



# INFRASTRUCTURE AND GROWTH

Roads, railways, the reliable provision of electricity and clean water, and strong telecommunications networks provide the platform for economic activity. Access to infrastructure is good across most of the EBRD region, but there is room for improvement in terms of sanitation and the supply of energy in poorer countries. Most of the region continues to lag behind advanced economies in terms of access to broadband internet. Low-quality infrastructure may explain the perception that poor transport imposes major constraints on firms in parts of the EBRD region. Infrastructure investment totalling €1.9 trillion is needed over the next five years in order to support the region's growth. Evidence from major upgrades to Turkey's road network suggests that improvements in market access as a result of better transport infrastructure generate new trade links and broaden the range of products available to consumers. In addition, the resulting rise in employment can also reduce emigration from previously isolated regions.

**€1.9  
TRILLION**

EBRD REGION'S ESTIMATED  
INFRASTRUCTURE  
INVESTMENT NEEDS OVER  
THE NEXT FIVE YEARS

**17%**

OF FIRMS IN THE SEMED  
REGION REGARD  
TRANSPORT PROBLEMS  
AS A MAJOR CONSTRAINT

**64%**

OF THE EBRD REGION'S  
TOTAL ESTIMATED  
INFRASTRUCTURE NEEDS  
ARE IN THE TRANSPORT  
SECTOR

## Introduction

Infrastructure networks provide a platform for economic activity. The generation and distribution of electricity powers industry and homes; water and sanitation facilities make environments liveable and deliver health; information and communication technology (ICT) knits businesses and communities together; and roads and railways physically connect markets and people, both within countries and across borders. High-quality infrastructure helps to allocate resources efficiently, making people and firms more productive,<sup>1</sup> while a lack of infrastructure hinders productivity growth.

The EBRD region's infrastructure needs are a reflection of its history and geographical diversity. Several countries already provide almost universal access to key infrastructure such as electricity, roads, and high-quality water and sanitation facilities. Much of that infrastructure was inherited from central planning.<sup>2</sup> While the priorities for the region as a whole tend to be better access to broadband internet and improved roads, some countries, such as those in the southern and eastern Mediterranean (SEMED) region, also have room for improvement in terms of access to electricity. The first section of this chapter provides a detailed analysis of the current stock of infrastructure across countries and sectors, as well as reviewing recent investment in infrastructure.

The second section estimates the EBRD region's total investment needs in the area of infrastructure over the next five years. In order to support economic growth and help their income levels to converge with those of advanced economies, most countries in the EBRD region require either major investment with a view to expanding their infrastructure networks or investment in maintaining and upgrading existing infrastructure. The region's overall infrastructure needs are estimated at €1.9 trillion.

The third section of this chapter examines the impact of major coordinated upgrades to Turkey's road network. Prior to those upgrades, Turkey's road network was large but had limited capacity. Those upgrades have significantly increased domestic trade between provinces thanks to reduced transport times. This evidence from Turkey provides new insight into the considerable benefits that improvements in market integration can have for employment and development in more isolated regions.

## Infrastructure stock

The EBRD region boasts a number of sectors where access to infrastructure is, on average, similar to that seen in advanced economies. Access to electricity, for example, has been comparable to that observed in western Europe since at least 2004. In 2014, that access rate stood at 86 per cent in Mongolia and 92 per cent in Morocco, with other countries enjoying rates of almost 100 per cent, according to the World Bank. Similarly, most countries in the EBRD region enjoy access to safe water, although access rates are lower in the West Bank and Gaza (61 per cent),<sup>3</sup>

Mongolia (64 per cent) and Tajikistan (74 per cent). Access to high-quality sanitation facilities has risen across the region since 2005, although Moldova, Mongolia, Morocco, Romania and Russia continue to lag behind, with access rates of less than 80 per cent in 2014.

By the time countries achieve middle-income status, the quality of their core infrastructure (such as electricity, water, sanitation and roads) is often relatively high. However, such countries often find it difficult to improve their ICT and upgrade existing infrastructure (for example, when it comes to "greening" their energy supply, improving the reliability of energy provision and increasing the capacity of their road networks).<sup>4</sup>

Access to broadband internet, for instance, varies greatly across the EBRD region and tends to be lower than the levels observed in western Europe. Outside central Europe and the Baltic states (CEB), most countries had access rates of less than 25 per cent in 2005 (see Chart 3.1). Although access rates have now risen above 50 per cent in most of the EBRD region, countries in the SEMED region and Central Asia continue to lag behind, as do Georgia, Moldova and Ukraine.

Motorway networks remain limited across the EBRD region (with the exception of Croatia and Slovenia), with most countries having less than 100 km of motorway per million people in 2015. Upgrades to road networks can increase safety and improve the integration of markets, both within countries and across borders. The third section of this chapter, which examines recent upgrades to Turkey's road network, shows that improved market integration on the back of better road infrastructure provides multiple benefits to the economy.

## Lagging behind advanced economies

The EBRD region continues to lag behind advanced economies in terms of the overall quality of infrastructure, despite comparable access rates in certain sectors. While there are few reliable cross-country measures of the quality of infrastructure, available sources paint a consistent picture. The World Economic Forum's *Global Competitiveness Report* conducts annual surveys of business leaders to measure the perceived quality of infrastructure around the world. The perceived quality of the EBRD region's transport, electricity and communications infrastructure is very close to the global average, but substantially lower than the levels observed in advanced economies such as Japan, the United States of America and the EU-15 (see Chart 3.2).

A closer inspection reveals substantial variation in the quality of infrastructure across the EBRD region. The CEB countries all exceed the average for the region as a whole, as do Russia and Turkey, with their infrastructure scores comparable to that seen in China. Within south-eastern Europe (SEE), Greece and Cyprus stand out in terms of the quality of their infrastructure. Morocco and Jordan have the best infrastructure in the SEMED region, while Kazakhstan is some way ahead of its peers in Central Asia.

At sector level, scores are noticeably lower for railways and roads. In the road sector, the best performers include Croatia, Cyprus, Lithuania and Turkey, all of which have sizeable networks

<sup>1</sup> See ADB (2017b); Dinkelmann (2011) on electrification; Jensen (2007) on mobile phones; and the third section of this chapter, which looks at roads.

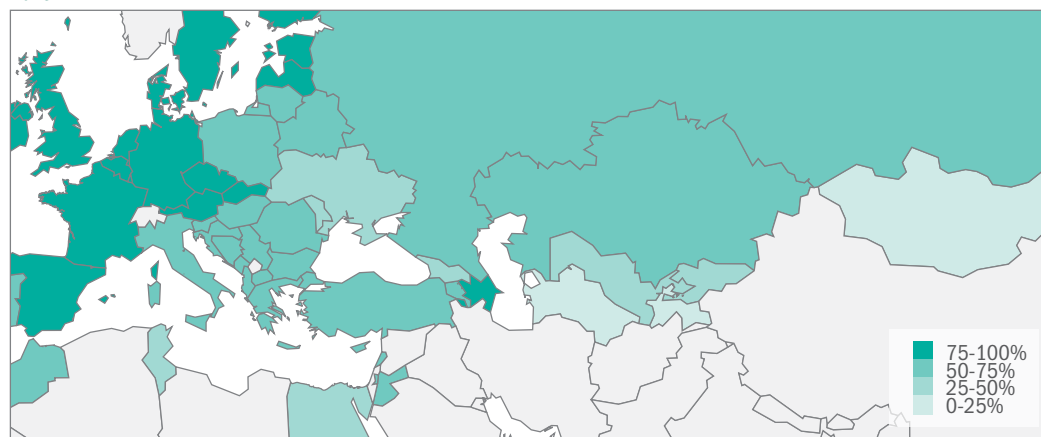
<sup>2</sup> See ADB (2017a, 2017b).

<sup>3</sup> In May 2017, the EBRD Board of Governors approved the Bank's engagement in the West Bank and Gaza for an initial period of five years. However, owing to insufficient data, the West Bank and Gaza only feature in Charts 3.1, 3.4 and 3.5 of this *Transition Report*.

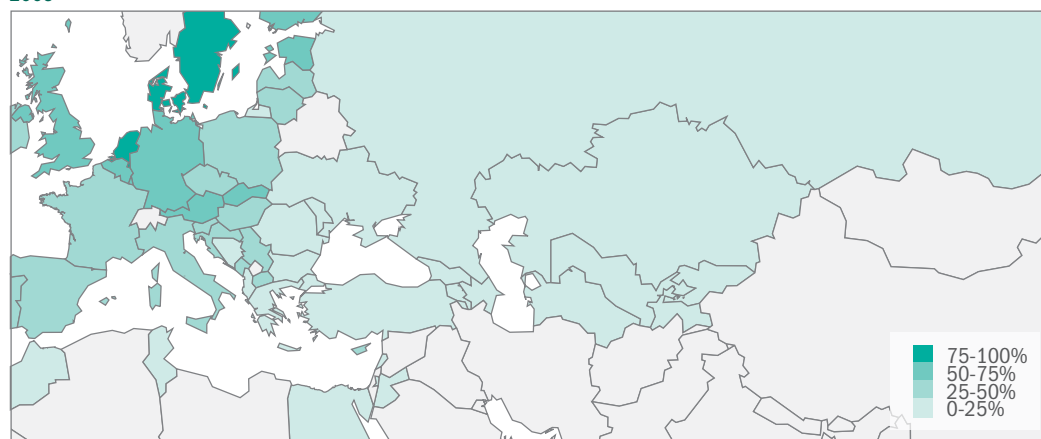
<sup>4</sup> See Abiad (2017) and ADB (2017a).

CHART 3.1. Percentage of households with access to broadband internet in the EBRD region and western Europe

2015

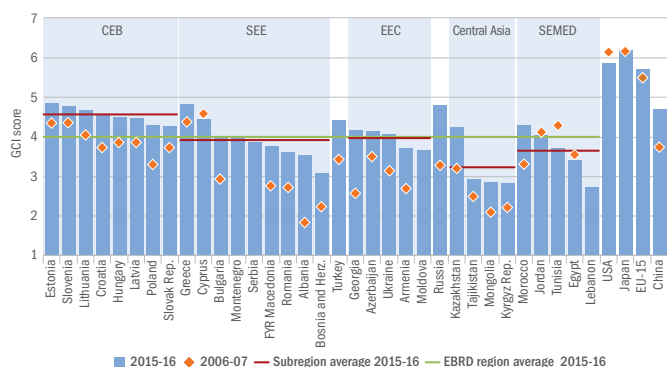


2005



Source: World Bank.

CHART 3.2. Global Competitiveness Index - infrastructure



Source: World Economic Forum and authors' calculations.  
Note: Scores are on a scale of one to seven, where higher numbers correspond to better infrastructure. Belarus, Kosovo, Turkmenistan and Uzbekistan are not included owing to insufficient data.

of motorways or expressways linking their main economic centres. Bosnia and Herzegovina, the Kyrgyz Republic, Moldova, Romania, Russia and Ukraine have the lowest scores in this sector. In the SEMED region, survey respondents indicate a deterioration over the past 10 years (with the notable exception of Morocco, where the perceived quality of the road network has improved substantially). The perceived quality of the EBRD region's railways is even lower, with the average for the region as a whole remaining below the global average.

While the perceived quality of infrastructure is still lower than that seen in advanced market economies, almost all countries in the EBRD region have made improvements in this respect since the Global Competitiveness Index (GCI) was launched in 2006-07. Indeed, the perceived quality of infrastructure has only worsened in four countries over the last 10 years: Cyprus, Egypt, Jordan and Tunisia.

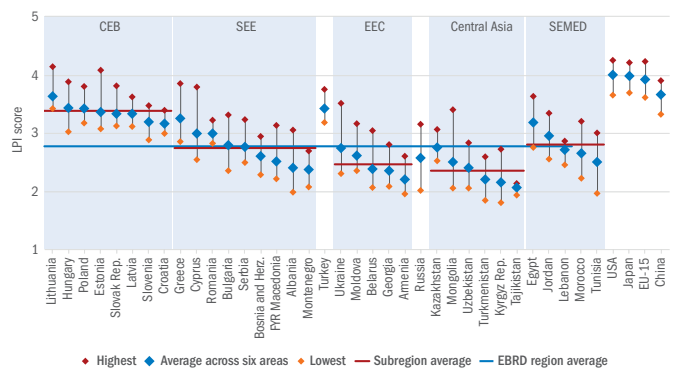
The Logistics Performance Index (LPI), an alternative global indicator of the quality of infrastructure services produced by the World Bank, paints a bleaker picture (see Chart 3.3). Once again, all the countries in the EBRD region score less than the advanced OECD economies. Here, though, they also score less than China. The CEB countries, Greece and Turkey have the highest scores, while the countries of the Western Balkans, Central Asia and the Caucasus have the lowest. In many countries, that poor performance is a result not only of low scores for infrastructure – which is just one component of logistics performance – but also of low scores in three other areas: customs, logistics competence and timeliness. Although every country in the EBRD region has improved its LPI score in the period since 2007, with the largest improvements being seen in Croatia, Kazakhstan and Lithuania, the average LPI score across the EBRD region as a whole continues to lag behind the global average.

### Which infrastructure sectors are reported as being problematic by firms themselves?

The regular enterprise surveys conducted by the EBRD and the World Bank<sup>5</sup> show that while electricity is generally less of a concern in the EBRD region relative to other emerging markets, firms in some individual countries (such as those in the SEMED region) still face major constraints in relation to electricity. Firms in Albania, Egypt, Kosovo, the Kyrgyz Republic, Lebanon, Tajikistan, Uzbekistan, and the West Bank and Gaza report losses of between 2 and 7 per cent of output owing to electricity outages, which represents a significant burden (see Chart 3.4). Recent major investments in Egypt have expanded the country's generation capacity, reducing the frequency of such outages.

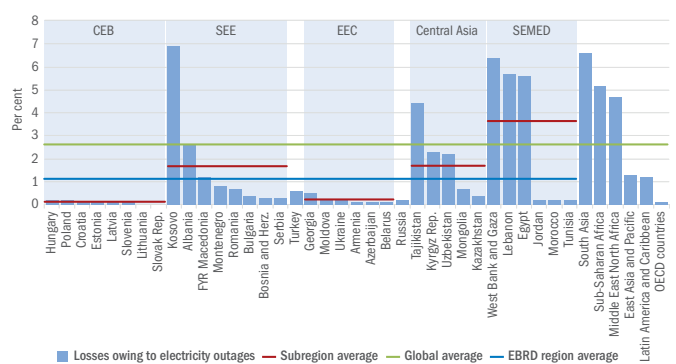
There is also considerable variation across the EBRD region in terms of the extent to which firms regard transport as a major constraint on their business. The West Bank and Gaza, Morocco, Kosovo and Romania all exceed, while Russia equals, the global average when it comes to transport-related constraints on firms (see Chart 3.5). An average of around 17 per cent of firms in the SEMED region report that transport represents a major constraint, compared with between 8 and 10 per cent in the SEE and CEB regions, eastern Europe and the Caucasus (EEC) and Central Asia. Overall, however, transport infrastructure in the EBRD region imposes fewer constraints on businesses than in other emerging markets.

CHART 3.3. Logistics Performance Index



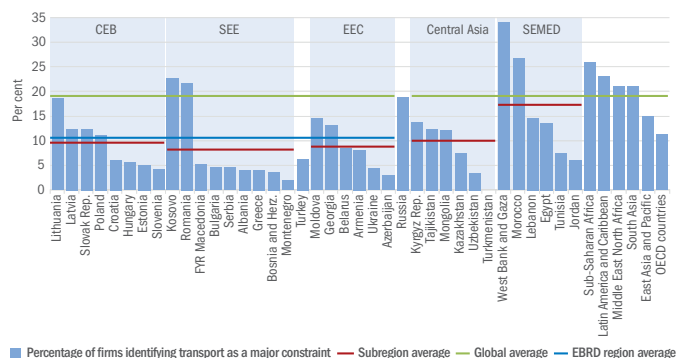
Source: World Bank.  
Note: The index covers six areas: customs, infrastructure, international shipments, logistics competence, tracking and tracing, and timeliness. Data for Kosovo are not available.

CHART 3.4. Losses owing to electricity outages, as a percentage of annual sales



Source: EBRD and World Bank enterprise surveys.  
Note: Based on the 2013 survey or the latest available. Cyprus, Greece and Turkmenistan are not included owing to insufficient data.

CHART 3.5. Percentage of firms identifying transport as a major constraint



Source: EBRD and World Bank enterprise surveys.  
Note: Based on the 2013 survey or the latest available. Cyprus is not included owing to insufficient data.

<sup>5</sup> See [www.enterprisesurveys.org](http://www.enterprisesurveys.org).

## Infrastructure investment: past and future

The availability of data on infrastructure investment is generally poor. A combination of inconsistent accounting methods for investment in public infrastructure across countries and irregular reporting of infrastructure investment (for both state-owned enterprises and private firms alike) makes it difficult to construct reliable measures of investment.

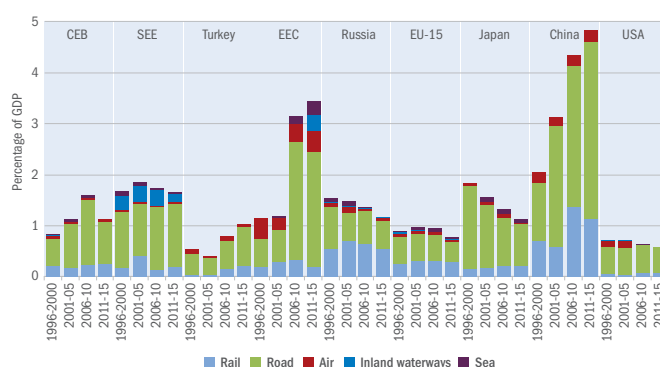
The OECD's International Transport Forum stands out as one of the few sources that collect and publish data on infrastructure investment, providing annual data on investment in transport infrastructure by OECD member countries and associated countries. According to that data, the EBRD region invested more in transport infrastructure as a percentage of GDP than either the EU-15 or the USA over the period 1996-2015 (see Chart 3.6). This is not surprising, given that the region lagged so far behind advanced economies prior to that period. In fact, other emerging markets (such as China) invested substantially more. While Japan's investment in infrastructure is sometimes regarded as excessive,<sup>6</sup> and the sustained large flows seen in China may be difficult to replicate in countries where the state does not play such a strong role in the economy, investment totalling 1 to 1.5 per cent of GDP (the current level in the EBRD region) will probably prove insufficient if the region is to quickly close the gap relative to advanced economies in the area of infrastructure. Moreover, in the SEE region and Russia, investment in roads has actually been declining in recent years. In contrast, investment rates in Turkey have increased significantly, albeit from a low base (see the next section for more details). The particularly high investment rates seen in the EEC region in 2006-15 are largely the result of a major investment programme in Azerbaijan.

### Estimating infrastructure investment needs

This section examines the EBRD region's investment needs in the area of infrastructure over the next five years (that is to say, the period 2018-22). The estimates in this section capture the investment that is needed in order to bring the region's infrastructure closer to levels consistent with those in advanced economies, support growth in populations and output, and replace ageing infrastructure lost to depreciation. These estimates are limited to network infrastructure – including roads and railways, electricity, water and sanitation facilities, broadband internet, landline telephone connections and mobile phones – and do not cover social infrastructure such as school buildings or hospitals.

All countries in the EBRD region have at least one infrastructure sector where infrastructure levels are lower than one would expect on the basis of country-level characteristics such as the level of development, population or population density in light of the experiences of advanced economies. These sectors are described as needing “catch-up investment” in order to bring their levels closer to those observed in advanced economies with a view to supporting income convergence.

CHART 3.6. Average annual investment in transport infrastructure



Source: OECD and authors' calculations.

In addition to that catch-up investment (which relates to desired levels based on current GDP and population figures and other characteristics), countries in the EBRD region will also need to invest in infrastructure in order to support anticipated future growth in GDP and population figures. These two components are complementary: investment supporting future growth in output and population figures will be needed whether catch-up investment takes place or not.

Lastly, investment is also needed in order to offset the deterioration of countries' existing infrastructure stock. Such investment needs can be calculated on the basis of depreciation rates for infrastructure in the various sectors and the unit costs of installing new infrastructure.<sup>7</sup> Importantly, maintenance costs also need to be taken into account. Box 3.1 discusses the methodology underlying all three sets of estimates and the assumptions made regarding unit costs and depreciation rates.

**8**  
**COUNTRIES**  
IN THE EBRD REGION  
HAVE ESTIMATED ANNUAL  
INFRASTRUCTURE NEEDS  
EXCEEDING 25% OF  
THEIR ANNUAL GDP

<sup>6</sup> See McKinsey Global Institute (2013).

<sup>7</sup> See ADB (2017a) and Fay and Yepes (2003).

### Infrastructure investment needs in the EBRD region

The total investment needs of the EBRD region are estimated at €1.9 trillion.<sup>8</sup> Bridging this gap over a five-year period will involve expenditure totalling approximately 9 per cent of the region's GDP in each of those five years.<sup>9</sup> The cost of catching up with the levels expected on the basis of the experiences of advanced comparator economies accounts for 52 per cent of that total, while improving infrastructure to support future growth in GDP and population figures over the next five years accounts for 15 per cent. The remaining 34 per cent relates to replacement and maintenance requirements over that same time period.

Infrastructure investment needs and their composition vary greatly from country to country (see Chart 3.7). While Mongolia, Moldova and Jordan have the largest infrastructure needs relative to GDP, the biggest contributions to the EBRD region's total infrastructure needs come from the region's largest economies (such as Egypt, Turkey and Russia, which have infrastructure needs totalling €190 billion, €190 billion and €480 billion respectively).

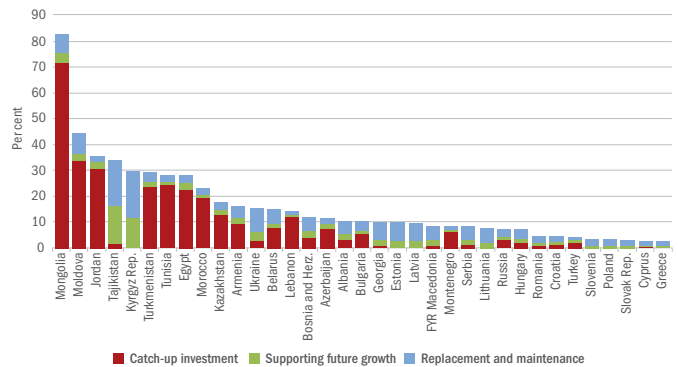
Higher-income countries in the EBRD region tend to have smaller investment needs as a percentage of GDP (see upper panel of Chart 3.8). In these countries, replacement and maintenance makes the largest contribution to overall investment needs. Of the 17 countries with the smallest investment needs as a percentage of GDP, there is only one – Turkey – where replacement and maintenance accounts for less than 50 per cent of total needs. In contrast, of the remaining 18 countries, there are only three – the Kyrgyz Republic, Tajikistan and Ukraine – where replacement and maintenance accounts for more than 50 per cent.

Likewise, catch-up investment tends to account for a smaller percentage of total investment needs in countries with higher GDP per capita (see lower panel of Chart 3.8). Poorer countries tend to have greater investment needs relative to GDP, mostly owing to relatively low levels of infrastructure at present.

Beyond these general trends, investment needs vary from country to country. Russia, for instance, already has significant infrastructure stock. Its catch-up investment needs are relatively modest and concentrated in the transport sector, reflecting the challenge of achieving sufficient connectivity in the world's largest country by land area. Overall, catch-up investment accounts for around 40 per cent of its total infrastructure needs. Russia's replacement and maintenance costs, on the other hand, are high precisely because of its large existing infrastructure stock. Supporting future growth also accounts for a sizeable percentage (albeit less than replacement and maintenance). In contrast, Egypt has much larger catch-up investment needs relative to its replacement and maintenance costs and the spending required to support the future growth of the economy.

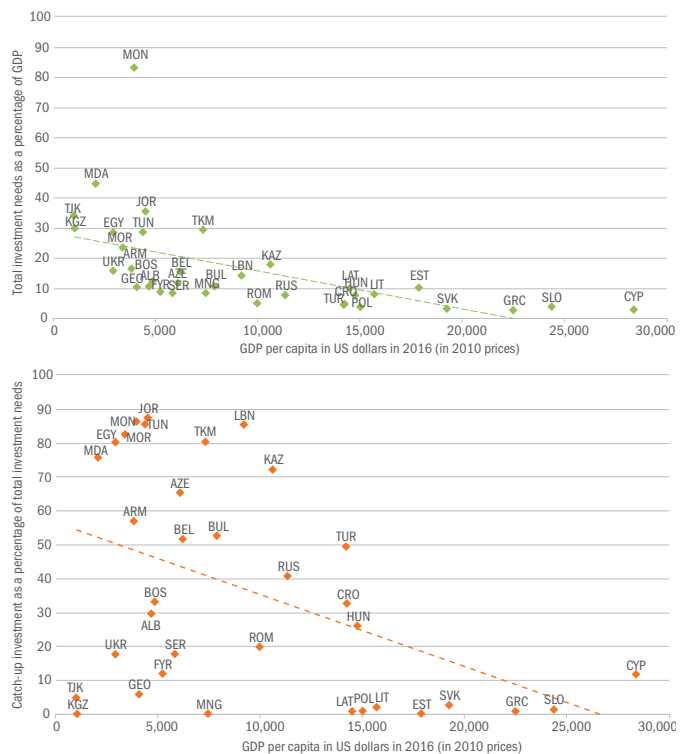
In most countries, infrastructure investment needs are dominated by either replacement and maintenance or catch-up investment. The cases of Poland and Morocco illustrate these two different profiles. Both countries have total estimated infrastructure needs in the order of €100 billion. However, just 1 per cent of Poland's infrastructure needs are accounted

**CHART 3.7.** Total investment needs for the period 2018-22, as a percentage of GDP per year



Source: WDI, IMF, US Energy Information Administration (EIA), Nunn and Puga (2012) and authors' calculations.  
Note: Data are expressed as a percentage of 2015 GDP figures, in 2010 prices. Estimates for Montenegro exclude the railway sector owing to insufficient data. Data are not available for Kosovo or Uzbekistan.

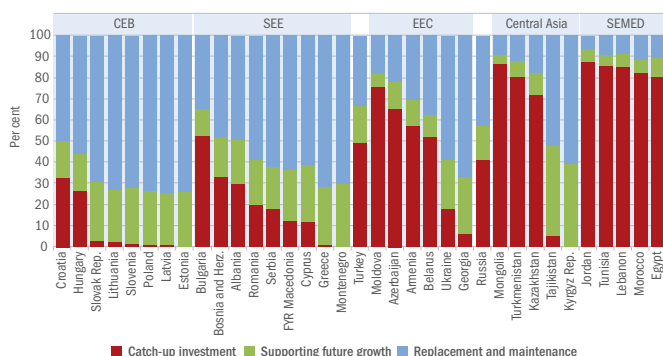
**CHART 3.8.** Investment needs and GDP per capita



Source: WDI, IMF, EIA, Nunn and Puga (2012) and authors' calculations.

<sup>8</sup> These calculations are in 2010 prices and do not include Uzbekistan (owing to insufficient data).  
<sup>9</sup> This calculation divides expenditure equally across the five years and is based on GDP figures for 2015.

**CHART 3.9.** Breakdown of estimated infrastructure investment needs

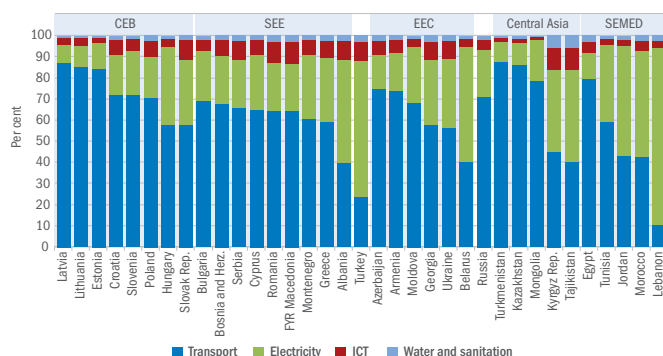


Source: WDI, IMF, EIA, Nunn and Puga (2012) and authors' calculations.  
Note: Data are not available for Kosovo or Uzbekistan.

for by catch-up investment, compared with 82 per cent in Morocco. In Belarus, Bulgaria and Turkey, however, investment needs are divided almost equally between catch-up investment and the sum of support for future growth and replacement and maintenance.

Countries in the same subregion tend to have similar profiles in terms of their infrastructure investment needs, albeit there are a number of exceptions in this regard (see Chart 3.9). Central Asia, the SEMED region and parts of the EEC region stand out as needing particularly large amounts of catch-up investment. In contrast, in the CEB and SEE regions – and, to a lesser extent, Russia – replacement and maintenance costs make a much larger contribution to total investment needs, with support for future growth also accounting for a sizeable percentage. With Turkey standing at the intersection of Europe and Asia, it is fitting that this country combines the typical investment needs of CEB economies with those of the SEMED region.

**CHART 3.10.** Sectoral breakdown of estimated infrastructure investment needs



Source: WDI, IMF, EIA, Nunn and Puga (2012) and authors' calculations.  
Note: Data are not available for Kosovo or Uzbekistan.

At sector level, transport infrastructure makes up an average of 64 per cent of total investment needs, followed by electricity (29 per cent), ICT (5 per cent), and water and sanitation (2 per cent). These estimates partly reflect the significant cost of building each new kilometre of roads and railways. Sectoral needs vary from region to region (see Chart 3.10). The SEMED region, for instance, requires higher levels of investment in electricity generation, as do Albania, Belarus and Turkey.



## Economic impact of upgrades to Turkish roads

Transport is the largest contributor to infrastructure investment in other parts of the world as well (see Chart 3.6). It plays a vital role in modern market economies, enabling the smooth functioning of global value chains, facilitating domestic and international trade and maintaining the economic rhythm of modern cities. This section examines the benefits that major upgrades to transport infrastructure can have in middle-income economies by looking at the case of Turkey, which undertook major public investment in roads during the 2000s.<sup>10</sup>

While Turkey's road infrastructure was already extensive prior to these upgrades, its capacity had long been considered inadequate. In 2005, the country's 81 provincial centres were already connected by a paved road network (see thin grey lines in Panel A of Chart 3.11). However, dual carriageways – divided multi-lane highways and expressways – made up only a small percentage of that network (see thick green lines).

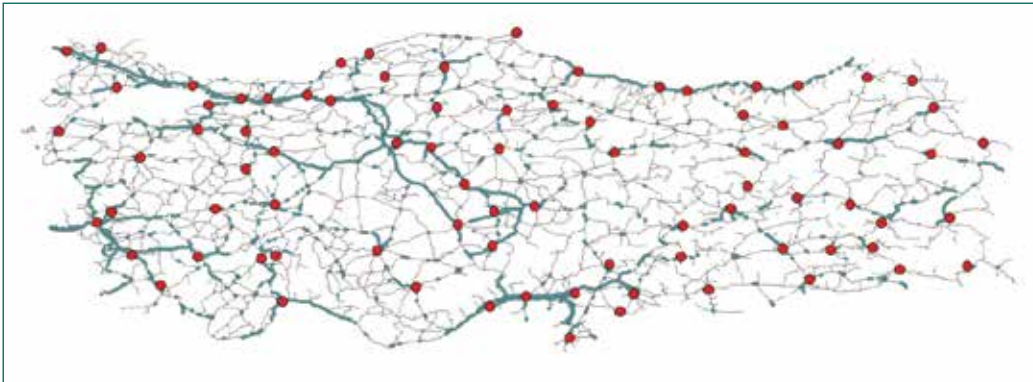
Consequently, the Turkish authorities launched a large-scale public investment programme in 2002 “to ensure the integrity

of the national network and address capacity constraints that lead to road traffic accidents”.<sup>11</sup> That investment programme has resulted in a significant percentage of existing single carriageways (undivided two-lane roads) being turned into dual carriageways. By 2015, numerous arterial routes had been upgraded (see Panel B of Chart 3.11), with dual carriageways accounting for 35 per cent of inter-provincial roads, up from 10 per cent in 2002 (see Chart 3.12).

This section examines the extent to which this major increase in road capacity has affected domestic trade and regional economic outcomes in Turkey. High transport costs impede market access in isolated regions, both in terms of firms' ability to sell goods and in terms of their ability to buy the required production inputs. Thus, investment in transport infrastructure can improve growth prospects by facilitating both domestic and international trade.<sup>12</sup> But how large are these gains? In order to answer that question, this analysis first measures the impact of infrastructure upgrades on travel times between provinces and then links changes in travel times to changes in regional income levels, employment and migration patterns.

**CHART 3.11.** Turkey's road network

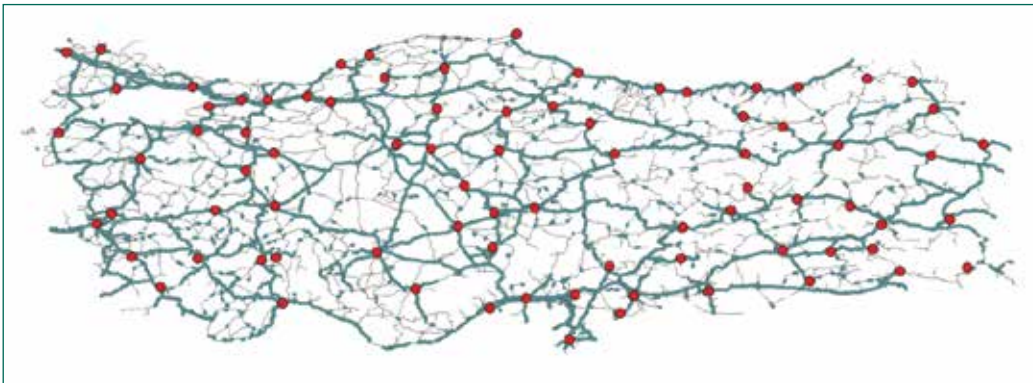
Panel A: 2005



**Source:** Turkish General Directorate of Highways (GDH).

**Note:** Red nodes denote provincial centres, thin grey lines represent single-carriageway roads, and thick green lines represent dual-carriageway roads (highways and expressways).

Panel B: 2015



<sup>10</sup> The analysis in this section is based on Coşar et al. (2017). Previous empirical work on the impact that transport infrastructure can have on development has focused on cross-country analysis, the impact of introducing the US interstate highway system and the construction or paving of new roads in middle-income countries. See, for instance, Limao and Venables (2001), Duranton et al. (2014), Allen and Arkolakis (2014) and Faber (2014).

<sup>11</sup> See GDH (2014).

<sup>12</sup> Coşar and Demir (2016) report that improvements made to Turkey's transport infrastructure in the 2000s significantly improved access to international markets for Turkish regions located a long way from the country's ports.

## Upgrades to the road network have greatly improved transport outcomes

While dual carriageways account for slightly more than a third of Turkey's total road stock, they account for around 80 per cent of total traffic.<sup>13</sup> Spending on road upgrades during the period 2003-10, when the bulk of the investment was undertaken, totalled US\$ 12.7 billion (at 2010 prices) or 1.7 per cent of 2010 GDP. Road safety has greatly improved, with the number of fatalities per kilometre travelled declining by 62 per cent since 2003.

The increase in capacity has allowed vehicles to travel more reliably at higher speeds, reducing accident rates and making arrival times more predictable. The average travel time between pairs of cities has been reduced by 1.5 hours (see Chart 3.13) relative to the average of 6.5 hours in 2005 (see Box 3.2 for methodological details). Time savings increase the further apart cities are, reaching five hours in the case of cities that are 1,500 km or more apart.

## Transport and domestic trade

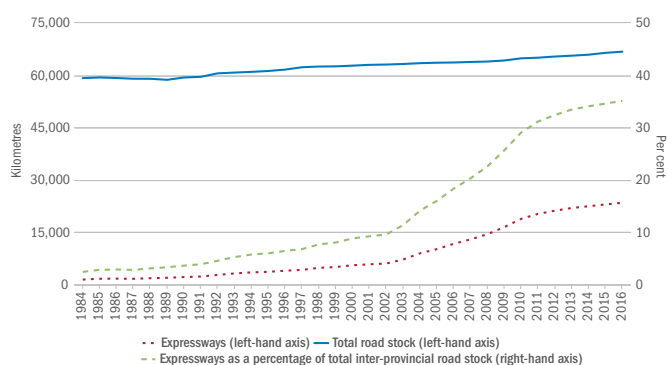
What impact have these time savings had on trade within Turkey? This subsection assesses that impact using firm-to-firm transaction data provided by the Turkish Ministry of Industry, which are based on value added tax (VAT) declarations by Turkish firms. Bilateral trade flows between provinces have been constructed by aggregating data on sales and purchases by individual firms (see Box 3.2 for details). Information on the road network is taken from the official road maps published by the GDH for 2005 and 2015. The digitised maps of single and dual carriageways that are shown in Chart 3.11 have been used to calculate the fastest possible travel times between the 81 provincial centres using geographic information system (GIS) software (see Box 3.2 for details). Data on provincial employment come from the Ministry of Industry, while migration data and information on provincial income per capita come from the Turkish Statistical Institute.

The reduced travel times resulting from the improvements made to Turkey's transport infrastructure between 2005 and 2015 are expected to have increased bilateral domestic trade flows between Turkish provinces. This impact is estimated using a gravity model of trade which relates changes in the volume of bilateral trade to changes in the economic size of trading partners and changes in the cost of bilateral trade (see Box 3.3 for details).

On the basis of the results reported in Box 3.3, a one-hour reduction in travel times between two provincial centres increases bilateral trade between those provinces by around 6 per cent. This effect is highly statistically significant and translates into a US\$ 4.6 million increase in trade flows over 10 years for a typical pair of cities.

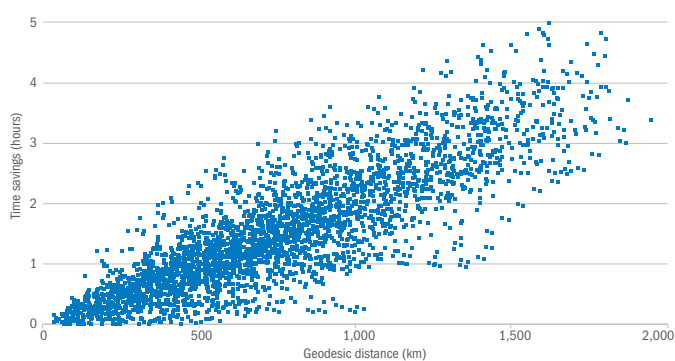
This represents a fairly large return on Turkey's investment. To see why, consider a hypothetical route with a distance equal to the average of the bilateral distances between the various pairs of cities. Assume that all 755 km of this route was on undivided single carriageway roads in 2006, resulting in a total travel time of approximately 11.6 hours. In order to reduce this travel time by

CHART 3.12. Turkey's roads over time



Source: GDH and authors' calculations.

CHART 3.13. Time saved on Turkey's roads



Source: GDH and authors' calculations.

Note: This chart plots declines in the fastest province-to-province travel times against distances as the crow flies. Each observation represents a pair of provinces.

**1.5 HOURS**  
AVERAGE REDUCTION IN TRAVEL TIMES BETWEEN PAIRS OF TURKISH CITIES SINCE 2005 FOLLOWING ROAD UPGRADES

<sup>13</sup> Turkish parliament meeting records, 9 November 2016.

one hour, around 30 per cent of the route (234 km) needs to be transformed into divided dual-carriageway roads at a cost of US\$ 26 million per year for 10 years (on the basis of the figures reported by the Turkish authorities). Thus, US\$ 1 of investment in roads generates an extra US\$ 0.18 in annual domestic trade between a pair of provinces, in addition to other benefits such as increases in international trade, reductions in the numbers of traffic-related fatalities and declines in overall travel costs.

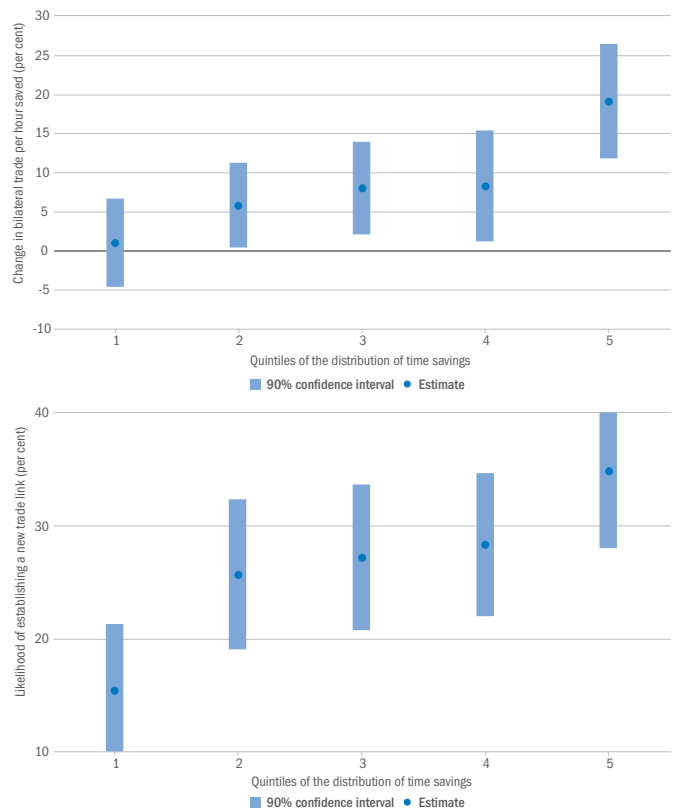
The impact of reductions in travel times is non-linear, with trade increasing more strongly in response to larger reductions in travel times. This can be seen from the upper panel of Chart 3.14, which shows estimated increases in domestic trade for city pairs corresponding to each quintile of the distribution of travel time saved (from shortest to longest). Thus, the fifth quintile comprises the city pairs that have gained the most in terms of time saved, which tend to be the furthest apart. The increase in trade that is seen for this group of city pairs is substantially larger than those observed for the rest of the sample. Indeed, a one-hour reduction in travel times increases trade by around 19 per cent where time savings are close to five hours. However, this does not necessarily mean that more trade is generated per US dollar of investment in roads, as the initial level of trade between remotely located trading partners tends to be fairly low.

Increases in trade also manifest themselves in the establishment of new trade links. Indeed, just 12 per cent of city pairs did not trade with each other in 2015, down from 43 per cent in 2006. In other words, Turkish provinces now source goods and services from a larger number of suppliers and consumers enjoy more variety.<sup>14</sup> A similar exercise is used to see whether that increase in the number of trade links is associated with the reductions in travel times between cities (see Box 3.3 for methodological details and results). This reveals that a one-hour reduction in travel times increases the probability of establishing a new trade link by 7 percentage points. As before, the estimated effect is much stronger for larger time savings. Indeed, the estimate more than doubles when moving from the first to the fifth quintile (see lower panel of Chart 3.14).

### Impact on income, employment and domestic migration

This subsection investigates the impact of the road improvement programme on provincial income, employment and domestic migration. First, this analysis looks at whether, within a geographical region, provinces that have experienced larger improvements in market access as a result of better roads have also posted stronger (nominal) income growth.<sup>15</sup> Improvements in market access are measured by calculating an average of the reductions in travel times experienced by a province when selling goods/services to other provinces, weighted by the GDP of trading partners (see Box 3.3 for details). Improvements in market access tend, on average, to be associated with stronger income growth, although the effect is not statistically significant. Estimates obtained separately

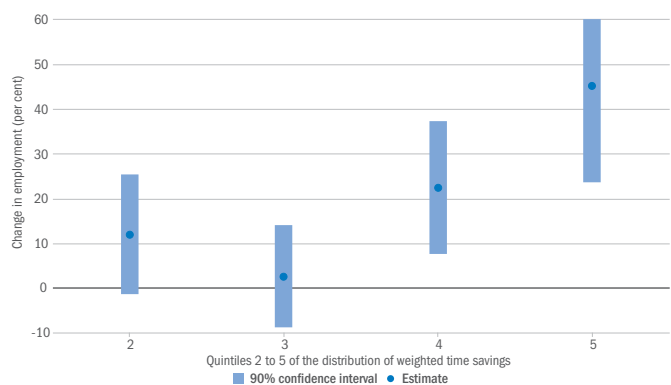
**CHART 3.14.** Time savings and change in domestic trade, 2006-15



Source: GDH, Turkish Ministry of Industry and authors' calculations.

Note: Based on regression analysis as defined in equation (2) in Box 3.3. Estimates are reported for each quintile of the distribution of travel time saved.

**CHART 3.15.** Time savings and change in regional employment, 2006-14

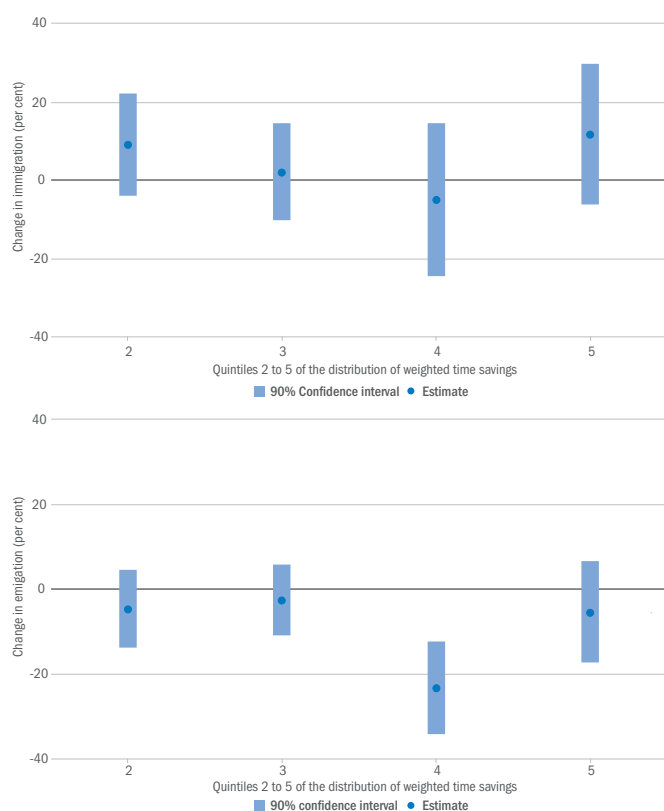


Source: GDH, Turkish Statistical Institute and authors' calculations.

<sup>14</sup> Melitz and Trefler (2012) identify these outcomes as one source of gains from trade.

<sup>15</sup> To this end, Turkey is divided into seven geographical regions: Aegean, Black Sea, central Anatolia, eastern Anatolia, Marmara, Mediterranean and south-eastern Anatolia.

**CHART 3.16.** Time savings and change in domestic migration, 2007-15



Source: GDH, Turkish Statistical Institute and authors' calculations.

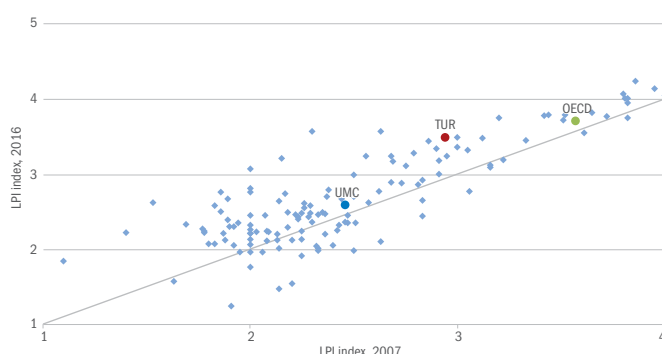
for each quintile of the distribution of improvements in market access do not show statistically significant effects either. This is consistent with earlier findings regarding provincial income growth in China.<sup>16</sup>

However, improvements in domestic market access do have a positive impact on regional employment (see Chart 3.15). A one-hour reduction in average travel times from the provincial centre increases employment by 0.6 per cent. With 22 of Turkey's 81 provinces (making up 4.5 per cent of initial employment) experiencing average time savings of one hour or more, the impact on regional job opportunities is substantial. Furthermore, in those poorly connected provinces that experienced the largest improvements in terms of market access, the estimated impact on employment is 40 per cent above the average estimate.

Internal migration is one of the channels that could potentially lead to employment gains in previously poorly connected provinces. Indeed, this analysis finds that improved connectivity is associated with large reductions in outward migration from such regions. The lower panel of Chart 3.16 shows this effect to be particularly strong in the 40 per cent of regions with the largest gains in terms of time savings. This suggests that improvements in road links create employment opportunities that slow the

<sup>16</sup> See Banerjee et al. (2012).

**CHART 3.17.** Changes in LPI scores



Source: World Bank and authors' calculations.

Note: "UMC" denotes the average score for upper/middle-income countries on the basis of the World Bank's classification.

depopulation of poorly connected regions. In contrast, there is no statistically significant evidence of changes in market access affecting inward migration (see the upper panel of Chart 3.16) or labour force participation, supporting the view that emigration is an important channel when it comes to explaining changes in employment patterns.

This evidence shows that infrastructure can help to enhance the economic prospects of underperforming regions. Regional infrastructure policy is important to policy-makers. For example, it comprised the single largest item in the EU's budget for the period 2014-20 (€352 billion out of a total of €1.1 trillion),<sup>17</sup> with a significant percentage of that amount being allocated to transport infrastructure "for the proper functioning of the internal market and for facilitating the circulation of people and goods within and beyond the EU" and "to spur growth in sparsely populated areas and the outermost regions of the EU". Evidence from Turkey, a large country with sizeable spatial income differentials, suggests that such policies can indeed be effective in facilitating regional convergence.

### Noticeable improvements for firms

This analysis concludes by looking at whether improvements in terms of increased trade and employment can also be observed at the level of individual Turkish firms and citizens. This is important, as in some instances economic dividends detectable in province-level data may accrue to just a handful of firms, without benefiting small and medium-sized businesses.

LPI data, which are constructed on the basis of surveys of global freight forwarders and carriers, point to sizeable improvements in firms' perception of Turkish infrastructure. In 2007, Turkey was ranked 38th in terms of the LPI index, with a score of 2.94. By 2016, however, it was ranked 30th with a score of 3.49 – well above the average for upper/middle-income countries (see Chart 3.17). Over the same period, the OECD average (excluding Turkey) rose from 3.57 to 3.71, indicating that Turkey displayed significant convergence with higher-income

<sup>17</sup> See European Commission (2014).

countries in terms of the perceived quality of logistics.

Moreover, Business Environment and Enterprise Performance Survey data indicate that road upgrades have benefited firms across the board. This survey asks the managers of manufacturing and service-sector firms about the extent to which transport represents an obstacle to their operations. The typical (median) firm taking part in the survey employs around 20 people. There are five possible responses: “no obstacle”, “minor obstacle”, “moderate obstacle”, “major obstacle” and “very severe obstacle”. In 2008, 12 per cent of respondents in Turkey regarded transport as a major or very severe problem. By 2013, this had dropped to 7 per cent. This holds when the various characteristics of the firms responding to the survey in 2008 and 2013 are taken into account. This improvement in terms of the perceived quality of transport infrastructure contrasts with BEEPS results for other countries, which show little change on average. This suggests that average firms in Turkey have indeed benefited from the country’s road upgrade programme.

When it comes to interpreting estimates of the impact of road upgrades, one concern is whether those estimates truly reflect the causal impact of infrastructure on economic development. If roads were only upgraded in areas with good growth potential, the subsequent improvements in economic indicators could, in part, reflect pre-existing differences in economic potential, rather than the impact of new infrastructure. In the case of Turkey, several features of the country’s ambitious investment programme serve to minimise such concerns. Those upgrades were spread across provinces, with no visible signs of concentration in particular regions. The long-term goal of establishing a comprehensive grid network spanning the country in order to improve connections between all provincial centres reduced the potential for upgrades to be used selectively to boost trade between particular regions. Moreover, the fact that this investment was planned centrally and financed entirely by the central government’s budget limited the potential for local authorities to exert influence over its implementation.

### Complementarity of infrastructure upgrades

Improvements to the flow of information as a result of investment in ICT can also lead to market integration, producing substantial economic benefits. As with the trade-related effects of road upgrades, more efficient diffusion of information on nearby markets can help to establish new links between consumers and firms.<sup>18</sup> Enhanced competition can, in turn, lead to stronger firm dynamics, fostering growth in high-productivity firms, encouraging underperforming firms to exit the market and supporting overall productivity growth, both within and across industries (as discussed in Chapter 2).

Upgrades to different types of infrastructure – roads and telecommunications, for instance – may also be complementary in terms of their impact. Better information on nearby markets is more useful if these markets can be reached without incurring excessive costs. Similarly, better use will be made of upgrades to transport networks when buyers and sellers have access to

information about distant markets. Reductions in travel and search costs can also promote financial inclusion, as discussed in Chapter 4 of the *Transition Report 2016-17*. Thus, the benefits of infrastructure upgrades can spill over into many different sectors.

## Conclusion

Firms and households across the EBRD region tend to have good access to basic infrastructure. However, in many countries the quality of this infrastructure still leaves a lot to be desired. This is reflected in firms’ perception that inadequate infrastructure is having a detrimental impact on their day-to-day business. Improvements to the provision of electricity (primarily in the SEMED region), improvements in road capacity (across much of the EBRD region) and greater investment in ICT are all priorities in terms of upgrading existing infrastructure stock. Infrastructure investment totalling €1.9 trillion is required in the EBRD region over the next five years, which is the equivalent of spending 9 per cent of the region’s GDP each year. Specific infrastructure needs vary widely across countries. Some, for example, require large amounts of investment in order to bring infrastructure into line with the levels that would be expected on the basis of country-level characteristics such as GDP per capita or population density. Other economies require major investment in order to support future population and income growth and maintain their existing infrastructure networks.

Detailed analysis of the major coordinated road upgrades that have been carried out in Turkey since the early 2000s indicates that increases in market integration can have a significant impact on local economies. Improvements in market access have generated new trade links, allowing firms to obtain intermediate inputs from new sources, and produced benefits for consumers in terms of the variety of available products. Improvements in market access have also led to employment gains, which have, in turn, been associated with reductions in outward migration from previously isolated areas. These findings suggest that comprehensive infrastructure upgrades can be effective policy tools with the potential to improve the economic prospects of underperforming regions.

Over time, greater integration into domestic and international markets leads to changes in production processes and increases in productivity. Increased competition in markets can make firm dynamics healthier, as discussed in Chapter 2, leading to stronger productivity growth.

Specific infrastructure projects should be decided on within the context of each country’s economic environment and needs, taking account of any spillover effects for other sectors. The cost of expanding networks varies from sector to sector, as does the time required for construction, so the order and composition of upgrades could have an impact on the delivery of benefits in the short term. Coordinating investment across sectors and regions can be important in terms of optimising the impact of upgrades.

<sup>18</sup> See Jensen (2007), Aker (2010) and Jensen and Miller (2017).

The scale of the infrastructure investment needs estimated in this chapter suggests that many countries will need to look beyond their domestic economies when it comes to financing such projects. Indeed, public resources are likely to fall a long way short of what is required in order to meet countries' investment needs in the area of infrastructure. However, recent research points to a vast reservoir of private savings in search of longer-term investment opportunities.<sup>19</sup> International financial institutions such as the EBRD can help to facilitate investment by private funds in several ways. They can, for example, provide region-specific expertise and help to mitigate risks stemming from asymmetric information, which can be extensive in

infrastructure projects. Acting as lead investors in syndicated loans is one way to do this, increasing the attractiveness of such deals for certain private investors.<sup>20</sup> They can also work with governments to improve the design and implementation capacity of public-private partnerships (see Annex 3.1 for details), as well as structuring deals involving project finance in order to better align incentives encouraging delivery on time and on budget (see Box 3.4 for details). Lastly, international financial institutions can help governments to design tender procedures for infrastructure projects with a view to reducing the likelihood of costly overruns and corruption, while at the same time delivering transparency and competitiveness.<sup>21</sup>

### Box 3.1. Estimation methodology for infrastructure investment needs

Countries' needs in terms of catch-up investment and support for future growth are estimated in two different ways. Both estimations pool countries in the EBRD region with advanced comparator countries from around the world. Each method estimates physical expansion needs in terms of catch-up investment and support for future growth for each infrastructure sector in each country. A unit cost of infrastructure expansion is then applied to all sector-specific estimates in order to express them in monetary terms and add them up.

The catch-up investment component is estimated using a random effects model for the period 1990-2015.<sup>22</sup> This model takes account of countries' GDP per capita at PPP, their rural and total populations, the percentages of GDP that are accounted for by agriculture and manufacturing, their land area and a measure of their geography (a "ruggedness index").<sup>23</sup> The catch-up component is the difference between a country's predicted and actual values in terms of its infrastructure stock.

The future growth component is measured in a similar manner, but based on a fixed-effects model. This model takes account of all country-specific factors that do not change over time and might affect infrastructure, as well as factors that are common across all countries at a given point in time (year fixed effects). This model estimates the relationship between infrastructure levels and a country's population and GDP.

Population forecasts and GDP projections are taken from the IMF's *World Economic Outlook* for the period up to 2022. That projected GDP growth is cross-checked against the performance of each country's synthetic comparator, as constructed in Chapter 1. A country's desired growth rate is assumed to be that of its comparator or the country's future growth as projected by the IMF, whichever is higher, plus one percentage point per year. The resulting GDP projections and population

forecasts are then used to estimate the increases in the stock of infrastructure that will be needed between 2018 and 2022 in order to sustain that projected growth.

This estimation assumes that the experiences of advanced economies will be indicative of the infrastructure requirements of the EBRD region as it seeks to achieve higher income levels.<sup>24</sup> It also makes simplified assumptions about unit costs and depreciation rates for infrastructure (see Table 3.1.1.), whereas these may in fact vary substantially across countries and over time. These estimates also ignore the fact that additional investment in infrastructure as part of the catching-up process may boost economic output, since reliable estimates of growth's response to infrastructure are not readily available and are likely to be sector and country-specific.

TABLE 3.1.1. Unit costs and depreciation rates for infrastructure

| Sector                | Unit       | Unit cost (US dollars) | Annual depreciation rate (per cent) |
|-----------------------|------------|------------------------|-------------------------------------|
| Broadband internet    | Connection | 3.4                    | 8                                   |
| Landline telephones   | Connection | 261                    | 8                                   |
| Mobile phones         | Connection | 127                    | 8                                   |
| Water supply          | Connection | 161                    | 3                                   |
| Sanitation facilities | Connection | 168                    | 3                                   |
| Electricity capacity  | Kilowatt   | 2,513                  | 2                                   |
| Road                  | Kilometre  | 600,000                | 3                                   |
| Rail                  | Kilometre  | 3,855,000              | 2                                   |

Source: ADB.

Note: Unit costs are reported in 2010 prices. The euro/US dollar exchange rate is set at €0.78 per US dollar for all calculations.

<sup>19</sup> See Arezki et al. (2017).

<sup>20</sup> See Carter et al. (2017).

<sup>21</sup> See Branzoli and Decarolis (2015).

<sup>22</sup> In some infrastructure sectors, data are only available for shorter time periods (such as the period 2000-11).

<sup>23</sup> See Nunn and Puga (2012).

<sup>24</sup> Lower and middle-income countries outside the EBRD region are not included in these regressions, as these countries often have insufficient infrastructure. The estimated high investment needs in Mongolia are due in part to the country's unique geography and low population density.

**Box 3.2. The data underlying the analysis of Turkish road upgrades****How are travel times and road speeds determined?**

Average speeds are calculated for trucks using a representative sample of road segments on the basis of data from the GDH. While the maps in Chart 3.11 show both divided expressways and highways as dual carriageways, travel times assume a speed of 90 km/h on expressways and 110 km/h on highways. The speed on single carriageways is assumed to be 65 km/h. For each pair of provincial centres in Chart 3.13, ArcMap software is used to calculate the shortest possible travel time for both years on the basis of the above assumptions regarding speeds.

**A new dataset on inter-firm linkages**

Turkey's Ministry of Industry provides firm-to-firm transaction data based on VAT declarations made to the Ministry of Finance by Turkish businesses. Since 2010, Turkish firms have been legally required to report, on a monthly basis, all purchases and sales exceeding TRY 5,000 (US\$ 3,225) per buyer/seller, excluding VAT.

Sales and purchases are reported at firm level. However, this makes it difficult to identify the relevant location when firms have multiple plants. To help address this issue, the sample used in this estimation restricts the set of firms to (a) all single-plant firms, (b) all multi-plant firms with plants located in a single Turkish province and (c) multi-plant firms with plants located in multiple provinces, but at least 70 per cent of employment concentrated in a single province (which is then regarded as the firm's location).

With 81 cities, there are 6,561 pairs of cities that can potentially trade with each other as buyers or sellers. The data on the amount of goods and services travelling from each source province to each destination province can be used to calculate trade flows in a given year. Since the data also cover transactions between firms within the same city, the source and the destination can be the same. The percentage of city pairs exhibiting zero trade fell from 43 per cent in 2006 to 12 per cent in 2015. The calculation of the long-term growth rate of bilateral domestic trade flows between 2006 and 2015 takes this large increase in the extensive margin into account. The mid-point growth formula defines change in trade between a source province (s) and a destination province (d) as

$$ChangeTrade_{sd} = 2 \cdot \frac{trade_{sd}^{2015} - trade_{sd}^{2006}}{trade_{sd}^{2015} + trade_{sd}^{2006}} \quad (1)$$

where  $trade_{sd}^{2015}$  and  $trade_{sd}^{2006}$  denote the value of trade between the source province and the destination province in 2015 and 2006 respectively.<sup>25</sup> This measure is constrained between -2 and 2. In the data, the long-term growth rate of bilateral domestic trade is well defined for 5,781 pairs that report trade in at least one of the years in question. Only 145 of these exhibit a decline in trade. For all other pairs, the growth rate ( $ChangeTrade_{sd}$ ) is strictly positive.

<sup>25</sup> See Davis et al. (1996).

### Box 3.3. Technical details relating to the analysis of Turkish road upgrades

#### Bilateral trade and travel times

The initial analysis estimates a gravity-type model using first-differences regression. In this regression, the dependent variable is the growth rate of bilateral domestic trade flows between Turkish provinces in the period 2006-15. The savings in terms of travel times between pairs of provinces are the independent variable. First-differences estimation eliminates all time-invariant characteristics of the source province, the destination province and their pairs that affect bilateral trade flows (such as the distance between provinces). This estimation also takes account of province-level characteristics that affect changes in trade in each province (with  $\alpha_s$  and  $\alpha_d$  representing source and destination fixed effects respectively):

$$ChangeTrade_{sd} = \beta_0 + \beta_1 TimeSaving_{sd} + \alpha_s + \alpha_d + \varepsilon_{sd} \quad (2)$$

Standard errors are clustered at the source and destination levels (two-way clustering).

To test for non-linear effects, the continuous variable for time savings in equation (2) is replaced by indicator variables for each quintile of its distribution. Estimates are obtained in respect of trade flows within provinces (the omitted category).

To examine the effect on new trade links, a similar relationship is estimated for the probability of observing positive trade for a pair of provinces in 2015, provided that the pair had zero trade in 2006 (see column 2 of Table 3.3.1 for the results).

#### Looking deeper: income growth, employment and migration

This element of the analysis looks at whether provinces that experienced greater improvements in market access as a result of upgrades to roads also recorded stronger income or employment growth or experienced different domestic migration patterns. Improvements in market access are measured by calculating a weighted average of the reductions in travel times experienced by a province when selling goods to other provinces. Each province's time savings are weighted on the basis of destination provinces' GDP figures for 2005 as follows:

$$WTimeSaving_s = \sum_{d=1}^{81} \frac{GDP_{d,2005}}{GDP_{Istanbul,2005}} TimeSaving_{sd} \quad (3)$$

The following equation is estimated for each outcome variable (such as income growth):

$$Change[OUTCOME]_s = \delta_0 + \delta_1 WTimeSaving_s + \alpha_r + e_s \quad (4)$$

TABLE 3.3.1. Results of regression analysis

| Dependent variable           | Change in bilateral trade flows, 2005-15 | New trade links in 2015 | Change in GDP per capita | Change in employment | Change in immigration | Change in emigration |
|------------------------------|--|-------------------------|--------------------------|----------------------|-----------------------|----------------------|
|                              | [1]                                      | [2]                     | [3]                      | [4]                  | [5]                   | [6]                  |
| Time savings (hours)         | 0.061***<br>(0.011)                      | 0.072***<br>(0.010)     |                          |                      |                       |                      |
| Time savings weighted by GDP |  |                         | 0.001<br>(0.001)         | 0.006*<br>(0.003)    | 0.001<br>(0.002)      | -0.003*<br>(0.002)   |
| Fixed effects                | Source and destination                   | Source and destination  | Region                   | Region               | Region                | Region               |
| No. of observations          | 5,781                                    | 6,561                   | 81                       | 81                   | 81                    | 81                   |
| R <sup>2</sup>               | 0.217                                    | 0.222                   | 0.160                    | 0.461                | 0.089                 | 0.190                |

Source: GDH, Turkish Ministry of Industry, Turkish Statistical Institute and authors' calculations.

Note: All regressions are estimated using ordinary least squares. Robust standard errors with two-way clustering at the level of source and destination provinces are indicated in parentheses. \*, \*\* and \*\*\* denote values that are statistically significant at the 10, 5 and 1 per cent levels respectively.

where  $\alpha_r$  denotes region fixed effects. Non-linear effects can be examined via a set of quintile indicator variables for the distribution of weighted time savings, as above. Data on provincial labour force participation are only available for the period 2008-13, and this analysis fails to find any impact on labour force participation as a result of changes in market access. As data on bilateral migration flows are not available, this analysis uses data on changes in population flows in and out of each individual province. The results are reported in Table 3.3.1.



### Box 3.4. Project finance in the EBRD context

Infrastructure projects typically require large amounts of investment up front, long before any revenues materialise. They also tend to involve uncertainty regarding future demand. This means that firms implementing infrastructure projects are exposed to significant amounts of risk. A common way of mitigating such risk is the use of special-purpose vehicles (SPVs).

SPVs are set up for the sole purpose of carrying out a specific project. In order to ring-fence project-related risk, they are legally independent of the entity that created them. SPVs vary in terms of their legal structure, ownership, management and financing. While these arrangements can be analysed through the lens of a large body of literature on finance and contract theory, there is little empirical evidence indicating which arrangements work best in which circumstances.

The EBRD recently conducted a review of various infrastructure projects that it has financed in an effort to understand how the structure of SPVs affects project objectives. A joint team comprising EBRD staff and external researchers looked at a set of 46 infrastructure projects that were agreed between 1999 and 2014 and completed between 2003 and 2016. Those 46 projects span all aspects of infrastructure, with 21 projects involving power and energy infrastructure, 11 involving the transport sector, 9 involving natural resources and 5 involving municipal and environmental infrastructure. The projects were implemented in 16 different countries (including 10 in Russia, 8 in Poland and 7 in Romania).

The analysis focused on two project objectives: completion on time and completion on budget. Of the 46 projects in the sample, 14 were completed on time and on budget, 15 experienced both delays and cost overruns, 16 experienced only delays and 1 experienced only a cost overrun. Delays averaged around 16 months, with a standard deviation of 12 months for delayed projects, while cost overruns averaged 20 per cent of budgeted costs, with a standard deviation of 31 percentage points for projects going over budget.

The team's analysis suggests that government involvement in an SPV significantly increases the risk of delays. Of the projects that were completed on time, 67 per cent had no government involvement at all, while 55 per cent of all projects experiencing delays had some government involvement (see Chart 3.4.1). This difference is statistically significant at the 10 per cent level. Furthermore, the degree of government ownership averaged 16 per cent in projects that were completed on time and 40 per cent in projects that experienced delays.

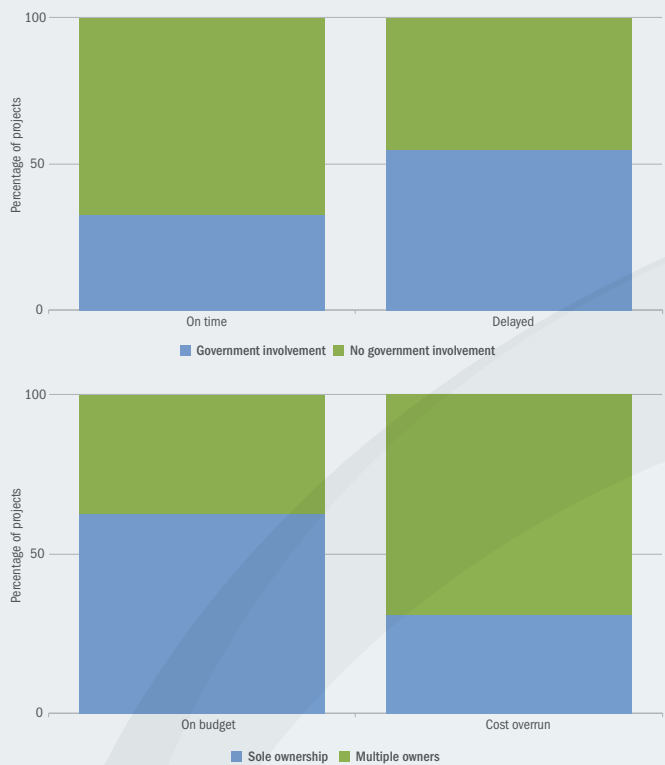
Moreover, regression analysis indicates that the dispersal of ownership within an SPV significantly increases the risk of cost overruns. SPVs with single owners had significantly smaller cost overruns than SPVs with highly dispersed ownership, with the difference between the two totalling around 1 standard deviation (31 percentage points).

There are two reasons why more concentrated ownership might reduce the risk of cost overruns. First, it may reduce coordination costs, allowing more effective monitoring of a project's progress. And second, it may strengthen incentives to monitor costs, as those involved in monitoring get to claim a larger percentage of any cost savings.

### Case study: Pester Wind

The Pester Wind project serves as an interesting case study with regard to project structure. This project was agreed in 2010 in order to finance the construction of two wind farms in Romania, with a total generating capacity of more than 230 MW. Ownership of the SPV was split between a firm from Portugal (85 per cent) and a firm from Cyprus (15 per cent). Thus, it was highly concentrated, with no government involvement. Construction finished slightly ahead of schedule and cost less than expected. The project achieved a high score for transition impact as measured by the EBRD, reflecting its contribution in terms of demonstrating a successful SPV arrangement and strengthening competition in the market.

**CHART 3.4.1.** Characteristics of projects with delays and cost overruns



Source: EBRD and authors' calculations.

This analysis suggests that special measures encouraging closer monitoring may be helpful where ownership of SPVs is less concentrated. More dispersed ownership need not necessarily undermine a project's success. Indeed, in some cases less concentrated ownership may help to manage risk and raise the necessary funds. Closer monitoring could be encouraged, for instance, by rewarding the parties responsible for monitoring when cost overruns are successfully avoided.

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## Annex 3.1.

# Legal frameworks governing public-private partnerships: insights and recommendations

## Introduction

Efficient and transparent policies are vital for the effective functioning of the infrastructure sector (which includes, for example, energy, transport and water supply, as well as social infrastructure for education and health care), as are legal and institutional frameworks that encourage private-sector participation. Over the past 12 years, the EBRD has conducted a number of assessments looking at the effectiveness of legislative frameworks governing public-private partnerships (PPPs) in the EBRD region.

The term “public-private partnership” covers a range of long-term arrangements between public authorities and private entities, including concessions, build-operate-transfer (BOT) models and related arrangements, private finance initiatives (PFIs) and institutional PPPs.<sup>1</sup> However, it excludes the sale of public assets as part of privatisation programmes, as well as public works, services and supply contracts which are subject to conventional public procurement rules. In the case of a concession, a contracting public authority entrusts a private entity with total or partial provision of public services or infrastructure for which that authority would normally be responsible, with the private entity assuming some or all of the risk and being remunerated predominantly by end-users. In the case of a PFI-type PPP, by contrast, the private entity is paid primarily by the public authority, rather than by end-users.

The EBRD’s assessments compare the legal frameworks in the various countries with internationally accepted standards and best practices, identifying strengths and weaknesses in terms of both extensiveness (law on the books) and effectiveness (law in practice). With international standards and trends in the PPP sector constantly evolving, the EBRD performed its latest assessment in 2017,<sup>2</sup> with the previous assessment having been carried out in 2011.<sup>3</sup>

The findings of these assessments are used to develop practical recommendations for policy-makers, helping them to address, through technical assistance, any weaknesses identified in the national PPP framework. See “What can policy-makers do?” on page 69 for a summary of recommendations based on the findings of the 2017 assessment.

## Methodology

The two-part assessments are based on a set of criteria developed by the EBRD. Part I looks at the comprehensiveness of legal rules, while Part II deals with issues of policy, institutional framework and lessons learned from the implementation of PPP projects.

In the 2017 assessment, which was carried out on the basis of laws and regulations as at 30 June 2017,<sup>4</sup> the countries in the EBRD region were divided into two groups. The first group was assessed using a range of public resources (legislation, national reports, legal articles, research findings and press coverage). The second group, which consisted of 12 countries,<sup>5</sup> was subjected to a more extensive assessment, which included interviews with national authorities and private-sector stakeholders. The assessment’s findings were then verified by qualified local lawyers, with each country being given a score.

**TABLE A.3.1.1. Assessment criteria**

| Part I – Legislative Framework Assessment (LFA)                  |                                |
|--|--------------------------------|
| 1.   | Legal framework governing PPPs |
| 2.   | Preparation of projects        |
| 3.   | Selection of private partners  |
| 4.   | Project agreements             |
| 5.   | Security and support issues    |
| Part II – Legal Indicators Survey (LIS) looking at effectiveness |                                |
| 6.   | Policy framework               |
| 7.   | Institutional framework        |
| 8.   | Award statistics               |
| 9.   | Business environment for PPPs  |

Source: EBRD (2017).

In 2017, Part I of the assessment was expanded to cover the following: threshold amounts, the involvement of state-owned companies on the private side, changes to shareholdings in project companies, the use of a public-sector comparator or a value-for-money test, competitive dialogue, monitoring procedures and direct agreements. There was also a greater focus on preparatory work and project selection in the form of compulsory feasibility studies, as well as additional questions on unsolicited proposals.

Part II, meanwhile, was expanded to cover two new core areas: award statistics and the business environment for PPPs. These included statistical and other questions aimed at providing a better understanding of how PPPs work in general and the level of development of the PPP industry in each country (which will itself help to determine how quickly any new PPP law is successful).

In addition to the above assessment criteria, a few other new criteria were also included in the 2017 assessment. These included a “bankability test” and “red flags”. The bankability test seeks to establish whether a country’s legal framework incorporates the fundamental requirements for making PPPs feasible for financing as seen from a lender’s perspective,

<sup>1</sup> For further details and definitions of the various types of arrangement, see: [www.ebrd.com/what-we-do/sectors/legal-reform/ppp-concessions/sector-assessment.html](http://www.ebrd.com/what-we-do/sectors/legal-reform/ppp-concessions/sector-assessment.html)

<sup>2</sup> See EBRD (2017).

<sup>3</sup> See EBRD (2012).

<sup>4</sup> In exceptional cases, significant legislative developments occurring in July 2017 were also taken into consideration, in order to ensure the completeness and accuracy of the assessment.

<sup>5</sup> Albania, Armenia, Croatia, Egypt, Jordan, Kazakhstan, Lithuania, Mongolia, Poland, Romania, Russia and Turkey.

while red flags indicate a lack of basic minimum compliance requirements, which is a deal-breaker for most investors.

The countries were placed in five groups on the basis of the EBRD's assessment of their compliance with international standards and the effectiveness of their legal frameworks.

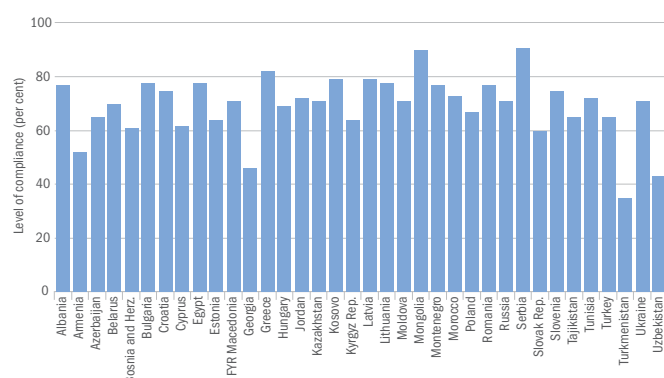
TABLE A.3.1.2. Classification of countries

|        |   |
|--------|---|
| ≥ 90%  | Very high level of compliance/effectiveness |
| 70-89% | High level of compliance/effectiveness      |
| 50-69% | Moderate level of compliance/effectiveness  |
| 30-49% | Low level of compliance/effectiveness       |
| < 30%  | Very low level of compliance/effectiveness  |

Source: EBRD (2017).

## Findings on compliance

CHART A.3.1.1. Compliance with internationally accepted standards and best practices



Source: EBRD (2017).

Note: Although it had not yet been adopted at the time of the assessment, so was not taken into consideration, Georgia's new PPP Law, which is due to be finalised and adopted shortly, should significantly improve its PPP framework and make it more compliant with internationally accepted standards and best practices.

### Very highly compliant countries

Mongolia, which displayed a very high level of compliance in the 2011 assessment, has maintained that ranking. Its Concessions Act, which was adopted in 2010, represents a comprehensive legal framework governing both concessions and PFI-type PPPs. The Concessions Act provides for a broad range of models, as well as a number of different security instruments. It also allows for the option of government support and guarantees. Meanwhile, bankability is supported by the option of direct agreements and step-in rights.<sup>6</sup>

Serbia, meanwhile, has significantly improved its ranking since the 2011 assessment. Its PPP and Concession Law was amended in December 2016, with the result that Serbia now boasts a comprehensive and very highly compliant legal framework governing PPP projects.

### Highly compliant countries

A large number of countries have been placed in the second-highest category on account of their sophisticated legal frameworks, their transparent procurement practices, their easy access to justice (including arbitration), and the fact that a range of security instruments are available, all of which facilitate financing.

Croatia has improved its legislation further since the assessment in 2011, particularly in the area of concessions, which was previously considered underdeveloped relative to PFI-type PPPs. In July 2017, Croatia replaced its 2012 Concession Act with a new Concession Act, which implements Directive 2014/23/EU on the award of concession contracts. While it remains to be seen how this will operate in practice, the new Concession Act clearly sets out the rules governing concessions and heavily regulates the award process. The new Concession Act explicitly provides for a range of different award procedures on the basis of the value of the contract and leaves no uncertainty as to the procedure that needs to be applied. It also expands on the concept of "strategic interest concessions" (which featured in the 2012 Concession Act), identifying sectors in which such concessions can be awarded.<sup>7</sup> Moreover, the country's PPP Act of 2014 is now well established and has been tested in practice. The selection of private partners is governed by public procurement legislation, which implements Directive 2014/24/EU on public procurement.

Lithuania has also improved its legal framework for PPPs. Thanks to recent amendments to its Concessions Act and the amendments made to its Investment Act and its Public-Private Partnership Resolution in 2015, Lithuania is now one of the few countries with a high level of bankability.

Russia has established a solid basis for the development of all forms of PPP. Russia's PPP Law, which came into force in 2016, has since undergone further amendments.<sup>8</sup> Concessions are governed by a separate federal law on concession agreements, which was adopted in 2005 and has since been amended. The PPP Law explicitly allows a private entity to create security interests over a project's assets, whereas the Concession Act restricts this.

FYR Macedonia's legislation has undergone substantial changes, as a result of which its rating has improved from moderately compliant to highly compliant. The country's Act on Concessions and Public Private Partnerships, as amended in 2015 and supported by secondary legislation,<sup>9</sup> provides for (i) variety/flexibility in terms of BOT models and non-concession PFI-type PPPs, (ii) economic evaluations/feasibility studies and (iii) competitive selection processes for private entities. Unlike the 2012 version of the Act, the amended legislation clearly guarantees concessionaires' rights, as well as providing for compensation in the event of termination (in the form of contractual penalties).

<sup>6</sup> This refers to a lender's right to assume the contractual responsibilities of a project partner (without a new tender procedure) in the event that the partner in question fails to meet its obligations under a contract.  
<sup>7</sup> Namely, the construction and management of motorways, railway lines, oil pipelines and gas transport systems, the transmission and distribution of electricity, and other concessions specified by the Croatian parliament.

<sup>8</sup> Federal Law No. 224-FZ on Public-Private Partnerships and Municipal-Private Partnerships in the Russian Federation and Amendments to Some Regulatory Acts of the Russian Federation, which entered into force on 1 January 2016.

<sup>9</sup> Bylaw on the contents of agreements establishing PPPs and concessions for goods of public interest of 23 March 2012, adopted pursuant to Article 40(6) of the Act on Concessions and Public-Private Partnerships as published here: <http://archive.economy.gov.mk/EN/pppe.html>

## Moderately compliant countries

Moderately compliant countries are characterised by a business-friendly environment and fairly well developed legal frameworks, which provide for opportunities to establish PPP projects. Core aspects, such as (i) the legal framework and (ii) guidelines or flexibility as regards the contents of a project agreement, the selection of a private partner and the availability of reliable security instruments, are covered by laws and regulations, although not always in a comprehensive and clear manner. This can cause scepticism and increase the risks perceived by investors.

Azerbaijan and Tajikistan have made significant progress in terms of compliance thanks to the adoption of new legislation. Tajikistan's PPP Act, for example, covers the implementation of projects in the area of merchant services (such as the provision of water, electricity and transport) and social services. However, it does not seem to cover mixed companies, the involvement of former state-owned companies following privatisation, or any public participation in joint ventures. It is also unclear whether this legislation prohibits PPP agreements that do not involve the transfer of assets to the public sector, as in the case of a build-own-operate (BOO) arrangement.

Azerbaijan adopted a new PPP Act at the end of 2016. However, there are still a number of uncertainties in relation to bankability. It is unclear, for example, whether security interests can be established over a private entity's rights or assets and whether there is the option of direct agreements or step-in rights.

Turkey's complex legal framework for PPPs is difficult to navigate. What Turkey really needs is a dedicated piece of legislation that specifically regulates PPPs and addresses all fundamental issues. There is a draft law on PPPs, but that legislation has been in the preparatory phase for some years now. The legislature has also adopted a significant number of inter-related sectoral laws covering both concessions and PFI-type PPPs.

## Low-compliance countries

Low-compliance countries continue to face challenges in the core assessment areas. These countries typically recognise PPPs, but have so far failed to establish an appropriate legal framework.

Problems often relate to an absence of clarity regarding the scope of a country's framework, non-transparent tender procedures, a lack of flexibility as regards the contents of project agreements and the absence of reliable security instruments (such as step-in rights or the possibility of government support or guarantees). Immature securities markets also have a tendency to hinder investment.

Georgia, Turkmenistan and Uzbekistan all fall into this category, as they did in 2011. At the same time, it should be noted that Georgia is in the process of establishing a modern PPP framework. In 2016, the Georgian government approved its PPP Policy, and in 2017, a draft PPP Law, both of which were developed with technical assistance from the EBRD. As of late October 2017, the draft PPP Law had been sent to the Georgian parliament and was awaiting adoption and enactment.

Turkmenistan does not have a dedicated piece of legislation governing non-concession PFI-type PPPs. The applicable legislation only partially regulates PPPs and does not sufficiently address most of the assessment criteria. There are, for example, very few provisions governing the selection of private partners, and those that do exist lack transparency.

## Findings on effectiveness

The effective implementation of laws is a challenge in many countries. Where countries do not have dedicated legislative frameworks specific to concessions or PFI-type PPPs, or they have low-compliance frameworks, the reasons for such a lack of effectiveness are fairly clear. Investors expect legal certainty regarding the scope of a law's application and may be discouraged if a PPP project is only governed by general laws, such as the country's civil code or an investment law. General laws do not typically provide for mechanisms which ensure bankability, such as feasibility studies, fair compensation in the event of termination, step-in rights, or the option of direct agreements between lenders and the contracting authority to give lenders the opportunity to rectify debtors' failings under project agreements.

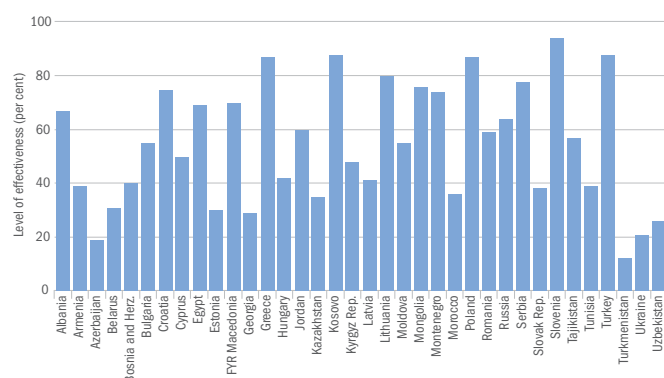
Slovenia is the only country in the EBRD region that has a very high level of effectiveness, with most countries demonstrating moderate, low or very low levels of effectiveness.

The reasons for modest levels of effectiveness even in high-compliance countries seem to be twofold. It may be that some countries have adopted the relevant laws for the purposes of being compliant on paper, but in practice public authorities and local investors do not regard concessions or PFI-type schemes as an effective means of improving their countries' infrastructure. On the other hand, there may be countries where the process of adjusting legislation has been undertaken with a genuine intention to lay the foundations for the effective contracting and performance of concession projects and other PPPs, but no significant transactions have taken place to date.

Countries with compliant laws and mature markets but only a small number of transactions share a number of features: (i) the absence of a strategy or policy document; (ii) a lack of political will; (iii) limited institutional capacity; (iv) insufficient public support; (v) a lack of awareness; and (vi) an absence of proper preparation for projects and/or insufficient funding for such preparatory work.

High-compliance countries such as Croatia and Lithuania have the potential to establish significant numbers of PPPs in the next 10 years. However, the absence of a PPP strategy or policy document demonstrating a clear political will appears to be a major obstacle to further development in this area. Both the general public and civil servants should be educated about the main features of PPPs, which would help to improve PPPs' reputation and address the concerns associated with these models.

**CHART A.3.1.2.** Effectiveness of political and institutional frameworks and business environments



Source: EBRD (2017).

## What can policy-makers do?

### Establish a firm policy that will be adhered to irrespective of political developments

A comprehensive policy document and/or clear strategic guidelines will indicate a country's commitment to using PPPs in order to achieve national development goals. Policy documents are particularly welcome in low-compliance countries, but some high-compliance countries also need to make more effort in this area in order to ensure that their policy documents are successfully implemented.

Azerbaijan, Jordan, Russia and Uzbekistan would all benefit from having a strategy document, which would signal their readiness to develop and implement PPP projects. Positive examples in FYR Macedonia, Kosovo, Mongolia, Montenegro and Turkey prove that adherence to a policy document significantly raises the PPP readiness index. Moreover, frequent changes of government may also impede the implementation of policy.

### Extol the benefits of PPPs in public

PPP projects need additional promotion, especially in countries with small numbers of transactions, preferably by means of awareness-raising campaigns run at national level.

The public often have limited knowledge about the benefits and advantages of PPPs, which may lead to resistance. PPPs are often regarded as expensive models that favour private partners and facilitate the privatisation of public wealth and services via the back door. This is especially true if PPPs have previously been associated with corruption or negative experiences in the form of failed projects, bad management or a lack of feasibility studies.

The need for an awareness-raising campaign is particularly high in Croatia, Egypt, Jordan and Lithuania, which have high-compliance frameworks but do not make sufficient use of them, partly owing to limited public support for PPPs.

## Develop a set of template documents

Even in the presence of well-established legal frameworks, many countries need assistance in order to expedite PPP projects, given their complexity. Template documents (such as tender forms or standard contracts) drawn up by a government PPP unit can provide useful guidance to public entities when it comes to the development and negotiation of PPPs, especially if those template documents incorporate the standards expected by investors.

Such template documents need to be flexible (that is to say, they should be for guidance only), as binding standard contracts are likely to lead to red flags. All countries except Mongolia need to develop template documents, although some countries (particularly Croatia) have been using EU structural funds to develop templates in particular sectors.

## Enhance the institutional framework

Countries with well-developed legal frameworks usually have a dedicated unit or body dealing specifically with PPPs. These bodies are established by law and have predefined competences that guarantee their involvement in the selection, oversight and implementation of projects.

The institutional framework is a weak point for most countries with moderate and low levels of compliance. These countries should focus on establishing dedicated bodies which deal solely with concessions and other PPPs. This is particularly true of Estonia and the Slovak Republic.

Having a specialist PPP unit dedicated to the development and supervision of PPP projects can make a real difference when it comes to promoting PPP solutions, concentrating the required expertise in one place and developing it further through targeted initiatives. Such units play a key role in terms of assisting contracting authorities with their PPP projects.

In many countries, it is not particularly clear which authorities are entitled to award PPP contracts. This is especially relevant in countries with decentralised government. In Morocco, for example, municipal authorities do not seem to be entitled to award PPP contracts, whereas regional and national authorities are. This is more than just a theoretical issue, especially when it comes to unsolicited proposals, as potential investors will have difficulty identifying the appropriate authority. Thus, it is important to establish clear and unambiguous rules in this respect to promote PPPs.

## Enhance the legal framework

### A dedicated legal instrument governing PPPs

In the past, it was common for non-concession PPPs (and even some concessions) to be awarded under general laws (for example, investment laws, civil codes or public procurement laws), but countries now tend to have a dedicated legal instrument governing such arrangements.

All high-compliance countries have dedicated legal frameworks addressing issues such as project selection, tender procedures and contracting in an effective manner. The scope of such frameworks needs to be clearly defined (with clarity, for

example, regarding the definition of a PPP, the sectors concerned, the competent authorities, the eligibility of private entities and the use of public procurement law for selection procedures in EU countries) in order to ensure legal certainty and limit the risk of challenges to the validity of PPP contracts.

Although most countries now have a dedicated legal framework governing PPPs, some do not. Armenia, for example, still relies on general laws when selecting and implementing PPP projects, but it is expected to adopt dedicated legislation in the near future. Bulgaria, meanwhile, is expected to adopt a new Concession Law in the next few months.

### Variety/flexibility in terms of models

Some countries adopt a PPP law in addition to a concession law, while others opt for a single piece of legislation covering both concessions and other PPPs. Many countries recognise the need to provide for a wide range of PPP arrangements (including BOT models). Examples of countries providing for a variety of BOT models/concessions and non-concession PFI-type PPPs include Croatia, FYR Macedonia (where only the BOO model is not permitted), Kosovo, Lithuania and Mongolia.

Countries with a limited range of PPP arrangements can be expected to engage in further legislative activity with a view to providing for greater flexibility in terms of models. Azerbaijan, for example, currently only provides for the BOT model, while in Tajikistan it is not clear whether the law covers PPP arrangements where there is no transfer of assets back to the public (as in the case of the BOO model, for instance).

For small projects involving social infrastructure, countries may use the PFI model, but without actually delegating the provision of the public service in question. Such projects are remunerated by means of rent or service fees paid by the contracting authority.

### Feasibility studies

An economic feasibility study ascertaining the viability and financial sustainability of a project over the lifetime of the contract (as well as the project's socio-economic benefits and environmental impact) is an essential element of the preparatory process. Many countries (including Albania, Bosnia and Herzegovina, Bulgaria, FYR Macedonia, Jordan, Kosovo, Montenegro, Serbia and Turkey) have recognised the importance of feasibility studies. Albania, for example, has detailed PPP legislation in this regard and requires contracting authorities to thoroughly evaluate PPP projects in the preparatory phase. However, the effectiveness of such legislation in practice remains to be seen and may depend on further guidance, capacity-enhancement measures and other factors.

In many countries, however, such studies are still not mandatory, or the requirements governing them are not clearly specified. In most cases, no such studies are performed, which highlights the need to make feasibility studies mandatory. At the same time, the required evaluation should not be excessively complex or costly.

Feasibility studies can also help to demonstrate that PPP arrangements are the best procurement method for the public sector. In some countries, the relevant legislation refers explicitly to the use of a public-sector comparator, a value-for-money test or another specific and clear evaluation method in order to determine whether a PPP offers significant advantages relative to other forms of procurement. Such tests can play a key role in reducing political resistance to PPPs.

### Selection of private partners

Private partners must be chosen by means of a fair and transparent selection process. Exemptions allowing for direct negotiations should be limited, and legislation should contain clear rules on the choice of tender procedure.

Tenderers have a lot at stake when pitching for PPP projects, and the cost of participating in a tender procedure can be very high. Quick and effective legal remedies in the event of appeals against the decisions of the contracting authority will provide valuable protection for investors, while minimising delays to the award process. Past decisions on open legal issues relating to award processes may provide valuable guidance to public officials in future tender procedures. Kazakhstan, the Kyrgyz Republic, Morocco, Turkmenistan and Ukraine are not currently doing enough to provide such legal protection, and Egypt, Tunisia and Uzbekistan could also do more in this regard.

All highly and moderately compliant countries fulfil this requirement, although very few countries have adequately addressed the issue of unsolicited proposals (that is to say, project proposals initiated by the private sector). It is often unclear whether unsolicited proposals are allowed, and if so, how they should be handled. This puts transparency at risk. In Russia, for instance, unsolicited proposals are allowed and enable a contract to be awarded without a tender procedure, provided that there are no other applicants interested in the project.

Some countries still need to work on improving transparency. In Azerbaijan, for example, the relevant legislation does not contain clear rules on the choice of tender procedure, and tender procedures are often not open to all applicants. In Uzbekistan, meanwhile, only foreign investors are allowed to conclude project agreements, placing domestic investors at a disadvantage. Furthermore, some countries do not require their selection committees to document or justify their decisions. In other countries, such as Morocco, public authorities do not have to inform tenderers that they have been excluded from the procedure or rejected at the pre-selection stage, and they are not required to publish the reasons for their decisions.

### Establish a “one-stop shop” for permits

Policy-makers often focus solely on the award procedure itself. However, private entities face many other legal issues when it comes to PPPs, particularly as regards the permits required for construction and operations.

Such problems can be addressed by means of a “one-stop shop” incorporating other permits that need to be obtained in connection with the PPP contract. From the perspective of a

private partner (especially a foreign investor), the fact that permits are granted by different authorities (potentially at different administrative levels) or authorities have conflicting competences can represent a major obstacle. Having a single authority to deal with as many permits as possible by means of a single procedure will allow national and international investors to save both time and money. Despite the great practical significance of such issues, only a few countries have applied this concept thus far. Indeed, even very highly compliant countries such as Serbia have not yet implemented this concept.

### Provide for reliable security instruments

The bankability of a project is dependent on the availability of reliable security instruments relating to the rights and assets of the private partner in the project and other instruments that can be used to contractually secure the private partner's cash flow in favour of lenders. In order to stabilise a private partner or a project company in turbulent economic times, direct agreements and step-in rights are required. The option of government support and guarantees regarding the contracting authority's proper fulfilment of its obligations will also significantly reduce risks relating to the financing of projects.

Unfortunately, many countries do not give lenders sufficient reassurance in this regard. In a number of countries, statutory rules relating to security instruments do exist (or their creation is, at least, not actively prohibited), but those rules are not sufficiently clear or detailed. This is true, for example, of Armenia, Belarus, Bulgaria, Hungary, Poland, the Slovak Republic and Turkmenistan. In Armenia, Azerbaijan, FYR Macedonia, Tajikistan, Turkey and Turkmenistan, lenders do not have any step in rights. Moreover, although step-in rights do exist in Cyprus, Georgia, Morocco and the Slovak Republic, the rules governing those rights need to be improved.

Meanwhile, in Estonia, FYR Macedonia and Morocco, the relevant legislation neither permits nor prohibits direct agreements between contracting authorities and lenders, and legal conclusions on this matter can only be drawn from the interpretation of general laws. In Romania, the law governing PPPs is similarly silent on this matter. Lastly, the framework governing state support for specific projects needs to be improved (without creating state aid issues) in Bosnia and Herzegovina, Cyprus, Estonia, Georgia, Latvia, Moldova, Morocco, the Slovak Republic and Tajikistan.

### Provide for international arbitration and enforcement of arbitral awards

Privately financed infrastructure projects require reliable dispute resolution mechanisms that are trusted by investors. International arbitration is a key dispute resolution instrument, and the absence of a provision enabling international arbitration is sometimes regarded by investors as a deal-breaker or an indication of significant political risk.

While most countries have ratified the Convention on the Settlement of Investment Disputes between States and Nationals of Other States (the "ICSID Convention"), some (such as Russia,

Poland and Tajikistan) have not. In Bulgaria, disputes must be settled before national courts, although ICSID protection is available. In Latvia, contracts with state authorities preclude arbitration at national level, but allow international arbitration.

Even in high-compliance countries with legal frameworks that do allow for arbitration, there may, in practice, be resistance to international arbitration. For instance, Jordan's Ministry of Finance appears to be reluctant to accept contracts providing for arbitration if the place of arbitration is not in Jordan, while the private investor involved in Croatia's biggest BOT project had to negotiate long and hard in order to insert an arbitration clause in its contract.

## Conclusion

A significant number of countries have amended their legislation since the 2011 assessment, either building on laws adopted prior to 2011 or introducing laws governing non-concession PPPs in addition to existing legislation on concessions.

Highly and very highly compliant countries have the potential to establish significant numbers of PPPs in the next 10 years. However, their current transaction record seems to point to the under-utilisation of such legislation, partly reflecting a perceived lack of political desire to promote the use of PPPs, as well as the need to train public officials.

Moderately compliant countries have supportive business environments and fairly well-developed legal frameworks, providing opportunities for the establishment of PPP projects. However, core areas relating to project selection, tender procedures and the bankability of projects need to be improved further in order to increase transparency and legal certainty.

Lastly, countries with low and very low levels of compliance need to adopt dedicated legislation governing PPPs or improve their legal frameworks in other ways.

All countries should continue to enhance their institutional capacities, preferably by establishing a specialist unit tasked with developing, actively promoting and supervising state-of-the-art PPP solutions.

## References

### EBRD (2012)

*Concession/PPP laws assessment 2011.*

### EBRD (2017)

*Concession/PPP laws assessment 2017, forthcoming.*