-hour service to most of the country. In 2013, there were only three partial blackouts and no total blackouts.

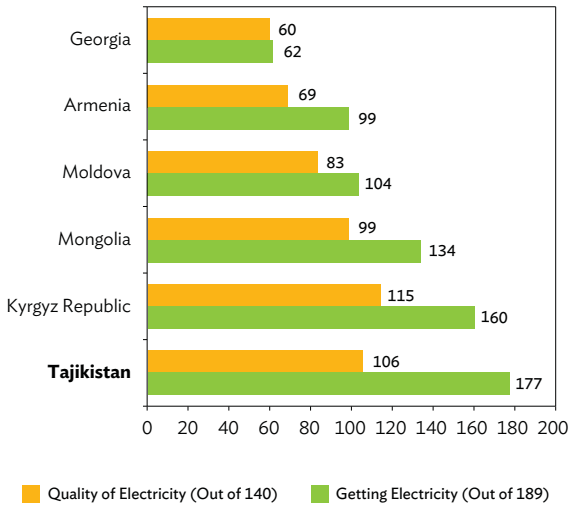
Tariffs have been increased to bring them to cost recovery. Except for a spate of drastic hikes between 1998 and 2006, tariffs remained stable from 2006 to 2012. And despite these rises, the affordability of electricity—spending on electricity relative to income—has improved since 2006, averaging at about 3% in 2013. From the environmental standpoint, Georgia's dependence on hydropower has kept carbon dioxide emissions relatively low.

Although still a work in progress, Georgia's power sector reform experience has already yielded three invaluable lessons for other countries. First, that it is important for a power sector reform program to be an integral part of general economic reform. Second, that creating conditions for competition by unbundling monopolies and allowing private investors to enter are instrumental to improving system efficiency and service quality. And third, that market transparency and fairness in regulations are crucial to creating a competitive power sector.

[a] Among these Presidential Decrees are: Decree No. 437 (4 July 1996) on the Creation of a Power Regulatory Commission; Decree No. 828 (9 December 1996) on privatization, which increased competition and enhanced investments; and Decree No. 829 (19 December 1996) on the normalization of the tariff system.
Source: ADB. 2015. *Assessment of Power Sector Reforms in Georgia: Country Report*. Manila.

private sector growth. To reduce the winter shortages, the government needs to take measures to improve energy efficiency on the demand side in addition to supply expansion. On the demand side, energy prices need to reflect the full cost of supply, which would then encourage electricity consumers to use it more efficiently. Measures should also be taken to avoid losses and minimize excessive usage. Governance at TALCO needs to be improved with the end in view of using electricity more efficiently. Likewise, efficiency improvements on the supply side could include controlling corruption and mismanagement and increasing generation capacity at power plants. Along this line, the government should also take

Figure 2.23: Rankings in Quality of Electricity and Ease of Getting Electricity



Sources: World Economic Forum. 2015. *The Global Competitiveness Report 2015–2016*; and World Bank. 2016. *Doing Business 2016: Measuring Regulatory Quality and Efficiency*. Washington, DC.

steps to minimize the quasi-fiscal deficits of state-run generator Barki Tojik by addressing weakness in its billing and collection mechanisms. During 2008, the quasi-fiscal deficit of Barki Tojik was as high as 7.8% of GDP (World Bank 2012).

According to the 2013 World Bank Enterprise Survey results, 27% of all enterprises that participated in the survey cited electricity supply as a major constraint. The losses due to electrical outages have been assessed at 4.4% of annual sales, the highest among the comparator countries (Table 2.4).

In the long run, Tajikistan needs to generate more electricity through hydropower to improve the overall business environment and thereby address the problem of low private investment. However, this will require substantial investment as well as reliable markets for summer exports—a challenge that would require careful planning and coordination of the country's legal, institutional, and fiscal infrastructure. This is because the capital investment required for constructing and upgrading Tajikistan's hydropower plants is far higher than the government's capacity to borrow, and this will be complicated further by the fact that the revenues to be generated by the energy utilities will come from tariffs lower than the cost of production.

The lack of provisioning for uninterrupted and sufficient power supply is a critical constraint for growth in Tajikistan. The government therefore needs

Table 2.4: Electricity Supply Indicators

Country	Tajikistan (2013)	Armenia (2013)	Georgia (2013)	Kyrgyz Republic (2013)	Moldova (2013)	Uzbekistan (2013)	Russian Federation (2012)
Number of electrical outages in a typical month	6.1	0.3	1.0	0.9	0.3	5.7	0.3
Duration of a typical electric outage (hours)	3.9	0.3	0.7	2.1	1.3	1.8	0.9
If there were outages, average duration of a typical electrical outages (hours)	6.9	2.7	3.3	3.7	8.6	4.8	5.6
Losses due to electrical outages (% of annual sales)	4.4	0.1	0.5	2.3	0.2	2.2	0.2
If there were outages, average losses due to electrical outages (% of annual sales)	9.2	0.2	2.2	4.0	0.7	6.6	2.0
Percent of firms owning or sharing a generator	33.3	9.7	28.6	39.1	7.5	5.1	8.9
Proportion of electricity from a generator (%)	4.8	0.5	0.5	3.0	0.1	1.1	0.7
If a generator is used, average proportion of electricity from a generator (%)	4.8	0.5	0.5	3.0	0.1	1.1	0.7
Days to obtain an electrical connection (Upon application)	19.2	4.8	8.7	54.6	10.5	6.2	120.4
Percent of firms identifying electricity as a major constraint	26.8	7.9	31.1	34.9	19.7	11.8	23.1

Source: World Bank Group. Enterprise Surveys. http://www.enterprisesurveys.org/ (accessed February 2016).

to focus on maximizing efficiencies at its existing hydropower plants and minimizing transmission losses. On top of this, it needs to rationalize electricity tariffs and subsidies so it can provide electricity to as many productive stakeholders as possible rather than skewing the supply to a few preferred heavy power users.

Transport and Connectivity

Poor transport infrastructure hampers Tajikistan's domestic and international connectivity.

After the breakup of the Soviet Union and the civil war in Tajikistan, the country lost a substantial part of its transport infrastructure, and whatever remained has been poorly maintained due to underinvestment. As the government struggled with a chronic shortage of public funds for investment and maintenance, it had to heavily depend on external aid to fund new development and continues to do so. Tajikistan has particularly not fared well in indicators for trade across borders, ranking 132nd among 189 countries in the World Bank's Doing Business report for 2016 (Table 2.5). Indeed, Tajikistan has the world's highest costs to export and almost twice the import costs of Uzbekistan, which has the next highest costs to import among the comparator countries.

Tajikistan's competitiveness in international trade is hampered by high transport costs and delays in the transport of goods. Of the average 71 days it takes to export from Tajikistan, 45 days are spent for inland transportation and handling, 20 days for document preparation, and 6 days for customs and technical inspections. There is clearly great room for further reductions in time and costs. Tajikistan is further disadvantaged by rugged and difficult terrain that divides the already small domestic market into even smaller markets, removing opportunities for economies of scale despite the natural protection its geography has granted local producers.[22] Good transport infrastructure can help reduce the impact of Tajikistan's geographic disadvantages in international trade and improve the competitiveness of its domestic production.

Like other low-income countries that emerged from the former Soviet Union, Tajikistan inherited infrastructure that it would not have been possible to come up with on its own. Indeed, they were built, operated, and maintained during the second half of the 1980s with transfers from the former Soviet Union, averaging 17% of net material product (the main Soviet growth indicator). The civil war in Tajikistan not only devastated much of that infrastructure but also stalled their maintenance and rehabilitation. However, two development initiatives supported by ADB under its Central Asia Regional Economic Cooperation (CAREC) Program have helped improve transit times and reduce transport costs in Tajikistan. The first program developed six CAREC transit corridors, four of which (2, 3b, 5, and 6c) run across Tajikistan

Table 2.5: Indicators for Trading Across Borders, 2014

Country	Rank in Trading across Borders	Documents to Export (number)	Time to Export (days)	Cost to Export ($ per container)	Documents to Import (number)	Time to Import (days)	Cost to Import ($ per container)
Uzbekistan	159	11	54	5,090	13	104	6,452
Tajikistan	132	11	71	9,050	12	70	10,650
Kyrgyz Republic	83	9	63	4,760	11	73	6,000
Moldova	33	9	23	1,510	11	27	1,870
Armenia	29	5	16	1,885	8	18	2,175
Georgia	78	4	9	1,355	4	10	1,595

Sources: World Bank. World Development Indicators. http://data.worldbank.org/data-catalog/world-development-indicators (accessed April 2016); and World Bank. Doing Business 2016

[22] A World Bank study concluded that Khatlon and Direct Republican Jurisdiction, both well connected to Dushanbe, have relatively diversified production bases, that Sughd is moderately diversified, and that the Gorno-Badakhshan Autonomous Region is extremely specialized (World Bank 2011b).

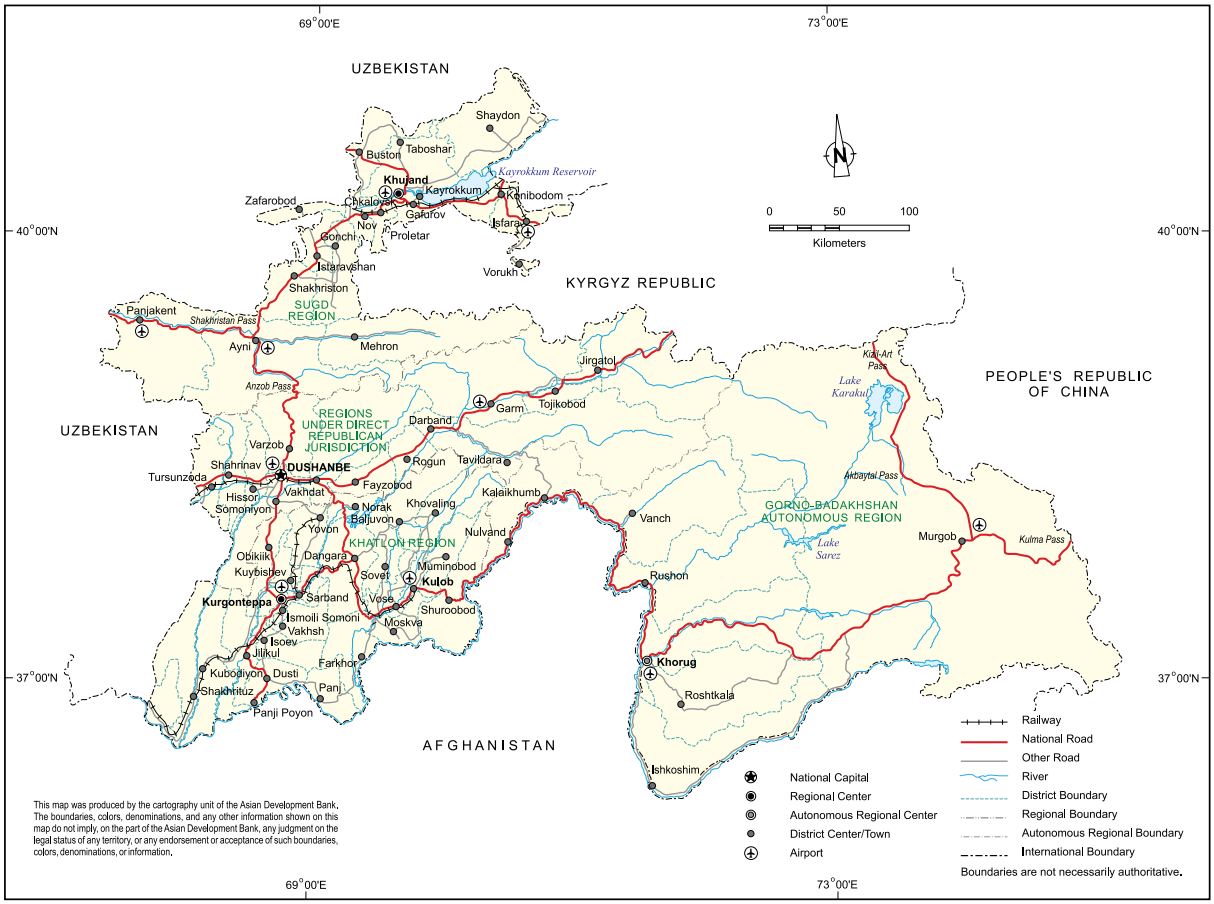
(Figure 2.24).[23] The second program put in place measures to overcome nonphysical barriers to cross-border movement of goods, vehicles, and people by (i) eliminating bottlenecks arising from outdated laws, regulations, and institutional mandates; and (ii) streamlining procedures.

Road Transport

Road transport carries the bulk of domestic freight and passenger traffic in Tajikistan. The country has a road network of 14,000 kilometers (km), of which 29% is paved in asphalt and managed by the Ministry of Transport, and another 18,000 km are local and rural roads managed by local authorities. About 80% of the former road network is beyond repair (ADB 2011a). With the bitumen surface gone on most roads, the average speed for about half of all roads in Tajikistan is no faster than 35 kilometers per hour (km/h), down from 50 km/h and much lower than the design speeds and standards (Egis International/Dornier Consulting 2013).

While Tajikistan lacks a good quality road network, other issues that make road transport even more complicated include excessive physical inspection, inadequate freight trafficking, and excessive requirements for documentation. These cause considerable delays in

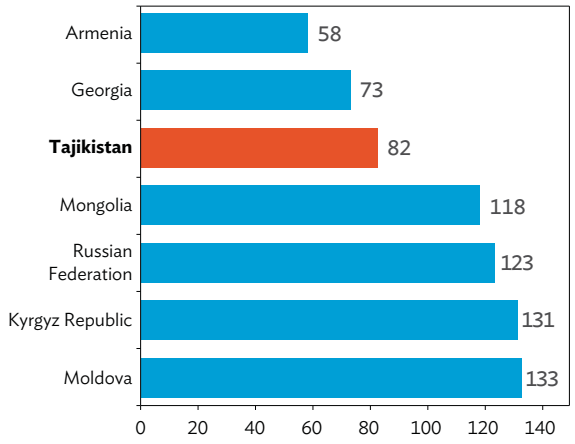
Figure 2.24: Transport Infrastructure of Tajikistan



Source: Asian Development Bank (2011a).

[23] As of September 2012, about 3,970 kilometers (km) of roads along the six CAREC corridors (51% of the regional road network) had been built, including 396 km of built or upgraded expressways or national highways and Tajikistan's Dushanbe–Kyrgyz Border Road Rehabilitation, Phase 2; 3,400 km (44%) were ongoing; and the rest (about 5%) were planned for 2013. ADB. 2012. *From Landlocked to Linked in: The Central Asia Regional Economic Cooperation Program.* Manila.

Figure 2.25: Quality of Road Infrastructure
(Rankings among 140 Countries)



Source: World Economic Forum. 2015. The Global Competitiveness Report 2015–2016. Geneva.

clearance and impaired services (Figure 2.25). Half the length of Tajikistan's international roads and 59% of its national roads are graded as category IV or V (cobble/gravel or unpaved).[24] About half the international road surfaces are graveled and bitumen-grouted, and around 30% are covered in asphalt (Table 2.6). The country lacks category I roads and 84% of local roads are unpaved. During 2008–2010, road transport accounted for about 75% of freight transportation in Tajikistan.

Table 2.6: Tajikistan Roads by Classification

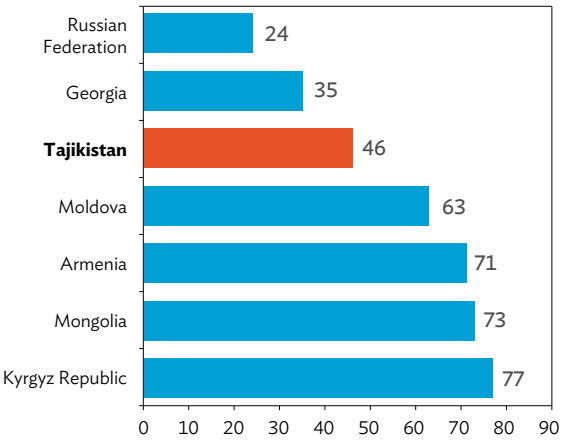
International Roads		National Roads		Local Roads	
Category	Length (km)	Category	Length (km)	Category	Length (km)
I	–	I	–	I	–
II	126	II	21	II	4
III	1,273	III	859	III	231
IV	1,588	IV	769	IV	1,144
V	160	V	495	V	7,305
Total	**3,147**	**Total**	**2,144**	**Total**	**8,684**

– = not applicable, km = kilometer.
Source: Asadov, S. 2012. Tajikistan's Transit Corridors and their Potential for Developing Regional Trade. *Institute of Public Policy and Administration Working Paper.* No. 6. Bishkek: University of Central Asia.

Railways

Tajikistan's railways carry about half of international freight along 960.6 km of track, of which 684.8 km are main lines. Three independent lines—Northern, Central, and Southern—interconnect in Uzbekistan.[25] The Northern line carries two-thirds of railway cargo volume. More than half of the rolling stock is in poor condition and needs to be replaced (Figure 2.26).

Figure 2.26: Quality of Railway Infrastructure
(ranking among 140 countries)



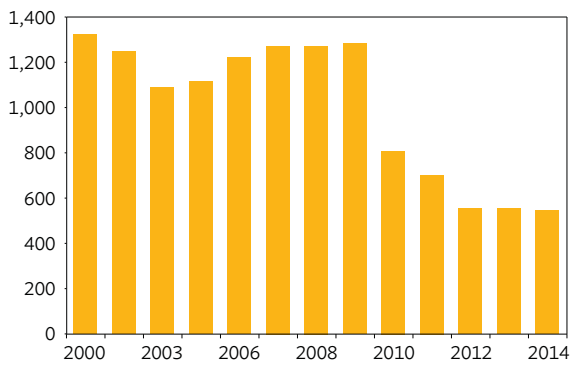
Source: World Economic Forum. 2015. The Global Competitiveness Report 2015–2016. Geneva.

Most bridges and many tracks require urgent rehabilitation. Since all rail cargo destined for Tajikistan transits through Uzbekistan, delays in transit and at border crossings as well as associated uncertainties that add to transport costs are the remit of Uzbekistan authorities. However, political and economic deadlock between Tajikistan and Uzbekistan has halted the transit of goods, and railway freight has been declining since 2010 (Figure 2.27).

[24] Based on Construction Norms and Regulations (SNIP -2.05.02 -85): Category I: Main long distance roads of international importance; Category II: Highways of national importance; Categories I and II are highways with multiple lanes (3.75-meter width); Category III: Roads of regional and local importance, designed for less intensive traffic, advanced lightweight surface (lane width under 3.5 meters); Category IV: Road of regional and local importance, paved (cobble, gravel) but not always improved (lane width under 3 meters); Category V: Local unpaved roads.

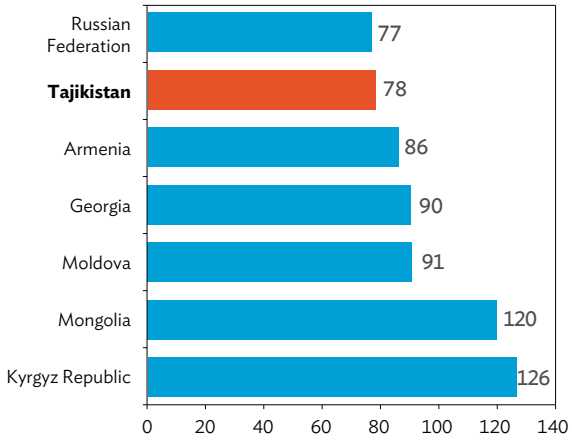
[25] The Southern and Central lines will be connected once the construction of the line linking Vahdat–Kurgan–Tube is completed, reducing the distance between Vahdat and Yovon significantly and avoiding the detour in Uzbekistan.

Figure 2.27: Railway Freight
(million tons-km)



Note: Data represent volume of goods transported, in metric tons times kilometers traveled.
Source: World Bank. World Development Indicators. accessed February 2016.

Figure 2.28: Quality of Air Transportation
(ranking among 140 countries)



Source: World Economic Forum. 2015. *The Global Competitiveness Report 2015–2016*. Geneva.

Civil Aviation

Civil aviation in Tajikistan suffered from serious financial, technical, and institutional problems and was held back by 2 decades because of the monopoly of Tajik Air on all infrastructure, services, and regulations until it was unbundled in 2009. A new private airline was started and traffic rights were awarded to more foreign airlines. Air transportation has played a negligible role in freight, mainly because Dushanbe and Khujand airports—the two largest international airports—have lacked capacity to handle air cargo. The number of flights and international passengers has risen in recent years, particularly because of the increase in migrant workers to the Russian Federation.

Tajikistan needs to improve the disorganized immigration and customs procedures at its international airports and to address their rudimentary baggage handling. A new airport building alone will not improve the unfavorable image of the airport in the region unless the approach and procedures that remain from the Soviet days are modernized. All of the region's countries have had difficulty in making adjustments to bring their airports and procedures to minimum international standards, and Tajikistan has yet to tackle this important aspect of its image (Figure 2.28).

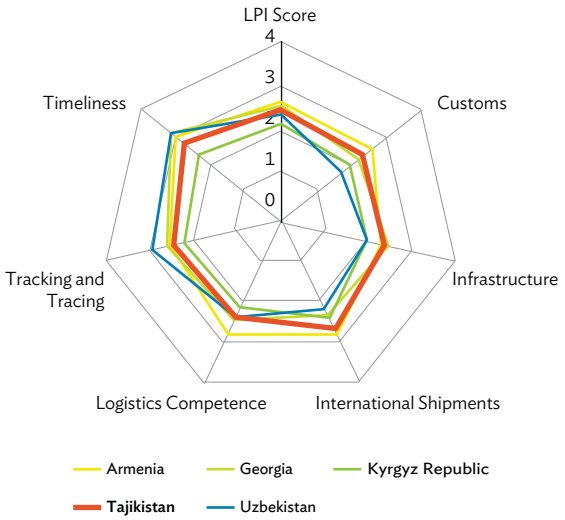
Limited and insufficient storage and logistics capacity have further constrained investment.

Storage capacity and logistics are two areas that Tajikistan needs to focus on to improve its competitiveness. The country lacks organized storage facilities and equipment for handling goods (Kie and Eshonov 2009), and the insufficient number of warehouses offering refrigeration and freezer services has been a serious impediment to expanding exports of fruits and vegetables. Tajikistan's logistics scorecard lags behind comparators except in the customs category (Figure 2.29).

The preceding discussion has highlighted that the quality of infrastructure in Tajikistan has deteriorated, and about 50%–70% of roads need reconstruction and maintenance. Estimates suggest Tajikistan lost about $1 billion in road assets from 1990 to 2010 (ADB 2011a). Existing roads, especially local roads, are generally in poor condition, thus adding to the cost of production and hurting the country's competitiveness. The limited domestic market and the large distances to major external markets make it even more important for Tajikistan to improve its infrastructure. It will require huge investment to modernize existing road and trade corridors.[26]

[27] Transportation costs for a landlocked country like Tajikistan are estimated to be about 50% higher than those for a median costal country, and improvement by one standard deviation has been found to reduce transport costs by an amount equivalent to a 1,000 km reduction in overland travel (Limao and Venables 1999).

Figure 2.29: Tajikistan Logistics Score Card, 2014 (scale 1–5)



LPI = logistics performance index.
Notes: The index ranges from 1 to 5, with a higher score representing better performance. The World Banks's Logistics Performance Index is used to assess the transport logistics performance and consists of six indicators: (i) the efficiency of customs clearance; (ii) infrastructure quality; (iii) international shipments; (iv) the quality of logistics services; (v) the ability to track and trace consignments; and (vi) timeliness, which covers the frequency with which shipments reach the consignee within the scheduled or expected time.
Source: World Bank. World Development Indicators. http://data.worldbank.org/data-catalog/world-development-indicators (accessed April 2016).

The poor quality of Tajikistan's infrastructure and its high transportation costs not only reduce its trade competitiveness but make its economy less attractive to foreign investors. They have been hampering the country's domestic and international connectivity and are a critical constraint to private sector development.

Telecommunications

Tajikistan has made progress in telecommunications but still lags behind in teledensity and broadband penetration.

Tajikistan has made major strides in upgrading its information and communication technology (ICT) infrastructure in the past 10 years. Tojiktelecom, the main fixed-line operator, has upgraded most of the backbone of its analog telephony infrastructure to fiber optics and converted more than 90% of the system to a digital service. Nine mobile telephony operators are providing services in CDMA or GSM and 3G or 3.5G standards. Tajikistan was the first country in Central Asia to introduce 3G services.

Despite recent progress, Tajikistan has lagged behind comparator countries in fixed lines and mobile phone subscriptions and in internet penetration (Figure 2.30). Tajikistan ranked 112th among 144 countries in the World Economic Forum's Networked Readiness Index 2013 (World Economic Forum 2013). Mobile phones and the internet were slow to take off, but growth accelerated as the number of migrant workers and demand for long-distance calls increased rapidly. Despite mobile subscriptions increasing from 70,000 in 2004 to more than 6 million by 2013, mobile teledensity is still below the averages of the Commonwealth of Independent States and the world.

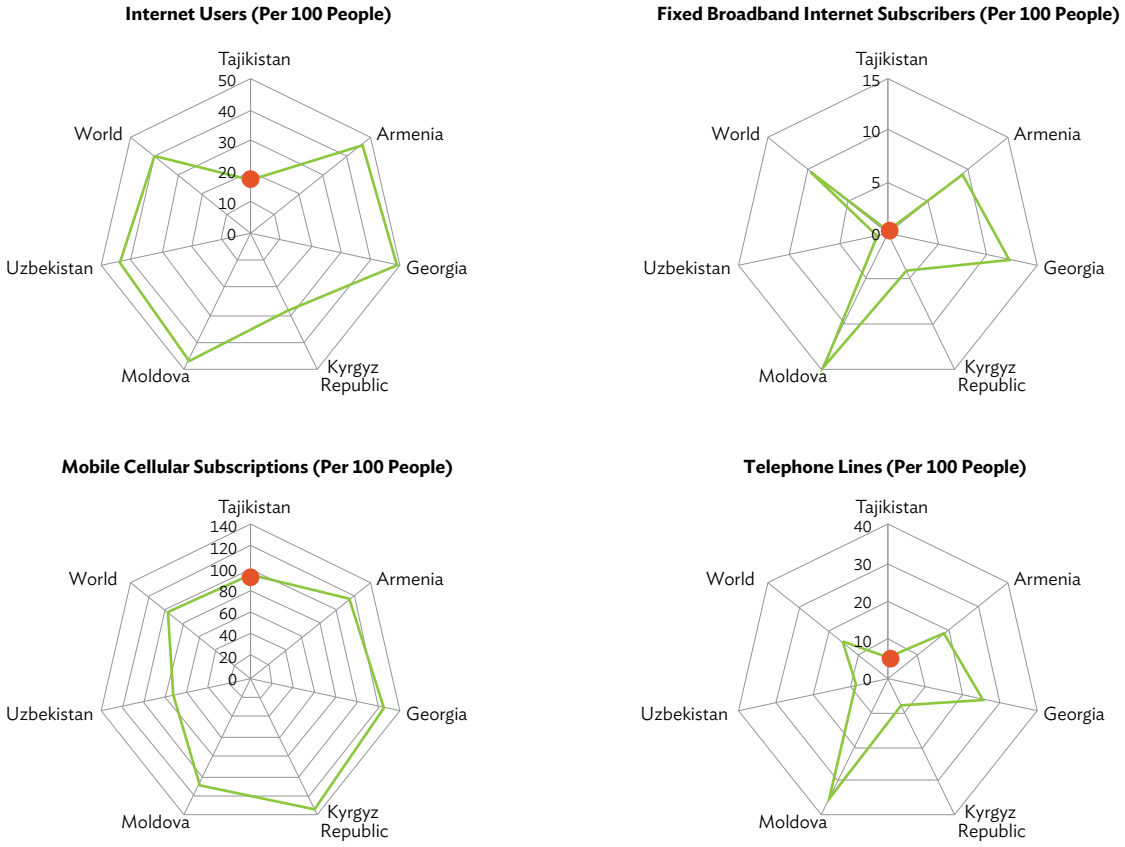
The high cost of mobile phones compared with average incomes is one of the main reasons why teledensity in Tajikistan is lower than in other countries. In 2013, monthly broadband price was $14.03 for a 500-MB handset-based data or a 1-GB computer-based data, quite above the regional average price of $9.3. The cost of a one-year broadband subscription is equivalent to 17% of gross national income per capita, the most restrictive compared with nearby countries like Armenia, Georgia, the Kyrgyz Republic, and Uzbekistan. Similarly, fixed (wired) broadband internet cost at more than $100 is prohibitively expensive for most people (Information Telecommunication Union, 2014). However, even with this relative expense, the current state of ICT is not a constraint to private investment.

2.2.2 Human Capital

The quality of the education system has deteriorated over time.

The social return to investment depends in part on the quantity and quality of human capital. Tajikistan's National Development Strategy 2005–2015 emphasizes the importance of access to good quality education, and the government has started allocating more resources to this. In 2014, Tajikistan spent about

Figure 2.30: Information and Communication Technology Indicators, 2014



Source: World Bank. World Development Indicators. http://data.worldbank.org/data-catalog/world-development-indicators (accessed March 2016).

18% of its budget on education. The government is also taking initiatives to attract external funds to improve school infrastructure. Box 2.3 provides a snapshot of Tajikistan's education system.

Tajikistan's literacy rate of 99% is similar to those of comparator countries, but financial constraints and a growing school-age population are posing new challenges. The quality of education and that of students has declined. Less than 25% of the working-age population in Tajikistan today has had a professional education, older people generally are better educated than today's youth, well-qualified teachers continue to be in short supply, and graduates find it hard to compete for high-skilled jobs.

Mismatches in the domestic labor market remain a cause for concern.

The number of students and graduates of professional technical education institutions has declined steadily over the past 20 years. Institutions that used to cater to around 35,000 students in 1992 now have only 22,000 students (Figure 2.31).

Migration to the Russian Federation has partly offset the fewer job opportunities in the domestic labor market, but it has also been a significant drain on skills. The migrant labor force became significant in the early 2000s, and more recent estimates have put the numbers at between 750,000 and 1.5 million workers.[27] While a fifth of migrant workers have tertiary

[28] Accurate data on migration are scant, in part because of a large group of illegal workers abroad. The Agency on Statistics under the President of Tajikistan estimated that 750,070 Tajik workers, including 86,773 women, were working abroad in 2011. The Federal Migration Service of the Russian Federation counted 978,940 Tajiks as of August 2015. To these, Tajik migrants in Kazakhstan, in other countries from the former Soviet Union, and the Gulf should be added.

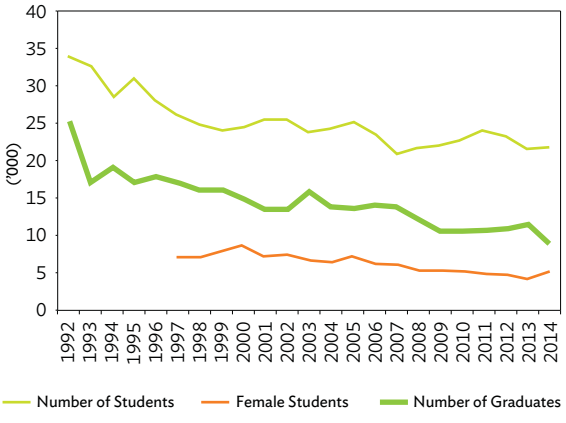
Box 2.3: Tajikistan's Education System

The education system of Tajikistan comprises the following types and levels of schooling:

1. **Preschools**
2. **Elementary schools**
   a. Primary education, grades 1–4 (7–10 years old)
   b. Lower secondary or basic education, grades 5–9 (11–15 years old), after which a certificate of incomplete secondary education is issued
   c. Upper secondary education, grades 10–11 (16–17 years old), after which a certificate of complete secondary education is issued
3. **Vocational schools**
   a. Basic vocational education, grades 10 or 10–11, after which a vocational qualification certificate is issued
   b. Basic vocational education combined with complete secondary education, grades 10–12, after which both a certificate of complete secondary education and of vocational qualification are issued
   c. Basic vocational education after secondary education covering grades 12 or 12–13, after which a vocational qualification certificate is issued
4. **Technical colleges (specialist secondary schools)**:
   a. Secondary technical education combined with complete secondary education, grades 10–13, after which a secondary professional education certificate is issued
   b. Secondary technical education, grades 12–13 after secondary general education, or grades 13–14 after initial vocational education, after which a secondary professional education certificate is issued
5. **Higher education institutions:**
   a. Junior specialist education lasting 2 years
   b. Four-year bachelor degrees following secondary education, initial vocational education combined with complet secondary education, and after both types of technical education.
   c. Two-year master degrees after completing a bachelor's degree
   d. PhD

Source: European Training Foundation. 2010. Torino Process 2010: Republic of Tajikistan. Luxembourg: Office for Official Publications of the European Communities.

Figure 2.31: Students and Graduates from Technical Education Institutions

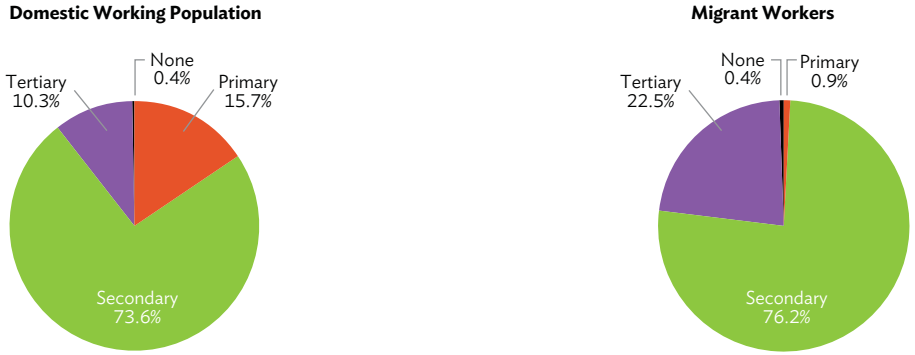


Source: Agency on Statistics under the President of Tajikistan. TajStat. http://www.stat.tj/en/database/socio-demographic-sector/

education, one-tenth of workers in the domestic labor force possess the same level of education (Figure 2.32). This leaves a pool of less-skilled workers for whom jobs are insufficient. The labor market cannot absorb highly qualified graduates either because of the skills mismatch, and many professional positions are not filled due to lack of qualified applicants.

Tajikistan ranks fairly low in reliance on professional management (116th), which could be interpreted as an indication of shortages in managerial skills (World Economic Forum 2014). An International Finance Corporation survey of small and medium-sized enterprises in 2009 reported that 1% of individual entrepreneurs and 5% of such enterprises identified an uneducated labor force as their single biggest obstacle (IFC 2009).

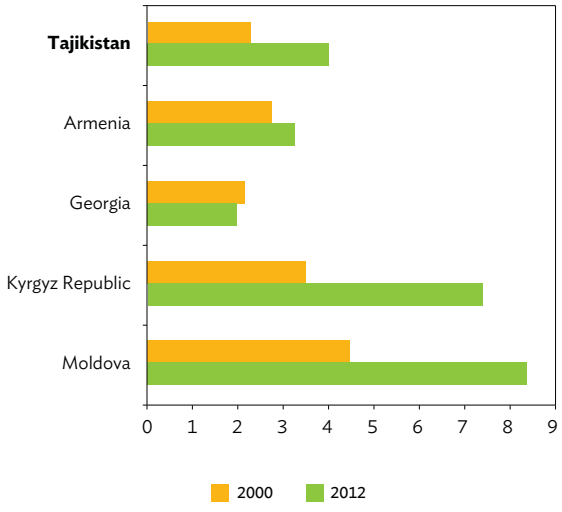
Figure 2.32: Educational Attainment of Labor Force and Migrant Workers (% distribution)



Source: For labor force: Agency on Statistics under the President of Tajikistan. TajStat; European Training Foundation. Labor Market Review – Tajikistan. http://www.etf.europa.eu/web.nsf/pages/Labour_Market_Review_Tajikistan

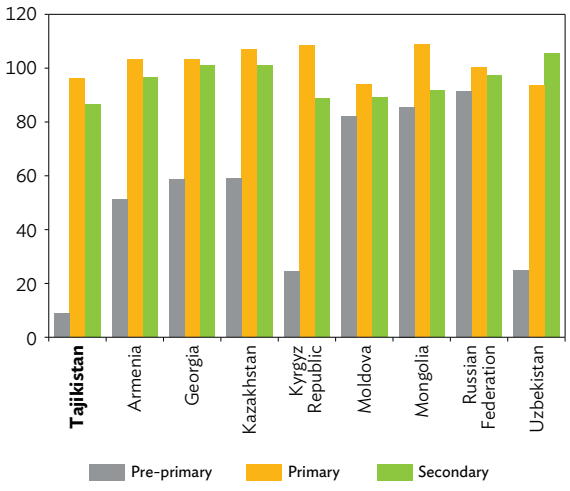
To upgrade the education system and meet the development challenges of its growing economy, Tajikistan increased spending from 2.3% of GDP in 2000 to 4.0% of GDP in 2012 (Figure 2.33). The gross enrollment rate for primary and secondary schooling shows in particular that Tajikistan's performance is comparable with that of other countries; however, more steps are needed to improve the quality of education, including better teacher training and a focus on curricula designed to provide skills and knowledge that meet development challenges (Figure 2.34). These will require further increases in education spending.

Figure 2.33: Expenditure on Education (% of GDP)



GDP = gross domestic product.
Source: World Bank. World Development Indicators. http://data.worldbank.org/data-catalog/world-development-indicators (accessed February 2016).

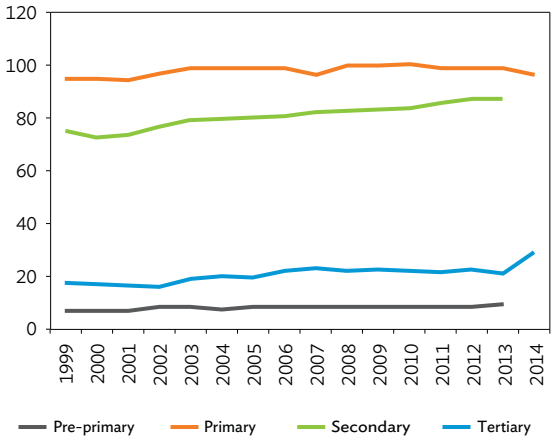
Figure 2.34: Gross Enrollment by Education Level, 2014 (%)



Notes: Latest year differ by country. Data on gross enrollment on preprimary, primary, and secondary for Tajiskistan are for 2011, 2014, and 2012; Armenia for 2012, 2009, and 2009; Georgia for 2008, 2013, and 2013; Kazakhstan for 2013, 2013, and 2013; Kyrgyz Republic for 2012, 2013, and 2012; Moldova for 2013, 2013, and 2013; Mongoloia for 2012, 2013, 2010; the Russian Federation for 2012, 2013, and 2013; and Uzbekistan for 2011, 2011, and 2011.
Source: World Bank. World Development Indicators. http://data.worldbank.org/data-catalog/world-development-indicators (accessed February 2016).

The enrollment rate for primary schools increased from 95% in 1999 to 100% by 2014, and for upper secondary education from 42% to 67% (Figure 2.35). However, higher education generally remains inaccessible to the poor while 65% of students come from households in the top 40% of the income range; only 16% come from the bottom 40% (World Bank 2014c). Initiatives to widening access include improvements to education financing and the establishment of the National Assessment System. Other programs provide necessary training for teachers.

Figure 2.35: Tajikistan Gross Enrollment (%), 1999–2014



Source: United Nations Educational, Scientific and Cultural Organization. UNESCO Institute for Statistics. http://www.uis.unesco.org/Pages/default.aspx (accessed February 2016).

The Global Competitiveness Report shows that Tajikistan's education system ranks 57th among 140 countries for quality, and ranks better than Armenia, Azerbaijan, and the Kyrgyz Republic (Table 2.7). Overall, Tajikistan has made progress in improving its education system; but the quality of education and the skills and knowledge of teaching staff still require considerable upgrading. The government needs to address the low quality of primary, basic, and secondary education in particular as this will shape the future of the entire education system. Likewise, more steps should be taken to raise the skills and knowledge of teachers since these are linked directly to improvements in the qualifications of students.

Table 2.7: Rankings in Education, 2015
(out of 140 countries)

Ranking	Tajikistan	Armenia	Azerbaijan	Kyrgyz Republic
Global Competitiveness Index (overall)	80	82	40	102
Quality of primary education	68	76	106	109
Quality of the educational system	57	84	107	112
Quality of math and science education	73	47	104	118
Quality of management schools	78	115	121	131
Internet access in schools	64	70	68	87
Availability of research and training services	69	104	82	100
Extent of staff training	81	117	90	101

Source: World Economic Forum. 2015. *The Global Competitiveness Report, 2015–2016*. Geneva.

The foregoing discussion suggests that human capital, specifically the dearth of skilled workers, is an economy-wide concern, but that it should not be considered a binding constraint to increasing private investment in Tajikistan.

2.3 Low Appropriability of Returns on Investment

The decision of private investors to invest depends on, among other things, the macroeconomic environment, on incentives provided by government, and on perceptions of government policy. In technical terms, risks to appropriability can emanate from government or from market failures, both of which have micro and macro dimensions.[28] While macro risks relate to fiscal and financial crises, micro risks include political

[28] Market failures affecting appropriability normally reflect information and learning externalities and coordination failures.

instability, corruption and a weak rule of law, overly burdensome taxation, and poor industrial relations.

2.3.1 Micro Risks

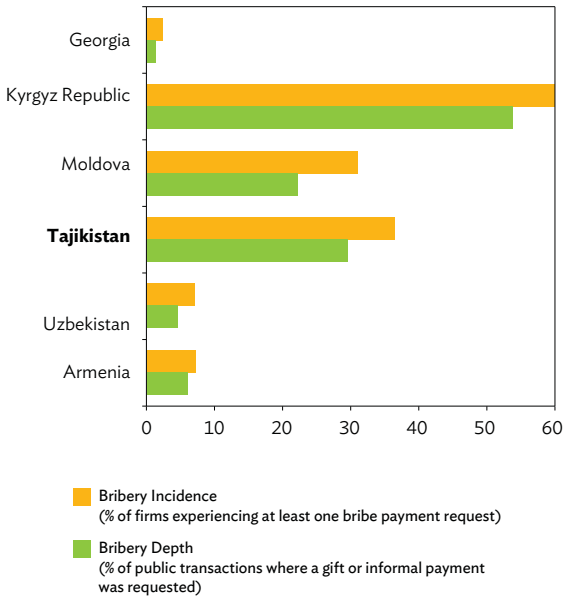
Corruption and the weak rule of law have discouraged private investment.

Corruption in Tajikistan appears more pervasive than in comparator countries except Uzbekistan, according to Transparency International's Corruption Perception Index in which Tajikistan ranked 136th out of 168 countries in 2015. Similarly, the Corruption in Tajikistan survey, conducted by the Strategic Research Center under the country's President, paints a pessimistic picture (Republic of Tajikistan and UNDP 2010). The survey found that the corruption scope—measured as the proportion of people who have been exposed to a corruption situation at least once, regardless of whether they paid a bribe or not—increased from 60.1% in 2006 to 84.1% in 2010. The corruption risk—a measure of the proportion of people who say they have been confronted with corruption in state programs—rose from 31.9% in 2006 to 46.1% in 2010. The demand for a bribe—measured as the proportion of cases when an average person gave a bribe —rose from 29.5% to 45.3%.

The dimension of the World Economic Forum's Global Competitiveness Report 2015-2016 that measures perceptions about state capture—the diversion of public funds to companies, individuals, or group due to corruption—placed Tajikistan at 41 out of 144 in 2014. The incidence and depth of bribery in Tajikistan is still higher than most of the comparators except the Kyrgyz Republic (Figure 2.36). These relate to companies making undocumented extra payments or bribes connected with imports and exports, dealings with public utilities, annual tax payments, the awarding of public contracts and licenses, and obtaining favorable judicial decisions.

Research shows that strong anticorruption efforts "in law" do not necessarily mean strong anticorruption efforts "in practice." According to a World Bank study, "firms in countries with stronger anticorruption laws and rules on the books pay bribes slightly more often, on average, than in other countries" (World Bank 2011d). Tajikistan, through effective implementation of rules and regulations, can also improve the situation particularly by focusing on the quality of governance.

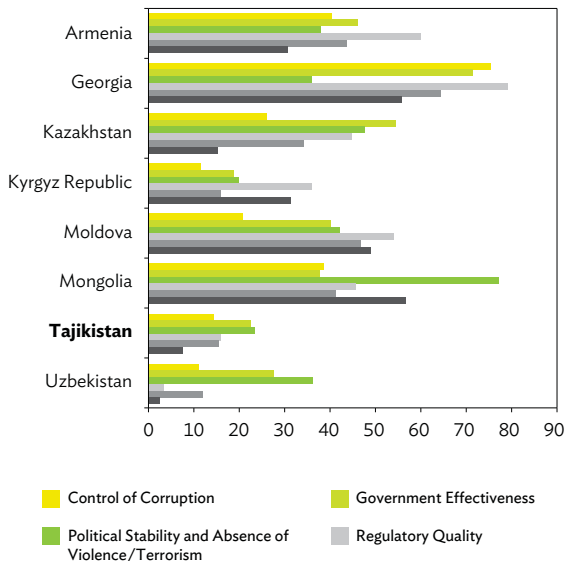
Figure 2.36: Depth and Incidence of Bribery, 2014 *(%)*



Source: World Bank Group. Enterprise Surveys. https://www.enterprisesurveys.org/data (accessed February 2016).

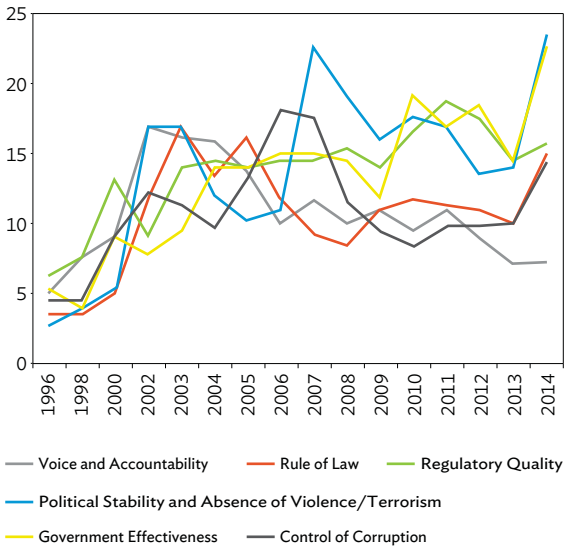
Tajikistan ranks below the 20th percentile in the government effectiveness sub-index of the Worldwide Governance Indicators, and is behind most comparators in virtually all indicators. This index reflects perceptions of (i) the quality of public services, (ii) the quality of the civil service and its degree of independence from political pressures, (iii) the quality of policy formulation and implementation, and (iv) the credibility of the government's commitment to ending graft. When set against comparator countries, Tajikistan does not fare well on most of these indicators. However, Tajikistan has performed well in comparison to Uzbekistan in all indicators except governance effectiveness and in control of corruption. Its performance is also better compared with the Kyrgyz Republic in political stability, in governance effectiveness, and in control of corruption (Figure 2.37).

Figure 2.37: Comparison of Governance Indicators, 2014 (percentile rankings)



Source World Bank. Worldwide Governance Indicators. http://data.worldbank.org/data-catalog/worldwide-governance-indicators (accessed February 2016).

Figure 2.38: Tajikistan's Governance Indicators, 1996–2014 (percentile rankings)



Source: World Bank. Worldwide Governance Indicators. http://data.worldbank.org/data-catalog/worldwide-governance-indicators (accessed February 2016).

Over time, Tajikistan has seen some improvement as well in the overall governance effectiveness; its ranking has increased from 8.78 in 2000 to 22.60 in 2014. Despite these improvements, centralized decision making continues to impede the design, coordination, and implementation of coherent policies. Although improvements have been made in some governance indicators, there is lot of room for further improvement (Figure 2.38). As in the case of other governance indexes, the rule of law index in Tajikistan improved significantly in 2002, but it has remained around the 15th percentile since then. In most of the elements of the governance category, Tajikistan's reforms appear to have stalled after the initial set of first order reforms that were implemented after the end of the civil war.

The European Bank for Reconstruction and Development, in a recent assessment of commercial and financial laws in Tajikistan, highlighted a degree of uncertainty over the judiciary's ability to enforce contracts and protect investor rights. The assessment found that Tajikistan also does not comply very well with international standards and with the OECD Principles of Corporate Governance. Although the government has amended the 1992 Law on Foreign Investment several times, the European Bank for Reconstruction and Development rates Tajikistan's legislative framework as the least developed among the Commonwealth of Independent States (EBRD 2012).

While Tajikistan has improved in some areas of the investment climate in the cluster of the micro constraints discussed above, it has been unable to raise its rankings significantly in a series of governance indicators. This study highlights that major transformations, rather than marginal measures, are needed to achieve significant improvements in governance. Investors' perceptions[29] about the governance cluster of micro constraints, which include low government effectiveness, weak rule of law, and inadequate control over corruption, are considered critical constraints on improving private investment in the country.

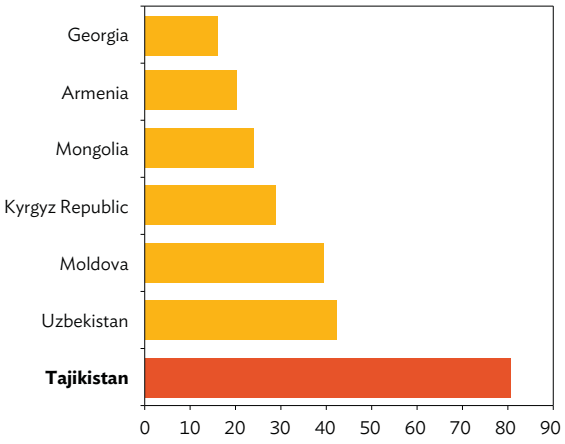
[29] For instance, a much publicized court case against TALCO in London in 2008 seems to have played an important role in unfavorable perceptions about Tajikistan and its investment climate, notwithstanding the substance of the case.

Tax Rates and Administration

Creation of a more transparent, accountable, and fair taxation system is a challenge.

Tajikistan still lacks a transparent and effective tax system for enterprises. Taxes on income and profits were equivalent to less than 4% of GDP in 2012, compared with an OECD average[30] of 8.8% in 2010, even if its statutory rates were in line with international norms. However, because of the narrow tax base, the burden falls on companies in the formal sector. Those companies report very high taxes measured as a percentage of their profits (Figure 2.39). Indirect taxes constitute a significant part of government revenue, with value-added tax levied on both imports and domestically produced goods, accounting for about half of the tax revenue collected.

Figure 2.39: Total Tax Collection, 2015
(% of commercial profits)

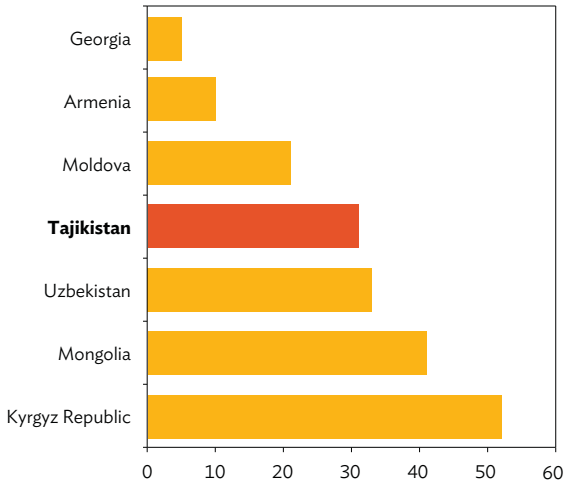


Source: World Bank. World Development Indicators. http://data.worldbank.org/data-catalog/world-development-indicators (accessed February 2016)..

Until recently, Tajikistan has seen a reduction in the number of tax payments, from 69 payments a year in 2013 to 31 by 2014 (Figure 2.40).

In contrast, many of the comparators have moved to e-filing and e-payments while reducing the frequency

Figure 2.40: Number of Tax Payments per Year, 2015



of payments as well as reducing the physical interaction of taxpayers with tax officials, which is an important element in reducing corruption and increasing revenue intake.

Among the amendments to the Tajikistan Tax Code in 2013 were (i) the elimination of the retail sales tax, (ii) the phasing out of the road user tax by 2017, (iii) an increase in the threshold for value-added-tax filing to harmonize it with the upper threshold of the simplified regime, (iv) a unified declaration for social and personal income tax, and (v) simplified filing and payment procedures, such as reducing filing for taxes from monthly to quarterly (World Bank 2013). Reform of tax administration, which is supported by a large group of donors, including ADB, the European Commission, the International Monetary Fund, and the World Bank, is an important challenge for the government and should go a long way in enabling Tajikistan to establish an efficient and transparent taxation system.

According to the 2013 Enterprise Survey, 18% of businesses in Tajikistan cited tax rates and 11% tax administration as their main obstacles after access to finance. Medium-sized companies seemed to have fewer problems with the tax rates and administration than small and large ones.

[31] Among the OECD countries, the ratio of taxes on income and profits ranged from 2.3% in the Slovak Republic to 24.3% in Denmark.

To avoid discouraging investors, Tajikistan's tax system requires further improvement in transparency and effectiveness. That would contribute toward enhancing the fiscal space. However, the foregoing discussion suggests that, by and large, the current taxation system in Tajikistan is not a binding constraint on private investment.

2.3.2 Macro Risks

Overall, Tajikistan's macroeconomic management has remained more stable in recent years on account of prudential fiscal management. This was despite occasional slippages in monetary management and financial regulation, as was the case with the recent episode of directed lending[31] that added to the fragility of the banking system.

From 1998 to 2006, Tajikistan experienced manageable fiscal and current account deficits. However, with a backdrop of cotton debt during the mid-2000s, macroeconomic policy started deteriorating owing to a loss of monetary control. Quasi-fiscal deficits were mainly funded by the central bank, thus depleting its foreign exchange reserves. The rise in the fiscal deficit from 2007 onward (Figure 1.10) and the consequent narrowing of the fiscal space pose risks to macroeconomic stability. The rise in the fiscal deficit, viewed in the context of reducing fiscal buffers in the form of government deposits maintained with the central bank, underscores the need for sounder policies for managing demand. The major risk is that external demand shocks, coming at a time when the fiscal buffers are low and the banking and financial sector is weak, could destabilize the economy. For this reason, it is critical to monitor the quasi-fiscal deficit of state-owned enterprises and directed lending to the public sector.

Tajikistan's current account deficit has been very volatile with exports remaining highly concentrated on a few products and with its international reserves steady at around 1.5–1.9 months of imports. Tajikistan needs to develop tools to cushion the impact of external demand shocks. In this context, it has to keep macroeconomic stability and fiscal management a high-priority area in formulating public policy. External debt stocks as a percentage of exports of goods and services rose sharply from 64.5% in 2006 to 369.4% in 2014. During the same period, interest payments on external debt as a percentage of exports of goods and services surged from less than 1.8% to around 8.5%. Considering Tajikistan's limited institutional capacity and vulnerability to external shocks, this rising tendency in external debt and interest payments could also destabilize the macro economy.

Uncertainty regarding such macroeconomic variables as GDP growth, inflation, the real exchange rate, terms of trade, and interest rates adds to risk aversion, which could prompt private investors to delay decisions or cause them to lower their investment. The volatility of these aggregates adversely affects investment behavior. While volatility associated with these macro variables is to be expected, volatility that gets so high could reduce the appropriability of returns. Although Tajikistan's GDP growth rates have been less volatile than those of comparators, its current account balance-to-GDP ratio became more volatile mainly because of sharp fluctuations in export earnings. There is therefore a critical need to closely monitor the volatility of Tajikistan's external and internal deficits and the depletion of its foreign exchange reserves to prevent them from becoming a constraint to growth.

Market Failures

Tajikistan's exports are highly concentrated and the share of industrial sector in GDP has declined.

Market failures can also make it difficult for companies and entrepreneurs to reap returns from their investment. Three market failures are of particular relevance to low private investment: (i) information externalities, (ii) learning externalities, and (iii) coordination failures. Information externality refers to the situation when the informational benefits of successfully introducing new products and/or production processes in a country may spill over to third parties, but, in case of failure, the cost is borne

[32] Directed lending continues to hound the banking system even after the government bailout and takeover of the Agroinvest Bank in 2012.

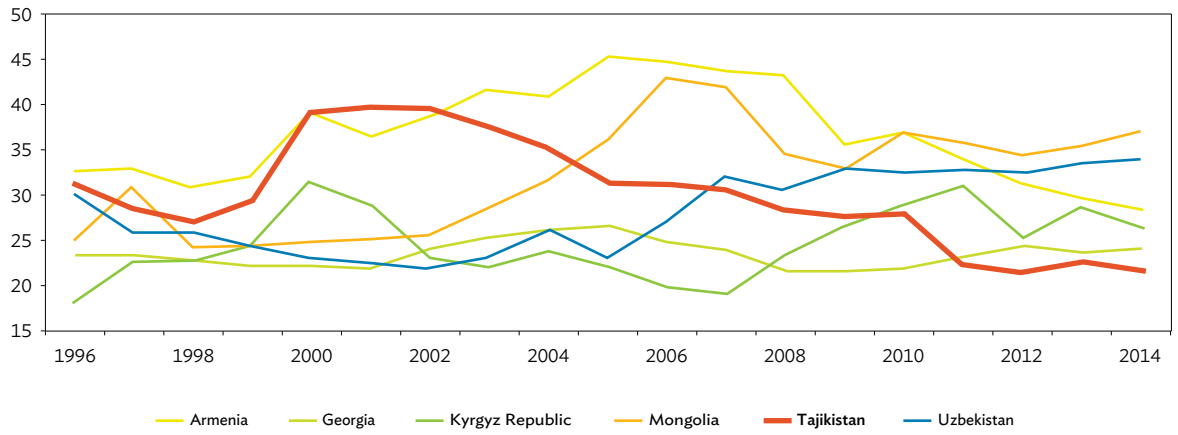
by the original proponent. Learning externality refers to the situation when the benefits from investments in building the capacity of the workforce spill over to third parties in the event that the trained workers switch employers or migrate to other countries. Coordination failure refers to a situation where a company's linkages to upstream and downstream industries are not well developed, or when its access to infrastructure, regulation, and other public goods is poor.

Although these externalities are often difficult to observe, their presence may partly account for the lack of diversity and sophistication in a country's export basket. (This will be described in detail in Chapter 4.) Tajikistan's heavy reliance on cotton and aluminum, which account for about two-thirds of its exports of goods, can be taken as a symptom of market failure. This is a case of a small domestic market whose poor quality infrastructure and connectivity are discouraging investors from backing new and high-value-added activities. Such a market failure discourages innovation and the introduction of new products, and its outcome is an industrial sector that remains concentrated on a few products. In comparison with comparator economies, Tajikistan's share of industry in GDP has declined and remains concentrated on a few products (Figure 2.41).

2.4 Conclusion

This chapter identifies five critical constraints to Tajikistan's low private investment, which may become binding to growth if not addressed properly: (i) limited access to finance and its high cost, (ii) unstable and seasonally interrupted electric supply, (iii) insufficient quality transport infrastructure and logistics, (iv) inadequate control over corruption and weak rule of law, and (v) market failures resulting in highly concentrated exports.

Figure 2.41: Share of Industry in GDP by Country, 1996–2014 (% of GDP)



GDP = gross domestic product.
Source: World Bank. World Development Indicators. http://data.worldbank.org/data-catalog/world-development-indicators (accessed February 2016).

Chapter 3
Critical Constraints to Inclusive Growth

As discussed in Chapter 1, poverty in Tajikistan has been reduced significantly owing to the sustained strong growth of the country's economy during the past 18 years. Being non-inclusive in character, however, that growth has not created enough jobs for the country's growing labor force. In the absence of a dynamic industrial sector, Tajikistan has remained dependent on its low-productivity agriculture sector to provide employment to the bulk of the labor force. The small percentage of workers absorbed by the service sector is engaged mainly in low-value-added services. Thus, the challenge to Tajikistan is to sustain its high growth trajectory by creating more domestic employment opportunities to ensure that its benefits are as widely distributed as possible among all sectors of its population.

Inclusive growth is a multidimensional concept containing more than one social objective. For the purpose of this study, we will follow the definition given by Ali and Zhuang (2007). They consider growth as inclusive when all the segments of society can participate in, and benefit from, the opportunities created by that growth. In their view, inclusive growth makes a distinction between the inequality of opportunity arising from differences in individual circumstances and the inequality of outcome arising from differences in individual effort. From this reckoning, it is equality of access to opportunity that should form the core of an inclusive growth strategy. Such a strategy requires strengthening human capacities and skills, improving access to markets and productive assets, and improving social safety nets.

Based on the framework for inclusive growth shown in Figure 3.1, this chapter will identify the critical constraints to inclusive growth in Tajikistan.

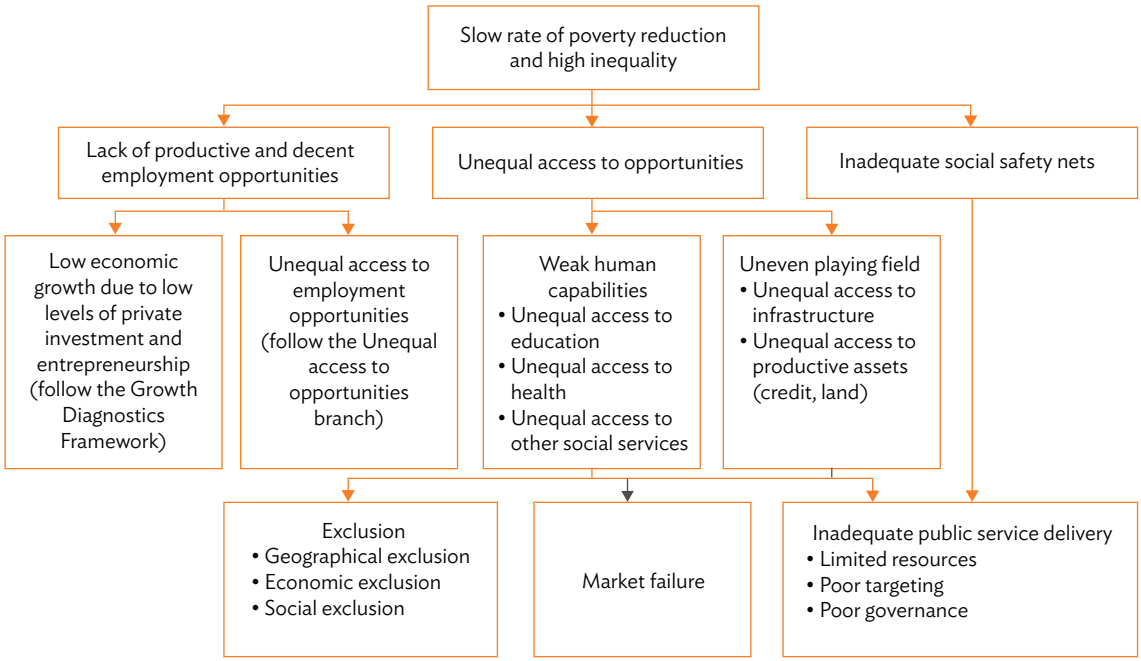
3.1 Productive Employment Opportunities

The lack of productive employment opportunities is a critical constraint on inclusiveness.

Tajikistan has two parallel labor markets—domestic and migrant. The labor force participation rate in the former, which had 2.38 million workers in 2014, declined significantly from 76.5% in 1991 to 47.2% by 2014 (Figure 3.2).

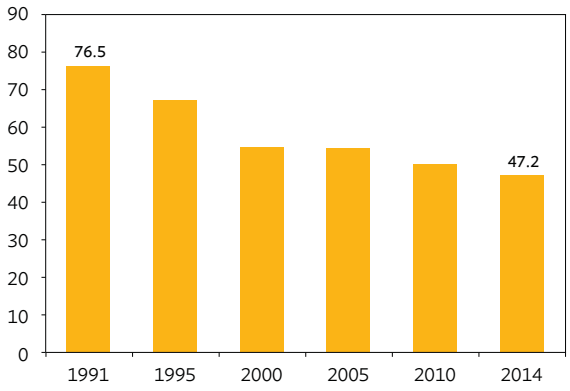
This decline in the labor force participation rate is a reflection of both limited job creation in the domestic labor market as well as the rapid growth of the working-age population (15–64 years). Except in agriculture, there was hardly any job creation after the massive labor shedding during the early years of transition and the civil war. Jobs created during the first growth episode (1997–2004) to some extent offset that labor shedding, but net new job creation declined significantly during the second growth episode

Figure 3.1: Diagnostics Framework for Constraints to Reducing Poverty and Inequality



Source: Ali, I. and J. Zhuang. 2007. Inclusive Growth toward a Prosperous Asia: Policy Implications. *ADB Economics and Research Department Working Paper Series*. No. 97. Manila: ADB.

Figure 3.2: Labor Force Participation Rates
(%)



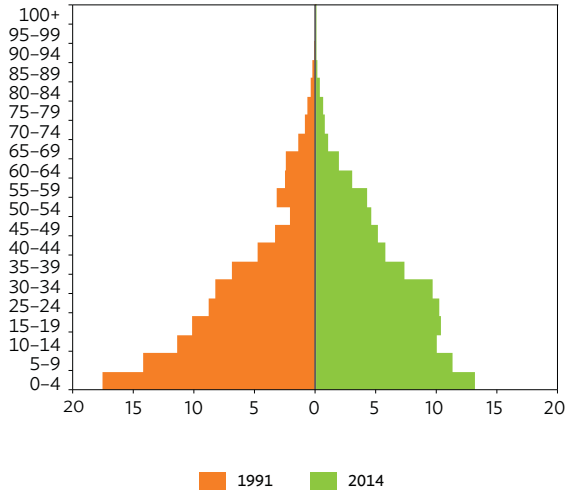
Note: Labor force participation rate is computed as the ratio of economically active (employed plus registered unemployed) to working-age population (15–64 years old).
Source: Agency on Statistics under the President of the Republic of Tajikistan. TajStat. http://www.stat.tj/en/ (accessed March 2015).

(2005–2014). The number of employed workers grew 2.2% per year on average in the first period, and just 1.1% in the second. On the other hand, Tajikistan's working-age population has increased sharply (Figure 3.3). In 1991, 43% of the population was below 14 years old; it is now of working age and putting pressure on the labor market. At present, more than a third of the population is still under 14, so in 10 years' time no less than a fifth of the population—about 1.8 million people—will be seeking jobs.

During 1991–2014, Tajikistan's working-age population increased 3.1% a year on average, whereas employment increased only 0.8% (Figure 3.4). With just 111,000 nonagricultural jobs created from 2004 to 2014, employment creation remains a critical challenge.

Tajikistan's official unemployment rate, at 2.4% in 2014, was low, as it counted only registered unemployment; that is, only those registered to receive unemployment

Figure 3.3: Population by Age Group (%)



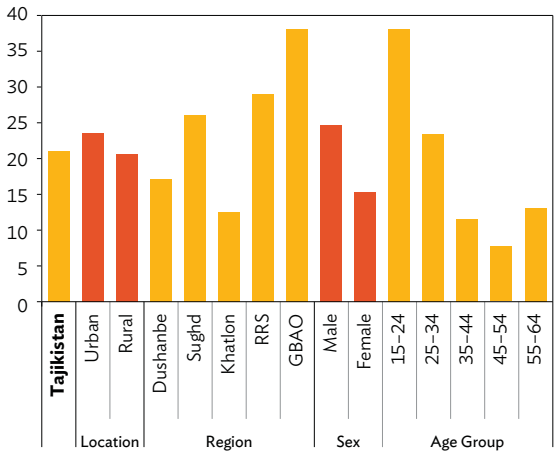
Source: Agency on Statistics under the President of the Republic of Tajikistan. TajStat. The Population of the Republic of Tajikistan on 1 January 2015 (accessed March 2016).

Figure 3.4: Changes in Working-Age Population and Employment (%)

Source: Agency on Statistics under the President of the Republic of Tajikistan. TajStat. http://www.stat.tj/en/ (accessed March 2016).

benefits (about $3.60 monthly), which is only a fraction of the likely actual total. However, the calculations based on the *2009 Tajikistan Living Standards Survey* show that overall unemployment is as high as 21%, while urban unemployment is higher than rural. Across regions, unemployment is highest in the Gorno-Badakhshan Autonomous Oblast (GBAO) and lowest in Khatlon, with unemployment higher for men at 24% than for women at 15%. High youth unemployment, at 37%, is particularly problematic (Figure 3.5).

Figure 3.5 : Unemployment Rate by Area, Gender, and Age Group, 2009 (%)



GBAO = Gorno-Badakhshan Autonomous Oblast, RRS = Region of Republican Subordination.
Source: Estimates based on *Tajikistan Living Standards Survey 2009*.

Fewer domestic job opportunities have compelled labor out-migration, mainly to the Russian Federation. Tajikistan's low wages also contribute to this labor out-migration. As of August 2015, about 1 million Tajik workers have left for the Russian Federation.[33] An International Labour Organization (2010) study reveals that while 40% of the respondents attributed their decision to migrate to the lack of jobs in the domestic market, 31% of them identified lower domestic wages as a reason to migrate. Although real wages increased during 2005–2014, by 18.6% a year on average, the wage rate remained the lowest among comparators in 2014 (Table 3.1).

[33] The Russian Federal Migration Service's website is at www.fms.gov.ru/about/statistics/data/details/54891/ (in Russian).

By sector, the average monthly real wage rate of agriculture sector workers was 6.8 times higher in the Russian Federation than in Tajikistan, and 4.6 times higher for the health sector and about four times for real estate and business activities (Table 3.2).

Because of limited job opportunities in the formal sector, the informal sector absorbs the bulk of the remaining labor force, as it is the only alternative for those who cannot get a job in the formal sector and have no option to work abroad. According to the *2009 Tajikistan Living Standards Survey*, about 31% of the labor force was employed informally (Figure 3.6). Majority of them have general secondary education and are of ages 15–34. But informal employment, with its modest wages, typically does not offer the social guarantees of the formal sector.

Table 3.1: Real Wages (at constant prices of 2005 $)

	2005	2014	Annual Average Change (%)
Tajikistan	**26.8**	**116.5**	**18.6**
Armenia	113.8	220.0	8.7
Kyrgyz Republic	62.6	133.2	9.0
Moldova	104.7	171.0	5.7
Georgia	112.7	286.4	11.8
Russian Federation	302.5	538.2	7.2
Kazakhstan	255.4	435.7	6.6

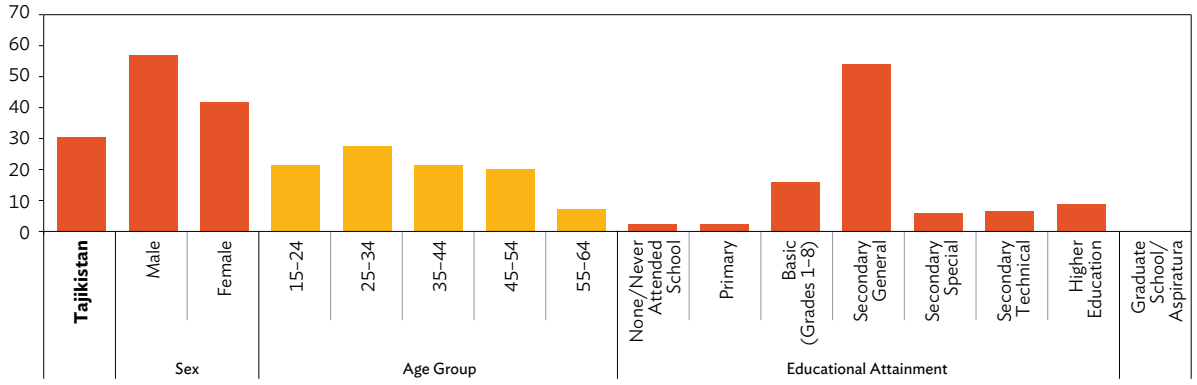
Sources: CEIC. https://www.ceicdata.com/en (accessed March 2016); World Bank. World Development Indicators. http://data.worldbank.org/data-catalog/world-development-indicators (accessed March 2016); ADB. 2015. *Key Indicators for Asia and the Pacific 2015.* Manila.

Table 3.2: Average Monthly Wages by Activity, 2014 (at constant prices of 2005 $)

Activity	Tajikistan	Russian Federation	Russian Federation/Tajikistan
Agriculture, hunting, and forestry	43.6	294.2	6.75
Wholesale and retail trade	109.1	425.0	3.90
Health and social work	97.06	449.4	4.63
Other community, social, and personal services	119.03	462.8	3.89
Transport, storage, and communications	253.72	448.4	1.77
Construction	285.48	487.3	1.71
Real estate and business activities	159.31	623.5	3.91

Sources: International Labour Organization. ILOSTAT Database (accessed March 2016); World Bank. World Development Indicators. http://data.worldbank.org/data-catalog/world-development-indicators (accessed March 2016); ADB. 2015. *Key Indicators for Asia and the Pacific 2015.* Manila

Figure 3.6: Informal Employment, 2009 (%)



Note: Informal employment comprises the self-employed without hired workers and unpaid workers in family businesses.
Source: Calculations based on Agency on Statistics under the President of the Republic of Tajikistan. *2009 Tajikistan Living Standards Survey*. Dushanbe.

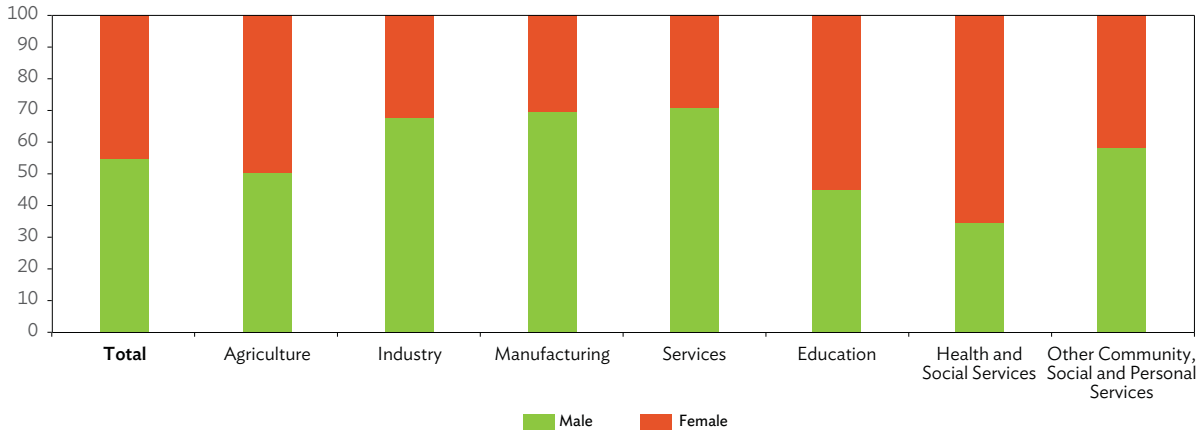
In the formal sector, agriculture provided employment to 65.6% of the labor force in 2014; industry, 6.8%; and services, 27.6%. Within services, most jobs were in education, wholesale and retail trade, and science and scientific services (Table 3.3). Of the employed, 55% were male. Opportunities for women in industry, particularly manufacturing, were limited. On the other hand, the percentage of female workers in agriculture and services was only marginally lower than that for males. In the service sector, women were mainly involved in education, health, and social services (Figure 3.7).

Table 3.3: Formal Employment by Sectors, 2013 and 2014

	2013	2014	2013	2014
	Number ('000)		%	
Total employment	**2,307.3**	**2,325.4**	**100.0**	**100**
Agriculture	**1,526.0**	**1,524.4**	**66.2**	**65.6**
Agriculture, forestry, and fishing	1,526.2	1,524.2	66.1	65.5
Fish breeding	0.2	0.2	0.0	0.0
Industry	**156.3**	**158.2**	**6.8**	**6.8**
Extraction industry and quarrying	12.0	10.6	0.5	0.5
Manufacturing industry	65.7	65.6	2.8	2.8
Electric power, gas, and water supply	19.5	20.1	0.8	0.9
Construction	59.1	61.9	2.6	2.7
Services	**625**	**642.8**	**27.1**	**27.6**
Wholesale and retail trade, repair of motor vehicles, motorcycles, and household goods	135.7	138.4	5.9	6.0
Hotels and restaurants	7.4	7.9	0.3	0.3
Transport, storage, and communication	55.0	55.0	2.4	2.4
Financial mediation	20.8	24.3	0.9	1.0
Operation of real estate, rent, and commercial activity	18.5	20.9	0.8	0.9
Extraterritorial organization	32.9	1.0	1.4	0.0
Education	201.3	203.9	8.7	8.8
Science and scientific services	90.6	94.0	3.9	4.0
Other public, social, and personal services	59.9	62.0	2.6	2.7
Public administration and defense, compulsory social insurance	2.4	35.4	0.1	1.5

Source: Agency on Statistics under the President of the Republic of Tajikistan. TajStat. http://www.stat.tj/en/ (accessed March 2016).

Figure 3.7: Employment Share by Gender *(%)*



Source: Agency on Statistics under the President of the Republic of Tajikistan. TajStat. http://www.stat.tj/en/ (accessed April 2015).

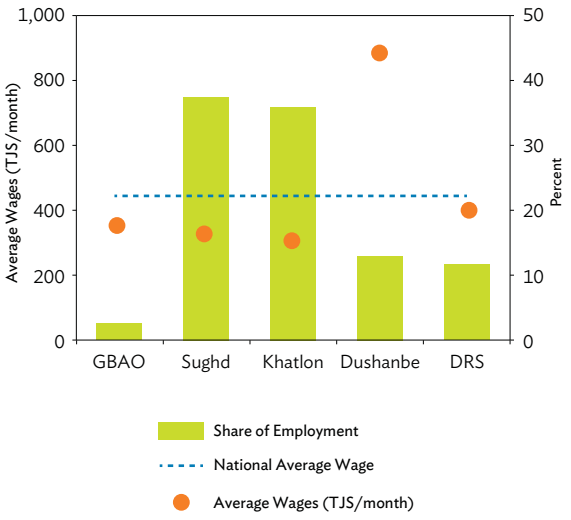
There are income disparities across regions and across gender.

Tajikistan's growth has been marred by rising regional inequalities caused by widening income disparities among the regions. Agriculture accounts for more than half of employment in the Sughd and Khatlon provinces, where wages are lower compared with the national average (Figures 3.8 and 3.9). The average wage in Dushanbe, which was twice the national average in 2011, reflects in part the wage premium for jobs in financial services and telecommunications and in part the higher urban living costs.

Gross regional product per capita, as a percentage of Dushanbe's, declined in all the regions from 2007 to 2011, points to widening income disparity (Table 3.4).

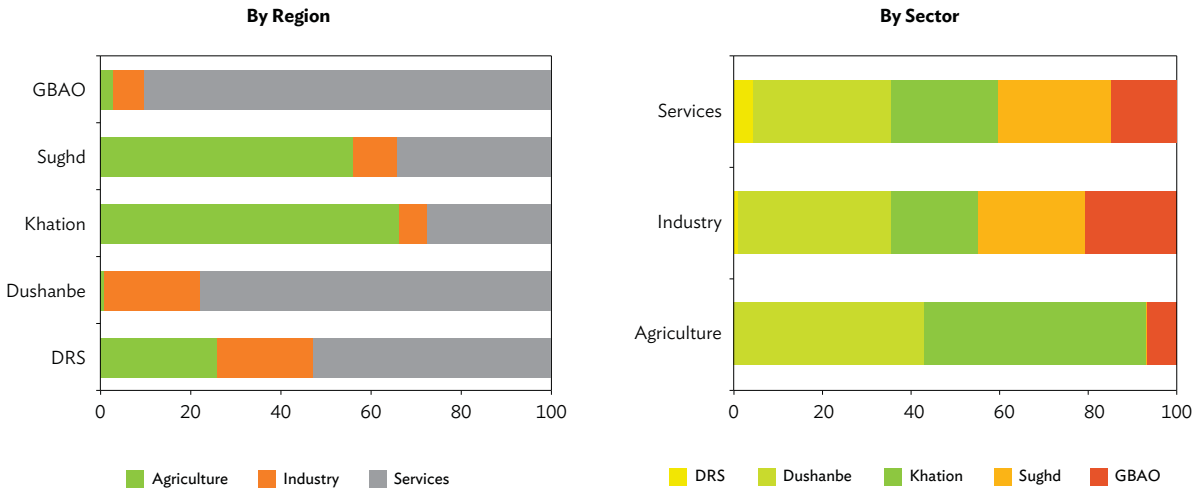
Tajikistan's gender pay gap grew from 38% in 2008 to 50.9% in 2011, compared with 25.6% in Moldova and 8.5% in Kazakhstan in 2010 (UNECE). It is among the widest in the former Soviet Union. Most women

Figure 3.9: Average Wages and Share of Formal Employment by Region, 2011



DRS = Districts of Republican Subordination, GBAO = Gorno-Badakhshan Autonomous Oblast.
Source: Agency on Statistics under the President of the Republic of Tajikistan. TajStat. http://www.stat.tj/en/ (accessed April 2015).

Figure 3.8: Formal Employment by Regions and Sectors *(%)*



DRS = Districts of Republican Subordination, GBAO = Gorno-Badakhshan Autonomous Oblast.
Source: Agency on Statistics under the President of the Republic of Tajikistan. http://www.stat.tj/en/ (accessed April 2015).

Table 3.4: Gross Regional Product
(% of Dushanbe's per capita gross regional product)

Regions	2007	2008	2009	2010	2011
GBAO	32	32	36	28	22
Sughd	40	39	46	36	36
Khatlon	40	39	39	34	35
DRS	57	43	50	36	31

DRS = Districts of Republican Subordination, GBAO = Gorno-Badakhshan Autonomous Oblast.
Source: Agency on Statistics under the President of the Republic of Tajikistan. TajStat. http://www.stat.tj/en/ (accessed April 2015).

work in agriculture; in health care; in education; and in culture, arts, and sciences where wages are lower than the national average. In agriculture, women's wages are almost one-third of men's. Only public administration and parts of finance offer similar wages to women and men (Amir and Berry 2008). Wage discrimination forces many women to take menial work in the informal sector.

In sum, unemployment in Tajikistan is high, particularly among men and youth, and labor productivity is low especially in agriculture, where most people are employed. This situation forces many to migrate to the Russian Federation for work. Indeed, the lack of decent employment in the domestic labor market is not only a major challenge but is a critical constraint to inclusive growth in Tajikistan.

3.2 Human Capabilities

Access to productive and decent employment is crucial to inclusion. In Tajikistan, the inequitable access to employment can be attributed to weak human capabilities among various groups or to uneven participation in growth, or both. As in many other developing countries, certain segments across the country have weaker human capabilities and skills than others due to unequal access to education, health care, clean water and sanitation, and other social services.

Basic schooling and good health are basic rights that are also both the ends and means of economic development. To provide equality in accessing economic opportunities, it is thus important for national policies to aim at expanding skills with a specific focus on the poor and the marginalized, including women. The high costs of education and health care for the poor are often barriers to opportunities, so these are areas where governments can play a crucial role. Access and inputs to education and health care offer the best social protection, in that a lack of both undermines the individual's capabilities and equality of opportunity for better jobs and wages. For young children, in fact, better health and nutrition improves cognition and has a great bearing on their future earning capacity and labor productivity (ADB 2011b).

Education

Chapter 2 has discussed the education sector in the context of human capital[34] and its implications for low private investment and economic growth. This section focuses on equality of access to education in the context of a more inclusive pattern of growth. As noted earlier, Tajikistan has a high literacy rate (99.7%) like other countries of the former Soviet Union, having inherited a good education system from that era. However, the education sector in Tajikistan has faced declining standards and funding difficulties in recent years.

Educational attainment varies across regions due to unequal access to education.

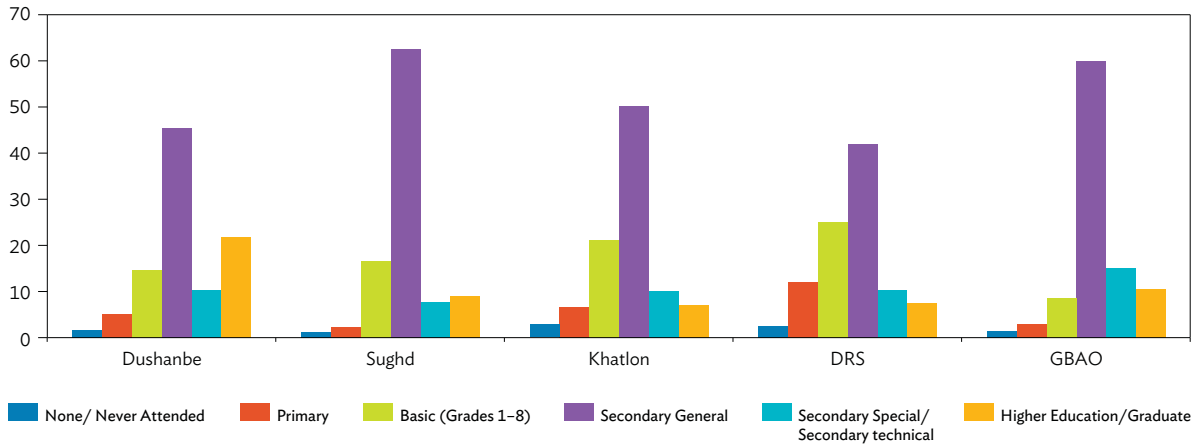
Educational attainment across regions varies significantly (Figure 3.10). In Khatlon and Sughd, it is very similar to the national profile, while Dushanbe and the GBAO have higher shares of people with higher education. For the employed, the differences are even more pronounced (Figure 3.11).

Fewer higher education institutions, with a concentration in Dushanbe, have led to unequal access to higher education.

Tajikistan faces challenges in providing the school-age population with access to education beyond the

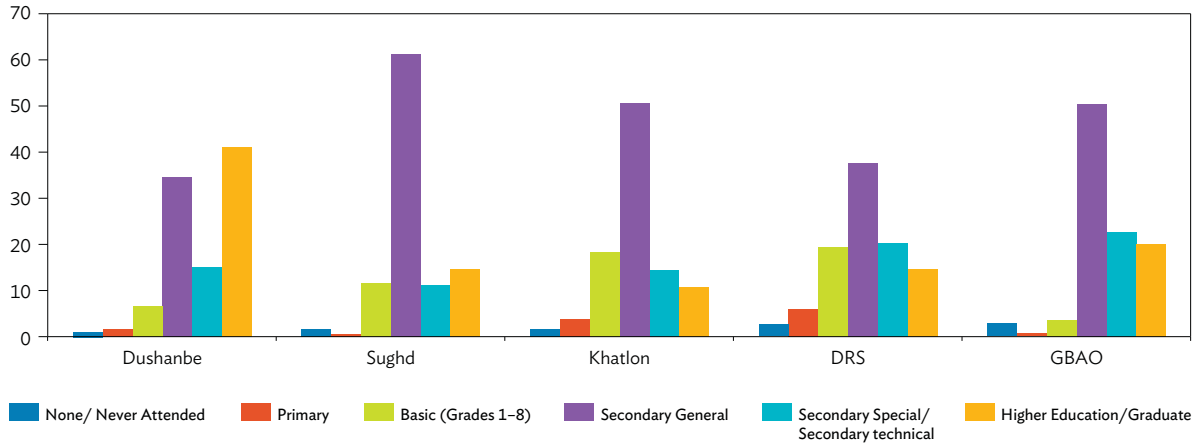
[34] Human capital consists of the skills and capacities that reside in people and that are put to productive use.

Figure 3.10: Educational Attainment of Working-Age Population (15–64 Years) by Region, 2009 (%)



DRS = Districts of Republican Subordination, GBAO = Gorno-Badakhshan Autonomous Oblast.
Source: Agency on Statistics under the President of the Republic of Tajikistan. 2009. *2009 Tajikistan Living Standards Survey*. Dushanbe.

Figure 3.11: Educational Attainment of Employed Population (15–64 Years) by Region, 2009 (%)



DRS = Districts of Republican Subordination, GBAO = Gorno-Badakhshan Autonomous Oblast.
Source: Agency on Statistics under the President of the Republic of Tajikistan. 2009. *2009 Tajikistan Living Standards Survey*. Dushanbe.

general education level. Though net enrollment for all levels has been steadily increasing, the enrollment rate for tertiary is still a very low 31%. Unlike primary and lower secondary schools, there is serious inequity in the distribution of higher education schools across the regions. Outside Dushanbe, which has 20 such institutions, there are only 13 in the country's four regions, with not a single one in the Region of Republican Subordination (Table 3.5). Access to secondary vocational education is particularly limited in the GBAO, which has only one school teaching at this level. And geographic distance, mountainous terrain, and the high cost of tertiary education generally add to the barriers blocking access to higher education.

The analysis in this section suggests that unequal access to education across regions and gender has produced an inadequately skilled workforce, and this is a critical constraint to inclusive growth.

Table 3.5: Number of Schools by Education Level, 2014

	General Education	Secondary Vocational Education	Higher Education
Tajikistan	**3,786**	**51**	**33**
Dushanbe	136	9	20
RRS	1,142	13	
Sughd	902	17	7
Khatlon	1,288	11	5
GBAO	315	1	1

GBAO = Gorno-Badakhshan Autonomous Oblast, RRS = Region of Republican Subordination.
Note: General education includes primary and secondary schools.
Source: Agency on Statistics under the President of the Republic of Tajikistan. TajStat. http://www.stat.tj/en/ (accessed April 2015).

Health

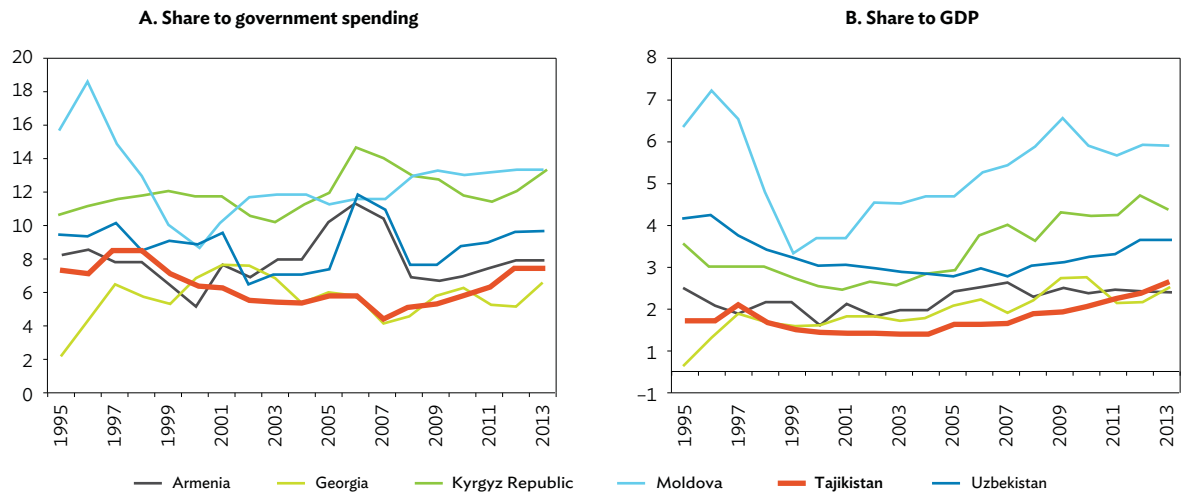
Health is important for improving human capabilities and skills. Poor health, in addition to its obvious harmful effects, leaves people less productive and reduces their earning potential. In this respect, Tajikistan inherited a large, centralized, and highly specialized health system from the Soviet era in which the state is the main provider of health care. Despite the health financing and organizational reforms piloted in Tajikistan, the country's health-care system remains primarily centralized and based on curative, in-patient, and hospital-centric care. Moreover, the health infrastructure is inadequate to support Tajikistan's goal of achieving inclusive growth in the long run.

Although public expenditure on health has increased through the years, it remains limited and unable to uplift health outcomes to achieve Millennium Development Goals.

Tajikistan's public expenditure on health has seen some improvement over time; however, it is still among the lowest in the region, accounting for only 2.1% of GDP in 2013. In other comparator countries such as the Kyrgyz Republic, Uzbekistan, and Moldova, the share of health expenditure to GDP in 2013 was 3.9%, 3.1%, and 5.4%, respectively (Figure 3.12).

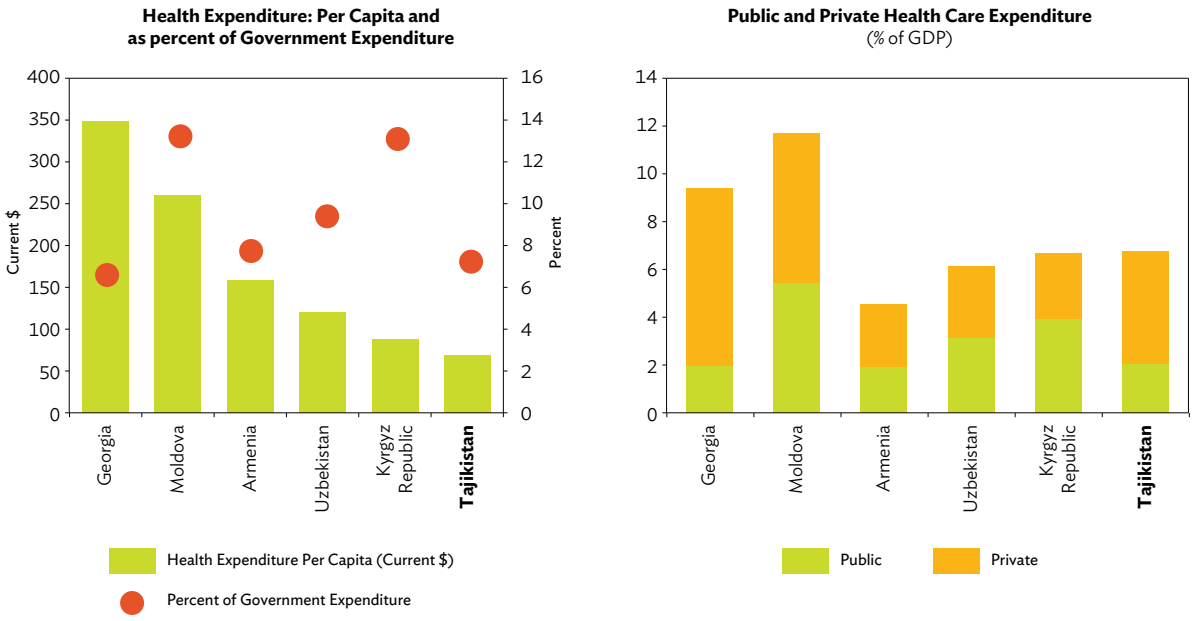
Among the former Soviet comparators, Tajikistan spent in 2013 the least per capita on health, estimated at $70 in current US dollars—in comparators, this ranges from $87 in the Kyrgyz Republic to $350 in Georgia (Figure 3.13).

Figure 3.12: Public Expenditure on Health Care, 1995–2013 (%)



GDP = gross domestic product.
Source: World Bank. World Development Indicators. http://data.worldbank.org/data-catalog/world-development-indicators (accessed March 2016).

Figure 3.13: Health Care Expenditure per Capita, 2013



GDP = gross domestic product.
Source: World Bank. World Development Indicators. http://data.worldbank.org/data-catalog/world-development-indicators (accessed March 2016).

Limited public funding in the health sector has resulted in low-quality health-care services, as manifested by the deterioration of hospital infrastructure especially in rural areas, by outdated and dilapidated medical equipment, and by a shortage of drugs (World Bank 2009). A study on emergency obstetric care found that over 15% of maternity hospitals have no clean water, and 18% of them have no constant power and heating supply (Republic of Tajikistan and UNDP 2010). Poor salaries and poor incentives have resulted in a shortage of quality medical personnel. A result is that Tajikistan is consistently ranked among countries with the highest out-of-pocket health expenditure. Health spending is mostly borne by households, as evident in the high proportion of out-of-pocket health spending. The share of private expenditure in health care was 70% of total expenditure on the sector during 2013. Of that, 87% was out-of-pocket expenditure (World Bank, World Development Indicators).

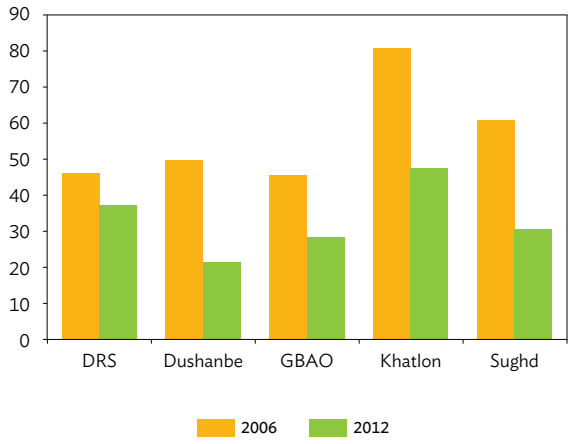
Public health outcomes have improved through the years, but they remain less favorable compared with those in other countries from the former Soviet Union.

A substantial decline in childhood mortality in Tajikistan is confirmed by a comparison of the results of the 2012 Tajik Demographic and Health Survey with those of the 2005 Multiple Indicator Cluster Survey. However, there is a wide disparity in infant mortality across regions (Figure 3.14).

A 2003 UNICEF-supported study reported that infectious diseases were a major cause of infant and child mortality in Tajikistan (Guerra et al. 2003).[35] Most infant deaths (71%) occurred in the first week of life. Although progress in reducing infant mortality has been remarkable between 2012 and 2005, the current rate varies across regions, from 22 per 1,000 infants in

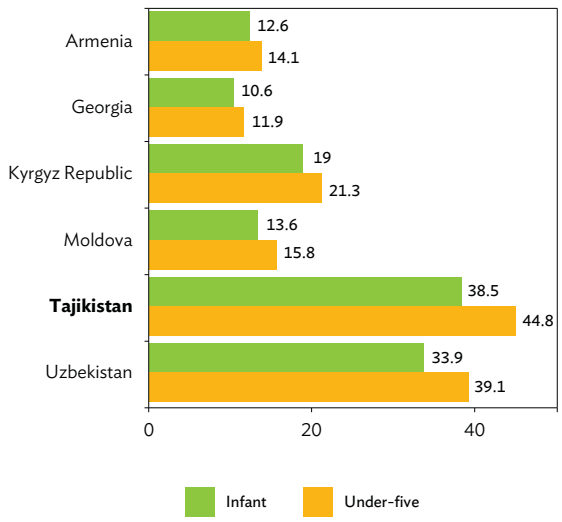
[35] Acute respiratory infections, diarrhea, and prenatal conditions are the main registered causes of infant mortality (Khodjamurodov and Rechel 2010).

Figure 3.14: Infant Mortality Rate per 1,000 Live Births



DRS = Districts of Republican Subordination, GBAO = Gorno-Badakhshan Autonomous Oblast.
Sources: State Committee on Statistics of the Republic of Tajikistan. 2007. *Tajikistan Multiple Indicator Cluster Survey 2005*. Final Report. Dushanbe; Agency on Statistics under the President of the Republic of Tajikistan (2012a).

Figure 3.15: Mortality Rates by Comparator Countries, 2015 (per 1,000 people)



Source: World Bank. World Development Indicators. http://data.worldbank.org/data-catalog/world-development-indicators (accessed March 2016).

Dushanbe to 48 in Khatlon. Overall, there has been a significant decline in infant and under-five mortality rates since 1990, but data from 2015 show that both rates are still significantly higher than those of most comparators (Figure 3.15).

Tajikistan has also not performed well on maternal mortality, which is among the highest in the region. However, overall life expectancy has improved from 63 years in 1990 to 69 years in 2015 but this modest improvement is not enough to catch up with that of the other countries of the former Soviet Union (Table 3.6).

Despite this modest progress in health outcomes, Tajikistan is unlikely to achieve its Millennium Development Goals for health. This is because during 2015 the indicators related to infant mortality, under-five mortality, and maternal mortality, at 38.5, 44.8, and 44, respectively, are far behind the Millennium Development Goals of 30, 39, and 30.

Table 3.6: Health Outcomes in Countries of the Former Soviet Union

Country	Infant Mortality (per 1,000 live births) 2015	Under-Five Mortality (per 1,000 live births) 2015	Maternal Mortality (per 100,000 live births) 2015	Life Expectancy 2013
Armenia	12.6	14.1	25	75
Georgia	10.6	11.9	36	74
Kyrgyz Republic	19.0	21.3	76	70
Moldova	13.6	15.8	23	69
Tajikistan	**38.5**	**44.8**	**32**	**69**
Uzbekistan	33.9	39.1	36	68

Note: The figure for maternal mortality is based on the modeled estimate per 100,000 live births.
Source: World Bank. World Development Indicators. http://data.worldbank.org/data-catalog/world-development-indicators (accessed March 2016).

Malnutrition prevalence among children has generally improved except for wasting.

According to anthropometric data from the 2005 Multiple Indicator Cluster Survey and the 2012 Tajikistan Demographic and Health Survey, there are differences among regions in terms of stunting (height-for-age), wasting (weight-for-height),[36] and underweight (weight-for-age) children under five. The regional breakdowns of the surveys are not comparable over time because of differences in the reference standards used. But the health survey provided a recalculated comparable series at the national level showing that the proportion of children suffering from wasting rose from 7% in 2005 to 10% in 2012. The comparison also revealed that the proportion of children who are stunted decreased only slightly, from 27% in 2005 to 26% by 2012, while the proportion of underweight children decreased from 17% in 2005 to 12% in 2012. In 2012, the Khatlon region had the highest proportion of underweight and wasting children under five, while the Sughd region had the highest proportion of stunted children (Table 3.7).

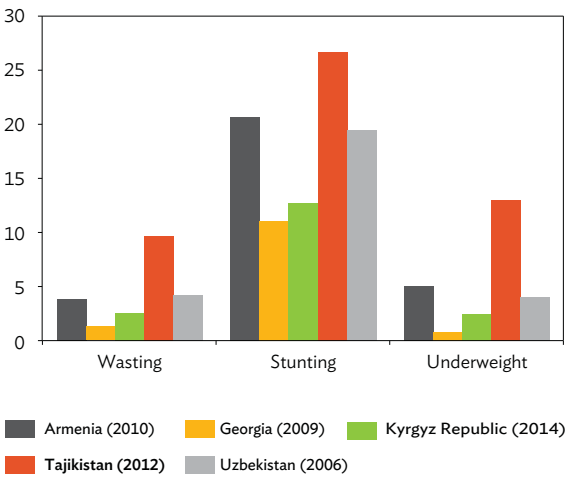
Table 3.7: National and Regional Nutritional Indexes of Children Under-Five

	GBAO	Khatlon	Sughd	Dushanbe	DRS	Tajikistan
Wasting (%)						
2005	5.5	9	3	7	7.5	7
2012	8.1	11.1	8.4	10.3	9.8	9.9
Underweight (%)						
2005	20	20	16	13	16	17
2012	13	14	10	9	13	12
Stunting (%)						
2005	30	28	28	22	21	27
2012	24	27	27	19	26	26

DRS = Districts of Republican Subordination, GBAO = Gorno-Badakhshan Autonomous Oblast.
Sources: State Committee on Statistics of the Republic of Tajikistan. 2007. *Tajikistan Multiple Indicator Cluster Survey 2005*. Final Report. Dushanbe; Agency on Statistics under the President of the Republic of Tajikistan (2012a).

Among comparator countries, Tajikistan has the highest rates of stunting, wasting, and underweight children under five (Figure 3.16).

Figure 3.16: Nutritional Indexes by Comparators (% under 5 years of age)



Sources: World Bank. World Development Indicators. http://data.worldbank.org/data-catalog/world-development-indicators (accessed March 2016).

Hunger partly explains Tajikistan's poor nutritional indexes. According to the Global Hunger Index (GHI) compiled by the International Food Policy Research Institute, Tajikistan falls under the category of "serious" to "alarming."[37] Tajikistan's GHI score though has improved between 1995 and 2005, remaining far higher than comparators. This suggests that despite marginal improvement in the health sector, overall nutrition in Tajikistan is still not adequate and more effort is required to make it at par with comparators (Table 3.8)

Table 3.8: Global Hunger Index

	1995	2000	2005	2015
Armenia	21.8	17.4	14.1	11.2
Georgia	31.8	15.2	10.2	8.5
Kyrgyz Republic	24.1	20.2	14.3	9.4
Moldova	16.0	15.3	15.7	9.1
Tajikistan	**40.3**	**40.4**	**36.5**	**30.3**
Uzbekistan	23.7	21.9	18.5	13.3

Note: The Global Hunger Index (GHI) is a tool designed to comprehensively measure and track hunger globally, regionally, and by country. The GHI score ranges from 0 to 100, where 0 is the best score (no hunger) and 100 the worst. An increase in a country's GHI score indicates that the hunger situation is worsening, while a decrease in the score indicates improvement in the country's hunger situation.
Source: International Food Policy Research Institute. 2015. *2015 Global Hunger Index*.

[36] The wasting away of muscle and fat tissue during illness.
[36] A GHI score of 20–34.9 is characterized by the International Food Policy Research Institute as "serious" while a score of 35.0–49.9 is "alarming."

Immunization coverage has generally increased but not equitably across regions and different maternal education groups.

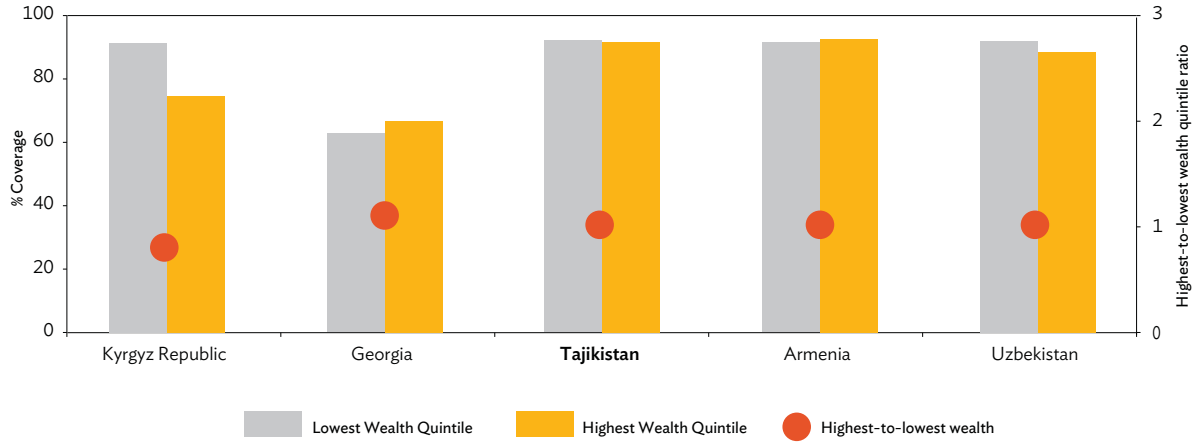
The results of the 2012 Tajikistan Demographic and Health Survey showed that among children aged 18–29 months, coverage has increased substantially for all basic Word Health Organization–recommended vaccinations from 2005 to 2012, and that the percentage of children who were fully immunized rose from 77% in 2005 to 88% in 2012. According to the survey (Agency on Statistics under the President of the Republic of Tajikistan 2012a), "Differences by sex and urban–rural residence are very small, but there are marked variations by region and maternal education. Children living in the Sughd and Khatlon regions are more likely than children in other regions to be fully immunized at 93% and 91%, respectively. Children born to mothers with general secondary education are more likely to be fully immunized (93%) than children of mothers with other levels of education."

The proportion of children aged 18–29 months who were vaccinated for bacillus Calmette-Guérin (BCG) varies between 97% in the Districts of Republican Subordination (DRS) and 100% in Sughd. Despite better access to health-care resources, Dushanbe had lower rates of child vaccinations than other regions, except DRS. Overall there has been no significant difference between the highest- and lowest-income quintiles in the immunization coverage for diphtheria, tetanus toxoid, and pertussis in Tajikistan, which fared reasonably well among the comparators (Figure 3.17).

Maternal health has improved markedly but the improvement is likewise not spread equitably across age groups, regions, and education levels.

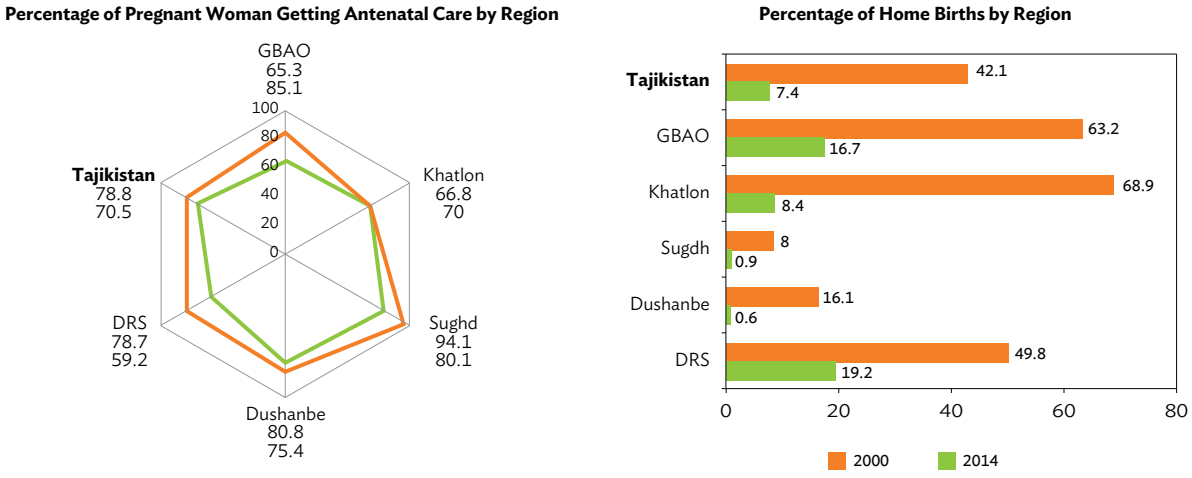
Outcomes for adult mortality in Tajikistan have been mixed. For adult females, it has declined. According to a report on the country's health systems (Khodjamurodov and Rechel 2010), actual mortality rates are significantly higher than those given in official statistics because of low rates of birth registrations and differences between Soviet-era reporting rules and World Health Organization standards. The same report states that "according to a [World Health Organization] World Health Report, estimated life expectancy in Tajikistan in 2004 was 63 years at birth, approximately 10 years lower than the officially reported life expectancy of 73.3 years in 2004." There has been a large decline in the share of home deliveries, from 42% in 2000 to 11% in 2011 (Figure 3.18).

Figure 3.17: Immunization Coverage, among 1-Year Olds
(lowest and highest wealth quintiles and their ratio, latest years)



Note: Latest year for the Kyrgyz Republic (2012), Georgia (2005), Tajikistan (2012), Armenia (2010), Uzbekistan (2006).
Source: ADB. 2014. *Key Indicators for Asia and the Pacific 2014*. Manila.

Figure 3.18: Antenatal Care and Home Births by Regions



Agency on Statistics under the President of the Republic of Tajikistan. 2014 TajStat: During pregnancy up to 12 weeks
Agency on Statistics under the President of the Republic of Tajikistan (2012a): Among women aged 15–49 who had a live birth in the 5 years preceding the survey, percentage who received antenatal care from a skilled provider for the last live birth, and among all live births
DRS = Districts of Republican Subordination, GBAO = Gorno-Badakhshan Autonomous Oblast.
Sources: Agency on Statistics under the President of the Republic of Tajikistan. 2012. Tajikistan Demographic and Health Survey Report. Dushanbe.

The number of medical and health care staff is insufficient to serve the population.

There are significant differences between Dushanbe and other regions in the number of health care staff (doctors, nurses, midwives) per 10,000 people. The GBAO is quite well served by middle-level personnel and hospitals, while the Khatlon and DRS regions have the lowest per capita indicators (Table 3.9). The number of both hospitals and hospital beds has declined significantly since 1990 as part of the rationalization of facilities and resources.

Tajikistan has the lowest number of physicians per 10,000 people compared with other countries of the former Soviet Union. However, the country fared little better among comparators in providing the needed number of hospital beds (Table 3.10).

In sum, there have been improvements in health conditions in Tajikistan in comparative terms, but the country has not kept up with most of the ex-Soviet comparators in this respect. The lack of access to health care in parts of the country and among poor households in particular is a critical constraint to inclusive growth.

Table 3.9: Tajikistan: Health Personnel and Facilities (per 10,000)

	Doctors		Middle-Level Staff		Hospital Beds		Hospitals
	2005	2011	2005	2011	2005	2011	2011
Tajikistan	**19.2**	**20.5**	**41.7**	**47.2**	**58.6**	**48.9**	**0.6**
Dushanbe	68.2	77.6	56.5	74.6	86.4	72.2	0.5
RRS	11.1	12.5	29.7	32.1	44.2	29.9	0.4
Sughd	21.7	19.9	57.3	58.3	70.4	61.8	0.6
Khatlon	9.5	10.6	30.7	37.5	47.5	40.4	0.5
GBAO	15.9	21.7	73.5	83.7	92.2	97.3	1.7

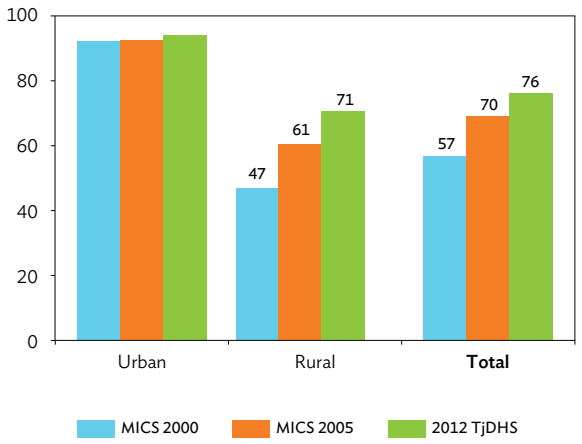
GBAO = Gorno-Badakhshan Autonomous Oblast, RRS = Region of Republican Subordination.
Source: Agency on Statistics under the President of the Republic of Tajikistan. TajStat. http://www.stat.tj/en/ (accessed April 2016).

Table 3.10: Health Personnel and Facilities, Tajikistan and Comparators
(per 10,000 population)

	Hospital Beds	Physicians	Nurses/ Midwives	Ratio
	2012	2013	2013	
	(1)	(2)	(3)	(3)/(2)
Armenia	39.0	27.0	48.3	1.80
Georgia	26.0	42.7	1.4	0.03
Kyrgyz Republic	48.0	19.7	62.2	3.20
Moldova	62.0	29.8	64.0	2.10
Tajikistan	**55.0***	**19.2**	**50.2**	**2.60**
Uzbekistan	44.0*	25.3	119.4	4.70
Russian Federation	97.0*	43.1*	85.2*	2.00

* The data for Tajikistan are for the years 2011 and 2013, Uzbekistan for 2010 and 2013, and the Russian Federation for 2006 and 2010.
Sources: World Bank. World Development Indicators. http://data.worldbank.org/data-catalog/world-development-indicators (accessed March 2016); and author's computations.

Figure 3.19: Trends in the Use of Improved Drinking Water Sources (%)



MICS = Multiple Indicator Cluster Survey, TjDHS = Tajikistan Demographic and Health Survey.
Sources: State Committee on Statistics of the Republic of Tajikistan. 2007. *Tajikistan Multiple Indicator Cluster Survey 2005*. Final Report. Dushanbe; Agency on Statistics under the President of the Republic of Tajikistan (2012a).

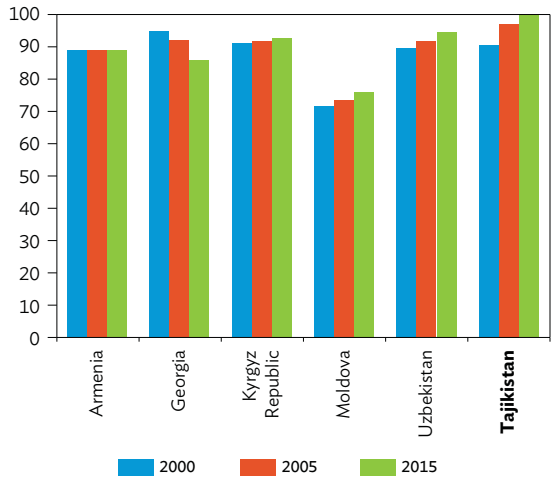
Other Social Services

Water Supply and Sanitation

Tajikistan has made gains in access to improved drinking water sources,[38] particularly in rural areas. Here, the percentage of the population with improved drinking water sources increased from 47% in 2000 to 71% by 2012.

In urban areas, where this level was already high in 2000, access to improved drinking water sources rose to 94% in 2012. Overall, the proportion of the population with access to improved drinking water sources increased from 57% in 2000 to 76% during 2012 (Figure 3.19). Tajikistan still lags behind its comparator economies in access to improved drinking water sources. Compared with 76% of the population in Tajikistan with access to improved drinking sources in 2012, the percentage in Armenia was estimated at 99.8%, in the Kyrgyz Republic at 87.6%, in Georgia at 98.7%, in Moldova at 96.5%, and in Uzbekistan at 87.3% (World Bank, World Development Indicators; and Agency on Statistics under the President of the Republic of Tajikistan 2012). With regard to sanitation facilities, Tajikistan fared well in comparison with other comparator countries (Figure 3.20).

Figure 3.20: Sanitation Facilities by Countries
(% of population)

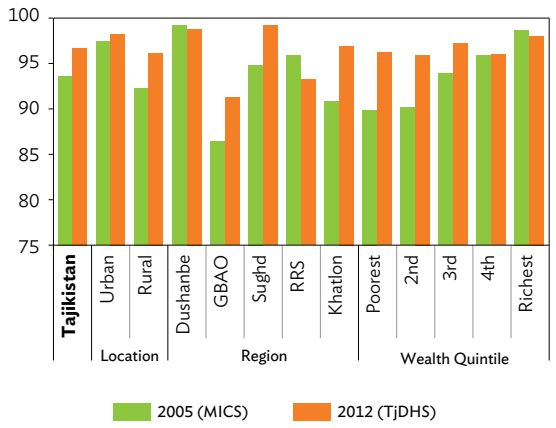


Note: Access to improved sanitation facilities refers to the percentage of the population using improved sanitation facilities, which include flush/pour flush (to a piped sewer system, septic tank, or pit latrine), ventilated improved pit latrine, pit latrine with slab, and composting toilet.
Sources: World Bank. World Development Indicators. http://data.worldbank.org/data-catalog/world-development-indicators (accessed March 2016).

[38] Improved drinking water sources include piped water on premises (piped household water connection located inside the user's dwelling, plot, or yard), and other improved drinking water sources (public taps or standpipes, tube wells or boreholes, protected dug wells, protected springs, and rainwater collection).

During 2012, 96.7% of the population had access to an improved sanitation facility, although access in the GBAO and the Region of Republican Subordination lagged behind other regions (Figure 3.21).

Figure 3.21: Tajikistan Sanitation Facilities, 2005 and 2012 (% of population)



GBAO = Gorno-Badakhshan Autonomous Oblast, MICS = Multiple Indicator Cluster Survey, RRS = Region of Republican Subordination, TjDHS = Tajikistan Demographic and Health Survey.
Note: Sanitation facilities refer to improved sanitation facilities, which include flush/pour flush (to a piped sewer system, septic tank, or pit latrine), ventilated improved pit latrine, pit latrine with slab, and composting toilet.
Sources: State Committee on Statistics of the Republic of Tajikistan. 2007. *Tajikistan Multiple Indicator Cluster Survey 2005*. Final Report. Dushanbe; and estimates based on the 2012 Tajikistan Demographic and Health Survey.

Despite this progress in access to safe water, the incidence of infectious diarrheal diseases has been high in Tajikistan. In 2008, 67,800 cases of acute intestinal infections were recorded compared with 67,300 cases in 2003 (Republic of Tajikistan and UNDP 2010).[39] In sum, access to safe drinking water, particularly in Tajikistan's rural areas, is a critical constraint on inclusiveness.

3.3 Access to Infrastructure

As discussed in Chapter 2, Tajikistan's infrastructure is inadequate to meet current development challenges. There is poor connectivity in various regions and lack of an uninterrupted electricity supply to households, particularly in winter; together, they constitute a critical constraint to inclusive growth. Although the electrification rate is high at more than 90%, household access is controlled by the grid, which imposes rolling blackouts from October through May (except in the GBAO, which is supplied by Pamir Electric), and about 70% of the population suffers from winter blackouts). Residential demand for electricity increases significantly for heating in the winter, thus overloading the system that has limited capacity to generate peak power. Electricity shortages force rural residents to burn wood, shrubs, and cotton stems for heating, such that the use of wood for fuel increased from 37% in 2007 to 47% by 2009 (Figure 3.22).[40]

Limited access to a central heating facility is a problem for households in Tajikistan.

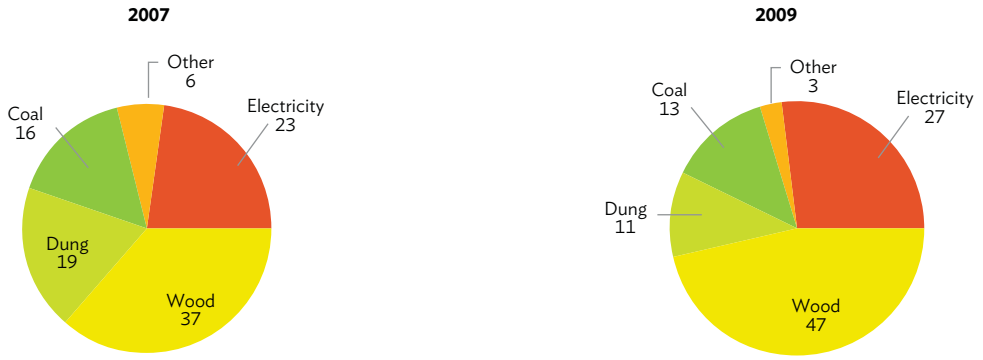
According to the 2009 Tajikistan Living Standards Measurement Survey, only 10% of Tajikistan households had a central heating facility. There are wide disparities between urban and rural households in access to central heating, with barely 1% of the households in rural areas having access to it. About 70% of households in Dushanbe had central heating access, but access levels in all other regions were extremely low (Figure 3.23).

Tajikistan's average per capita electricity consumption is highly unequal due to this disparity in access to central heating. During 2006–2009, for which data are available, per capita consumption in urban areas was almost five times that of rural consumption. Electricity shortages during winter are a particular concern as all regions except Dushanbe face wide-ranging daily supply interruptions (Figure 3.24).

[39] According to Republic of Tajikistan and UNDP (2010), drinking water is mainly disinfected in municipal water pipelines, and disinfection in provincial pipelines is irregular. Liquid chlorine disinfection is available only in large cities. In 2010, of Tajikistan's 62 cities, district centers, and urban villages, only 52 had a central water supply and only 32 a sewer system. All water supply and sewer infrastructure needed rehabilitation. The incidence of infectious intestinal diseases in 2005–2009 showed that poor water quality played a major role in the outbreaks.

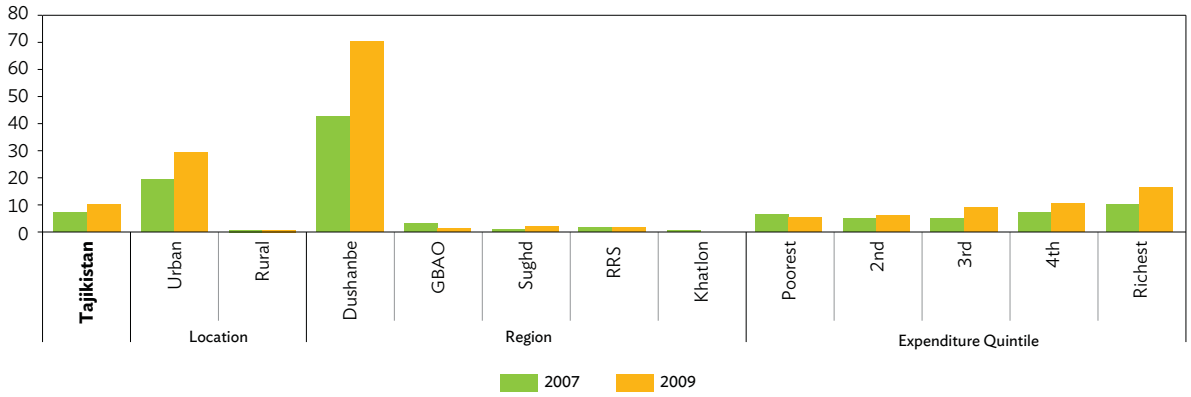
[40] A UNDP report on energy and poverty noted that "due in large part to use of wood for fuel, Tajikistan's mountainous regions have lost up to 70% of their forest cover since the late 1990s. The average rural household uses more than 20 kilos of firewood and/or dung per day; most of this work is done by women and children who spend up to 6 hours per day collecting and preparing firewood and dung. The lack of lighting reduces living standards and basic economic activities, especially in winter" (Morvaj et al. 2011).

Figure 3.22: Household Sources of Energy for Heating (% of households)



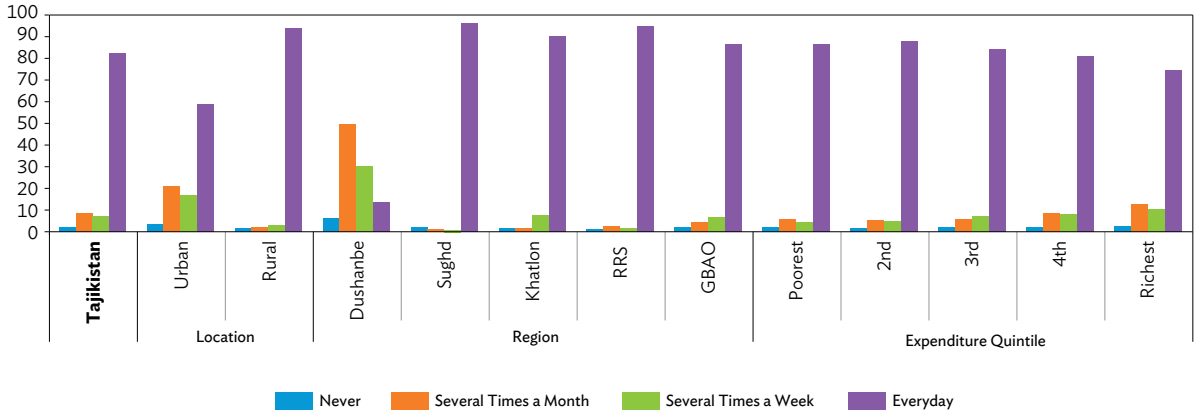
Source: Estimates based on Agency on Statistics under the President of the Republic of Tajikistan. *Tajikistan Living Standards Measurement Survey 2007* and *2009 Tajikistan Living Standards Survey.*

Figure 3.23: Household Central Heating Facility, 2007 and 2009 (% of households)



GBAO = Gorno-Badakhshan Autonomous Oblast, RRS = Region of Republican Subordination.
Sources: Estimates based on Agency on Statistics under the President of the Republic of Tajikistan. *Tajikistan Living Standards Measurement Survey 2007* and *2009 Tajikistan Living Standards Survey*.

Figure 3.24: Energy Supply Interruption, Winter 2007 (% of households)



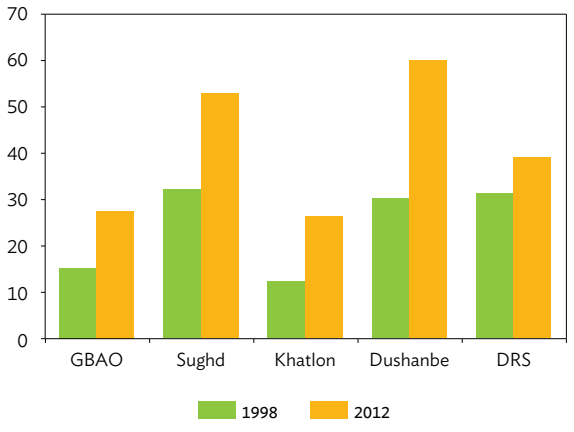
GBAO = Gorno-Badakshan Autonomous Oblast, RRS = Region of Republican Subordination.
Source: Estimates based on the Tajikistan Living Standards Measurement Survey 2007.

The analysis in this section therefore suggests that the energy dimension of poverty is a binding constraint to inclusive growth in Tajikistan, and the repercussions are wider than just on the energy sector alone.

Transport

Because of its challenging geography, particularly its mountainous terrain, Tajikistan has the least developed transport system among the former Soviet Union countries, and also has the highest transport costs in the world. As discussed in Chapter 2, roads are dominant for domestic freight and passenger transport, but despite efforts to improve the condition of the road network through rehabilitation projects, poor road quality continues to hamper the country's development. The number of light vehicles in Tajikistan has increased rapidly in recent years, but there are significant variations among regions. Dushanbe and the Sughd oblasts have the highest number of cars per 1,000 people, while Khatlon oblast and the GBAO have the lowest (Figure 3.25).

Figure 3.25: Number of Passenger Cars by Region (per 1,000 population)



DRS = Districts of Republican Subordination, GBAO = Gorno-Badakhshan Autonomous Oblast.
Source: Agency on Statistics under the President of the Republic of Tajikistan. TajStat. http://www.stat.tj/en/ (accessed April 2015).

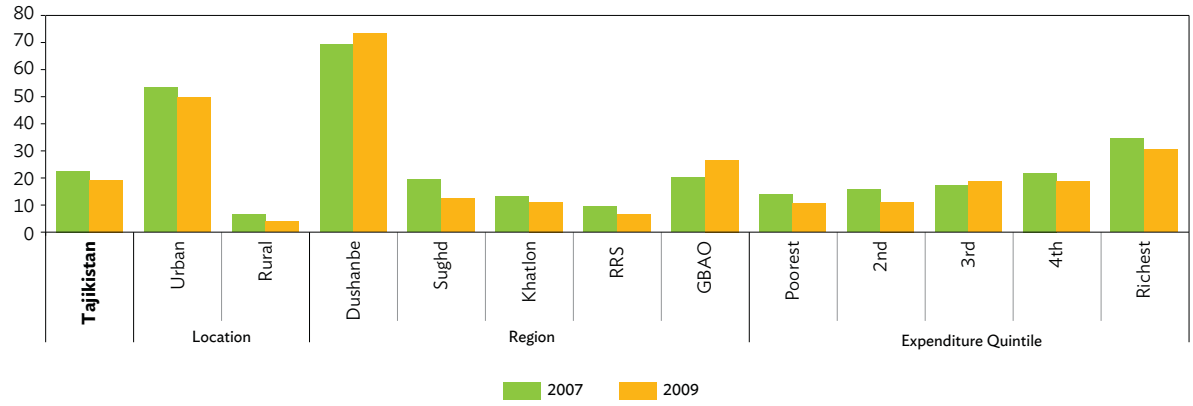
While there are four major airports in Tajikistan, only two are used for international flights. Domestic passenger flights between Dushanbe and Khujand account for 89% of all domestic passenger travel, and flights between Dushanbe and Khorog for another 5%. International passenger travel is mostly to and from the Russian Federation, accounting for 87% of Tajikistan's total passenger travel in 2009. Freight by air is negligible. In sum, poor transportation is a critical constraint to inclusive growth.

Mobile Phone, Cellular Network, and the Internet

Information and communication technology (ICT) plays an important role in reducing the economic distance to markets and in integrating urban centers. In countries with disadvantaged geography like Tajikistan, ICT can dramatically reduce the need for travel and transportation. There are wide disparities in access to landline telephones between urban and rural areas, but mobile access is fairly equal (Figure 3.26 and Figure 3.27). However, only 3.5% of households in Tajikistan have direct internet access, most of them in Dushanbe and other urban areas (Figure 3.28).

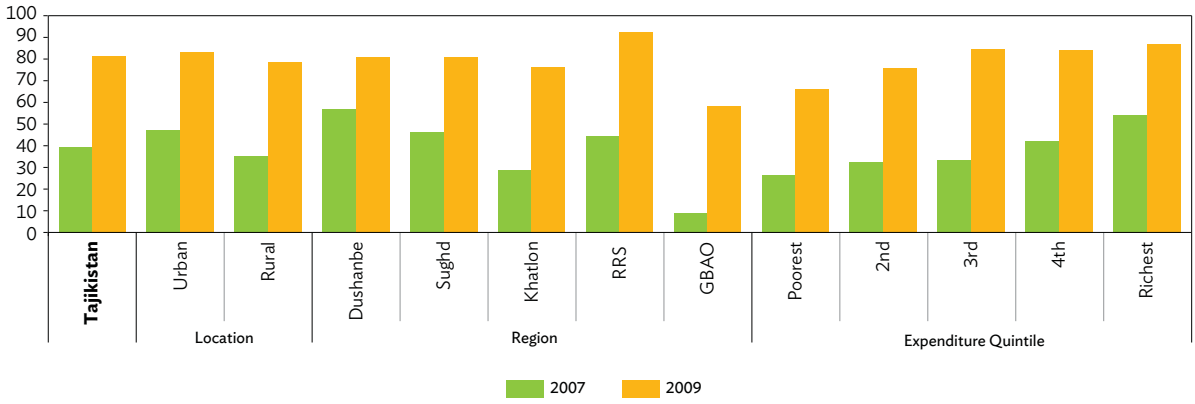
Landline telephone subscriptions likewise vary widely among the regions and across urban and rural areas. Because individual telephone needs are increasingly met by mobile services, landline subscriptions should not be considered the only measure of the availability of communications services. Even so, landline subscriptions are still a reasonable indicator of formal business activity in a given area. The big number of landline subscriptions in the GBAO, however, likely reflects the fact that the small population of its vast mountainous areas is not being adequately served with cellular coverage. Even so, the overall level of access to telephony is not a critical constraint to inclusive growth in Tajikistan.

Figure 3.26: Landline Telephone Ownership, 2007 and 2009 (% of households)



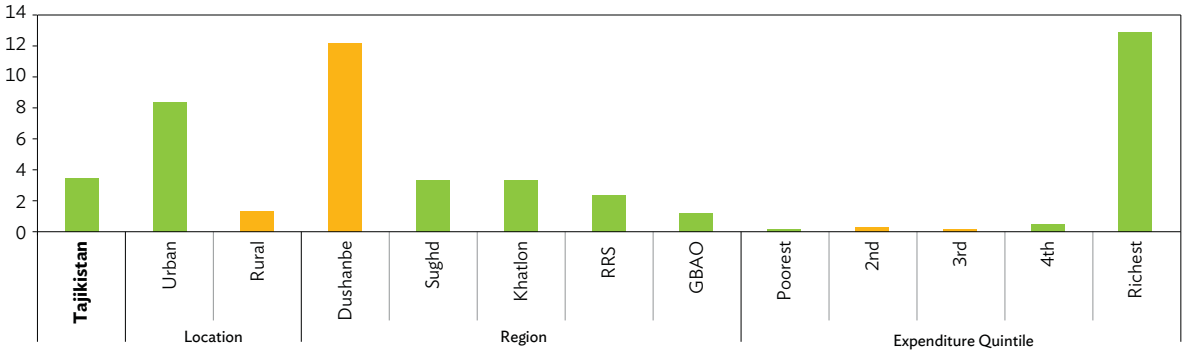
GBAO = Gorno-Badakshan Autonomous Oblast, RRS = Region of Republican Subordination.
Source: Estimates based on Agency on Statistics under the President of the Republic of Tajikistan. *Tajikistan Living Standards Measurement Survey 2007* and *2009 Tajikistan Living Standards Survey*.

Figure 3.27: Mobile Phone Ownership, 2007 and 2009 (% of households)



GBAO = Gorno-Badakhshan Autonomous Oblast, RRS = Region of Republican Subordination.
Note: A household with any member who has a mobile phone is considered to have access to a mobile phone.
Source: Estimates based on Agency on Statistics under the President of the Republic of Tajikistan. *Tajikistan Living Standards Measurement Survey 2007* and *2009 Tajikistan Living Standards Survey*.

Figure 3.28: Internet Connection, 2012 (% of households)



GBAO = Gorno-Badakhshan Autonomous Oblast, RRS = Region of Republican Subordination.
Source: Estimates based on data from Agency on Statistics under the President of the Republic of Tajikistan. 2012. *Tajikistan Demographic and Health Survey Report*. Dushanbe.

3.4 Social Protection

Tajikistan's social protection system is shallow, untargeted, and unable to meet the challenges of inclusive growth.

Besides promoting equal access to opportunities and expanding human capabilities and skills, a strategy to achieve inclusive growth also requires an effective system of social protection. Poor households are more vulnerable to the negative effects of transitory livelihood shocks caused by sickness and injury, joblessness, macroeconomic crises, and natural disasters. Safety nets aim to cushion such shocks and provide a minimum welfare level for the chronic or long-term poor (Ali and Zhuang 2007).

Tajikistan's social protection system is dominated by social insurance (pensions), old-age pension, disability pension, and survivor's pension, with only little social assistance and labor market programs (Appendix 3.1). Table 3.11 shows how large a share of the budget goes to social insurance. In 2009, almost 70% of the budget in the social protection program was spent in pensions and other forms of social insurance.

Table 3.11: Social Protection Programs in Tajikistan, 2010 (%)

Social Protection Program	Coverage (share of total social protection beneficiaries)	Expenditure (share of total social protection expenditure)
Social assistance		
Child educational assistance	11.7	2.8
Other child protection programs	20.2	3.3
Other health assistance	1.4	2.7
Other social assistance	13.7	10.9
Social insurance		
Pension	31.8	23.6
Unemployment Insurance	0.2	0.6
Other social insurance	18.2	49.7
Labor market programs		
Employment generation	0.4	0.2
Skills development	0.1	0.5

Source: ADB. Social Protection Index. http://spi.adb.org/spidmz (accessed March 2016).

An ADB report on social protection in Tajikistan describes the system as "... characterized by financial imbalance, inadequate coverage, poor targeting, limited information, and poor distribution mechanisms. The government acknowledges that the social pension system is 'badly run and ineffective,' benefits are 'unacceptably low,' and the system requires significant reform. But there has been little progress in overhauling the system and the same problems are cited in the 2007 and 2010 Poverty Reduction Strategy papers. In addition to low benefits, arrears in the payment of social pensions are commonplace due to poor cash management" (Son 2011).

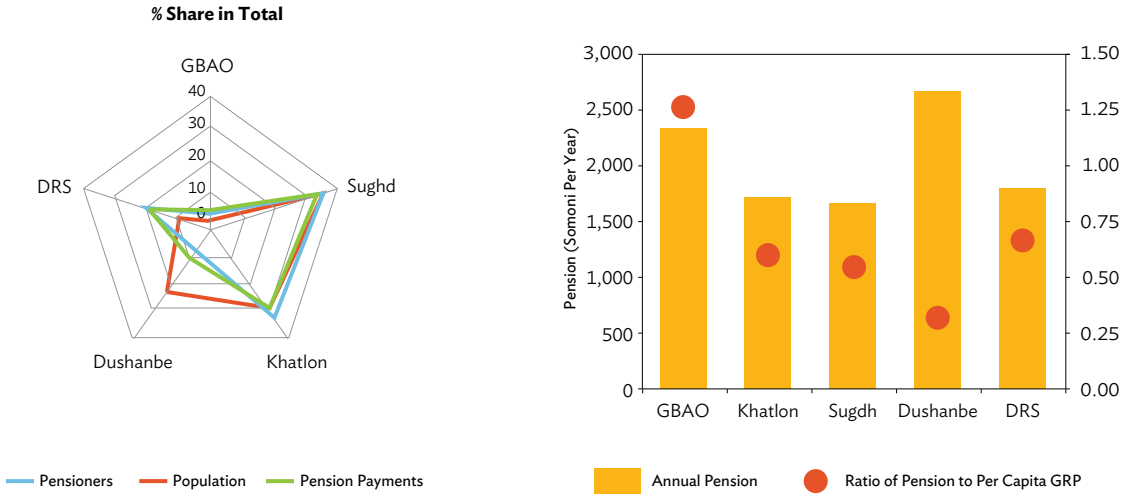
The pension system is weak and unsustainable.

Pension benefits are determined by the recent wage level of the pensioner. This criterion results in low pension benefits, as those who are employed in the formal sector receive low wages. The situation is aggravated by the fact that more than 1 million Tajik citizens work abroad, mainly in the Russian Federation as seasonal workers. These workers do not contribute to the social insurance and pension system; however, they may, in the future claim social assistance benefits (Republic of Tajikistan and UNDP 2010). Social protection in Tajikistan lacks mechanisms to protect the poorest during financial crises. Other countries responded to the 2008–2009 global financial crisis by improving and scaling up their social safety net programs, but no such program was undertaken in Tajikistan (World Bank 2011a).

About 90% of pensioners live in the Khatlon, Sughd, and DRS regions. Average pensions in these regions are about half of gross regional product and significantly lower than those of Dushanbe and the GBAO (Figure 3.29).

An ADB study also found that the "social pension program is highly inequitable in terms of transfers received by poor and non-poor beneficiaries. The beneficiaries from poor households receive TJS11.23 per equivalent adult per month on average, while their non-poor counterparts receive an average monthly

Figure 3.29: Share of Pension by Region



DRS = Districts of Republican Subordination, GBAO = Gorno-Badakhshan Autonomous Oblast, GRP = gross regional product.
Source: Agency on Statistics under the President of the Republic of Tajikistan. TajStat. **http://www.stat.tj/en/** (accessed April 2016).

pension of TJS14.78 per equivalent adult. Inequity, which is inherent in the social pension system, is consistently observed across the three programs (sic old-age pension, disabled pension, and survivor's pension)" (Son 2011).

Pensions are not regularly adjusted with inflation and, as a result, the real value of social pensions has fallen over the years and is not enough to meet even basic needs (Son 2011). In 2009, the average old-age pension received by households was only TJS139 per month. Although this is higher than the TJS80 minimum wage (Yuldoshev 2012), it is far below the average TJS284 wage received by employed individuals (Agency on Statistics under the President of the Republic of Tajikistan 2012a).

According to ADB's 2010 Social Protection Index (SPI),[41] Tajikistan had a score of 0.04, the lowest among the Central and West Asian countries. Social protection expenditures, which accounted for 1.2% of GDP in 2010, were well below the average for Central and West Asian countries of 5.0%. The SPI also measures the depth of social protection, which is represented by the average benefits received by each beneficiary and the breadth of coverage. This is the proportion of the total potential beneficiaries who are actual beneficiaries (that is, who receive social protection benefits). On both scores, Tajikistan did not do well among comparators (Figure 3.30). The gender decomposition of the SPI shows that the social protection system favors males (SPI of 0.025) over females (SPI of 0.015).[42]

Government spending on social assistance (child welfare, health assistance, and social transfers) is small. In 2010, at less than 0.5% of GDP, it was one of the lowest among comparator countries (Figure 3.31). Tajikistan's consolidated government budget for social assistance is less than half of what is spent in Armenia, Georgia, the Kyrgyz Republic, Moldova, and Uzbekistan.

[41] The SPI is an indicator used to assess the depth and breadth of a country's social protection programs and their distributional impact on the poor and the nonpoor, and on women and men.

[42] Unemployment benefits are limited to a relatively small group of people who are registered at an employment office, able and willing to work, and receiving no income from employment. The benefits cover 50% of the insured's gross average earnings and are paid for 6 months. At the end of October 2013, there were 55,000 registered unemployed and only 1,300 received unemployment benefits.

Social assistance and pensions in Tajikistan are not effective in reducing poverty because of poor targeting and a weak distribution mechanism.

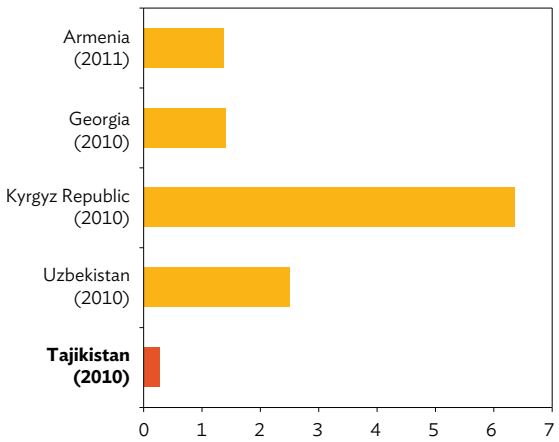
During the Soviet era**,** state pensions and subsidies were universal because technically, there were no rich or poor households. Thus, the administrative capacity to implement targeted programs—such as legal basis, regulatory framework, institutions, statistical capacity, poverty mapping, and so on—was never developed. After Tajikistan transitioned to a market economy, targeting became a key problem. Only a fraction of the poor (lowest-quintile households) received any social assistance. Social assistance covered only 20% of poor households, the lowest percentage among comparators (Figure 3.32).

Social assistance in 2009 totaled around 3% of the per capita monthly consumption of the poorest 20% of the population. Compared with the other comparator countries, Tajikistan ranked the lowest in generosity to social assistance (Figure 3.33).

Figure 3.30: Depth and Breadth of Social Protection, 2010

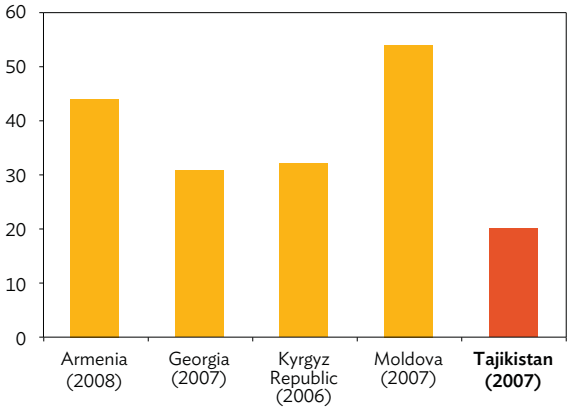
Source: ADB. Social Protection Index. http://spi.adb.org/spidmz/index.jsp (accessed March 2016).

Figure 3.31: Share of Social Assistance in GDP
(%)



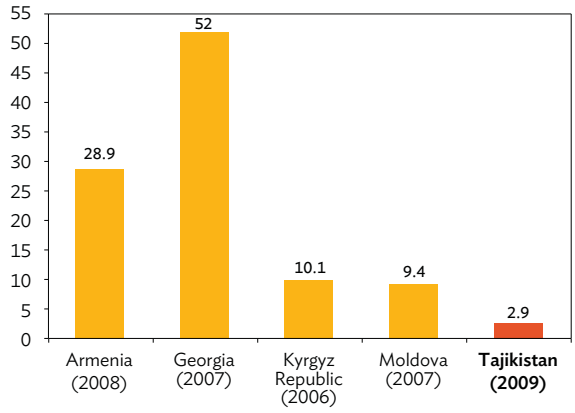
GDP = gross domestic product.
Source: ADB. Social Protection Index. http://spi.adb.org/spidmz/index.jsp (accessed March 2016).

Figure 3.32: Share of Households in the Poorest Quintile Receiving Social Assistance
(%)



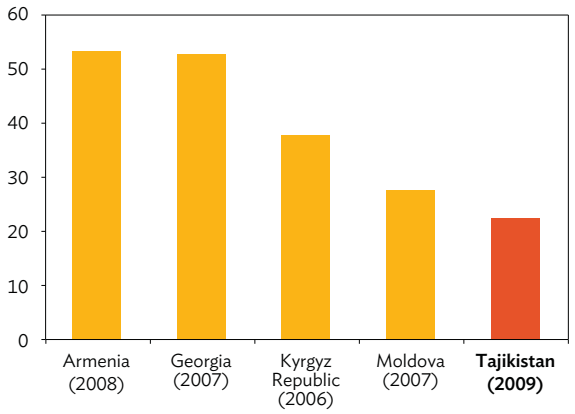
Note: Program coverage is the portion of households in each group where at least one member receives social assistance.
Source: World Bank. *Republic of Tajikistan: Delivering Social Assistance to the Poorest Households*. Washington DC.

Figure 3.33: Generosity—Social Assistance as a Share of the Income of the Poorest Quintile
(%)



Note: Generosity is the mean value of the transfer received by all beneficiaries in a group as a share of consumption per capita of the social assistance beneficiaries in that group.
Source: World Bank. *Republic of Tajikistan: Delivering Social Assistance to the Poorest Households*. Washington DC.

Figure 3.34: Share of Social Assistance Benefits Received by the Poorest Quintile
(percentage point shares in total social assistance)



Note: These figures are the transfer amounts received by the group as a percentage of total transfers received by the population.
Source: World Bank. *Republic of Tajikistan: Delivering Social Assistance to the Poorest Households*. Washington DC.

The lack of targeting weakens the effectiveness of the pension system in relation to the goal of reducing poverty (ADB 2011b). The effectiveness of Tajikistan's social assistance programs lags behind comparator countries, as just a little more than 20% of social assistance benefits go to the bottom quintile (Figure 3.34). Based on estimates of the *2009 Tajikistan Living Standards Survey*, only a 0.3 percentage point decline in the poverty head count is attributed to social assistance programs. In sum, Tajikistan's social protection system is not effective, has been unable to meet challenges in relation to spreading the benefits of growth, and is not leading to inclusiveness.

3.5 Conclusion

This chapter has discussed various factors that can impinge on the inclusiveness of growth in Tajikistan and, based on the diagnostic framework, has identified the following as critical constraints to the inclusiveness of growth: (i) limited opportunities for productive and decent employment in the formal sector, (ii) the challenge of poor health and providing quality health services, (iii) limited access to and declining quality of education, (iv) insufficient quality transport and electricity infrastructure, and (v) a weak and ineffective social protection system.

Despite robust economic growth, Tajikistan has had limited success in providing decent employment opportunities to its growing labor force, particularly in the formal sector. Although literacy is high, the quality of education has deteriorated and gender disparities have increased. The health infrastructure is not sufficient to provide quality services and the Tajik people have to expend a significant amount of their own resources on health care. Moreover, health facilities are not easily accessible to a wide segment of the population. All these are on top of the lack of an uninterrupted supply of electricity in Tajikistan particularly in winter, a situation that has become a serious binding constraint to inclusive growth.

Appendix 3.1: Social Protection Programs in Tajikistan

Year	Social Protection Program	Function	Intended Beneficiary	Coverage	Budgetary Allocation
Social Assistance Program					
2001	**Cash transfers for education**	Financial support to low-income families with children enrolled in public schools.	Families with students enrolled in classes 1–9 whose monthly income per family member is below 50% of the minimum wage.	15% of schoolchildren from the poorest households in each school (due to limited budget, the program is unable to cover all poor schoolchildren). The benefits are given in cash, TJS40 per year, TJS20 given twice a year.	The program is financed from local government budget, received directly from the Ministry of Finance.
2003	**Gas and electric subsidy**	To cover the electricity bills of the poor families after the increase in tariffs for electricity.	The compensation or subsidy is given and paid for low-income families, citizens living alone; the elderly, families with many children who have lost the breadwinner, families with two or more disabled members, and families with the household head having lost the ability to work, earning an average monthly income for a family member equal or less than 50% of minimal salary established by the Government of Tajikistan.	The subsidy is considered for no more than 20% of all officially registered families in administrative legal entities. The poorest of the poor of eligible individuals or families are given the benefit. The subsidy is given irrespective of availability of a gas meter. The size of the subsidy in the absence of a gas meter is set according to seasonal norms of electricity and natural gas consumption. There are fewer subsidies in summer than in winter. The subsidy is set for 1 year and paid every 2 months either in cash or in kind, depending on the choice of the recipients. After each 6-month period, the recipient contacts the relevant committee for further support with a new application.	The subsidy is financed from the Republican budget.
1991	**Disability benefit**	The program provides sanatorium and spa treatment each year for the disabled.	Disabled and invalid in category 1 and 2, members of World War 2 and Chernobyl victims (the financial position of the beneficiary is not considered).	The beneficiaries of this program are permitted to issue a voucher for the sanatorium and spa treatment once in 2 years. In case the eligible individual (excluding World War 2 and Chernobyl victims, and personnel pensioners) has not been awarded the benefit during the 2 years, compensation is in the form of cash based on the average size of the sanatorium voucher price. The voucher per person costs TJS630 for 18 days (TJS35 per day) and the compensation is paid TJS800.	Financed from the Republican budget. Implemented by the Ministry of Labour and Social Protection.

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Year	Social Protection Program	Function	Intended Beneficiary	Coverage	Budgetary Allocation
2008	**Health assistance**	The program is a co-payment exemption for health care.	Citizens of Tajikistan and groups of citizens based on social status (excluding veterans and disabled of World War 2, Labor citizens who suffered from the Chernobyl accident, disabled/invalids of category 1 and 2, invalids due to professional injury, disabled children, orphaned children living in government houses for orphans, pensioners over 80 years of age, and elderly citizens living in homes for the elderly).	Free-of-charge health care services in the following districts: 1. Sughd–Spitamen 2. Khatlon 3. Nurek 4. Sarband 5. Danghara 6. Districts of Republican Subordination – Turzunzade 7. Shahri Nav 8. Varzob	
2006	**Scholarship stipends for students**	The scholarship or stipend is set for students of higher professional education and given to students based on their academic progress.	Students of middle and higher professional institutions with satisfactory evaluation in accordance with their socioeconomic status. The mandatory stipend is granted by the scholarship committee to the following students: (i) Heroes of the Government of Tajikistan; (ii) Deaf, blind, and those with tuberculosis; and (iii) Orphans or residents of children's homes and boarding schools.	The stipend fund for middle and higher professional institutions is set at 60% of the total number of students. This percentage applies to students from the state budget studying full time. For students on a contractual basis, the stipend is determined by the terms of the contract and paid to middle and higher professional institutions.	
1999	**School feeding program**	Provides hot meals for schoolchildren.	Primary school children, from classes 1 to 4.	The program mainly covers village schools with 61% of all schools being provided hot meals. The meal is provided once each day.	The program is implemented and financed fully by World Food Programme through the Ministry of Education.
Social Insurance Programs					
1999	**Civil service pension**	Guarantees all citizens residing in Tajikistan the right to material security in old age and other circumstances.	Granted to all individuals engaged in labor or employment, hired employees, and individual businessmen and entrepreneurs. The main pension eligibility criteria since 2003 are men reaching age 63 with working experience of 25 years and women reaching age 58 with 20 years working experience; and having made payments of social tax for the duration of employment.	The law sets the level of pensions based on minimum living wage and regular reviews. The size of the retirement pension is set at 55% of the employee salary, and at 60% of salary for employees with continuous working experience of 25 years for men and 20 years for women. The minimal retirement pension is set at the same rate as the country's established minimum salary.	Financed from the state budget and has a separate allocation for the Agency of State Social Insurance.

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Year	Social Protection Program	Function	Intended Beneficiary	Coverage	Budgetary Allocation
1999	**Civil service pension**		Disability pension is also assigned in the case of disability, resulting in full or partial loss of working ability as a result of occupational injury or professional illness; general illness; military trauma; and illness developed during the provision of service in military forces. The long-service pension is assigned for individuals with occupation disability or qualified to decrease the age of retirement, and eligible for retirement pensions. The recipients of this pension are employees of aviation, including testing-flight members with 25 years of experience for men and 20 years for women. The employer pays social tax (excluding 25% employer and 1% employee salary for the Pension Fund) for each hired employee. Through payment of the social tax, insured individuals obtain the right to receive pensions. Individual entrepreneurs or businessmen independently pay a social tax of 20% and become eligible for retirement pension.	The size of disability pension is set according to the type or group of disability (that is, disabled individuals of group 1 and 2 pension is set at the rate of 70%, and group 3 at 50% of their salary). The minimum disability pension is set at 100% of the minimum salary in the country for the disabled group 1 and 2; and for the group 3 at 50% of the country's minimum salary.	
1999	Social pension	Guarantees all citizens residing in Tajikistan the right to material security in old age and other circumstances.	Assigned to individuals who do not have the ability to work, regardless of their social status. The social pension is paid for unemployed individuals (except those disabled from childhood) who do not have the right for civil service pensions (excluding disabled or invalids of category 1 and category 2, including those disabled from childhood; invalids and disabled of category 3 at age 65 for men and age 60 for women; children as a result of loss of breadwinner; and disabled children at the age of 16).	The social pension is as follows: (i) 100% of minimum size retirement pension for invalids of category 1, invalids from childhood 1 and 2, and disabled children at age 16 years; (ii) 50% of minimum size of retirement pension for invalids of category 2 (except invalids from childhood), men reaching the age of 65 and women aged 60 and above, and children who experienced loss of breadwinner; (iii) 100% of minimum size of retirement pension for children who lost both parents; (iv) 30% of minimum retirement pension for invalids of category 3; and (v) for mothers with 10 or more children and raising them until age 8, social pension is paid at the rate of 100% of minimal retirement pension.	

Source: Compiled by authors.

Chapter 4
Structural Transformation and Export Diversification

As discussed in Chapter 1, Tajikistan has achieved high rates of economic growth since the end of its civil war. However, the productive capacity of the economy remains low because expansion has not led to accelerated private investment. More importantly, the country has not achieved the needed structural transformation to move resources from lower to higher productivity sectors. This situation threatens the sustainability of high growth.

This study posits that for Tajikistan to continue its strong economic growth in the long run, it needs to modernize its economy through structural transformation and export diversification. The same is true if it is to meet its goals to provide decent employment in the nonfarm sectors, improve the general standard of living, and help reduce regional inequality. But such structural transformation and diversification requires the capability to conceptualize and implement changes in the country's production and export structures. Does Tajikistan have those capabilities? Answering this question requires deep analysis of the country's level of export sophistication and the challenges it faces. This will help us understand why, despite high economic growth, the country has not successfully shifted resources toward high-value-added sectors. Apart from detailing the results of that analysis, this chapter will look at how attractive it is for Tajikistan to move to new activities, and then identify products that may help accelerate that structural transformation.

Empirical evidence suggests that the production structure of an economy affects export diversification and economic growth (Hausmann and Klinger 2006). Tajikistan remains primarily agricultural, with about 70% of the population living in rural areas and with 66% of the workforce employed in the agriculture sector. The industrial sector has not been a major contributor to growth and employment. This chapter contends that structural change requires a well-crafted push that will not come through market forces alone. In close collaboration with the private sector, the government has an important role to play in developing and implementing specific industrial policies.

Employment has declined in Tajikistan's industrial sector, while the employment absorption of the service sector has remained flat.

Tajikistan's high economic growth has not yet generated significant new employment. Although the service sector has become the largest contributor to growth, its contribution to job creation remains limited. The country's stagnant industrial sector reflects its inability to transfer resources from low- to high-value-added sectors. Private investment remains low and the economy's productive capacity has not been expanded at the same pace as the labor force. Consequently, most workers remain in low-productivity jobs. These structural weaknesses make it difficult to speed up structural transformation.

An examination of successful economies in Asia suggests that structural transformation in those had three main characteristics. First, resources moved from primary sectors to industry. Second, their outputs shifted from low-productivity goods to high-value-added goods, particularly manufacturing. Third, as their export baskets diversified, they comprised increasingly of more sophisticated products.

But Tajikistan has yet to experience such structural change in the composition of output and employment. Indeed, the industrial sector's contribution to output and employment has even declined. Similarly, during 1992–2013, the share of manufacturing to output and employment also declined. As of 2014, manufacturing accounted for 9.2% of output and only 3.3% of employment. This is in sharp contrast to other successful economies that have seen industry and manufacturing contribute greater shares of employment and, at more advanced stages of development, have seen the employment share of services rise (Table 4.1).

In the absence of sufficient employment in the modern sectors of the economy, agriculture has remained the main sector for employment. The service sector has become the main driver of growth since the mid-2000s. Yet, as noted, it has not added proportionately to jobs, with its employment share declining from 40.2% in 1992 to 30.3% by 2014.

4.1 Labor Productivity and Structural Transformation

Tajikistan has not been so successful in moving resources from low- to high-value-added sectors and its labor productivity remains low.

Rapid growth in labor productivity is yet another characteristic of any of Asia's successful economies. For example, the People's Republic of China, the Republic of Korea, and Malaysia successfully shifted labor from low-productivity sectors to high-productivity ones. In contrast, on measures of average labor productivity, Tajikistan has also lagged behind other countries (Figure 4.1).

The findings of the analysis suggest that Tajikistan's labor productivity declined 0.25% a year during 1991–2014. The breakdown of labor productivity also shows significant differences across sectors and in the pace of productivity changes. Even though the labor productivity of industry at that time increased by 2.15%, employment declined by 4.1%. While the service sector experienced a rise in labor productivity by 1.6%, its contribution toward employment generation remained at 0.12%. Agricultural productivity increased by 0.2% and employment by 2.4% during the same period (Figure 4.2).

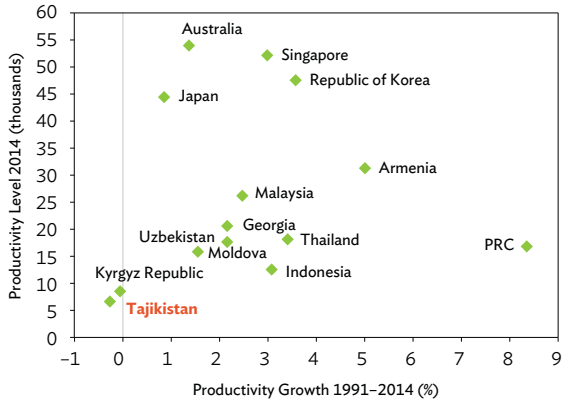
Table 4.1: Structural Change 1992–2014

	Tajikistan		China, People's Rep.			Korea, Rep. of			Malaysia			Thailand		
	1992	2014	1980	1990	2014	1980	1990	2014	1980	1990	2014	1980	1990	2014
Output Structure (% of GDP)														
Agriculture	27.4	27.4	29.9	21.4	9.2	15.1	7.1	2.3	23.0	14.6	8.9	23.2	12.3	10.5
Industry	46.1	21.7	47.9	43.0	42.7	34.2	37.9	38.2	41.8	41.1	40.0	28.7	38.1	36.8
Manufacturing	34.1	9.2	40.2	32.6	...	22.8	24.5	30.3	21.9	25.8	22.9	21.5	27.5	27.7
Services	26.5	50.8	22.2	35.6	48.1	50.7	55.0	59.4	35.2	44.3	51.2	48.1	49.6	52.7
Employment Structure (% of total Employment)														
Agriculture	46.7	65.5	68.7	60.1	31.4	34.0	17.9	6.1	37.2	26.0	12.2	70.8	64.0	39.6
Industry	13.1	4.1	18.2	21.4	30.1	29.0	35.4	24.4	24.1	27.5	27.4	9.9	13.5	21.2
Manufacturing	...	3.3	13.8	15.1	18.7	21.6	27.2	16.7	16.1	19.9	16.7	7.9	10.2	14.0
Services	40.2	30.3	13.1	18.5	38.5	37.0	46.7	69.5	38.7	46.5	60.3	19.3	22.6	39.2

... = data not available, GDP = gross domestic product.
Note: Tajikistan data cover 1992–2014; data for other economies cover 1980–2014. Latest employment data for Tajikistan and Malaysia stand for 2014. For all other countries, latest employment data are for 2013. Data on manufacturing employment for all the countries are for 2013.
Sources: World Bank. World Development Indicators. http://data.worldbank.org/products/wdi (accessed April 2016); and ADB. various years. Key Indicators for Asia and the Pacific.

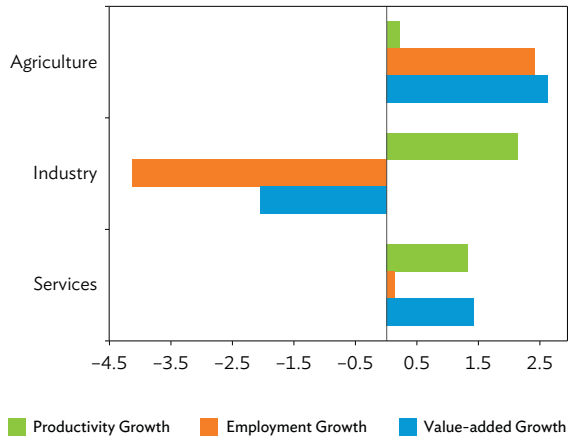
To understand the contribution of industry to economic growth and improvements in labor productivity, disaggregated data for various industrial units have been used.[43] It is important to note that output growth can be decomposed into two elements: employment growth and labor productivity growth, since output can be increased through growth in either employment or labor productivity. The results of our analysis reveal that Tajikistan has seen a decline in employment growth and, particularly, that sectors with high labor productivity have not experienced sustained increases in employment (Figure 4.3).

Figure 4.1: Average Labor Productivity (at constant 1990 PPP $)



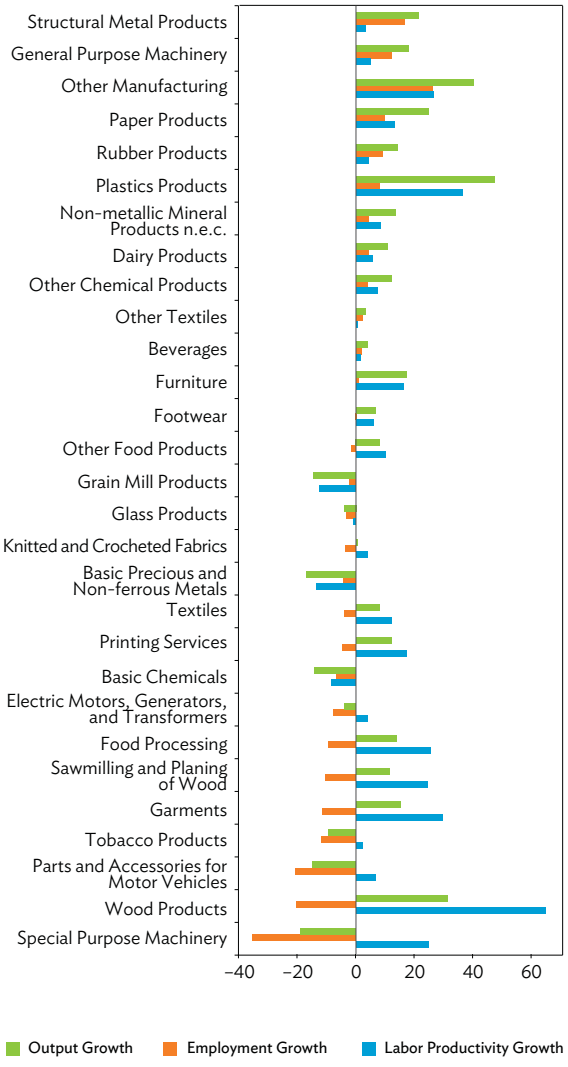
PRC = People's Republic of China, PPP = purchasing power parity.
Sources: Computations based on World Bank. World Development Indicators. http://data.worldbank.org/products/wdi (accessed April 2016).

Figure 4.2 : Changes in Value-Added, Employment, and Labor Productivity, 1991–2014 (%)



Source: Computations based on World Bank. World Development Indicators. http://data.worldbank.org/products/wdi (accessed April 2016).

Figure 4.3 : Decomposition of Industrial Output (%)



Source: Computations based on World Bank. World Development Indicators. http://data.worldbank.org/products/wdi (accessed April 2016).

[43] Disaggregated data for output and employment are only available for 2000–2012. Therefore, these results need to be interpreted with caution. However, this analysis establishes that despite high economic growth, by and large, the impact of labor reallocation from low- to high-value-added sectors remained negligible.

Similar analysis for the overall economy suggests that although GDP per capita, measured in terms of value added (at constant 2005 $) declined by $77 during 1991–2014, it increased significantly by $295 during 1997-2014. However, the contribution of employment toward changes in per capita value added remained negative (Table 4.2).

The results of the per capita decomposition point out that, during 1991–2014, employment shedding and a lack of job creation have offset the gains from marginally improved labor productivity that might have emanated from the increase in the working-age population. Accordingly, growth was jobless during 1991–2014. Further disaggregation of analysis reveals that while value added per capita (at constant 2005 $) during 1997–2004 and 2005–2014 increased by $109 and $171, respectively, the contribution of employment toward this growth remained negative.

Overall labor productivity growth can be thought of as a weighted average of sectoral labor productivity growth rates, weighted by employment shares in each sector. A decomposition of aggregate labor productivity growth into its various components can provide a clearer insight into the underlying dynamics of productivity changes. To this end, shift–share analysis is a convenient tool to investigate how aggregate growth in labor productivity is linked to growth in labor productivity and to labor reallocation between different sectors (Box 4.1).

Economy-wide labor productivity can be increased by shifting labor from less productive to more productive sectors. This can be achieved by increasing labor productivity within a sector itself, or through a combination of both. The decomposition of aggregate labor productivity therefore can provide us with more information about the underlying dynamics of productivity changes. The results of the shift–share analysis show that the main source of labor productivity growth in Tajikistan has come from the within effect (Box 4.1) throughout the period under consideration (Table 4.3).

Table 4.2: Decomposition of GDP Per Capita, 1991–2014 (per capita, at constant 2005 $)

	1991–2014	1997–2014	1997–2004	2005–2014
Total change in GDP per capita (value added)	**(77.2)**	**294.6**	**109.2**	**171.2**
Change linked to output per worker	44.2	312.8	100.6	201.8
Change linked to changes in employment rate	(211.3)	(73.9)	(11.8)	(57.3)
Change linked to changes in the share of working-age population	89.9	55.7	20.4	26.7

( ) = negative, GDP = gross domestic product.
Note: Algebraically, we can write (Y/P) = (L/P) x ((Y/L) = (L/WAP) x (WAP/P) x (Y/L), where Y/P is per capita GDP, L/P is the employment-to-population ratio, and Y/L is labor productivity. L/WAP is the ratio of labor to working-age population and WAP/P is working-age population to total population, which captures the demographic transition.
Source: Estimates based on World Bank. World Development Indicators. http://data.worldbank.org/products/wdi (accessed April 2016).

Box 4.1: Labor Productivity Decomposition and Shift–Share Analysis

We use the shift–share decomposition method to analyze growth effects that contribute to rising total labor productivity in Tajikistan. Following Ichihashi et al. (2013), total labor productivity can be decomposed into its various components as follows:

$$\frac{\Delta LP_i}{LP_i^O} = \sum_j (\Delta S_{ij}) \frac{LP_{ij}^O}{LP_i^O} + \sum_j \frac{\Delta LP_{ij}}{LP_i^O} S_{ij}^O + \sum_j (\Delta S_{ij}) \frac{\Delta LP_{ij}}{LP_i^O},$$

where subscript 'i' denotes a country, subscript 'j' denote a sector, LP is labor productivity, S is the share of sector in employment, a superscript 'o' indicates the year 1991, and D indicates a change over 1991–2013.

Static shift effect: The first term on the right-hand side of the equation has been dubbed the static shift effect, which measures the part of productivity growth that is due to structural change. This therefore captures changes in productivity associated with the reallocation of employment from sectors of low productivity to high productivity. A sector whose employment share increases will have a positive shift effect that is weighted by the ratio of the initial labor productivity of the sector to aggregate labor productivity.

continued on next page

Box 4.1 continued

Within effect: The second term in the above equation denotes what we call the within effect. This is the sum of the sector growth rates of labor productivity, weighted by the initial share of employment of the sector. Therefore, sectors that have above-average labor productivity growth will contribute strongly to this effect. As such, this measures the contribution of what happens within the sector itself.

Dynamic effect: The last term in the equation shows the dynamic effect. This is the multiplication of two changes, labor productivity growth within the sector and changes of the employment share of the sector. Sectors that have rapid labor productivity growth and have an increasing share will contribute strongly to this effect.

Source: Ichihashi, M. et al. 2013. Structural Change, Labor Productivity Growth, and Convergence of BRIC Countries. *Development Discussion Policy Paper*: 3 (5). Japan: Graduate School for International Development and Cooperation, Hiroshima University.

Table 4.3: Shift–Share Analysis of Labor Productivity Growth (%)

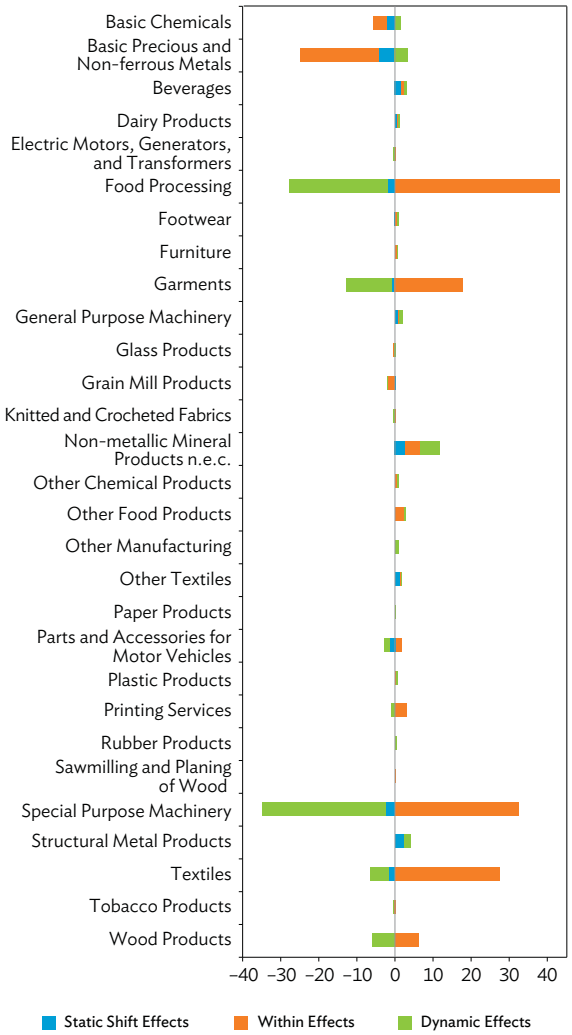
	1991–2014	1997–2014
Static Shift Effect	(1.27)	(0.20)
Within Effect	1.81	10.68
Dynamic Effect	(0.79)	(0.63)

( ) = negative.
Source: Estimates based on ADB. various years. Key Indicators for Asia and the Pacific.

That is, for Tajikistan, the changes in labor productivity have not been associated with intense structural change and that most of the labor force remains in low-productivity sectors. The main impetus has come from increased labor productivity in industry and services. However, and as mentioned, this is basically a reflection of the decline in their respective employment shares. This is reflected as a negative static effect, as the bulk of the labor force remains in agriculture, and it shows lack of structural change associated with rising labor productivity in modern sectors of Tajikistan's economy. Likewise, the negative dynamic effect reflects the country's inability to shift resources from agriculture to higher productivity sectors. To further understand the dynamics of structural changes within the industrial sector, we use disaggregated data on industrial output and employment for 2000–2012 and decompose industrial labor productivity (Figure 4.4).

Analysis based on disaggregated data again highlights that, by and large, structural transformation played a negligible role in improving labor productivity during 2000–2012. Rising industrial labor productivity mainly came from declines in the employment share of various industrial units. The analysis indicates that the "within effect" dominated the outcome, accounting for 250% of aggregate labor productivity

Figure 4.4: Decomposition of Labor Productivity Growth in Industry
(%, at 2000 constant prices)



n.e.c. = not elsewhere classified.
Source: Estimates based on United Nations Industrial Development Organization data, various issues.

growth during 2000–2012. Certain industrial units, such as nonmetallic mineral products (269),[44] structural metal products (281), general purpose machinery (291) and other textiles products (172), increased their employment share. But, for most of the others, structural transformation was not a significant contributory factor to labor productivity. On average, the contribution of structural transformation during 2000–2012 in industry remained around –7.1%. Similarly, the negative sign of the dynamic shift factor, on the other hand, implies that during the same time period the industrial sector experienced a reallocation of labor toward lower productivity branches and that the employment share of high-productivity branches declined. The effect of the dynamic shift factor is calculated at –143%. This analysis therefore suggests that Tajikistan's industrial sector has not successfully transferred resources to high-productivity branches, and that its overall performance has remained weak.

4.2 Export Sophistication and Growth

The current level of export sophistication is low, providing little prospect for accelerating and sustaining high growth.

We use exports as an indicator for a country's capability to make and export high-value-added products in the world market. Any successful development strategy will have to concentrate on improving the quality and attractiveness of exports. Economies that have undergone successful structural transformation, as noted, did so after having started producing and exporting more diversified and sophisticated products. Structural change therefore appears to be reflected in the mix of products that a country produces and exports. The characteristics of a country's export basket, therefore, matters for subsequent economic growth and structural transformation. The composition and sophistication of exports carry important information about the potential for economic growth and structural transformation.

Empirical evidence by Hausmann and Klinger (2006) suggests that what a country exports does matter for subsequent economic growth. They also show that a country's export sophistication is positively correlated with per capita GDP (Figure 4.5).[45]

Besides cotton and aluminum, Tajikistan has not successfully tapped its potential in high-value- added products. Comparison with comparator countries shows that Tajikistan exports mainly less-sophisticated products. The overall productivity of the export basket indicates that Tajikistan has not performed well in transferring its productive structure toward high-value-added products, so its export sophistication has not seen any visible improvement between 1995 and 2014. Instead, Tajikistan has experienced a decline in its export sophistication between 2010 and 2014 (Figure 4.6).

Tajikistan needs to expand its export basket and increase the level of its export sophistication in order to accelerate growth and create decent jobs.

If a country has a more sophisticated export basket, it has a better chance to accelerate economic growth as production can be shifted to activities that pay workers higher wages. In essence, countries become what they export (Hausmann and Klinger 2010). This means that merely producing more of the same products may not be a fruitful strategy, thus underscoring the

[44] Numbers in parentheses are International Standard Industrial Classification (ISIC) Revision 3 codes for various industrial units.

[45] Following Hausmann, Hwang, and Rodrik (2007), export sophistication is measured through the index EXPY, which is the weighted average of the sophistication level of the products that a country exports, weights being the share in the country's exports. It is calculated as follows:

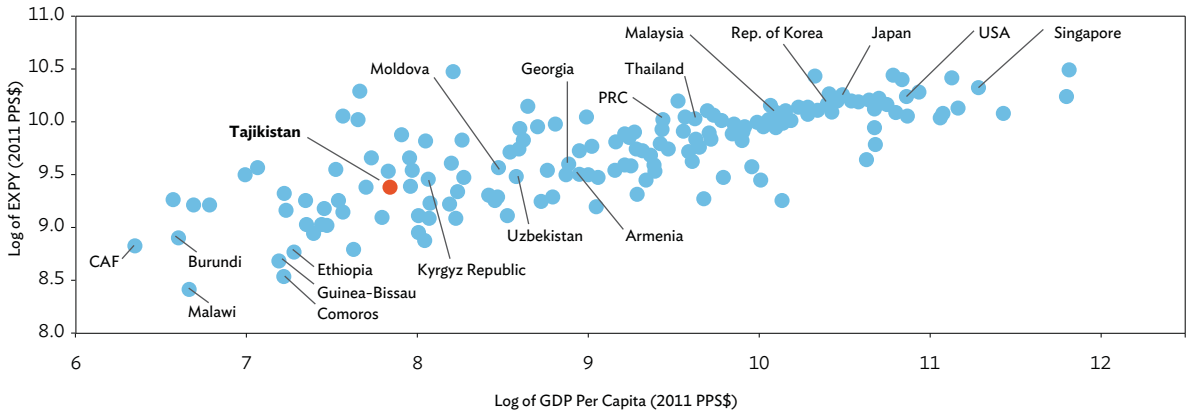
$$EXPY_c = \sum_i \left(\frac{xval_{ci}}{\sum_i xval_{ci}} \times PRODY_i \right),$$

where $xval_{ci}$ is the export value of product *i* by country *c*. Where PRODY is the income level associated with the products that a country exports, it is calculated as follows:

$$PRODY_i = \sum_c \left[\frac{xval_{ci} \Big/ \sum_i xval_{ci}}{\sum_c \left(xval_{ci} \Big/ \sum_i xval_{ci} \right)} \right] \times GDPPC_c ,$$

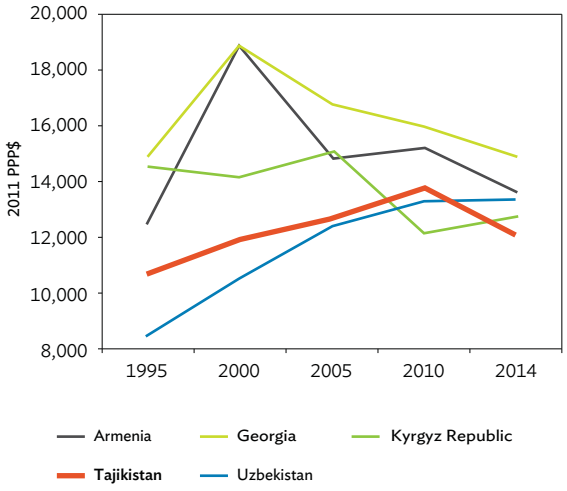
where $xval_{ci}$ is the export value of product *i* by country *c*.

Figure 4.5 : Export Sophistication and GDP per Capita, 2014



CAF = Central African Republic , PRC = People's Republic of China, GDP = gross domestic product, PPP = purchasing power parity, US = United States.
Sources: Estimates based on World Bank. World Development Indicators. http://data.worldbank.org/data-catalog/world-development-indicators; and United Nations Commodity Trade Statistics Database. http://comtrade.un.org/db/default.aspx (all accessed March 2016).

Figure 4.6: Sophistication of Export Baskets of Tajikistan and Comparators



PPP = purchasing power parity.
Source: Estimates based on dataset from United Nations Commodity Trade Statistics Database. http://comtrade.un.org/db/default.aspx (accessed March 2016).

importance of diversifying and upgrading the structure of the economy toward high-value-added export products. The sustainability of growth requires moving to new and high-value-added exports. This has not happened in Tajikistan.

In Tajikistan, there has been no significant change in the composition and concentration of exports, except for a shift in volumes of two major export items, cotton and aluminum. It shows that while the share of aluminum increased from 25.3% of total exports in 1995 to 52.5% by 2013, the share of cotton declined from 51% to 12.7%. The combined share of these two commodities in Tajikistan's total exports was 76.4% in 1995 and this had increased to 79.2% by 2005. Although the share of cotton and aluminum has fallen since, they dominate total export receipts at around 65% in 2010 and 2013. However, as discussed in Chapter 1, with the decline in the international prices of these two commodities, and also because of the National Bank of Tajikistan's operation in Switzerland to convert nonmonetary into monetary gold, the share of cotton and aluminum in total exports has declined in 2014 to 33.4%. Tajikistan has also started exporting other high-value-added products like nonferrous base metal and aluminum alloys. Similarly, other more sophisticated products like motor vehicles (7810),[46] parts and accessories for apparatus (7649), poultry (0114), and fruits, fresh or dried (0579) have also started appearing in its export categories, but the existing share of these products in Tajikistan's total exports remains minimal. Excluding aluminum, the overall sophistication reduces further to an even lower level. This again points to concerns that high concentration and reliance on only one export

[46] Numbers in parentheses are the Standard International Trade Classification (SITC) Revision 3 codes of Tajikistan's top exports.

to raise export sophistication only serves to mask the problem of low diversity of production (Table 4.4).

Tajikistan has not been able to diversify its exports and is also facing a decline in export-demand elasticity.[47] This implies the country's limited ability to sustain high economic growth unless it can change the existing drivers of growth. To reiterate, the empirical research demonstrates that countries seldom become rich by simply producing more of the same products, but rather they grow by moving into new and more complex products. Therefore, Tajikistan's export basket needs to be expanded and made more sophisticated in order to accelerate growth and create decent jobs. The following section investigates how Tajikistan has performed in structural transformation and how this can be accelerated.

4.3 Product Space Analysis

Product space analysis shows that Tajikistan's current set of products—that is relatively isolated in product space—constrains structural transformation.

So, as already made clear, a country's export diversification and economic growth are strongly linked, which underscores the importance of diversifying investments into new activities. But entrepreneurs face significant cost uncertainties when they decide to produce new goods. Where they succeed, the information spillovers and gains are shared by others. The entrepreneur who fails, however, will have to shoulder the cost (Hausmann and Rodrik 2003). Therefore, a government that provides the right kind

Table 4.4: Share of Tajikistan's Top 20 Exports (selected years)

S. No.	SITC	Commodity	Sophistication Product Level (PRODY)	Export Share (%)				
				1995	2000	2005	2010	2014
1	6841	Aluminum and aluminum alloys, unwrought	14,729	25.33	47.85	60.11	52.45	26.26
2	9710	Gold, nonmonetary	11,617	-	-	0.09	-	16.97
3	2875	Zinc ores and concentrates	10,521	-	-	-	0.13	9.50
4	2874	Lead ores and concentrates	11,287	0.42	0.09	0.03	0.84	8.64
5	2631	Raw cotton, excluding linters, not carded or combed	3,902	51.03	19.97	19.04	12.68	7.09
6	2879	Ores and concentrates, nonferrous base metals	5,723	0.42	0.01	0.61	0.62	4.71
7	0579	Fruit, fresh or dried, nes	12,365	0.02	4.74	2.87	8.23	4.66
8	0344	Fish fillets, frozen	12,772	-	-	0.12	2.10	2.68
9	8423	Men's and boys' trousers, breeches and the like	6,743	0.01	1.04	1.62	1.32	2.34
10	2871	Copper matte, cement copper	9,146	-	-	-	0.72	1.97
11	6513	Cotton yarn	6,185	0.12	1.47	1.13	0.35	1.74
12	0545	Other fresh or chilled vegetables	11,111	0.03	0.75	0.94	4.16	1.70
13	0114	Poultry, dead and edible offal	22,980	-	-	-	-	1.12
14	6114	Leather of other bovine cattle and equine leather	11,663	-	0.00	-	0.20	0.91
15	7821	Motor vehicles for the transport of goods	24,953	0.03	0.01	1.11	0.02	0.70
16	0548	Vegetable roots and tubers, nes, fresh, dried	6,761	-	0.07	0.03	0.09	0.59
17	0422	Rice, semi-milled or wholly milled	8,516	-	0.23	0.27	0.19	0.48
18	7649	Parts, nes of and accessories for apparatus (76)	25,089	0.07	0.00	0.01	0.02	0.41
19	0577	Nuts edible, fresh or dried	5,584	-	0.14	0.29	0.71	0.41
20	7810	Passenger motor vehicles (excluding buses)	28,230	-	0.01	0.27	0.01	0.41
		Sub-total		**77.47**	**76.35**	**88.53**	**84.85**	**93.28**
		Sophistication, Country Level (EXPY)		**10,719**	**11,912**	**12,717**	**13,777**	**12,134**
		Sophistication, Country Level (EXPY) (excluding unwrought aluminum)		**9,359**	**9,326**	**9,685**	**12,728**	**11,210**

... = not available, EXPY = export sophistication at country level, nes = not elsewhere specified, SITC = Standard International Trade Classification.
Note: PRODY indexes are based on 2011 purchasing power parity dollars.
Source: ADB estimates based on United Nations Commodity Trade Statistics Database. http://comtrade.un.org/db/default.aspx (accessed March 2016).

[47] See discussion in Chapter 1.

of incentives and missing public inputs to investors can encourage them to engage in new activities and help accelerate structural transformation.

Having the necessary institutions and improvements in capabilities is the prerequisite for transforming production structure toward diverse and higher-value-added goods. It has to be emphasized that structural transformation has to be policy induced; merely relying on market forces is not sufficient.

We examine structural transformation through the introduction of "product space" methodology (Box 4.2). This helps us understand why Tajikistan has been unsuccessful in transforming its production structure, which remains narrowly based with declining export elasticities.

The product space methodology shows all the products exported in the world and how close they are in capabilities. The product space is highly heterogeneous and is composed of peripheral products that are only weakly connected to other products, while products that are at the core of the product space are well connected. Product space therefore provides a glimpse into the embedded knowledge of countries by highlighting their productive capabilities and the opportunities these imply.

If a country is producing goods in the core of the product space, then the set of existing capabilities can be easily redeployed to other nearby products—and therefore the process of structural transformation becomes much easier.[48] On the other hand, where a country has specialized in peripheral products, this redeployment is very challenging as no nearby products can be produced with the existing set of capabilities. Product space analysis shows empirically that the speed of structural transformation depends on how closely existing exports are located to higher and more sophisticated goods. By examining the position of a country's export basket in the product space, we can assess its potential to expand production toward higher-value goods. Developing countries generally produce and export products in the periphery, while rich countries engage in highly connected products at the core of the product space. As such, an economy whose exports are found mainly in the periphery would find it difficult to move toward nearby products, as fewer of its capabilities can be redeployed elsewhere in the economy.

For a successful transformation, Tajikistan will have to find ways to shift production from the periphery to the core of the product space and develop capabilities that can be easily redeployed.

Evidence shows that most developing countries have the specialist skills to produce certain goods, but are often not able to transfer them to the production of more sophisticated goods. Viewed in this context, export diversification and upgrading becomes an important area for policy makers to speed up the pace of structural transformation. The production of each product requires very specific inputs that may include knowledge, physical assets, intermediate inputs, labor training, infrastructure, regulatory requirements, and other complementary inputs best provided by the public sector. Input requirements vary for different products, although some commonalities may exist, particularly when products are similar (Hausmann and Klinger 2009).

If Tajikistan decides to move from the periphery to the core, the transition will require building new organizational capacities and addressing coordination and innovation externalities. It would also require large investment in complementary infrastructure and new skills. The role of industrial policy at this stage becomes crucial in selecting new activities and in promoting structural change. Experiences of advanced economies reveal that structural change was associated with industrial expansion. In this regard, the role of manufacturing becomes important in raising overall labor productivity. Indeed, the establishment of a vibrant and sound industrial base is the key to sustaining growth (Felipe 2007).

[48] If the goods require similar inputs and endowments, then they are "nearby." If they require totally different capabilities, they are "far away."

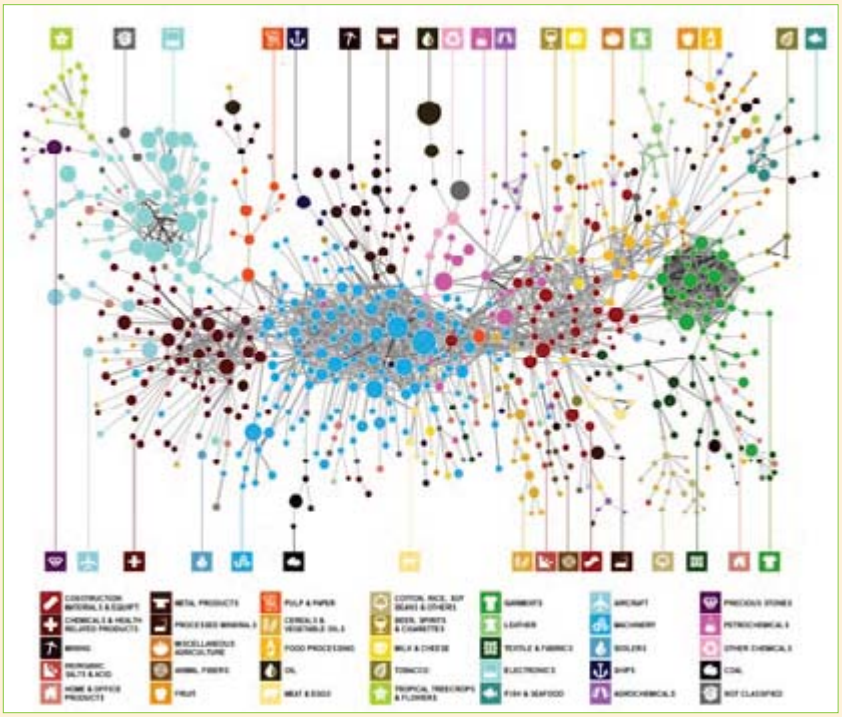
Box 4.2: Product Space Analysis

Hausmann and Klinger (2006) pioneered product space analysis to analyze structural transformation in an economy. They specifically analyzed a key aspect of structural transformation—product diversification. Further, Hidalgo et al. (2007) mapped products across global economies (Figure B4.2.1). This accounts for proximity by computing the probability of a country having a comparative advantage in one product given its comparative advantage in another. Proximity measures capabilities that are used to produce one product and can be used to produce another. (Capabilities could include knowledge about the product, physical assets, intermediate inputs, labor relations, labor training requirements, technology, marketing, infrastructure, property rights, regulatory requirements, and other public goods).

Hidalgo et al. (2007) elaborate using the analogy that the product space is a forest, with trees as the products and monkeys as companies. A monkey can easily jump to "nearby" (proximate) trees, but it needs to exert a gargantuan effort to transfer to "far away" trees. If the monkey is in the clustered portion of the forest, the monkey has more opportunity to jump from one tree to another. The stock of capabilities accumulated jumping from tree to tree will serve the monkey well. In summary, the capabilities that firms learned in producing several products (diversification) can lead to the development of more high-end products (sophistication).

Hidalgo et al. (2007) measured the distance (proximity) of each pair of products and developed the concept of product space. They applied network theory to visualize the distance between products by their relative similarities in needed capabilities. Their analysis used an international trade dataset based primarily on the Standard International Trade Classification Revision 2, disaggregated at the four-digit level. Data were available for 773 products. The different nodes represent products, and their colors correspond to their product groups based on the Leamer classification[a], and the node size is in proportion to world trade values. The colors of the lines that connect the nodes represent the distance between a pair of products. The map is highly heterogeneous, with the dense part representing many products that are closely connected—particularly machinery, chemicals, and capital-intensive products. This indicates the ease with which companies can move from one commodity to another. In the periphery, products such as natural resources, primary products, and agricultural products are weakly connected to others. This indicates the difficulty of moving from these products to other products.

Figure B4.2.1: Product Space



Source: Hausmann, R. and B. Klinger. 2006. Structural Transformation and Patterns of Comparative Advantage in the Product Space. *CID Working Paper* No. 128. Cambridge: Center for International Development, Harvard University.

[a] The product classification introduced by Leamer (1984) is based on relative factor intensities, that is, the relative amount of capital, labor, land or skills required to produce each product.

The position of a country in the product space determines its opportunities to expand its productive knowledge and increase its economic complexity. Examples of products in the periphery are agricultural goods, vegetables, and natural resources, while chemicals, machinery, electronics, and transformed metals are examples of goods located in the core product space.

Tajikistan has not experienced a speedy and intense structural transformation, as the number of goods where it used to have revealed comparative advantage has declined and exports have remained highly concentrated (Table 4.5). The fact that most of these products lie on the periphery of the product space implies that they are loosely connected and therefore the capabilities to produce other nearby products are quite limited. It is difficult for an economy to jump to products that are at the core of the product space, for example, since this would require more advanced sets of knowledge and such goods would be difficult to produce with existing capabilities. In its effort to diversify, Tajikistan can initially choose some of the nearby products, while medium-distance and far-away products can be targeted in the long run. However, the real challenge would be to build new organizational capacities and address product-specific constraints.

This analysis further points out that if a country is producing goods in the dense part of the product space, then structural transformation becomes relatively easy as these products are closely connected and production capabilities for one product can be used for yet another. Tajikistan mainly produces and exports products that are peripheral in nature. It has acquired certain capabilities that cannot easily be redeployed to make unexploited products. This impedes structural transformation.

In Figure 4.7, black squares show products where Tajikistan has revealed comparative advantage (RCA>1). In this way, the information shows a visualization of the products exported over time and gives an idea of structural transformation. Economic

Table 4.5: Evolution of Tajikistan's Export Diversification (number of products and % of total exports)

		1995		2000		2005		2014	
SITC2	Description	No.	Share	No.	Share	No.	Share	No.	Share
0	Food	3	1.1%	14	9.3%	12	6.4%	11	12.3%
	o/w: Vegetable and Fruits	1	0.3%	12	8.9%	10	6.0%	5	7.7%
1	Beverages and Tobacco	1	1.2%	2	2.0%	1	0.1%	1	0.1%
2	Crude Materials	21	56.9%	18	23.5%	16	20.9%	12	32.6%
	o/w: Hides, skins and fur skins	5	1.0%	3	0.1%	4	0.2%	0	0.0%
	Cotton Products	7	53.0%	10	21.6%	7	19.4%	4	7.2%
	Metalliferous Ores	4	2.4%	3	1.4%	3	0.9%	4	24.9%
3	Mineral Fuels	1	1.6%	2	0.5%	0	0.2%	0	0.0%
4	Animal and Vegetable Oils	3	0.1%	0	0.0%	0	0.0%	2	0.0%
5	Chemical and Chemical Products	6	3.1%	3	1.0%	6	1.7%	0	0.6%
6	Manufactured Goods	10	28.1%	13	61.6%	13	65.3%	11	30.4%
	o/w: Leather products	1	0.0%	0	0.0%	1	0.1%	2	1.0%
	Textile Products	2	1.2%	5	10.3%	5	3.2%	3	2.1%
	Aluminum	1	25.4%	2	50.3%	1	60.3%	2	26.6%
	Metal Products	2	0.3%	2	0.3%	1	0.1%	0	0.0%
7	Machinery and Transport	1	1.4%	0	0.6%	1	2.6%	4	3.5%
8	Miscellaneous Manufactures	2	6.5%	3	1.6%	4	2.7%	5	3.3%
	o/w: Garments	1	0.4%	1	1.3%	2	2.0%	4	2.9%
9	Other Manufactured Articles	0	0.1%	1	0.1%	0	0.2%	1	17.1%
	TOTAL	**48**	**100.0%**	**56**	**100.0%**	**53**	**100.0%**	**47**	**100.0%**

o/w = of which, SITC = Standard International Trade Classification.
Note: Number of products refers to those exported with revealed comparative advantage > 1.0.
Source: Computations based on dataset from United Nations Commodity Trade Statistics Database. http://comtrade.un.org/db/default.aspx (accessed March 2016).

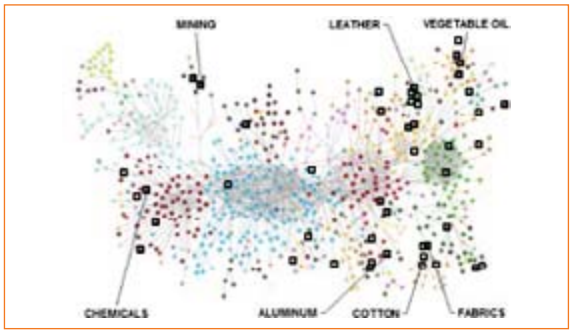
development is not only a process of continuously improving production of the same set of goods, but is, more importantly, a process that requires more complex sets of capabilities to be acquired to move toward activities associated with higher levels of productivity. Therefore, countries whose production structure is oriented to high-productivity activities will have faster development.

Figure 4.7 shows that both the Republic of Korea and Malaysia have moved toward the dense part of the product space, which signifies highly sophisticated and closely connected products. Most of Tajikistan's products lie on the periphery, suggesting that it is stuck in producing those goods that are not strongly connected, and has very limited capabilities to produce other nearby products.

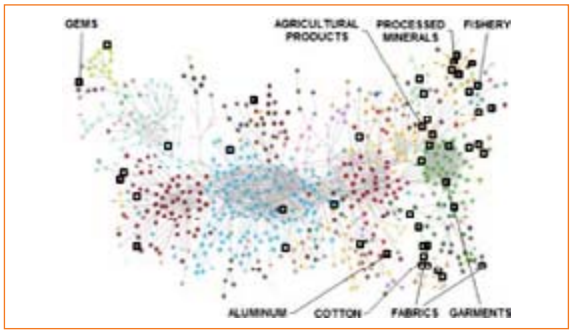
Figure 4.7: Evolution of Structural Transformation

Tajikistan

1995

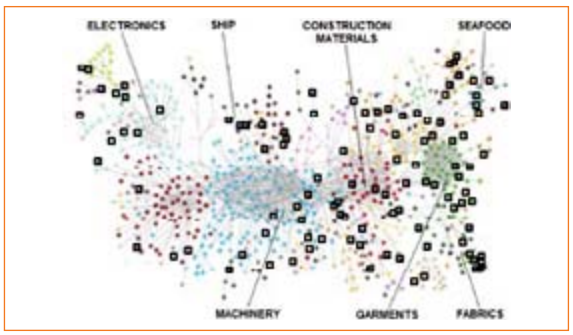


2014

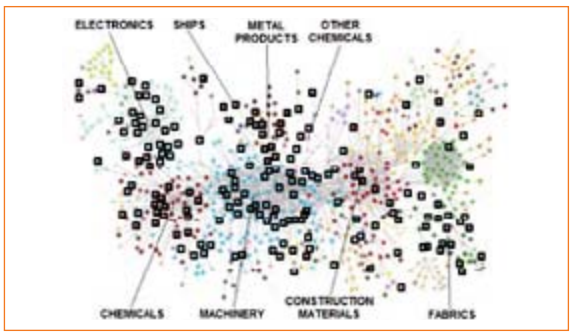


Republic of Korea

1970

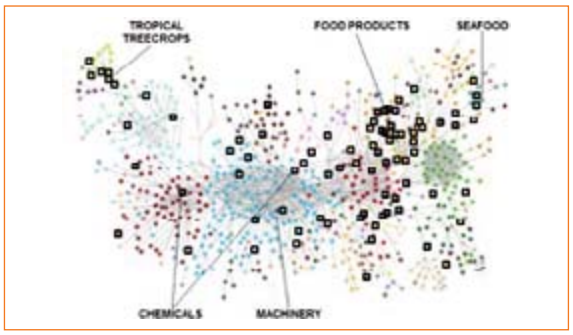


2014

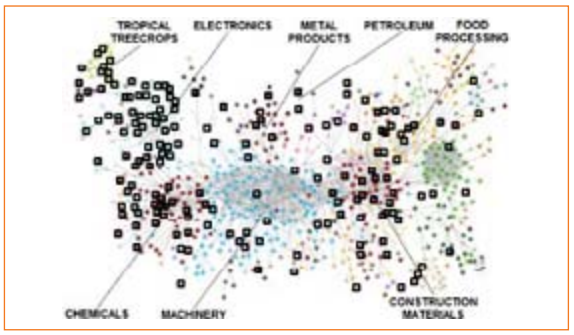


Malaysia

1970



2014



Source: ADB estimates based on National Bureau of Economic Research–United Nations Trade Data. http://cid.econ.ucdavis.edu/data/undata/undata.html for 1970; and United Nations Commodity Trade Statistics Database. http://comtrade.un.org/db/default.aspx for others.

Even though Tajikistan has some complex capabilities and is successfully exporting a few sophisticated products, there are no products nearby, that is, the capabilities used in those products are not easily transferable. Its exports are also far away from the core of the product space. On the other hand, the Republic of Korea and Malaysia have developed capabilities to produce more sophisticated products—production that requires more advanced technology and has high elasticities in the international market. That is, both countries have successfully acquired capabilities that can be replicated with a degree of ease to produce similar products.

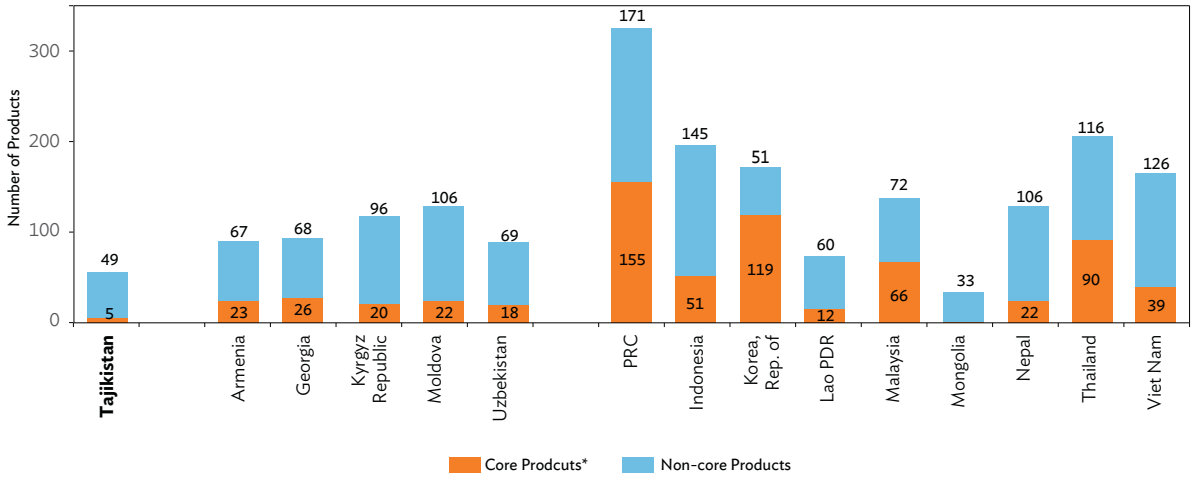
It is quite difficult for a country to move to new and dense parts of the product space in practice. But it is very important for Tajikistan to focus on those products with higher sophistication and higher spillover impact than those in its current export basket. That is because once an activity starts in a new and well-connected part of the product space, it can create new and enhanced capabilities that can be applied to other nearby products with much less difficulty. The other nearby products also become feasible, which attracts other investors into those new activities (Hausmann and Klinger 2009).

The development of comparative advantage in new and high-value-added products is far from random; it is strongly affected by firms' capabilities.

Therefore, for Tajikistan to move to new and high-value-added activities, it is very important to position itself toward the core of the product space. This would allow it to move to other nearby products with greater ease. The country has fewer capabilities that can be utilized to expand production toward high-value-added products than countries like the Republic of Korea and Malaysia, which have developed more versatile capabilities. This implies that it may take Tajikistan longer to upgrade and diversify than was the case for these successful industrializers.

In Figure 4.8, the average number of Tajikistan's export products with comparative advantage during 2010–2014 has been classified into core versus noncore products and compared with the ex-Soviet comparators and successful economies in Asia. With the exception of Mongolia, Tajikistan has fewer core products (5 core and 49 noncore) than other countries and therefore has virtually no presence in the core of the product space. Our analysis shows that Tajikistan's

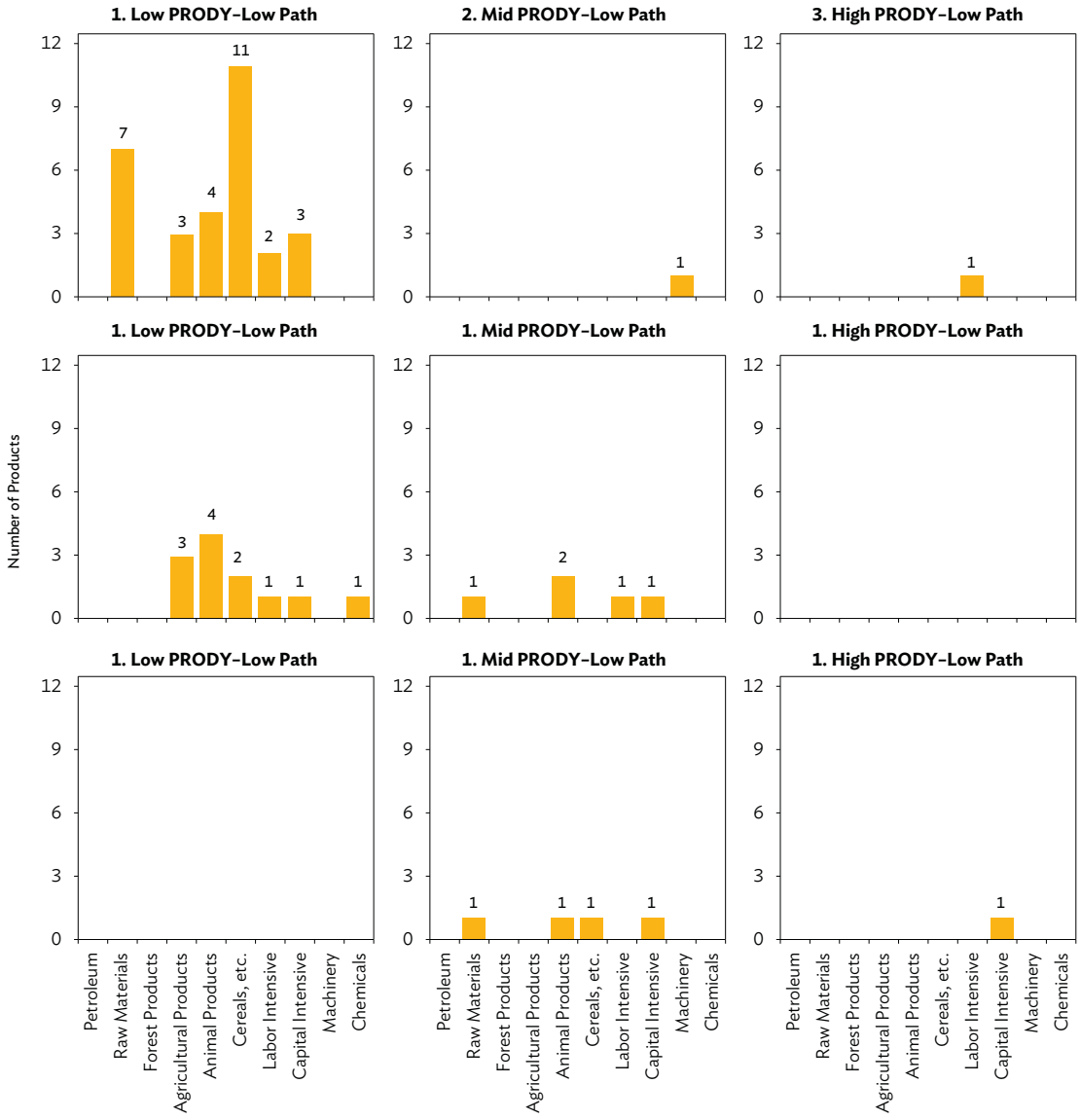
Figure 4.8: Diversification by Core and Noncore Products (average 2010–2014)



Lao PDR = Lao People's Democratic Republic, PRC = People's Republic of China.
* The core products comprise machinery, metal, and chemicals.
Source: Estimates based on United Nations Commodity Trade Statistics Database. http://comtrade.un.org/db/default.aspx (accessed March 2016).

exports with comparative advantage have generally low sophistication (as measured by PRODY) and low-to-average linkages (as measured by proximity to other products). Therefore, Tajikistan is stuck in a low-product trap and will be facing difficulty in diversifying and upgrading its export basket (Figure 4.9).[49]

Figure 4.9: Export Diversification by Leamer Classification
(average, 2010–2014)



PRODY = sophistication level of individual products.
Source: Estimates based on United Nations Commodity Trade Statistics Database. http://comtrade.un.org/db/default.aspx (accessed March 2016).

[49] To examine whether goods currently exported with RCA are in the dense part of the product space or in the periphery, following Felipe et al. (2014), we have computed "path" and goods are classified in terms of low, medium, and high path categories. Appendix 4.1 explains path and the other technical concepts used in the analysis.

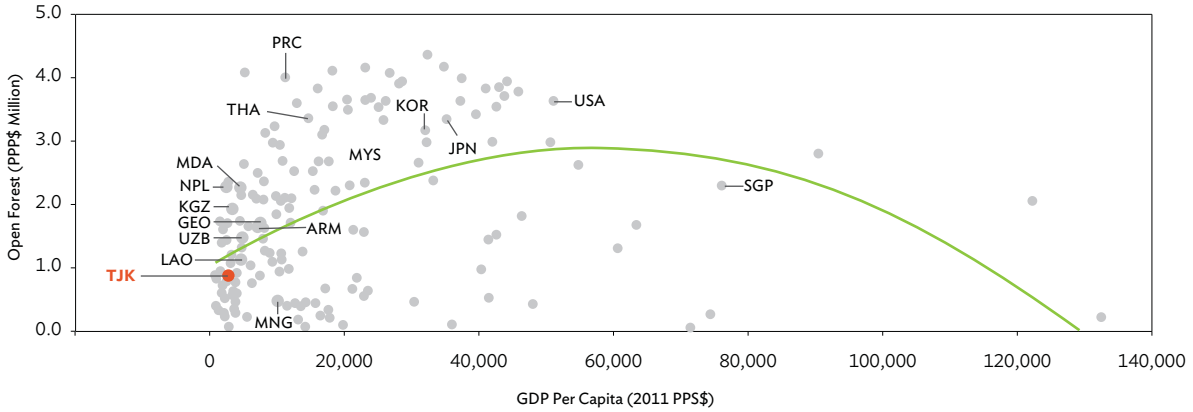
Even though Tajikistan's existing capabilities, as has been made clear, are such that they cannot be easily redeployed to produce other nearby products, industrial policy can help increase the number of high-value-added products that are strongly connected with other products. The policy can facilitate jumps to products that are further away, and assist the development of new activities. The government can help the private sector accumulate new capabilities and improve the sophistication of exports through a realistic industrial vision and an effective set of policies (Felipe 2015).

4.4 Diversifying and Upgrading the Export Basket

Tajikistan's existing capabilities combined with its position in the product space help identify the country's unexploited opportunities for structural transformation.

Given Tajikistan's existing capabilities and its position in the product space, what realistic unexploited opportunities are available? We can identify these by using the "open forest index,"[50] which indicates the potential to expand into new production sectors (see Appendix 4.1). The open forest index becomes a measure of a country's unexploited opportunities and it provides a clue about future growth of export sophistication and the structural transformation. The higher the index, the more unexploited opportunities the country has for structural change, while a low value indicates fewer opportunities for diversification and upgrading. Therefore, countries with a high value of open forest index enjoy faster subsequent growth in export sophistication and overall economic growth. They are in a better position to redeploy productive capabilities to new export activities and, therefore, they can easily mitigate the impact of external demand shocks (Hausmann and Klinger 2008a). These unexploited opportunities are shown in the Figure 4.10 scatter plot of open forest versus GDP per capita for 2010–2014, and indicate that, given its per capita income, Tajikistan's open forest value is lower than comparator countries. This implies that most of its products lie in the sparse part of the product space and hence the capabilities to produce those products cannot be easily redeployed. This makes structural transformation more difficult.

Figure 4.10: Open Forest Index and GDP per Capita (average 2010–2014)

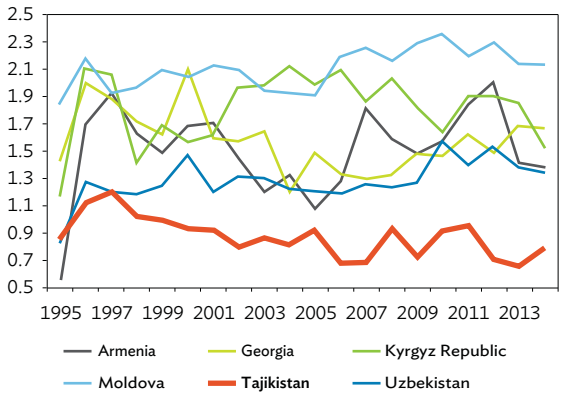


ARM = Armenia, GEO = Georgia, GDP = gross domestic product, IDN = Indonesia, JPN = Japan, KOR = Korea, Republic of, LAO = Lao People's Democratic Republic, KGZ = Kyrgyz Republic, MDA = Moldova, MNG = Mongolia, MYS = Malaysia, NPL = Nepal, PPP = purchasing power parity, PRC = People's Republic of China, SGP = Singapore, THA = Thailand, TJK = Tajikistan, USA = United States, UZB = Uzbekistan.
Sources: Estimates based on United Nations Commodity Trade Statistics Database. http://comtrade.un.org/db/default.aspx; and World Bank. World Development Indicators. http://data.worldbank.org/data-catalog/world-development-indicators (accessed March 2016).

[50] Open forest captures the expected value of the goods that an economy could potentially export; that is, the products that currently an economy does not export with comparative advantage. This value depends on how far the unexploited products are from the current export basket and on their level of sophistication.

Comparison of Tajikistan with countries in the region shows that its open forest index value remained below its comparators during 1998–2014, indicating that fewer unexploited opportunities are available for diversification and upgrading of the export basket. It also shows that its value by this indicator has declined, suggesting that the country has been unable to develop capabilities for moving into new and diversified products, resulting in even fewer unexploited products (Figure 4.11).

Figure 4.11: Open Forest Index, Tajikistan and Comparator Countries, 1992–2014
(constant prices, 2011 PPP, $ million)



PPP = purchasing power parity.
Source: Estimates based on United Nations Commodity Trade Statistics Database. http://comtrade.un.org/db/default.aspx (accessed March 2016).

It then becomes relevant to ask, given its current capabilities, what opportunities do exist for Tajikistan to upgrade and diversify its export basket? We next investigate this question and analyze unexploited exports by their distance from current capabilities. Each dot in the figure represents a product currently exported, but without comparative advantage (Figure 4.12). Core products within each distance category are shown in different marker styles. Overall, products located farther from the current capability set are more sophisticated and can increase the sophistication of the export basket—they have a higher strategic value (and thus more valuable from the point of view of structural transformation).[51]

In the sophistication–strategic value combination, the ideal quadrant would be the upper right, which would include relatively more sophisticated products that are valuable future opportunities, but they are all far from the current capability set. Those nearby (shown in green) have a low strategic value.

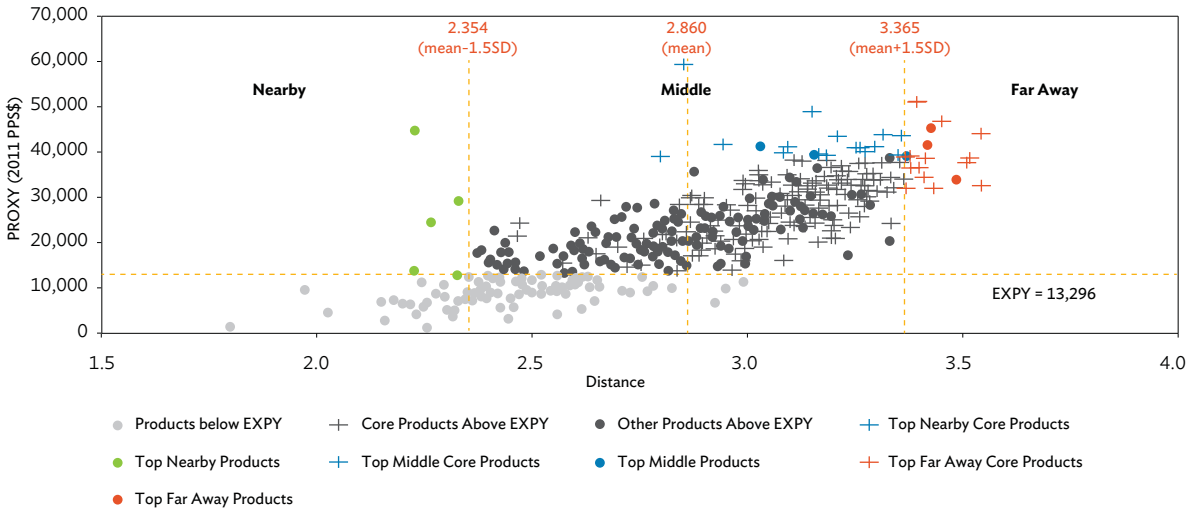
Tajikistan's potential to move to unexploited products can be evaluated by examining the distance between products and their spillover impacts on the rest of the economy. Depending on the distance, we divide the unexploited products into nearby, medium, and far-away categories and then analyze them by looking at the product sophistication in relation to the distance from the average of all unexploited products. However, a trade-off exists between the strategic value of the product and the distance associated with it. While the nearest products do not involve the development of new capabilities that can be used elsewhere, products that are far away and are in the core of the product space, on the other hand, not only improve the overall export sophistication, but also carry higher spillover impacts for the entire economy. In principle, therefore, the prime focus of industrial policy should be to support movement toward products that are farther away with the highest strategic value, while recognizing that there is a trade-off in practice between distance and spillover effects.

To better understand Tajikistan's potential, we will first look at nearby products for their export sophistication and spillover impacts. Later, we will gradually include medium and far-away products in the analysis. These analyses will provide insight into how much extra effort is required to improve existing capabilities.

It is important to note that adding nearby products to the export basket would only modestly increase export sophistication and will have limited spillover impact on

[51] The strategic value, which measures the spillover impact of each unexploited product, is basically the potential contribution of that product to the open forest if it is added to the export basket and exported with comparative advantage (see Appendix 4.1).

Figure 4.12: Top Unexploited Products of Tajikistan by PRODY and Distance (average 2010–2014)



EXPY = export sophistication at country level, PPP = purchasing power parity, PRODY = sophistication level of individual products, SD = standard deviation.
Notes: Distance is measured as the log of the inverse of density (discussed below). The three distance groups created are (i) the "nearby" group with distance less than 1.5 standard deviation below the average of all unexploited products, (ii) the "middle" group with distance between ±1.5 standard deviations around the average, and (iii) the "far away" group with distance at least 1.5 standard deviations above the average. The gray circles represent the unexploited opportunities; that is, products that are being exported (export value greater than 0), but with no comparative advantage. Among the unexploited products, only those with PRODY higher than that of Tajikistan's export basket (EXPY), which appear as dark gray circles, were considered for selection as target products for diversification. Core products are machinery, chemicals, and metals.
Sources: Estimates based on World Bank. World Development Indicators. http://data.worldbank.org/data-catalog/world-development-indicators (accessed March 2016); and United Nations Commodity Trade Statistics Database. http://comtrade.un.org/db/default.aspx (accessed March 2016).

the rest of the economy. Focusing on these nearby products still would not achieve the differentiated capabilities required to sustain high growth. This means that in the long run, Tajikistan should concentrate on middle-distance and far-away products that have much higher spillover impacts. The capabilities acquired in making these products can be applied to other unexploited products. Our analysis shows that as we move from nearby to middle-distance products, a more enhanced set of capabilities and the necessary institutions for their development are needed. For policy, movements from current capabilities to middle-distance and far-away products are considered "strategic bets." These require government involvement in providing the missing public inputs and complementary infrastructure needed to develop the new activities, as well as possibly public funding for the innovative investment.

The analysis suggests a trade-off between proximity and export sophistication. While moving to nearby products is relatively easier, moving farther may be more valuable for structural transformation. Moreover, there is an "efficient frontier" in this trade-off, as some potential exports are both closer to the current export basket and more strategically valuable than others (Hausmann and Klinger 2008b). We can study this efficient frontier by focusing on export products with revealed comparative advantage of less than unity (RCA<1.0) during 2010–2014 and limit ourselves to products whose productivity (PRODY) is higher than the overall export sophistication (EXPY), so their expansion can raise the overall sophistication of the export basket.

4.5 High-Potential Export Products

Tajikistan faces a trade-off between its existing capabilities and in moving toward high-value-added products.

We can analyze the efficient frontier of Tajikistan by exploring which sectors offer the best combinations of proximity, sophistication, and strategic value, and at the same time represent large market opportunities. In this context, we first concentrate on nearby products—what have been called the "low-hanging fruits." When considering low-hanging fruits, however, it should be kept in mind that not all these nearest products may be the best areas of focus.[52] Most of the nearby products are found in isolated parts of the product space and have spillover impacts that are insufficient for speedy structural transformation. We concentrate first on those products that are relatively close to Tajikistan's current production capabilities. We take all potential products beyond a certain threshold (based on their standard deviation from the mean for all unexploited products), group them into sectors using the International Standard Industrial Classification, and list products by their strategic values and total world trade. This helps identify which of the unexploited products not only offer opportunities for strategic investments but also have large market potential, and therefore shows the sectors in which investment will facilitate structural transformation.

We start exploring the unexploited products by examining their distance with respect to the average distance of all the unexploited products. Initially, we focus on those products whose distance is 1.5 standard deviation below the mean distance and label it Option 1. Based on the above criteria, we arrange the top unexploited products and list them according to their export sophistication, strategic values, and export values in the world market. These potential products have both higher strategic value and large global demand (Table 4.6). The government, through close collaboration with companies already engaged in producing and exporting these products, can initiate dialogue to help diagnose the product-specific constraints. These constraints are in addition to those discussed in Chapter 2, and they are more product-specific in nature. The main areas for future investment that emerge from Option 1 are as follows:

1. Crop farming (011)[53]
2. Textile products (171)
3. Mining (132)
4. Basic precious and nonferrous metals (272)
5. Animal farming (012)

It is important to note that investment in these nearby products does not improve the diverse capabilities needed to accelerate structural transformation. For Tajikistan, which has very few nearby opportunities, any form of transformation will require targeting some

Table 4.6: Option 1—List of Unexploited Products, Average 2010–2014
(1.5 standard deviations from mean distance)

No.	ISIC	ISIC Description	PRODY (2011 PPP$)	Strategic Value (2011 PPP$)	Tajikistan Exports ('000 $)	World Exports (million $)
1	011	Crop farming	13,339	17,141	27.7	9,011
2	272	Basic precious and nonferrous metals	15,865	15,264	140.4	5,790
3	012	Animal farming	29,289	7,852	14.4	3,192
4	171	Textiles	25,029	13,976	6.9	955
5	132	Mining: nonferrous metal ores	14,248	16,665	3.2	467

EXPY = export sophistication at country level, ISIC = International Standard Industrial Classification, n.e.c. = not elsewhere classified, PPP = purchasing power parity, PRODY = sophistication level of individual products, RCA = revealed comparative advantage.
Note: Table shows all unexploited products (RCA<1) by Tajikistan in 2010–2014, excluding those (i) for which PRODY is less than EXPY; (ii) swine and processed pig meat, fish and pearl products, petroleum products, seawater salt, and special transactions; (iii) that have no export value; and (iv) products with a distance that is not at most 1.5 standard deviation above the mean for all unexploited products. The remaining products meeting the above criteria were combined into ISIC Revision 3 sectors, weighted by (i) 2010–2014 world exports, and (ii) strategic value.
Sources: Estimates based on United Nations Commodity Trade Statistics Database. http://comtrade.un.org/db/default.aspx (accessed March 2016); and United Nations Statistics Division. Correspondence between ISIC Rev. 2 and ISIC Rev. 3. http://unstats.un.org/unsd/cr/registry/regso.asp?Ci=1&Lg=1

[52] It is also important to mention that we consider only the merchandise exports; services are not included.
[53] The figures in parentheses represent the International Standard Industrial Classification codes of high-potential sectors.

medium and far-away products. To see the possibilities of such goods, we repeat the above analysis and decrease the minimum distance from 1.5 standard deviations to 1.0, which allows for potentially further jumps and the addition of some new activities to the efficient frontier (Table 4.7).

Additional potential products that emerge out of this analysis are listed below:

1. Chemicals (241)
2. Food products (151, 154)
3. Additional garments and textile products (181, 171)
4. Additional mining products (132)
5. Crop and animal farming (011, 012)
6. Nonmetallic mineral products (269)
7. Paper products (210)
8. Basic precious and nonferrous metals (272)

If we further reduce the cutoff point and reduce the minimum distance to 0.5 standard deviation from the average distance of unexploited opportunities, it allows us to add more sophisticated products into Tajikistan's efficient frontier. This iterative analysis gives us an idea of how the set of attractive new export opportunities changes when a country plans for products that are far away from its current capabilities. Table 4.8 reports the results of this analysis.

Below are additional areas that emerge from our analysis:

1. More sophisticated food and beverage products (151, 154, 155)
2. Electrical products (315)
3. Additional mining and quarrying products (101, 132, 141)
4. Additional garments and textile products (171, 172, 181)
5. Wood and paper (202, 210)
6. Plastic products (252)

By using the data-driven approach, we have highlighted the top unexploited Standard International Trade Classification trade categories representing the best trade-offs between proximity and sophistication.[54] It is important to note that identification of these high-potential and strategically valuable sectors is not meant for "picking winners." This should rather be treated as a first step in identifying potential areas for investment and in initiating a meaningful dialogue with the private sector to identify the product-specific constraints that have inhibited investors from backing

Table 4.7: Option 2—List of Unexploited Products, Average 2010–2014
(1.0 standard deviations from mean distance)

No.	ISIC	ISIC Description	PRODY (2011 PPP$)	Strategic Value (2011 PPP$)	Tajikistan Exports ('000 $)	World Exports (million $)
1	241	Basic chemicals	21,513	17,869	48.7	100,065
2	151	Food processing	15,204	20,553	1,674.7	42,998
3	171	Textiles	20,431	16,845	458.6	21,665
4	011	Crop farming	22,684	26,108	76.8	16,565
5	132	Mining: nonferrous metal ores	14,307	10,339	3.3	13,871
6	269	Nonmetallic mineral products n.e.c.	15,892	19,176	0.1	11,254
7	012	Animal farming	23,749	12,697	107.7	5,985
8	272	Basic precious and nonferrous metals	15,865	15,264	140.4	5,790
9	154	Other food products	18,200	16,615	6.3	4,063
10	181	Garments	14,129	19,151	163.3	3,777
11	210	Paper products	14,011	20,008	1.5	3,328

EXPY = export sophistication at country level, ISIC = International Standard Industrial Classification, n.e.c. = not elsewhere classified, PPP = purchasing power parity, PRODY = sophistication level of individual products, RCA = revealed comparative advantage.
Note: Table shows all unexploited products (RCA<1) by Tajikistan in 2010–2014, excluding those (i) for which PRODY is less than EXPY; (ii) swine and processed pig meat, fish and pearl products, petroleum products, seawater salt, and special transactions; (iii) that have no export value; and (iv) products with a distance that is not at most 1.0 standard deviations above the mean for all unexploited products. The remaining products meeting the above criteria were combined into International Standard Industrial Classification Revision 3 sectors, weighted by (i) 2010–2014 world exports, and (ii) strategic value.
Sources: Estimates based on United Nations Commodity Trade Statistics Database. http://comtrade.un.org/db/default.aspx (accessed March 2016); and United Nations Statistics Division. Correspondence between ISIC Rev. 2 and ISIC Rev. 3. http://unstats.un.org/unsd/cr/registry/regso.asp?Ci=1&Lg=1

[54] Appendix 4.2 gives the details of these product categories at the 4-digit SITC level.

Table 4.8: Option 3—List of Unexploited Products, Average 2010–2014
(0.5 standard deviation from mean distance)

No.	ISIC	ISIC Description	PRODY (2011 PPP$)	Strategic Value (2011 PPP$)	Tajikistan Exports ('000 $)	World Exports (million $)
1	241	Basic chemicals	23,926	19,714	205.2	179,329
2	101	Mining: hard coal	17,192	11,848	0.0	115,256
3	151	Food processing	17,160	21,236	1,832.5	103,575
4	154	Other food products	22,316	24,631	219.2	70,143
5	252	Plastics products	19,122	25,233	21.7	45,505
6	171	Textiles	18,662	20,462	576.0	42,978
7	269	Nonmetallic mineral products n.e.c.	18,358	19,791	72.8	27,286
8	210	Paper products	17,570	24,808	4.5	22,943
9	160	Tobacco products	19,989	20,604	4.0	21,252
10	155	Beverages	15,712	21,653	49.2	17,378
11	011	Crop farming	15,393	18,331	77.4	16,982
12	012	Animal farming	20,525	16,647	316.4	14,460
13	132	Mining: nonferrous metal ores	14,307	10,339	3.3	13,871
14	172	Other textiles	18,462	21,570	250.1	10,570
15	202	Wood products	18,694	15,056	0.0	9,741
16	243	Man-made fibers	21,442	24,688	361.7	7,743
17	141	Quarrying: stone, sand and clay	13,742	22,397	2.3	7,175
18	272	Basic precious and nonferrous metals	15,865	15,264	140.4	5,790
19	222	Printing services	14,035	21,785	0.8	4,236
20	181	Garments	14,129	19,151	163.3	3,777
21	191	Leather products	15,742	22,911	0.0	2,053
22	242	Other chemical products	17,542	22,053	2.1	1,518
23	315	Electric lamps and lighting equipment	18,891	20,660	0.3	883

EXPY = export sophistication at country level, ISIC = International Standard Industrial Classification, n.e.c. = not elsewhere classified, PPP = purchasing power parity, PRODY = sophistication level of individual products, RCA = revealed comparative advantage.
Note: Table shows all unexploited products (RCA<1) by Tajikistan in 2010–2014, excluding those (i) for which PRODY is less than EXPY; (ii) swine and processed pig meat, fish and pearl products, petroleum products, seawater salt, and special transactions; (iii) that have no export value; and (iv) products with a distance that is not at most 0.5 standard deviations above the mean for all unexploited products. The remaining products meeting the above criteria were combined into International Standard Industrial Classification (ISIC) Revision 3 sectors, weighted by (i) 2010–2014 world exports, and (ii) strategic value.
Sources: Estimates based on United Nations Commodity Trade Statistics Database. http://comtrade.un.org/db/default.aspx (accessed March 2016); and United Nations Statistics Division. Correspondence between ISIC Rev. 2 and ISIC Rev. 3. http://unstats.un.org/unsd/cr/registry/regso.asp?Ci=1&Lg=1.

these activities. Most of these sectors are farther away from Tajikistan's current capabilities, and their current export volumes are quite low. It suggests that only a handful of companies make these high-potential products. The government and policy makers will need to identify potential domestic and foreign investors and address product-specific constraints. This will enable them to diversify investments appropriately. However, it also will require building the capacity of existing institutions as well as creating new institutions to encourage potential investors. It will also be necessary to increase the capabilities of companies and improvements in the stock of human capital through investment in education and training. One would need to look carefully at the costs and benefits of such investments. This is the point where government can play a very effective role through the introduction and implementation of what has been termed a "modern industrial policy" (Felipe 2015).

Unexploited opportunities exist in a number of areas.

The above analysis shows that unexploited opportunities exist in a number of areas, and that there are examples in the experience of other economies from which they can be drawn. For example, Tajikistan has very strong potential to develop the agrifood processing sectors (Option 2 and Option 3 areas in the above analysis), and by following the steps other successful economies have taken, it can reap the benefits of such a transformation (Box 4.3).

Box 4.3: Unleashing Transformation in the Agrifood Industry

Tajikistan's agriculture sector is underperforming. Arable land area, irrigation resources, and state efforts are concentrated in cotton produced on stagnant farms that descended from the former Soviet Union.

While the country is among the few in Asia where a majority and growing share of employment is in agriculture, it is a cereal importer and has some of the highest rates of malnutrition in Asia. Agriculture in Tajikistan can offer much more. Small plots devoted to household cultivation show the potential, as their productivity has risen at a much faster pace than that of large commercial farms.

However, the small scale of household plots, their inability to rent or agglomerate land, lack of credit, the absence of support services, and a legacy of state control have stymied agricultural progress. On top of this, the processing industry and the processes that add value are in decline; exports of processed vegetables and fruit were five times lower in 2011 than in 2002. Before 1990, Tajikistan exported 200,000 tons of fruit, vegetables, and canned food annually (FAO 2012).

This stands in stark contrast to the rest of Asia, where the agrifood industry has been transformed over the past half century. Reardon et al. (2009) argue that this has occurred in two stages.

The "pre-liberalization" stage, which ended in the early 1980s in the open economies of Asia, relied on the public sector to develop large municipal wholesale markets, parastatal processing facilities, and state-owned retail outlets. Tajikistan is still largely in this stage.

The second "liberalization/globalization" stage followed in other countries based on structural transformation of the agrifood industry as a result of food-processing liberalization and foreign direct investment in the retail sector, which catalyzed domestic investment in competing industries.

The result was consolidation of processing and retail, with increased specialization, the emergence of increased product quality standards, and vertical coordination to efficiently fulfill those standards. This vertical coordination has involved greater contract arrangements that often circumvent the traditional constraints of credit, risk, and extension support. Buyback agreements between producers and processors typically underpin this coordination and assure access to appropriate inputs, technologies, and markets for farmers, while processors are ensured of the quality and quantity of supplies.

In many respects like size and crop composition, small household plots in Tajikistan face similar conditions as many farmers in the People's Republic of China (PRC). However, the PRC has implemented a series of reforms that have unleashed the second stage of transformation. In the 1970s, the PRC, like Tajikistan during the Soviet era, had large state-run vegetable production and processing facilities.

But from the 1980s onward, cropping choice, processing, and marketing were increasingly liberalized and farmers were given greater autonomy over their plots. This initially resulted in fragmentation and value-chains oriented toward wet-market retailing, which transformed toward market-oriented integration and coordination. Small plot sizes were partially resolved by implementing fanzu daobao, in which parcels were consolidated to provide larger production bases to vertically integrated producers (Stringer et al. 2009). Reforms contributed to rapid growth in production, with output quadrupling between 1991 and 2003, even as fruit and vegetable areas only doubled. This allowed the PRC to nearly double the value of fruit and vegetable exports between 2000 and 2004, even as domestic per capita protein consumption levels neared those of Japan.

Source: ADB Economic Research and Regional Cooperation Department.

Similarly, the textile and garment sector is another candidate for government–private sector collaboration to tap potential. This sector is also included as a priority in Tajikistan's ongoing development plans and it has the capacity to contribute significantly to employment and growth. Bangladesh offers a good example in the development of the garments industry for expanding the market and in improving quality management infrastructure (Box 4.4).

Box 4.4: The Growth of the Bangladesh Garments Industry

For Bangladesh, the ready-made garment industry has been the main export sector and a major source of foreign exchange since the late 1970s. From about $31.6 million, or 4% of export earnings in 1984, the industry has grown to $24.5 billion within a span of 30 years, accounting for about 81% of the country's export earnings in 2014. This has put Bangladesh among the five largest apparel exporters in the world.

In 2014, 60% of foreign currency from ready-made garments came from sales to the European Union (EU), 21% from the United States, and 4% from Canada. The industry accounted for 18% of the country's gross domestic product (GDP) and its 4,222 factories provided jobs for 4 million people. Since more than 85% of the garment workforce is women, the ready-made garment industry has raised the status of women in their families and communities.

Among the factors that contributed to the success of the industry in Bangladesh are the following:

Nonmarket factors. The Multi-Fiber Arrangement in global textile and clothing trade (in effect from 1974 to 2004) created an opportunity for Bangladesh to exploit its comparative advantage in the labor-intensive garment industry, as large importers of ready-made garments like the United States and Canada imposed quota restrictions limiting the export of garments from Hong Kong, China; India; Indonesia; the Republic of Korea; Malaysia; Singapore; Sri Lanka; and Thailand. Investors seized the opportunity to establish businesses in Bangladesh. The main foreign investors include the Republic of Korea, Japan, the United States, the United Kingdom, the People's Republic of China (PRC), Malaysia, and India. Being a least developed country, Bangladesh received preferential treatment from the United States and the EU.

Government policy. The government focused on export-led industrialization with minimal regulation, encouraged foreign direct investment, organized international trade fairs, and established export processing zones. There are currently eight that are under the supervision of the Bangladesh Export Processing Zones Authority and they are located in Adamjee, Chittagong, Comilla, Dhaka, Ishwardi, Karnaphuli, Mongla, and Uttara. Most garment companies are located in these zones, where tariffs and quotas are eliminated and the bureaucratic requirements are minimized. More importantly, the government took the recommendations of private investors, and streamlined the industry in the early 1980s by adopting the following:

(i) **The back-to-back letters-of-credit system**, where export letters-of-credit (outputs) are backed by import letters-of-credit (inputs), minimizing the need for working capital and foreign exchange in the ready-made garment industry;

(ii)**The bonded warehouse system**, where imported inputs can be cleared through the customs against export orders without paying import duty, effectively allowing access to imported inputs at zero tariff.

These two innovative policy designs managed to accelerate the growth of the ready-made garment industry. The Sixth Five Year Plan (2011–2015) also sets out a strategy for market integration by developing a domestic and regional transport network. To improve transport connectivity and trade, Bangladesh will develop infrastructure like roads, railways, and ports that will allow it to be connected to the Asian Highway Project implemented by the United Nations Economic and Social Commission (UNESCO) for Asia and the Pacific.

Market factor—low cost production. Low wages allowed Bangladesh to compete with countries like the PRC, India, and Viet Nam by enabling it to implement mass production of ready-made garment products. This low-wage factor also sustained their competitiveness after the Multi-Fiber Arrangement ended in 2004.

continued on next page

Box 4.4 continued

Industrial factors. The Bangladesh Garment Manufacturers and Exporters Association is committed to promote the ready-made garment industry through policy advocacy, services to members, ensuring workers' rights, and social compliance in the factories. The association, started in 1978 and registered in 1983, also established the National Institute of Fashion Technology to ensure supply of skilled labor. A number of Bangladeshi workers who had the opportunity to receive training at Daewoo's state-of-the-art technologies in the Republic of Korea in 1979 went on to become among the initial workers for Desh Garments, the first export-oriented, ready-made garment company in Bangladesh. Most of these workers eventually set up their own companies or joined newly set up local garment makers, transferring and spreading their knowledge of modern technologies.

Despite its strong growth and its continuing prospects, challenges hound the Bangladesh ready-made garment industry, particularly in relation to workplace safety and achieving better working conditions for its millions of workers. Among the current challenges that should be addressed to remain competitive in the world market are (i) export/product diversification, as too much export concentration on ready-made garments makes the economy vulnerable to external shocks; (ii) low innovative capacity such as in apparel designs; (iii) poor safety standards for workers, which need to be improved to prevent tragedies similar to the Tazreen fire (in 2012) and the Rana Plaza collapse (in 2013) that took more than 1,200 lives.

Source: ADB Economic Research and Regional Cooperation Department.

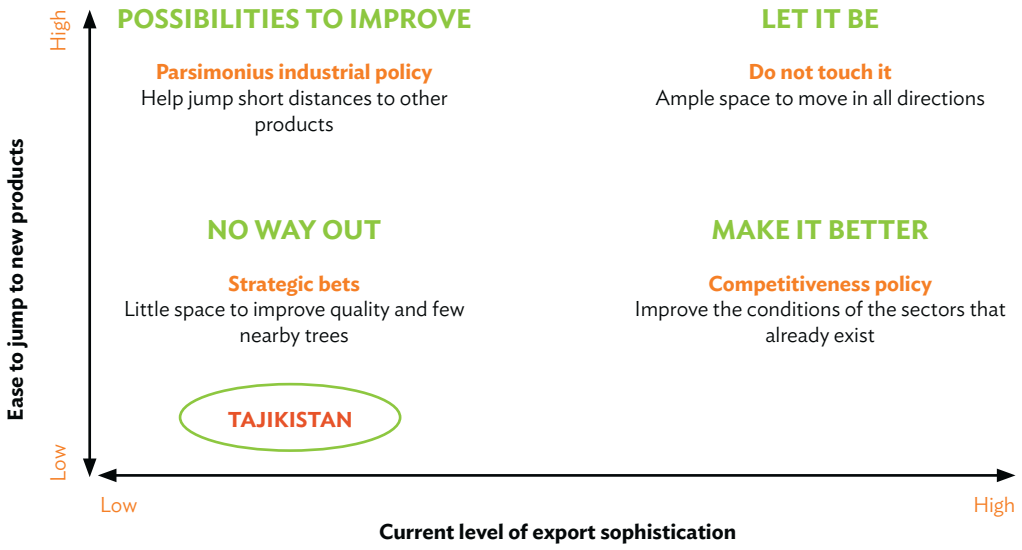
4.6 Policy Implications for Tajikistan

The successful structural transformation of the high-growth Asian economies was the result of purposeful action through industrial policy. In technical parlance, industrial policy is typically rationalized as an exercise in coordinating activities between public and private sectors to identify market failures that impede structural transformation (Hausmann and Klinger 2006). In this way, policy making becomes a process of compiling information about the different externalities, the existing constraints, and the available opportunities. Market failures potentially reduce the ability of firms and entrepreneurs to invest in new and nontraditional products. To address these and to encourage the private investor to discover new products, government can play an important role that establishes the rationale of a modern industrial policy (Rodrik 2004).

A modern industrial policy can help export diversification and upgrading. The discussion so far has highlighted high-potential products that offer the best combination of proximity and sophistication. The sectors that have been identified can significantly improve export sophistication, and support for them should be helpful in transforming resources toward high-value-added sectors. The following policy framework may help efforts to take advantage of these unexploited opportunities and address product-specific constraints through appropriate policy targeted at either nearby or distant products (Figure 4.13).

The framework suggests three strategies to promote structural transformation. The bottom right of the matrix represents existing activities that can be enhanced to push the country toward much higher income. This would require competitiveness policies, strategies to expand and improve on things Tajikistan is already doing, and solving coordination problems. The upper left quadrant represents the challenge of moving toward relatively nearby activities. These are activities where many requisite inputs are already in place and a handful of entrepreneurs are already engaged. Government in this situation can sort out the problems of missing public inputs and through providing the necessary infrastructure that can attract other investors. The lower-left quadrant represents the strategic bets, activities that will not happen without major public involvement, as the

Figure 4.13: Policy Map for Structural Transformation



Source: Hausmann, R. and B. Klinger. 2009. Policies for Achieving Structural Transformation in the Caribbean. *Private Sector Development Discussion Paper.* No. 2. Washington, DC.

market on its own is unlikely to solve the coordination problems and provide the necessary resources and complementary inputs.

The framework does not suggest that government necessarily pick priority sectors on its own and try to outsmart the market. Instead, this approach emphasizes the importance of learning about sector-specific barriers and providing the necessary sector-specific public inputs to allow firms to move to new activities and to operate existing activities more productively. In practice, identifying these inputs—and agreeing on the way to supply them—requires public attention, legislative time, and the optimal allocation of scarce fiscal resources. The provision of the missing public inputs requires a government that can identify as many obstacles and opportunities as possible and can make informed choices. The success of such strategic bets will critically hinge upon the quality and depth of public–private dialogue. The idea is that opening discussions with the private sector will bring in different sectors as new opportunities for structural transformation emerge.

Once government identifies the categories of products that need to be the target of its medium- and longer-term perspective plans, appropriate policies may be devised to facilitate private investment. However, it is important to note that jumps in the product space from current capabilities to nearby products are very different from jumps to faraway products. Some of the nearby products, such as textiles, crop farming, animal farming and mining, already engage private investors and are products in which Tajikistan has acquired some important capabilities. To facilitate jumps to these nearby products, the government can, for example, start discussion with the private sector and learn about the publicly provided sector-specific inputs that are missing. This dialogue should also be able to bring in new sectors of the economy.

The public–private dialogue process can help the government identify missing public inputs. In cases where the private sector decides to move toward high-value-added products that are far away from existing capabilities, they are likely to face a lot of missing public inputs. Therefore, if Tajikistan initially focuses its attention on nearby "low-hanging fruit" in which private investors are already involved and exporting products, then companies can be engaged in the public–private dialogue and government can learn about the missing public inputs.

However, where the government focuses on more distant products and activities in which only a few companies are able to give views about missing public inputs, a more careful evaluation is required. Government, for example, may establish a development bank or a body at the top to facilitate longer jumps. If that is the case, such a body should encourage private investors to come forward with business plans, and, through dialogue, government can assess the product-specific constraints. Government can also provide financial support to enable companies to develop plans and to share valuable information with the public. Likewise, some companies could engage with large foreign partners, encouraging them to invest and learn about product-specific problems. Similarly, new industrial zones may be built, which can be helpful in identifying the constraints preventing private sector investment in potential activities. The idea is that these industrial zones should help explore opportunities and obstacles, and identify solutions for attracting investment in new activities. The challenge for Tajikistan, given its peripheral position, is to enter into activities far from its current capability set and with high strategic value so that they can open more opportunities.

4.7 Modern Industrial Policy in Practice

This section discusses some of the examples of modern industrial policies that can help improve the production structure of an economy. We first present the successful case of the industrialization of the Republic of Korea and then compare it with India, whose experience was not that successful. Later, we compare the experience of Malaysia with that of the Republic of Korea. This provides valuable insight into the key elements of success and a clearer picture of what might cause failure.

The Republic of Korea's success story

The successful development of the Republic of Korea has been a source of fascination and contention for policy makers and of inspiration for other developing economies. The rapid rise in its per capita GDP in a relatively short time provides hope for all countries who want to radically transform their economies and improve standards of living in the course of a single generation. With its impressive industrial upgrading, the Republic of Korea transformed from one of the poorest countries in the world at the beginning of the 1960s to a rich nation epitomized by its membership in the Organisation for Economic Co-operation and Development (OECD) in 1996. The country was able to relocate workers from agriculture to manufacturing, which helped improve overall productivity as well.

The Republic of Korea provides a classic case for understanding the usefulness of industrial policy at different phases of development. It is important to realize how the role of industrial policy changes. In the early stages of development, for example, governments themselves select the sectors for investment. However, as economies develop and modes of production become more complex, the role of the private sector increases. During the early industrialization in the 1960s, the Government of the Republic of Korea was very active; the President and industry-related ministries were involved in the selection of industries. The private sector was also involved in decision making and in setting up export-oriented industries, while government provided subsidies and incentives if they managed to achieve certain targets (Table 4.9).

The Republic of Korea's pursuit of export-oriented industrialization during the 1960s initially revolved around the development of labor-intensive manufacturing industries. However, it did not wait to get stuck in producing low-value-added products. Instead, the government and the private sector collaborated on how to fill the missing links in the domestic value chain, move up the quality ladder, and improve international competitiveness. Moreover, to maximize spillover, it tried consistently to increase the links between sectors of high productivity and the rest of the economy (Felipe and Rhee 2013).

To help implement industrial policy in the early phase of industrialization, the country adopted a top-down monitoring and evaluation mechanism, and the President and industry-focused ministers monitored the progress of the export sectors. The private sector also took part in the decisions. When the economy

Table 4.9: Industrial Policy Phases – Republic of Korea

	1960s	1970s	1980s	1990s	2000s
Development Stage	Factor driven	Investment driven		Innovation driven	
Industrial Policy	Support export development	Promote heavy and chemical industries	Shift from industry targeting to research and development (R&D) support	Provide information infrastructure and R&D support	Promote new engines of growth and upgrade R&D
Science and Technology Policy	• Ministry of Science and Technology/ Korea Institute of Science and Technology • Science and Technology Policy Promotion Act • 5-Year Economic Plan including Science &Technology	• Government research institutes • Technical and vocational schools • R&D Promotion Act • Daedeok Science Town	• National R&D plan • Private sector initiatives in R&D	• Informatization • E-Government • Restructuring of government research institutes • University–industry–government linkages	• Universities' leading role • Efficient national innovation system • Regional innovation system and innovation clusters

Source: Felipe, J. 2015. *Development and Modern Industrial Policy in Practice: Issues and Country Experiences*. Cheltenham: Edward Elgar Publishing.

developed and the industrial structure became more complex, oversight was shifted and decentralized to ministries and agents. The emphasis of monitoring and evaluation moved from the short term to medium term and more weight was given to risk management. As development advanced, the Republic of Korea's industrial policies also advanced and became even more complex, using a range of financial instruments to support enterprises and the research and development that encourages innovation (Lim 2011). This process of involving the private sector in decision making remained crucial to the Republic of Korea's plan to develop the heavy and chemical industry. In the 1970s, the government worked closely with the private sector on this goal.

As the economy progressed, by the 1990s and the 2000s, it became increasingly difficult to select and directly support specific industrial units because of insufficient technological knowledge and concerns about the potential for international trade conflicts. In this era, the government shifted to indicative targeted industries, and assistance was confined to research and development efforts that were usually related to selected high-technology industries, and to financial guarantees to support private loans from financial institutions (Felipe 2015).

One important aspect of the Republic of Korea's industrial policies was that the government not only provided various kinds of incentives, tax preferences, and interest-rate subsidies to exporters, but also its assistance that included the development of basic infrastructure, industrial structure reforms, and the development of key industries supplying raw and intermediate materials. Similarly, targeted import restrictions were applied to help infant industries until they became competitive enough and started exporting or supplying inputs for domestic manufactures (Felipe and Rhee 2013).

An interesting example comparing the experience of the Republic of Korea with that of India comes from the 1970s, when both countries tried to establish hydraulic excavator industries. The success of the Republic of Korea's venture and the failure of India's strategy provide useful insights. In particular, a key difference between the two countries lies in the way their incentives were introduced. While the Government of the Republic of Korea managed to instill a sense of competition and dynamism in its producers by announcing a credible program of time-bound protection, these aspects were missing in India. As a result, the production of two excavator manufacturers from the Republic of Korea—Samsung and Daewoo—

was almost 10 times higher than their counterparts from India. Moreover, the manufacturers from the Republic of Korea had designed and developed their own excavators, which were competitive enough to be exported starting in 1987. In contrast, none of India's manufacturers had introduced an excavator based on their own design and none was in any position to export the product (Box 4.5).

While the Republic of Korea succeeded in implementing industrial policies to upgrade and diversify the industrial base, it also had to contend with setbacks. For example, the establishment of its heavy chemical industry during the 1970s suffered from structural difficulties due mainly to overinvestment and competition, which led to excessive supply capacity, while world demand was not increasing at

Box 4.5: Comparison of Industrial Policies in the Republic of Korea and India

Jacobsson and Alam (1994) provide an example showing that the correct implementation and design of a successful industrial policy program requires not only a dose of creativity and experimentation, but also some clear guiding principles that combine a "carrot" to promote investment in nontraditional areas and "sticks" to weed out investment projects that fail.

Both India and the Republic of Korea started producing hydraulic excavators (equipment used to remove soil and stones) in the 1970s. Both countries protected these infant industries by restricting imports of finished hydraulic excavators. Technology was imported through licenses. Protection was supplemented by requirements for local component inputs, which became more stringent over time. Despite these initial similarities, the development of the hydraulic excavator industry differed substantially in the two countries, and the way India and the Republic of Korea promoted their infant industries contrasts sharply.

By the late 1980s, the two excavator manufacturers from the Republic of Korea—Samsung and Daewoo—were producing more than 10 times the annual production of Larsen and Toubro, the largest excavator manufacturers from India. Moreover, the manufacturers from the Republic of Korea had designed and developed their own excavators, which were competitive enough to be exported starting in 1987. By contrast, none of India's manufacturers had introduced an excavator based on their own design and none was in any position to export the product.

Two aspects of government policy in these countries are crucial in explaining this difference in industry performance. First, although both governments guided private investment decisions in the industry, the Government of the Republic of Korea recognized the importance of economies of scale. It limited the Republic of Korea's industry to two firms and allowed them to expand production capacity and exploit production economies.

The Government of India, by contrast, encouraged many firms to enter the industry and limited their individual production capacities in the belief that this would foster competition in an otherwise protected market.

Second, the Republic of Korea government managed to instill a sense of competition and dynamism in its two producers by announcing a credible program of time-bound protection. India's protection was not time bound.

This impending liberalization of the industry was the main factor driving the Republic of Korea firms to formulate a clear strategy for developing an internationally competitive design for excavators and an export marketing plan for them. The cases of India and the Republic of Korea reinforce the critical role that greater openness after a limited period of protection plays in developing competitive infant industries.

Source: ADB. 2008. Report and Recommendation of the President to the Board of Directors: Proposed Program Cluster and Loans for Subprogram 1 to the Islamic Republic of Pakistan for the Accelerating Economic Transformation Program. Manila.

that pace. However, government-led restructuring of the industry saved the country from debt default. The government closed down and merged the industries and continued to provide fiscal incentives and cheap funds for surviving companies.

The Republic of Korea's experience shows that industrial policy consists not only of providing targeted incentives but also involves the restructuring of industrial units as and when needed. To promote development, the government and the private sector jointly addressed the problems of innovation and coordination externalities. We emphasize that conventional policy tools, such as enhancing human capital, improving infrastructure, and providing inputs like electricity, are important; however, to diversify and upgrade industrial structure and raise export sophistication, it is necessary to come up with more targeted incentive schemes. The experience of the Republic of Korea and India shows how important it is to have effective monitoring and evaluation mechanisms if industrial policy is to succeed.

The Republic of Korea's experience reveals the importance of industrial policy that changes with the level of development.

Developed and developing economies can apply a range of industrial policy instruments while enforcing a particular policy for industrial upgrading. These can broadly be classified into eight categories: (i) fiscal incentives, (ii) investment attraction programs, (iii) training policies, (iv) infrastructure support, (v) trade measures, (vi) public procurement, (vii) financial mechanisms, and (viii) industrial restructuring schemes. In the following section we will analyze how the Republic of Korea has applied these instruments in industrial upgrading.

During the 1960s, for example, the Republic of Korea provided fiscal incentives like preferential tax credits and concessions and allowed exporting firms to retain foreign exchange earnings for import purchases. Similarly, to attract investment, export credits were given to promote the export of heavy chemical industry in the 1970s. Likewise, in the 1960s, it enacted a plan to establish industrial zones.

To meet these goals and promote exports, the government provided the necessary infrastructure to industrial units. For the heavy chemical industry, the government drafted a comprehensive manpower development plan and, for this purpose, technical and vocational training facilities were greatly expanded, science and engineering education strengthened, and research and development support was enhanced through government support.

The government established high-quality technical high schools and provided incentives like employment guarantees; this helped increase the number of high-quality technicians who were particularly needed for the heavy chemical industry.

Additionally, to provide quality infrastructure and to develop the industry, the government established a number of industrial complexes, which included quality transportation and energy infrastructure. This helped develop the domestic supply chains of specific industries. The Republic of Korea also used international trade as an essential component of its development policy.

The development of a competitive export sector has also helped the Republic of Korea discover its comparative advantage in high-value-added products, overcoming the limits of its small domestic market and exploiting economies of scale. Indeed, export promotion has changed the mindset of its people, who began to compare the country against global benchmarks, and it propelled growth by helping significantly in infrastructure development, industrial upgrading, and human resources development (Felipe and Rhee 2013).

Public procurement also played an important role, where industrial complexes established under the heavy chemical industry program were expected to provide 30% of manufactured products to the military, serving as a measure of revenue stability for the companies in the industry. Similarly, incentives and financial support were provided for developing small and medium-sized enterprises.

Finally, when the adverse impact of oil shocks during the 1970s and the 1980s undermined the heavy chemical industry, the government helped restructure it by closing and merging uncompetitive units. The government also provided various fiscal incentives such as low interest rates.

However, as the economy reached the higher rungs of development, the country started pursuing a more indirect industrial policy, which involves financial tools that support risk sharing, research and development, education, and small and medium-sized enterprise development (Lim 2011).

The Republic of Korea's experience shows the importance of the correct use of incentives and of commitment, public–private dialogue, and monitoring and evaluation that ensures incentives that are time bound and properly linked with the actual performance of companies.

Malaysia used foreign direct investment (FDI) to acquire technology, but, with weak backward linkages[55] with domestic manufacturing, has not been as successful as the Republic of Korea in producing and exporting domestically owned and designed products.

Although Malaysia had undergone substantial industrial transformation, its efforts to deepen the domestic manufacturing base have not been successful in contrast to the Republic of Korea's experience. Instead, Malaysia's economy continues to depend on imported technology and capital and the manufacturing sector is facing premature deindustrialization.

The country has been unable to create strong backward linkages for the domestic manufacturing sector (Heng, Loke et al. 2011). And these poor backward linkages with the domestic economy and the country's industrial policies have resulted in a dualistic industrial structure.[56]

In the 1980s, Malaysia decided to promote heavy industry in an effort to emulate the success of Japan and of the Republic of Korea. It required importation of intermediate and capital goods for outputs that were oriented toward the domestic economy. But this resulted in large fiscal and external deficits and, with the advent of global recession and a drop in commodity prices in the early 1980s, led to reconsideration of the strategy and forced the government to focus on a private-sector–led approach.

The government then initiated programs to attract FDI and took trade liberalization measures. The country also became a beneficiary of the relocation of Japanese and other East Asian investments to Southeast Asia.

To industrialize, Malaysia used FDI to acquire technology, which helped it to improve the global supply chains. This policy also avoided the burden of high public-debt financing. The country created technology parks to attract FDI, provided skills training to improve human capital, and established special economic zones in the southern part. It practiced import substitution before shifting to export-oriented manufacturing due to a limited domestic market and the need to generate employment. It also provided fiscal incentives and tariff protections, although the latter was used only moderately compared with those of other developing countries. Table 4.10 summarizes the phases of industrialization in Malaysia.

The country successfully attracted FDI and capital flows and was also able to become a middle-income country. But apparently this did not automatically result in transferring the foreign technology to domestic firms, and it did not increase the export of highly sophisticated products on a large scale. Malaysia provided a lot of incentives and exemption to multinational corporations, which benefited from these concessions, but it also maintained strict control over technology to domestic firms. This carried negative implications for diversifying and upgrading of exports and suggests that merely relying on FDI alone is not a fruitful strategy for industrial development (Felipe and Rhee 2013).

[55] Backward linkage refers to the relationship between an industry or firm and the suppliers of its inputs. A change in the output of the industry will get transmitted backward to the supplier of its inputs by changing in demand for inputs.

[56] Malaysia's FDI reliance has yielded a dualistic industrial structure, with limited linkages and technology transfer to the Malaysian economy.

Table 4.10: Summary of Phases of Industrialization and Policies in Malaysia

Period	Trade Policies	Foreign Direct Investment Policies	Motivations
1957–1967	Import substitution in manufacturing	Foreign direct investment (FDI) for import-substituting industries	Supply finished goods that were imported
1968–1980	Export promotion in manufacturing	Free trade zones	Generate employment
1980–1985	Import substitution in manufacturing	Joint venture projects between state-owned enterprises for selected heavy industries such as automotive, motorcycle assembly, steel, cement, fertilizers, and so on	Employment, linkages, develop heavy industries
1986–2005	Export promotion in manufacturing	Relaxation of equity constraints for manufacturing	Employment; technology transfer and moving up the value chain of production through cluster development
2006–2020	Export promotion of manufacturing and selected services as new sources of growth	Relaxation of equity constraints for selected services	Continuation of knowledge-based industrial growth based on cluster development; export of selected services as new sources of growth

Source: Loke Heng, et al. 2011.

As a result, Malaysia's experience has been modest compared with that of the Republic of Korea. This was due mainly to its excessive reliance on foreign investments and to an industrial policy in which incentives were not linked clearly with the actual performance of the firms, as was done in the Republic of Korea.

The Malaysian experience shows the limited potential of relying on FDI to improve the domestic economy through technology transfer. Even now, Malaysia has yet to come up with world-class indigenous manufacturing companies that can match the Republic of Korea's Samsung or LG.

How can modern industrial policy play a pivotal role in the industrial development of Tajikistan?

The successful structural transformation of the Asian economies is the result of purposeful action through industrial policy. In modern parlance, industrial policy is an exercise in coordinating activities between public and private sectors in identifying market failures that impede structural transformation (Hausmann and Rodrik 2003). In this way, policy making becomes a process of compiling information about the different externalities, the existing constraints, and the available opportunities.

In the initial stage, the development of a diversified industrial sector would require exploiting existing capabilities and identifying where some companies already operate. In the context of product space analysis, it is in the area of choosing nearby products that modern industrial policy can be especially useful.

4.8 Tajikistan and the Principles of Modern Industrial Policy

Tajikistan has introduced various social and economic reforms since the early 1990s. Significant progress has been made with these reforms and economic growth has been strong. But as noted, the industrial and export structure have remained concentrated on a few products; considering that the majority of these products lie on the periphery of the product space, as defined here, this carries negative implications for accelerating and sustaining high growth in the long run. In addition, the presence of market failures and lack of complementary inputs potentially reduces the ability of firms and entrepreneurs to come forward to invest in new and nontraditional products.

Here we highlight the 10 principles of modern industrial policy that provide useful insights into designing industrial policies for diversifying and upgrading the industrial structure (Box 4.6).

An assessment of Tajikistan's ongoing programs and policies suggests that by and large, the subsidies and concessions in these plans are neither well targeted nor linked with the performance of companies or industry. The National Development Strategy is a case in point.

Box 4.6: Ten Principles of Modern Industrial Policy

Rodrik (2004) highlights the following 10 principles for the successful implementation of industrial policy:

(1) **Incentives should be provided only to "new" activities.** The overall objective of the industrial policy is to diversify the economy and generate new areas of comparative advantage. This would require that incentives be given to those activities that are "new" to the domestic economy. It is important to note that merely subsidizing the traditional sectors may not induce up-gradation and diversification. "New" is defined as investments in products or services that are new to the country and that have not been produced there previously or, if so, only marginally.

(2) **Clear benchmarks/criteria for success and failure are needed.** This principle requires clear benchmarking for the companies and industries engaged in producing new products. Since not all the investments in new activities will pay off, government needs to set clear benchmarks. This requires subsidies and incentives designed to encourage the performance of the firms and ensure that subsidies are not just a free ride for all the firms.

(3) **There must be a built-in sunset clause.** Support must be time limited to ensure that available resources do not remain tied up for a long time in activities that are not paying off. Therefore, for projects that require public support, there should also be a built-in sunset clause that ensures the withdrawal of support after an appropriate time has lapsed. This would induce firms to improve performance and not to remain dependent on incentives and subsidies alone.

(4) **Public support must target activities, not sectors.** Government needs to support specific products and activities and not merely the sectors or industries. The targets of public support have to be viewed not at as sectors alone, but as activities. Products to be chosen should be those that have the highest spillover impact for the rest of the economy, and industrial policy support must be aimed at overcoming market failures and product-specific constraints. For example, if logistics are a problem, then infrastructure can be improved; if low technological standards are a bottleneck, then incentives to acquire and adapt global technologies would help.

(5) **Subsidized activities must have clear potential for spillovers and demonstration effects.** This principle requires that there is no reason to provide public support to an activity unless that activity has the potential to "crowd in" other complementary investments or generate informational or technological spillovers. The benefits should not be captured by a single firm, and government support should be designed to maximize spillover to the rest of the economy.

(6) **The authority for carrying out industrial policies must be vested in agencies with demonstrated competence.** To successfully implement modern industrial policy, it is important to have a competent agency at the top to help in designing and coordinating the new activities. The experience of Japan provides such an example, wherein the key agency was the Ministry of International Trade and Industry; the Republic of Korea employed a similar developmental state model guided by key agencies.

(7) **The implementing agencies must be monitored closely by a principal with a clear stake in the outcomes and who has political authority at the highest level.** The successful implementation of such a policy would also depend on the competency of the bureaucracy and people at the top. They should be made responsible for monitoring and coordination of the activities that need to be carried out to move toward new economic activities.

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Box 4.6 continued

(8) **The agencies carrying out industrial promotion must maintain channels of communication with the private sector.** While government is vital for the successful implementation of modern industrial policy, this does not mean that bureaucrats must maintain an arm's length relationship with the private sector. In fact, for effective and sound decision making, it is a must for them to coordinate and improve communication channels with private entrepreneurs. Continuous public–private dialogue is the key to better understand the impediments constraining the private sector from making new investments and the government from devising policies that can help private entrepreneurs in discovering new products.

(9) **Some mistakes that result in "picking the losers" will inevitably occur.** The public strategies discussed here may not always be able to pick winners, and some product activities may fail. Discovering a country's productive potential will entail mistakes of this type. It is important to build safeguards against them, but the objective should be to learn from the past and to minimize the costs of mistakes rather than to discourage self-discovery.

(10) **Promotion activities need to have the capacity to renew themselves, so that the cycle of discovery becomes an ongoing one.** While there is no single blueprint for undertaking promotion of new activities, the needs and circumstances of productive discovery are likely to change over time as a country develops. This would further require that the agencies carrying out those policies will have the capacity to adjust themselves to the new environment and that the structure of incentives also evolves over time.[a]

[a] Hausmann et al. (2008) adds some additional criteria: "The dialogue process should be transparent and the requests from the private sector should be made public to prevent rent-seeking. The private sector should be willing to invest its own funds in the necessary input, so that the investment passes a market test. Public interventions should have clear criteria for success."

Source: Rodrik, D. 2004. *Industrial Policy for the Twenty-First Century*. Cambridge, MA: Harvard University Press; Authors.

To provide for orderly, long-term growth, it suggests various actions to encourage capital investment in the domestic processing of primary aluminum and in the development of the textile industry and the mining industry. However, the strategy's scheme of incentives is made largely available to both new and traditional sectors of the economy, thus violating the very first principle in Box 4.6, which is that such incentives should be provided only to "new" activities.

Tajikistan has also enacted laws for improving public financial management, under which it introduced the Medium-Term Budget Framework and Public Investment Programme for improving public sector investment. However, both programs are not well aligned with the spirit of modern industrial policy. They neither explicitly incorporate a sunset clause nor offer time-based and performance-based subsidies, violating principles 2 and 3 in Box 4.6.

Finally, Tajikistan needs to seriously reassess its continuing focus on traditional sectors such as aluminum and cotton. Although this approach may help improve some of its established industries where the country has a comparative advantage, it does not guarantee diversification and up-gradation toward high-value-added products. In devising strategies for sustained and high growth in the long run, the government needs to pay more attention to working with and helping the private sector in identifying and discovering new high-value-added and nontraditional products.

4.9 Conclusion

Through product space analysis, this chapter has highlighted why Tajikistan has been unsuccessful so far in transferring resources toward high-value-added products. The analysis suggests that changes in its labor productivity have not been associated with intense structural change and that most of the labor force remains engaged in low-productivity sectors.

It has also highlighted that largely, the role of structural transformation in improving the labor productivity in Tajikistan remains negligible. The analysis also indicates that the current level of export sophistication is insufficient to accelerate and sustain high growth in the long term. A successful development strategy will have to focus on improving the quality of its exports to make them competitive and attractive to the international market.

The product space analysis also revealed that Tajikistan's current set of products is relatively isolated in product space and facing declining income elasticities and static demand in the international market. The country has few relatively sophisticated products and the majority of its existing products are weakly connected with other nearby products. The fact that the capability to produce these products could hardly be replicated elsewhere in the economy has impeded Tajikistan's structural transformation.

The analysis has also highlighted the importance of observing the basic tenets of modern industrial policy in addressing product-specific constraints. This requires government to work in close collaboration with the private sector in trying to discover what factors have been holding back private sector initiatives in possible new areas of growth. The key point in this public–private dialogue is to have a better understanding of the missing public inputs needed to induce investors into these new areas.

International experience, with the Republic of Korea's experience as a case in point, suggests that establishing a high-level committee or independent body with the backing of senior political leadership is important for policy deliberation. Tajikistan can also follow these steps and should establish clear benchmarks for the success and failure of its industrial programs. To this end, it should have an effective monitoring and evaluation system in place that should guide the government on a project-by-project basis. International experience also suggests that industrial policy may sometimes face setbacks that entail fiscal costs, which need to be allowed for in budgeting.

Successful structural transformation requires a well-crafted policy program to improve and upgrade industrial structure. At present, it appears that subsidies and incentives provided by the government are not well aligned with the actual performance of the companies involved. The analysis suggests that Tajikistan's structural transformation can be speeded up if the government will work more closely with the private sector in identifying product-specific constraints and in providing much-needed public inputs to hurdle them.

Appendix 4.1: Technical Notes on Product Space

1. Product Sophistication (PRODY)

PRODY is the income level associated with the products that an economy exports. Following Hausmann, Hwang, and Rodrik (2007), PRODY is calculated as follows

$$PRODY_i = \sum_c \left[\frac{xval_{ci} / \sum_i xval_{ci}}{\sum_c \left(xval_{ci} / \sum_i xval_{ci} \right)} \right] \times GDPPC_c$$

where $xval_{ci}$ is the export value of product *i* by economy *c and* $GDPPC_c$ is the gross domestic product (GDP) per capita of economy *c*. GDP per capita, and therefore PRODY, is measured in 2005 PPP$.

2. Export Sophistication (EXPY)

This measure of the sophistication of an economy's export basket is from Hausmann, Hwang, and Rodrik (2007). It is a weighted average of the sophistication level of the products that an economy exports, weights being share in the economy's exports. It is calculated as follows

$$EXPY_c = \sum_i \left(\frac{xval_{ci}}{\sum_i xval_{ci}} \times PRODY_i \right)$$

where $xval_{ci}$ is the export value of product *i* by economy *c*. EXPY is measured in 2005 PPP$.

3. Revealed comparative advantage

Revealed comparative advantage (RCA) is defined, based on Balassa (1965), as

$$RCA_{ci} = \frac{xval_{ci} / \sum_i xval_{ci}}{\sum_c xval_{ci} / \sum_{i,c} xval_{ci}},$$

where $xval_{ci}$ is the value of the exports of economy *c* in the product *i*. An economy *c* is said to have RCA in export of product *i* if *RCA* is larger than one.

4. Proximity and path

Proximity: If every country that exports a product also exports another product, then these two products must involve similar capabilities. On the other hand, if every country that exports a product does not export another product, then these two products must involve different capabilities. This led to the use of conditional probabilities to measure the similarity between the two products. "Proximity" is measured as the minimum between the probability that countries export product *i* given that they already export product *j*; and the probability that countries export product *j* given that they already export product *i*. The reason for taking the minimum of the two probabilities is to create a symmetric measure of distance for a pair of products. Formally, the proximity between products *i* and *j* is defined as

$$\varphi_{ij} = \min \{P(x_i = 1 \mid x_j = 1), P(x_j = 1 \mid x_i = 1)\}$$

where $x_i = 1$ implies that, for every country *c* and commodity *i*, $RCA_{ci} > 1$.

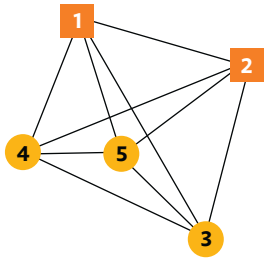
Path: For each product, we measure the strength of the linkages with other products by simply adding up the proximities leading to that product. This index, called "path," shows which products are in a dense part of the product space, and which are on the periphery. The path of product *i* is defined as

$$Path_i = \sum_i \varphi_{ij}$$

5. Density, open forest, and strategic values

Suppose there are only five commodities C_i (i=1, 2, 5) in the product space, and country A exports commodities C_1 and C_2 with comparative advantage, and other products (C_3, C_4, and C_5) are unexploited products (no comparative advantage) (Figure A1.1).

Figure A1.1: Product Space of Country A



Density: Density is defined for each unexploited product. In this example, an unexploited product, say product C5, links with four products (C_1, C_2, C_3, and C_4). Each link with C_5 has a different value of proximity. Some links are with products that have comparative advantage (C_1 and C_2), but others are with unexploited products (C_3 and C_4). Density of C_5 is the sum of proximities with products that are currently exported with comparative advantage, divided by the sum of proximities with all products. If φ_{ij} is the proximity between products i and j, $i \neq j$, the density of C5 in country A is

$$Density_{5A} = \frac{\varphi_{15} + \varphi_{25}}{Path_5} = \frac{\varphi_{15} + \varphi_{25}}{\varphi_{15} + \varphi_{25} + \varphi_{35} + \varphi_{45}}$$

By definition, density ranges between 0 and 1. If an unexploited product has links only with products that have comparative advantage, the density of that product is equal to 1. This implies that it is highly likely that the unexploited product can be exported in the future since required capabilities for that product are already developed for producing other products.

Open forest: Open forest measures the value of unexploited products at the country level, taking into account the distance from the country's current export products. Open forest (of country A) is defined as

$$Open\ forest_A = \sum_i \sum_j \frac{\varphi_{ij}\, x_{Ai}}{\sum_i \varphi_{ij}} (1 - x_{Aj}) PRODY_j$$

Based on Figure A1.1 (product space of country A), open forest can be expanded as

$$Open\ forest_A = \frac{\varphi_{31} + \varphi_{32}}{\varphi_{31} + \varphi_{32} + \varphi_{34} + \varphi_{35}} PRODY_3 + \frac{\varphi_{41} + \varphi_{42}}{\varphi_{41} + \varphi_{42} + \varphi_{43} + \varphi_{45}} PRODY_4 + \frac{\varphi_{51} + \varphi_{52}}{\varphi_{51} + \varphi_{52} + \varphi_{53} + \varphi_{54}} PRODY_5$$

Note that the weight on a PRODY above corresponds to the density of each unexploited product. A country's open forest thus depends on the proximity of the unexploited products to the products over which the country has comparative advantage and the level of sophistication of the unexploited products. A higher value of open forest implies more opportunities to jump into new products.

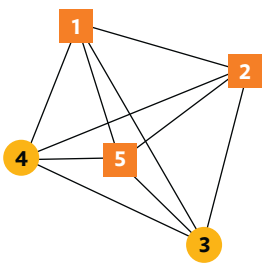
Strategic value: The successful export of each unexploited product has a different spillover effect into other unexploited products, since each product involves a different set of capabilities. Some products can provide capabilities that can be applied to a wide range of products, but others cannot. The strategic value of a product provides this information.

In the example, there are three unexploited products (C_3, C_4, and C_5). Suppose country A will acquire comparative advantage in C_5. Successful production of this product creates a new set of capabilities that entrepreneurs can also apply for C_3 and C_4. The strategic value of product C_5 is defined as

$$Strategic\ value_A = \frac{\varphi_{35}}{\varphi_{31} + \varphi_{32} + \varphi_{34} + \varphi_{35}} PRODY_3 + \frac{\varphi_{35}}{\varphi_{41} + \varphi_{42} + \varphi_{43} + \varphi_{45}} PRODY_4$$

As illustrated in Figure A1.2, the strategic value of C_5 represents the proximity of the other unexploited products (C_3 and C_4) to C_5, and the level of sophistication of these products ($PRODY_3$ and $PRODY_4$). Products with high strategic values have wide-ranging effects on future structural transformation by creating capabilities to be allied for many unexploited products.

Figure A1.2: New Product Space of Country A



Appendix 4.2: Unexploited Export Products for Tajikistan by Trade Category, 2010–2014

ISIC	ISIC Description	SITC	SITC Description	PRODY	Tajikistan Exports ('000 $)	World Exports (million $)
A. 1.5 Standard Deviations Below Average Distance						
011	Crop farming	0571	Oranges, mandarins, etc., fresh or dried	13,339	27.68	9,011
012	Animal farming	2681	Wool greasy of sheep or lambs	29,289	14.39	3,192
132	Mining: nonferrous metal ores	2911	Bones, ivory, horns, and similar products	14,248	3.22	467
171	Textiles	2682	Wool degreased, of sheep or lambs	25,029	6.92	955
272	Precious and nonferrous metals	6851	Lead, and lead alloys, unwrought	15,865	140.43	5,790
B. 1.0 Standard Deviations Below Average Distance						
011	Crop farming	0541	Potatoes, fresh or chilled	17,202	13.35	4,141
		0571	Oranges, mandarins, etc., fresh or dried	13,339	27.68	9,011
		0572	Other citrus fruits, fresh or dried	18,070	35.81	3,414
012	Animal farming	0616	Natural honey	16,806	53.71	1,807
		2116	Sheep and lamb skin with the wool on, raw	18,542	39.57	987
		2681	Wool greasy of sheep or lambs	29,289	14.39	3,192
132	Mining: nonferrous metal ores	2872	Nickel mattes, etc.	14,309	0.04	13,403
		2911	Bones, ivory, horns, similar products	14,248	3.22	467
151	Food processing	0564	Flour, meals, etc., nes	15,963	0.18	990
		0565	Vegetables, prepared or preserved, nes	15,341	315.65	14,472
		0585	Fruit or vegetable juices	15,581	851.03	15,688
		0589	Fruit prepared or preserved, nes	14,473	507.83	11,848
154	Other food products	0483	Macaroni, spaghetti, and similar products	18,200	6.27	4,063
171	Textiles	2682	Wool degreased of sheep or lambs	25,029	6.92	955
		6552	Knitted of fibers other than synthetic	20,219	451.73	20,710
181	Garments	8422	Men's and boys' suits	14,129	163.29	3,777
210	Paper products	6575	Twine, cordage, ropes, and cables	14,011	1.50	3,328
241	Basic chemicals	5121	Acyclic alcohols, and their derivatives	24,343	46.64	49,797
		5621	Mineral or chemical fertilizers, nitrogenous	21,763	0.86	27,580
		5629	Fertilizers, nes	14,998	1.17	22,688
269	Nonmetallic mineral n.e.c.	6613	Building and monumental stone	15,892	0.12	11,254
272	Precious and nonferrous metals	6851	Lead, and lead alloys, unwrought	15,865	140.43	5,790
C. 0.5 Standard Deviations Below Average Distance						
011	Crop farming	0541	Potatoes, fresh or chilled	17,202	13.35	4,141
		0571	Oranges, mandarins, etc., fresh or dried	13,339	27.68	9,011
		0572	Other citrus fruits, fresh or dried	18,070	35.81	3,414
		0576	Figs, fresh or dried	19,890	0.55	417
012	Animal farming	0011	Animals of the bovine species, live	18,248	208.74	8,475
		0616	Natural honey	16,806	53.71	1,807
		2116	Sheep and lamb skin with the wool on, raw	18,542	39.57	987
		2681	Wool greasy of sheep or lambs	29,289	14.39	3,192
101	Mining: hard coal	3222	Other coal, not agglomerated	17,192	0.01	115,256
132	Mining: nonferrous metal ores	2872	Nickel mattes, etc.	14,309	0.04	13,403
		2911	Bones, ivory, horns, coral, shells	14,248	3.22	467
141	Quarrying: stone, sand and clay	2782	Clay and other refractory minerals, nes	13,742	2.29	7,175
151	Food processing	0111	Bovine meat, fresh, chilled or frozen	16,889	1.62	34,966

continued on next page

ISIC	ISIC Description	SITC	SITC Description	PRODY	Tajikistan Exports ('000 $)	World Exports (million $)
		0546	Vegetables, frozen	22,674	0.92	12,730
		0564	Flour, meals, etc., nes	15,963	0.18	990
		0565	Vegetables, prepared or preserved, nes	15,341	315.65	14,472
		0583	Jams, jellies, marmalades, etc.	18,794	122.48	2,316
		0585	Fruit or vegetable juices	15,581	851.03	15,688
		0586	Fruit, temporarily preserved	15,215	32.78	4,222
		0589	Fruit prepared or preserved, nes	14,473	507.83	11,848
		4235	Olive oil	21,552	0.00	6,343
154	Other food products	0483	Macaroni, spaghetti, and similar products	18,200	6.27	4,063
		0620	Sugar confectionery, non-chocolate	16,902	21.97	9,086
		0980	Edible products and preparations, nes	23,473	190.97	56,994
155	Beverages	1110	Nonalcoholic beverages, nes	15,712	49.19	17,378
160	Tobacco products	1222	Cigarettes	19,989	3.96	21,252
171	Textiles	2682	Wool degreased of sheep or lambs	25,029	6.92	955
		6515	Yarn containing 85%+, synthetic fibres	13,421	5.11	355
		6517	Yarn of regenerated fibers	15,651	5.60	3,138
		6531	Fabrics, woven	16,613	106.61	17,821
		6552	Knitted of fibers other than synthetic	20,219	451.73	20,710
172	Other textiles	6560	Tulle, lace, embroidery, ribbons, etc	20,401	245.99	6,564
		6594	Carpets, rugs, mats, of wool	16,516	0.75	1,226
		6596	Carpets, rugs, mats, nes	14,743	3.34	2,781
181	Garments	8422	Men's and boys' suits	14,129	163.29	3,777
191	Leather products	6129	Other articles of leather	15,742	0.00	2,053
202	Wood products	6342	Plywood	18,694	0.04	9,741
210	Paper products	6421	Packing containers, box files, etc., of paper	18,174	2.97	19,615
		6575	Twine, cordage, ropes and cables	14,011	1.50	3,328
222	Printing services	6423	Registers, exercise books, etc., of paper	14,035	0.76	4,236
241	Basic chemicals	5121	Acyclic alcohols, and their derivatives	24,343	46.64	49,797
		5221	Chemical elements	21,285	44.08	19,683
		5225	Inorganic bases, hydroxides, and peroxides	21,028	52.03	21,689
		5322	Dyeing, tanning extracts, and their derivatives	15,476	4.07	1,703
		5621	Mineral or chemical fertilizers, nitrogenous	21,763	0.86	27,580
		5629	Fertilizers, nes	14,998	1.17	22,688
		5832	Polypropylene	29,528	56.37	36,189
242	Other chemical products	5722	Fuses, caps, igniters, detonators	17,542	2.12	1,518
243	Man-made fibres	2665	Discontinuous synthetic fibers	21,442	361.75	7,743
252	Plastics products	8931	Plastic packing containers, lids, etc.	19,122	21.65	45,505
269	Nonmetallic mineral n.e.c.	6613	Building and monumental stone	15,892	0.12	11,254
		6624	Non-refractory ceramic bricks, tiles, etc.	20,089	72.65	16,033
272	Precious and non-ferrous metals	6851	Lead, and lead alloys, unwrought	15,865	140.43	5,790
315	Electric lamps and equipment	8991	Carving, molding materials, nes	18,891	0.33	883

ISIC = International Standard Industrial Classification, nec = not elsewhere classified, PRODY = sophistication level of individual products, SITC = Standard International Trade Classification.
Sources: Estimates based on United Nations Commodity Trade Statistics Database. http://comtrade.un.org/db/default.aspx (accessed in April 2016); and United Nations Statistics Division.

Chapter 5
Summary and Policy Recommendations

Tajikistan faces a number of challenges in its quest to become a modern and vibrant industrial economy. The main challenges are to raise private investment substantially, to diversify and upgrade exports, and to provide decent jobs in the nonfarm sectors. The country has changed into a service economy over 18 years of remarkable growth, driven by consumer spending fueled by the remittances of migrant workers. But growth has failed to create decent jobs in industry and services, and the employment profile remains that of an agrarian economy.

The analysis presented in this study shows that Tajikistan's growth has largely been concentrated on nontradable activities and has led to a growing gap between exports and imports. Had the country speeded up structural transformation, the pace of growth likely would not only have increased but also would have brought significant changes in the composition of output and employment. Resources would have moved from low productivity to high productivity sectors, thus spreading the benefits inclusively.

As it is, a sudden drop in remittances in particular will have serious consequences for macroeconomic stability. Sustaining high growth, on the other hand, will crucially depend on export dynamism and creating conditions that can increase private investment.

The government, by addressing the constraints identified in earlier chapters and providing a business-enabling environment, can play an important role in speeding up the process of structural transformation and moving the economy toward high-value-added products. Accordingly, this chapter focuses on recommendations for the policies needed to sustain high and inclusive growth.

5.1 Critical Constraints to Inclusive Growth

This study used a diagnostic approach to growth and inclusiveness to identify the critical constraints to stimulating private investment and reducing income and social inequality in Tajikistan. Overcoming them can help the government in its efforts to create jobs in the formal labor market, and thus allow the economy to become more diversified and less dependent on remittances while at the same time spreading the benefits of growth across the country. To recap, the main constraints to private investment and in sustaining high growth are the following:

- High cost of finance and limited access to financial services
- Market failures resulting in highly concentrated exports
- Lack of an uninterrupted electric supply
- Poor quality transport infrastructure and logistics as well as low connectivity
- Micro constraints such as corruption and weak rule of law

Also among the constraints to the inclusiveness of growth in Tajikistan are an inadequate electricity infrastructure, limited employment opportunities, unequal access to education, declining human capital, and fragmented and underfunded social protection programs.

To sustain growth and make it more inclusive, this study proposes various short-, medium-, and long-term policy options. The critical constraints identified are interlinked and will need to be addressed to create an enabling environment for business that can help spur private investment and diversify and upgrade exports.

Tajikistan's future growth rate depends on the revival of industry and attaining sufficient export dynamism. More exports are needed to create employment and maintain healthy foreign exchange reserves that can help maintain macroeconomic stability and absorb external shocks. As discussed, the agriculture sector is still the main employment provider, and there is still great potential to improve output and productivity in this sector. Yet, this would squeeze demand for labor, an outcome that points to the need for more job opportunities in nonfarm sectors. Indeed, the challenge to Tajikistan is to create jobs in industry and services to absorb labor released from agriculture and generated by population growth.

5.2 Policy Recommendations

1.2.1 Addressing the higher cost and access to finance

Tajikistan's financial sector is underdeveloped and plagued with weak governance, unable to play the role of an effective intermediary in channeling remittance inflows for productive investment. Poor financial intermediation has resulted in higher lending rates which, combined with lack of access to financial services, has further constrained the ability of the private sector to make new investments. Moreover, the banking sector continues to practice directed lending. There is clearly a need to strengthen the institutions responsible for advancing financial sector development, help reduce the cost of finance, and make the financial sector a more effective conduit for private investment. To make its financial services affordable and more accessible, Tajikistan could explore the following policy recommendations:

(1) Strengthen regulatory and supervisory framework

Short-term to medium-term measures

(a) Prioritize public investments to sectors that have higher spillover impact for the rest of the economy and gradually strive to end the practice of directed lending.

(b) Continue to strengthen the central bank, the National Bank of Tajikistan, in implementing its mandate and undertaking necessary reforms, including giving it adequate capitalization. This would allow the National Bank of Tajikistan to properly assert its regulatory authority and mandate over financial entities and make it less vulnerable to outside influence and political maneuvering.

(c) A review to bring supervision and regulatory policies of the banking sector to international standards should also be implemented.

(d) Strengthening the central bank should include a capacity-building program on banking supervision and regulation and on-site examination of the bank's compliance, safety, and soundness issues. A remedial action regime should be put in place for the National Bank of Tajikistan to enable it to exercise prompt legal, corrective action in handling financially distressed institutions before they are completely compromised.

(e) Fast-track and implement requiring adequate capitalization of commercial banks to weed out small inefficient financial institutions and enhance their liquidity. Update the legal and institutional framework according to international banking rules and regulations by improving bank licensing practices in line with Basel Core Principles for effective banking supervision. And along

with initiatives to enforce prudential oversight, licensing regimes should allow scrutiny of the shareholders and senior management of applicant banks to determine their suitability.

(f) Review and enhance the legal and regulatory framework for secured lending transactions to enable borrowers to access collateralized financial products and tap formal financial channels. This would require the establishment of a uniform system of property registration—a collateral registry—that expedites the registration and use of land and related properties as secured assets, and by enforcing protection of private property through laws and legal instruments to enable the holders of these assets to access credit facilities.

(g) Enact a law requiring public disclosure of shareholding structures in financial institutions, clarifying operational definitions of conflict of interest, beneficial ownership, and related lending. This would send important signals to the shareholders and management of these institutions and to the public at large.

(h) Upgrade existing measures for the regulation, operation, and oversight of payment systems, and ensure that new technology is introduced to drive the modernization of these payment systems.

Medium- to long-term measures

(a) Enhance surveillance on asset classification and loan provisioning to keep nonperforming loans for various types of borrowing within manageable levels.

(b) Devise best-practice frameworks in financial markets to help shape local financial operations and keep them in line with international standards.

(2) Strengthen the financial intermediation capacity of banks

To strengthen the financial intermediation capacity of banks and foster an environment that mobilizes domestic savings with greater efficiency and improves availability and access to financial information, the following measures may be considered:

Short-term to medium-term measures

(a) Undertake a marketing campaign to advertise formal finance to the public to help foster trust in the banking system and create public interest in using formal finance channels.

(b) Support liberalization measures to encourage the entry of foreign banks in the country to foster a healthy and competitive banking sector environment.

(c) Seek to improve remittance services and encourage banks and other formal channels for inflows to expand their range of products, thus enabling the formal financial sector to capture a greater share of the country's overseas earnings.

(d) Promote the use of the national currency by promoting somoni-denominated products for savings and loans, and monitor foreign currency deposits and loans that could be detrimental to the financial system. The latter measure can minimize loan defaults in the event of external shocks and sudden swings in the exchange rate.

(e) Enhance the capacity of the financial sector to assess credit risk and create a mature credit culture, and promote expansion of the coverage of the Credit Information Bureau of Tajikistan to cover more companies and individuals, particularly in rural areas. Providing incentives could be considered to encourage banks to register with credit bureaus and exchange both black (negative) and white (positive) financial information profiles on their borrower databases.

(f) Establish clear and fair rules for protection of confidentiality and the right to correct inaccurate information.

(g) Design and promote mobile banking products that have much lower cost-to-serve rates than traditional products. This would be particularly beneficial in hard-to-reach areas where a limited

transport network prevents households and business from using banking services regularly.

Medium-to long-term measures

(a) Encourage and incentivize banks and nonbank financial institutions to (i) create a diversified range of viable and affordable rural credit products that cater to the needs of those engaged in agriculture, micro, small, and medium-sized enterprises, and activities particular to the rural economy; and (ii) design alternative collateral instruments and mechanisms that enable landless individuals to borrow.

(b) Implement a comprehensive financial literacy program to encourage more private businesses and households to use formal financial institutions. Promote financial literacy especially in the rural areas and among the youth to enhance their knowledge of the role of savings and credit in promoting activities that could enhance the quality of life and improve household welfare.

(c) Develop the capital market to serve as an alternative channel for financing the long-term lending needs of private firms.

(d) Create a suitable environment for interbank lending to encourage the development of secondary markets.

(e) Continue implementing and updating consumer protection measures to better safeguard the banking and financial transaction records of private customers.

(f) Strengthen the core skills of financial sector specialists, especially in credit and risk assessment.

5.2.2 Addressing market failures

The incidence of market failures can reduce the ability of companies and entrepreneurs to invest in new products. The industrial sector remains highly concentrated and has had very limited impact on job creation in the formal labor market. The analysis presented in this study has pointed out that Tajikistan generally produces goods that lie at the periphery of the product space, and that, as a result, it has not developed the capability to produce high-value-added and more sophisticated products. This limits its ability to accelerate structural transformation.

To diversify and upgrade industry, it would be advantageous for the government to come up with better-targeted incentives and exemptions than the ones it already provides. The principles of modern industrial policy discussed in Chapter 4 should be applied in this effort.

Short-term to medium-term measures

(a) Provide incentives like tax breaks, credit guarantees, and loans to entrepreneurs intending to engage in new economic activities or in producing new products. The government can use product space analysis in choosing from the list of nearby products that require capabilities Tajikistan already has in possession. This list can then form the basis for discussion with the private sector. The specific set of policy instruments required to support private investors can emerge from this dialogue.[57]

(b) Discussions can be conducted with entrepreneurs in the case of more distant products to establish what support they would need to invest in them. Interventions should be focused on identifying and providing public inputs that raise a sector's productivity and should not subsidize low-productivity sectors. The proposed products should have a clear criterion for success and be time limited.

(c) Establish phytosanitary facilities that comply with international standards.

(d) Establish credit-guarantee programs and improve financial expertise. This will strengthen credit facilities for small and medium-sized enterprises,

[57] The Hausmann–Rodrik argument is that the selection of specific policy instruments to support private investors is less important than the process whereby constraints are identified.

encouraging them to increase the volume and sophistication of their production.

(e) Introduce programs to establish networks for small and medium-sized enterprises that can serve as the foundation for an improved value chain and greater productivity.

(f) Implement the standards of the Extractive Industries Transparency Initiative to capitalize on Tajikistan's advantage in mining. Currently, 402 mineral deposits have already been explored and only a quarter of these are now being extracted (EITI 2014).

(g) Engage in bilateral trade talks with markets in East Asia, particularly in the People's Republic of China (PRC), to reduce trade restrictions from the equivalent tariff of lower than 20%, when at present the PRC tariff is 70% (World Bank 2014a). One possible area for discussion is to minimize tariffs on farm produce.

Medium- to long-term measures

(a) Focus support on more distant products as defined in the product space analysis.

(b) Establish a high-level committee or independent body for policy deliberation.

(c) Introduce monitoring and evaluation systems to guide the government on a project-by-project basis.

5.2.3 Providing an adequate and reliable supply of electricity

Despite its tremendous potential for hydropower, Tajikistan suffers from chronic shortages of electricity particularly during the winter months because the installed generation capacity is insufficient to meet peak demand for heating and there is not enough water to run hydropower plants at that time. To address this gap, the government needs to implement strategies that would increase electricity supply and improve energy efficiency by reducing its uneconomic use. Addressing institutional and regulatory gaps is equally important to creating a sustainable power supply.

(1) Enhance power generation capacity

To increase power generation through rehabilitation of assets and development of generation capacity, the following measures are recommended:

Short- to medium-term measures

(a) Raise tariffs to cover costs. Strengthen efforts to reduce the buildup of arrears and accounts receivable to provide financing for rehabilitation and maintenance efforts, and minimize the quasi-fiscal deficits of state-run utility Barki Tojik by addressing the weakness in its billing and payment-collection mechanisms.

(b) Implement the rehabilitation program to avoid further deterioration of the aging and dilapidated network and prevent risk of a catastrophic network failure.

(c) This would also help restore capacity of existing generation infrastructure (for example, at the Nurek switchyard and at the Kairakkum and Golovnaya hydropower plants). Rehabilitation of the transmission and distribution network would help reduce losses that accounted for as much as 17% of generation in 2011. The cost of dealing with the backlog of delayed maintenance and rehabilitation is estimated at over $1 billion. With such a high financing requirement, careful prioritization over many years will be required to maximize the returns from these investments.

(d) Carefully evaluate new hydropower projects, as run-of-the-river projects would increase their installed capacities by only a fraction because river flows decline during winter months. In view of low tariffs, many of these projects are likely to attract foreign investment or be a candidate for public–private partnerships.

(e) Develop emergency diesel-generating capacity to make power available during shortages to priority consumers like hospitals.

(f) Explore alternative electricity import options.

Medium- to long-term measures

(a) Establish a clear, transparent, and legitimate regulator for the power sector. A foremost consideration is that it should be a truly independent regulatory body with clearly defined mandate, functions, and jurisdiction.

(b) Sustain the implementation of the rehabilitation program, continuing with smaller hydropower plants.

(c) Develop environmentally compliant coal-fired power plants (Shurob-1, Shurob-2, Fon Yaghnob). In addition to the two coal-fired 50 MW units of Dushanbe-2 combined heat-and-power plant coming online in 2014, consider accelerating the building of a new dual-powered combined heat-and-power plant with 200–300 MW capacity to cover part of the imbalance in winter demand and supply.

(d) Construct micro hydropower plants to improve supply security and access to electricity in remote areas, and reduce the losses arising from long-distance transmission.

(e) Develop other renewable sources of power, particularly solar and wind energy in selected areas.

(f) Construct planned transmission lines, together with hydropower projects, that will enable increased electricity trade between Tajikistan and Turkmenistan through Afghanistan. This will need development and/or improvement of existing infrastructure to allow exports to other markets such as the Russian Federation, South Asia, Central Asia, and East Asia. Since the financing requirements are high, careful prioritization over a multiyear period would be required.

(g) Continue the dialogue toward establishing an agreeable framework for electricity trade. Maintain a constructive relationship with the Coordination Energy Council of Central Asia toward reunification of the Central Asia Power System.

(2) Improve energy efficiency

To improve the energy efficiency and reduce the uneconomic uses of electricity, the following measures may be considered:

Short-term to medium-term measures

(a) Implement such an energy-efficiency program to cover industries, residential, and nonresidential buildings. The program could stipulate guidelines and requirements issuing the building certificate, like the installation of insulation systems in residential buildings, getting affordable financing for energy-efficiency investments, and establishing efficiency standards for electrical appliances.

(b) Design an energy-efficiency program for the Tajik Aluminum Company that would include shifting its annual maintenance period from summer to winter. This will reduce overall winter peak demand, modernize its processes, and/or enable a switch to a new, energy-efficient technology to maximize the potential efficiency gains.

(c) As part of rationalizing the electricity tariff structure, implement tariff increases gradually along with a supplementary demand-side management program for households to save on electricity and minimize the burden of higher electricity prices. Ensure coordination between the Ministry of Energy and Industry and the Ministry of Labor and Social Protection in designing and implementing electricity subsidies for vulnerable households.

(d) Eliminate direct and implicit subsidies for industrial users to create fair competition and encourage the

economic use of resources. Prioritize installation of metering devices in large industrial enterprises, offices, commercial centers, irrigation, and high-consuming households.

Medium- to long-term measures

(a) Repair and rehabilitate district heating systems to minimize heat loss. Provide incentives to households to encourage them to switch to coal-based heating.

(b) Continue implementing the energy-efficiency program.

5.2.4 Improving the quality of transport infrastructure and logistics

The poor condition of Tajikistan's aging transport infrastructure has contributed to the under-provision of economic and social opportunities and benefits such as better accessibility to markets and employment, and investments that could have supported growth. Comprehensive assessment of the institutional and regulatory structure of the transport sector is needed, along with a reform plan to develop a clear and effective institutional and regulatory structure. Current infrastructure capacity is inadequate to meet the development challenges ahead, and the infrastructure will require extensive rehabilitation and continual maintenance. To effectively address these needs, the reform program should rationalize the functions and/or mandate of the ministries and institutions in the transport sector and provide for the establishment of an independent regulatory body for each of the transport modes (roads, railways, and civil aviation).

The following strategies are primarily aimed at rehabilitating existing assets, extending the transport network, and improving intermodal transport.

(1) Road transport network and management

Short-term to medium-term measures

(a) Enhance the planning and asset management capacity of road authorities by adopting modern road management practices and an automated road data collection and compilation system (for example, in road monitoring and highway information).

(b) Rehabilitate roads, giving priority to those critical to economic growth; that is, key national roads and roads to growth centers, particularly Dushanbe and Khujand, and road sections with poor safety records.

(c) Develop and/or rehabilitate roads in the Central Asia Regional Economic Cooperation (CAREC) Program corridors to improve regional connectivity and thereby promote trade and investment.

(d) Complete the road improvement project that links Dushanbe's Western Gate to the Uzbekistan border.

(e) Prioritize rehabilitation works on roads identified in the 2011 Transport Master Plan, primarily Dushanbe–Tursunzade–Uzbekistan border (Corridor 3b), Dushanbe–Rudaki–Shaartuz–Aivaj–Afghan border (Dushanbe to Obikiik) (partly Corridor 5), and Kanibadam–Khujand–Khavast–Spitamen–Uzbek border (Kanibadam to Spitamen) (Corridor 2).[58]

(f) Introduce systematic road-user charges, based on the costs road damage from vehicular use (higher user charges for heavy vehicles) and explore collection of toll fees on the Anzob Pass and other tunnels as well as on express highways.

(g) Encourage the private sector to build and operate roads under concession agreement or under public–private partnership.

[58] Based on the list in ADB (2011a).

(h) Develop a road maintenance program for newly rehabilitated roads that, in addition to routine, periodic, and special works, includes performing routine patrols and detailed inspection to identify gaps between actual road conditions and maintenance targets.

(i) Explore the contracting maintenance works for high-traffic volume roads.

Medium- to long-term measures

(a) Complete rehabilitation works of all international and national roads through public–private partnership arrangements to the extent possible or with assistance from development partners.

(b) Prioritize connectivity to the PRC and to the Russian Federation.

(c) Rehabilitate local and feeder roads according to the country's rural development strategy and delegate responsibility for developing and managing these roads to local authorities or development committees.

(d) Build capacity of local road authorities and give them technical and financial assistance in planning, developing, operating, and maintaining roads.

(e) Continue efforts to simplify and harmonize border-crossing requirements.

(2) Railway transport and services

Short-term to medium-term measures

(a) Create a railways database that includes (i) a comprehensive track inventory and condition surveys; (ii) an inventory of coaches, locomotives, and wagons; (iii) cargo and passenger traffic information; and (iv) cost-accounting information, arranged by services and line sections.

(b) Maintain the existing rail network and improve the quality of service through repairing/replacing railway sleepers. Modernize and replace coaches, locomotives, and freight wagons, and invest in modern signaling and communication facilities.

(c) Rehabilitate bridges that are critical to railways operation, prioritizing those handling high-volume traffic.

(d) Complete the railway network that connects Dushanbe, Vakhdat, Yovon, and Kurgan-Tube.

(e) Prepare a feasibility study with detailed technical, economic, and financial analysis on planned network extensions, prioritizing the planned construction of the Vahdat–Karamyk line to the border at the Kyrgyz Republic, the Kolhozabad–Nizhni Pyanj line to the border with Afghanistan, and the connection between Tajikistan and Turkmenistan via Afghanistan.

Medium- to long-term measures

(a) Continue rehabilitation of existing assets—sleepers, ballast, tracks, and bridges—in remaining sections and procure or modernize coaches, locomotives, and freight wagons.

(b) Update safety equipment and improve communications and coordination with national and international authorities to prevent accidents and derailments.

(c) Establish intercountry railway systems through CAREC to facilitate the movement of goods to and from the Russian Federation, the PRC, Europe, and the Middle East.

(d) Corporatize and modernize railway operations, including setting up business development and planning units.

(3) Civil aviation infrastructure and management

Short-term to medium-term measures

(a) Upgrade immigration, customs, and baggage-handling procedures at the new Dushanbe Airport Terminal.

(b) Renovate the flight control center, upgrade navigational and communications facilities, and modernize the air-traffic management system.

(c) Procure new freight-handling equipment for Dushanbe and Khujand airports to facilitate transportation of goods by air.

(d) Review restrictions on international airlines that are limiting competition with Tajik Air and other domestic private operators. Consider extending passenger and cargo traffic rights to more providers, either domestic or foreign investors.

(e) Rationalize airport service fees, including the landing fees that are considered to be among the highest in the world.

Medium- to long-term measures

(a) Consider/review the possibility of privatizing air services, air-traffic control, and passenger- and cargo-terminal operations.

(b) Give the regulatory body for aviation the necessary powers to ensure that Tajikistan's airlines properly maintain their fleets.

(c) Build runways and other aviation infrastructure at new locations.

(d) Improve auxiliary airport services like hotels, car parks, and other facilities to take advantage of increased air traffic.

(4) Logistics and intermodal transport

To improve Tajikistan's logistics, measures to reduce the cost of importing and exporting must be systematically planned and implemented. Movement across borders, through neighboring countries, and within Tajikistan itself must also be improved. Tajikistan needs to (i) simplify processes on borders and eliminate informal payments, (ii) reduce trade barriers with important regional trading partners, and (iii) link infrastructure and integrate transport systems with neighboring countries through CAREC.

Short-term to medium-term measures

(a) Reduce cases of bribery by using a highly automated, low-discretion system and tighten the monitoring system to prevent requests for informal payments at the border.[59]

(b) Simplify trade procedures to gain more access to other markets. Considering its proximity to Afghanistan, the PRC, Pakistan, and the Middle East, Tajikistan can follow the Kyrgyz Republic path of reexporting manufactured goods from the PRC to other Central Asian countries and the eastern Russian Federation.

(c) Draw up plans for intermodal transport facilities, including initially dry ports in Dushanbe and Khujand, which are equipped with cargo and container-handling facilities and streamlined customs procedures. Explore the possibility of foreign investment and public–private partnership to fund this.

Medium- to long-term measures

(a) Improve equipment in transportation hubs.

(b) Develop infrastructure for intermodal handling.

5.2.5 Strengthening governance and the rule of law

A key overarching constraint among those discussed in this report is the cluster of micro-risks that have a significant impact on appropriability. This cluster includes, among others, governance-related problems like weak rule of law, lack of property rights, corruption, and high tax rates. These risks constitute an important part of the causes of the other constraints that have been discussed. Indeed, the financial system and the power and transport sectors all suffer from corruption and poor governance.

[59] This requires moving from a transaction-based approach to an approach where accounts and control systems within enterprises are checked instead of their cargo.

(1) Improve judiciary and public administration

Short-term to medium-term measures

(a) Provide a wider range of training opportunities to the members of the judiciary, including judges and court staff.

(b) Improve and increase legal literacy and public access to legal services, including providing free legal aid and services to socially vulnerable groups among the population.

(c) Enhance and strengthen tax and customs legislation to attract more private investment in all areas of the economy.

(d) Develop a reform plan for improving and strengthening public administration.

(2) Improve control of corruption

Short- to medium-term measures

(a) Strengthen the capacity of agencies involved in the fight against corruption, specifically the Agency for Financial Control and Fight against Corruption of the Republic of Tajikistan and the National Anticorruption Council.[60]

(b) Provide effective means for law enforcement to investigate and prosecute high-level corruption cases and ensure effective coordination between government agencies involved in fighting corruption.

(c) Improve logistics of law enforcement agencies through the introduction of modern information technologies.

(d) Bring criminal anticorruption legislation in full compliance with international standards; for example, criminalize corruption offenses and make the legislation consistent with the requirements and standards of the United Nations Convention Against Corruption.

(e) Increase the role of civil society in anticorruption efforts and continue public awareness and educational campaigns on this front.

(f) Draw up comprehensive codes of conduct for all public officials and standard operating procedures for issues that concern public finances, with penalties for noncompliance clearly stated, and make the codes and standard operating procedures publicly available. Improve control and compliance mechanisms by instituting a code of ethics for civil servants that includes the prevention of corruption.

(g) Pursue expansion of e-government to include procurement to reduce corruption opportunities, strengthen the procurement framework and mechanism, and increase transparency in procurement activities.

Medium- to long-term measures

(a) Drawing on technical assistance and best-practice investigative techniques, institute a periodic and comprehensive study of the state of corruption and the effectiveness of measures to prevent and combat it at the national and regional levels.

(b) Expand the requirements for completing declarations of income and property to spouses and children of officers, and improve existing forms of declarations, moving them toward an electronic-format declaration process.

5.2.6 Enhancing human capital stock

Limited job creation in the domestic formal economy, despite high growth experienced in the past decade, has pushed many Tajik workers to seek employment in neighboring countries. The labor participation rate has been on the decline; migrants comprise both highly skilled and unskilled workers. Gender pay gaps

[60] This body is also referred to as the Agency for State Financial Control and Combatting Corruption of the Republic of Tajikistan..

across the country's regions remain high and wages in agriculture, the largest employer, continue to be depressed.

The quality of education has declined, and health infrastructure is insufficient to provide quality services to a wide segment of society. Since lack of education and poor health undermine capabilities and skills and equality of opportunity, government can consider the following measures for improving the quality of education and health.

(1) Improve access to education and raise its quality

Aside from government efforts to improve the educational system, the following initiatives can stimulate job creation and encourage the labor force to enter formal employment:

Short- to medium-term measures

(a) Undertake a review of the curricula to upgrade the teaching materials in all levels of education, which would correspond to the shift to a 12-year basic education system; and, in consultation with the private sector, improve the relevance of vocational and higher education to meet the needs of the labor market.

(b) Regularly review teacher salaries and provide merit increases and incentives to encourage and retain highly qualified teachers, particularly in the rural areas.

(c) Reassess the training and skills of teachers, especially those in vocational schools and higher education institutions, so they can keep up with the evolving needs of the labor market.

(d) Establish a national evaluation system to systematically monitor the progress, outcomes, and efficiency of education programs. This would include development of a more comprehensive education management information system to provide updated information on participation and performance.

(e) Develop a systematic national assessment tool to measure the achievement of students across the age-range and education levels and to assess the quality of education across the regions.

(f) Increase allocations for the provision of equipment and training materials through education.

(g) Allocate more resources to the repair of classrooms to reduce the number of shifts and improve the learning environment. Provide for the construction of more schools and classrooms to address the increasing number of entrants into basic education.

Medium- to long-term measures

(a) Ensure that access to education is equitable, including among women and children from rural areas and people with special needs, by devising programs to keep them in school.

(b) Create a mechanism for partnerships with the private sector to fund formal training of specialists and staff to meet evolving business requirements.

(c) Coordinate the efficient management of programs and their funding by defining responsibilities for their execution by the education ministry and local governments.

(2) Enhancing the quality of health services

To arrest the deterioration of health services in the country, the following priority initiatives are recommended:

Short- to medium-term measures

(a) Increase public spending on health along with the expansion and deepening of health-financing reforms. Increased public health expenditure should align with the government's long-term financial sustainability and its poverty reduction strategy. Strengthen results-based funding to speed up the delivery of priority health services.

(b) Provide specialized retraining of health-care workers to handle pressing needs, including maternal and child-health services. These should be aligned with international standards and evidence-based protocols.

(c) Introduce a new employment compensation program that increases the wages of medical personnel and explore the option of linking their salaries to their performance or the quality of service provided. Provide more incentives to encourage medical personnel to work in rural areas.

(d) Ensure sufficient medical equipment and facilities and upgrade/renovate hospital facilities.

(e) Create an environment conducive for private entities to enter the health sector such as simplifying medical licensing and changing the tax administration. Privatize medical treatment and preventive care institutions to reduce the burden on the health-care budget and enable the government to switch resources to meet the needs of the poorest and most vulnerable among the population.

(f) Institute unified health-care monitoring that includes information from interconnected databases. The monitoring system should provide feedback for decision making.

(g) Accredit and certify all hospitals and public-health education institutions.

Medium- to long-term measures

(a) Rationalize primary hospital and specialist services. Consolidate regional (oblast) and provincial (rayon) hospitals into general secondary hospitals, organize them at the regional level and ensure their strong links with primary health care in the provinces.

(b) Ensure accurate and timely data on health performance. Strengthen capacity to collect, analyze, and use the data for policy and planning.

5.2.7 Improving access to infrastructure and productive assets

For the government to address inequality, it has to ensure that as wide a segment of the population as possible has access to economic opportunities. Those in the lowest-income groups and other disadvantaged people should have equal access to infrastructure as well as to credit. Tajikistan has made major progress in upgrading its information and communication technology infrastructure in the past decade. However, since it lags behind comparators among former Soviet countries in fixed-line and mobile teledensity and internet penetration, the study is making the following policy recommendations:

Short-term to medium-term measures

(a) Increase the coverage and reduce the cost of information technology and internet access. Several options are available to bring internet connectivity to rural areas. A least-cost solution is to provide Wi-Fi in remote villages.

(b) Encourage competition among communications and internet providers to improve service quality and affordability.

(c) Educate people on how to use information technology to increase their productivity. Include basic computer skills and information technology in the education curriculum.

(d) Conduct an information campaign on how information technology can be applied to local industries.

Medium- to long-term measures

(a) Establish low-cost sources of bandwidth. If talks about installing a fiber-optic cable with assistance from the PRC are realized, this would allow internet service providers to access bandwidth within the country instead of buying from international points of connection.

(b) Ensure a consistent supply of electricity to be able to take advantage of information technology, as unstable supply makes access to the internet and other services unreliable.

5.2.8 Increasing provision of social protection programs

In addition to providing equal access to opportunities and improving human capital, an effective social protection system is crucial to achieving inclusive growth. The following measures are suggested to improve Tajikistan's social protection system:

Short-term to medium-term measures

(a) Better target social assistance to increase coverage of social protection among the poor and vulnerable. Provide capacity-building programs for social welfare personnel in conducting poverty targeting.

(b) Improve the selection of beneficiaries by developing a credible targeting mechanism that gives priority to the poor and vulnerable and increases its coverage to protect them.

(c) Introduced reforms to improve the administration of social protection. Establish a unified information database system that includes registry of applications, beneficiaries, and payments for easier administration of social protection benefits.

(d) Train competent staff to deliver assistance and handle complaints.

(e) Set up a system to monitor the efficiency of social assistance.

Medium- to long-term measures

(a) Expand the budget of social protection in cooperation with nongovernment organizations and other donor agencies.

(b) Increase benefits in accordance with the current standard of living and adjust them for inflation.

(c) Rationalize benefit schemes and revise the pension system to ensure an adequate income for elderly people.

5.3 The Way Forward

Tajikistan's strong growth performance over the past 18 years has helped to reduce poverty but has been characterized by regional disparities and a lack of inclusiveness. And this growth, mainly driven by consumption backed by remittance inflows, has been unable to provide adequate employment opportunities in the domestic labor market. The report highlights the country's need to diversify and upgrade its export structure toward high-value-added products, as this will help support high growth rates in the long run and create decent job opportunities for its growing labor force.

The report's findings also underscore that diversifying exports and upgrading the industrial sector are prerequisites for speedy and successful economic transformation. Although Tajikistan succeeded in maintaining high growth since its civil war ended, its heavy reliance on remittances and inability to raise private investment pose considerable threats and raise questions about the sustainability of its high growth. To facilitate structural transformation and diversification, the government needs to address product-specific constraints and impediments to private investment in new activities. The report's product space analysis provides a list of product categories, which Tajikistan can explore by availing of the country's existing capabilities in order to diversify and upgrade its export structure. The continued economic growth of Tajikistan crucially depends on its success in doing this.

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Tajikistan: Promoting Export Diversification and Growth

Country Diagnostic Study

Building on robust economic growth since the end of a civil war in 1997, Tajikistan has transformed itself into a service economy driven by consumer spending fueled by strong remittance inflow. Yet the transfer of resources to high value-added sectors has been restrained, and structural change has generated few new jobs. Without sufficient employment opportunities in the services and industrial sectors, agriculture became the fallback for most of the labor force. To continue its economic growth, Tajikistan requires new drivers from a diversified industry sector and a modernized economy through structural transformation and export diversification.

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ADB's vision is an Asia and Pacific region free of poverty. Its mission is to help its developing member countries reduce poverty and improve the quality of life of their people. Despite the region's many successes, it remains home to half of the world's extreme poor. ADB is committed to reducing poverty through inclusive economic growth, environmentally sustainable growth, and regional integration.

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