Economic performance of state-owned enterprises in emerging economies

A cross-country study
The contents of this publication reflect the opinions of the individual authors, Sanja Borkovic and Peter Tabak, and do not necessarily reflect the views of the European Bank for Reconstruction and Development (EBRD).

Sanja Borkovic is an Associate Economist and Peter Tabak is a Regional Lead Economist at the EBRD.

All charts in this report use authors’ calculations based on the Orbis database (published by Bureau van Dijk, a Moody's Analytics company)
In general, the private sector has been growing as a share of the economy in countries where the European Bank for Reconstruction and Development (EBRD) invests. However, state ownership remains prevalent in many sectors and, in some countries, has even increased (in Hungary, Poland and Turkey, for example). What is more, many larger-scale privatisation plans have stalled, been delayed or been very slow to implement. The share of state ownership was an important measure of economic transition in the 1990s, but is now less closely followed. This study aims to put the metric back on the radar by looking at non-financial state-owned enterprises (SOEs) in 25 of the economies where the EBRD invests. In addition to measuring the size of each country’s state-run sector, it will assess its performance in terms of profitability, liquidity and indebtedness. Our research shows that, almost three decades since the start of transition, there are still quite a few countries with a large state-owned footprint and/or in need of improvement in the state-owned sector in areas from corporate governance to financial management.
Introduction

The share of state ownership was an important measure of economic transition in the 1990s, but is now less closely followed. Although, in general, the private sector has been growing as a share of the economy in countries where the EBRD invests, state ownership remains prevalent in many sectors and has even been increasing in some countries such as Hungary, Poland and Turkey. What is more, many larger-scale privatisation plans have stalled, been delayed or been very slow to implement (for example, in Cyprus, Kazakhstan, Slovenia and Ukraine).

Measuring the size, scope and effectiveness or efficiency of state ownership is still important. EBRD diagnostic studies of Croatia, Serbia and Slovenia, for instance, have uncovered many areas ripe for improvement, from corporate governance to financial management. The large footprint and low efficiency of state-owned enterprises (SOEs) can also have significant and various negative effects on the private sector. SOEs can have unfair competitive advantage from subsidies, get away with providing low-quality services to private customers, or create financial problems for suppliers by not paying bills on time.

The aim of this study is to provide a much-needed snapshot of state ownership in economies where the EBRD invests and to identify those countries and sectors that most need to improve SOE performance.

Chart 1. Private-sector share of GDP (per cent)

Country, time and SOE coverage

The survey sample for our study was limited to 25 of the 38 economies in which the EBRD invests, largely due to the (un)availability of data. While the survey covered Europe quite extensively, the focus in Central Asia and the southern and eastern Mediterranean (SEMED) region was on the largest economies.

- **Central Europe and the Baltic states:** Croatia, Estonia, Hungary, Latvia, Lithuania, Poland, Slovak Republic, Slovenia
- **South-eastern Europe:** Albania, Bosnia and Herzegovina, Bulgaria, Cyprus, North Macedonia, Greece, Kosovo, Montenegro, Romania, Serbia
- **Eastern Europe and the Caucasus:** Belarus, Georgia, Moldova, Ukraine
- **SEMED:** Egypt
- **Central Asia:** Kazakhstan
- **Turkey**

The state-owned sectors of some countries were deemed insufficiently representative, however. Representativeness was judged on the availability of asset data, typically the most widely available indicator. While some countries had a relatively high number of SOEs listed in the Orbis database (published by Bureau van Dijk (BvD), a Moody’s Analytics company), five (Albania, Belarus, Cyprus, Egypt and Georgia) had asset data for fewer than 10 per cent of their SOEs for the period under review. They were consequently deemed insufficiently representative. These countries (and others) were omitted from results calculations, effectively reducing the sample to 20 countries (or fewer, depending on the availability of data on a particular indicator).

The study analysed the performance of non-financial companies in which state ownership exceeded 25 per cent. We included minority state ownership (25-50 per cent), as governments can still wield significant influence over the operations of these enterprises, for example, by introducing regulations benefiting the companies in question or blocking certain decisions. Financial companies were not included due to the distortions that could arise from their sizeable leverage (especially banks and insurance companies) compared with non-financial firms and the different nature of their operations.

We included SOEs owned both by the state and sub-sovereign entities (regions, municipalities). Centrally and locally owned SOEs were bundled together, as Orbis’s SOE identification criteria do not facilitate automatic separation. Overall, the sample comprised around 17,600 SOEs.

Our analysis focused on 2014 to 2016. Data availability analysis for 2008-16 showed significant variation over time in the number of companies for which certain indicator data were available (for most countries, for example, asset data were quite limited for 2008-09, but far more available for 2014-15). This is why, when considering a time-series analysis, attention must be paid to the underlying number of SOEs for which data are available in the years in question. We chose the more recent 2014-16 period for the purposes of this report.

1 Georgia stood out, with around 4,350 SOEs recognised by Orbis, but no available asset data.
2 The average number of SOEs with data on assets for at least one year in the 2008-16 period.
The primary source of the data was the Orbis database (published by BvD, a Moody’s Analytics company), containing firm-level accounting and ownership data for around 300 million companies worldwide, standardised to a “global format” that makes the data comparable across jurisdictions. The primary SOE search strategy was: ownership data; companies owned by an ultimate owner; characteristics of the ultimate owner; and public authorities, states and government of a country. When extracting data, priority was given to unconsolidated accounts based on local registry filings.

We supplemented the Orbis SOE list with data from other sources. To our knowledge, among service providers the Orbis database has the most comprehensive list of SOEs. However, as Orbis did not recognise all SOEs in the countries studied, the initial list of companies had to be amended. The other sources of information were mainly official national reports (from ministries of finance, fiscal councils or state audit institutions, for example), reports from international financial institutions and government websites. Thus, around 600 new SOEs were added to the list.

Additional sources were used to calculate indicators on SOE performance, namely, the International Monetary Fund’s April 2018 World Economic Outlook for gross domestic product (GDP) data and the International Labour Organization’s employment statistics for people over the age of 15.

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3 We consider unconsolidated data more appropriate, as the consolidated data of large holding structures would not allow for proper sectoral analysis.

4 In Orbis, manual recognition of SOEs is made more difficult when some company names are given in the local language and others in English, the transliteration from the local to the English alphabet is not done consistently, or abbreviations are used instead of full names. Such issues were particularly pronounced for Ukraine, Kazakhstan and Greece.


6 See ILO (n.d.)
SOE size and performance were gauged based on 22 indicators. Definitions of these diverse indicators are available in Annex 1. They can be grouped into six clusters:

1. **Overview of the state sector**
   (number of SOEs, value added as a percentage of GDP, percentage of listed SOEs)

2. **Sector size**
   (assets, revenues, shareholders’ funds, share of assets of top 10 companies, five largest SOEs’ share of total SOE assets)

3. **Employment**
   (percentage of total employment, cost of employees)

4. **Liquidity**
   (ratio, credit days, collection days)

5. **Profitability**
   (profit/loss, return on assets (ROA), return on equity (ROE))

6. **Indebtedness**
   (financial debt, ratio of financial debt to earnings before interest, tax, depreciation and amortisation (EBITDA), total debt, ratio of debt to equity, share of long-term liabilities, implied interest rate)

The financial data of all firms were observed in US dollars.
Data limitations and cleaning

Despite the highly comprehensive nature of the Orbis database, it has several limitations, which can be summarised as follows:

- Some SOEs are not identified as such or missing.
- There is a total absence of data on certain SOEs.
- There is a lack of data on certain indicators:
  - no Belarusian or Georgian data on SOE assets;
  - no Turkish data on number of employees;
  - no data on credit periods for SOEs of North Macedonia
  - more than half of (the nearly 40,000) SOEs in the database lack data for most indicators in most years
  - peculiarities by country: Moldova has 2-3 times more SOEs with asset data in 2012 and 2014 than in other years, while many Egyptian SOEs have data on employees or revenues for only one year.
- There are potential inconsistencies in data for certain indicators:
  - in Estonia, the 2011-16 credit period for many companies was cut to 0-1 day
  - for some SOEs in the Slovak Republic, the same number of employees was repeated for several years in a row.
- Certain data are suspicious:
  - dubious data: negative values for balance-sheet or profit-and-loss account items (such as assets, revenue and financial debt)
  - outliers: overly high values for some indicators (for example, data on implied interest rates might show distortions due to large write-downs of financial assets, which were entered as financial expenses alongside interest charges).
- There were changes in SOE ID numbers after initial data downloads, making subsequent updates more challenging, notably in:
  - Greece and Kazakhstan.

Data issues were alleviated by quality checks and data-cleaning procedures. Suspicious data were dropped from our calculations, usually by limiting floor or ceiling values, as we note in those sections that delve into the indicators in more detail. In addition, weighted averages were calculated wherever appropriate (mostly for liquidity, profitability and indebtedness ratios) to increase the relative importance of larger companies.

Still, caution is needed when interpreting the results. Complete time series for all indicators over the 2008-16 period were available for just 260 SOEs in eight countries. The remaining SOEs had at least one year of data missing, meaning that the consistency of some time series may be an issue. That was particularly the case with data on value added, the ratio of financial debt to EBITDA, and implied interest costs. Also, as only current owners of companies were listed, the sample may be less representative historically, especially if there were major privatisations in the meantime (for example, Poland in 2008-11). For similar reasons, data on nationalised companies prior to nationalisation (when they were still private) could not be automatically excluded; this had to be done manually when information on nationalisation was obtained (for example, Hungarian MAL Zrt in 2010).

The results in the following section are based on data available as of end November 2018.\(^7\)

\(^7\) The cut-off date for data from Orbis was 21 July 2018, except for 60 or so SOEs that were added between then and at the end of November 2018.
Results

Overview of the state sector

The number of SOEs analysed ranged from 20 in Kosovo to around 8,000 in Ukraine. As Ukraine is the largest country in the sample, it unsurprisingly boasts the greatest number of SOEs. The majority are sub-sovereign companies, while the rest (around 2,500) are centrally owned. Almost 90 per cent of the SOEs examined for this study are majority owned by the state. The only country where the state predominantly holds minority stakes (two-thirds of the total) is Greece.

Chart 2. Number of SOEs

SOEs in Montenegro seem to add the most value. However, this should be treated with caution due to the significant lack of data available. Overall, time series on value added were some of the least complete series. Data were available for a sufficient share of companies in fewer than half of the countries studied. Among those, Montenegrin SOEs created the most value added, at 5.5 per cent of GDP. By way of comparison, the value added of Polish SOEs was 1.5 per cent of GDP.

Chart 3. Value added

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8 Weighted averages are reported for shareholders’ funds, employee costs, liquidity and profitability indicators, debt to equity, long-term to total liabilities, implied interest rates and financial debt to EBITDA. The data are weighted by firm assets.
9 The average number of SOEs with data on assets in 2014-16. Crimean SOEs were included in Ukrainian SOE listings until 2013.
10 Charts 2-39 in this report use authors’ calculations based on the Orbis database (published by Bureau van Dijk (BvD), a Moody’s Analytics company).
11 Value added was calculated as the sum of profit/loss and the cost of employees where both sets of data were available for a company in a given year.
12 For at least 80 per cent of SOEs with data on assets in 2014-16.
Bosnia and Herzegovina has the largest percentage of listed SOEs. Somewhat surprisingly, listed SOEs are not that common in the more developed central and eastern European economies, unlike the relatively less developed and smaller countries. Bosnia and Herzegovina ranks first, with one in three SOEs listed. However, this is mostly the result of a mass privatisation programme in the late-1990s, when two stock exchanges were established to enable citizens to invest in their national enterprises. In reality, the exchanges are illiquid and very few companies use them to raise capital. Furthermore, most of the listed companies are too small to efficiently use the stock exchange to raise capital.\(^\text{13}\)

**Chart 4. Listed SOEs**

(Percentage of all SOEs, 2016)

Source: Authors’ calculations based on the Orbis database.\(^\text{10}\)

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**Sector size**

Based on asset size, the SOE sector is smallest in Turkey and largest in Montenegro and Ukraine. While Turkey’s SOE assets accounted for only 7 per cent of GDP in 2014-16, in Montenegro and Ukraine that figure was around 100 per cent.\(^\text{14}\) Overall, the average size of the state-owned sector is around 47 per cent of GDP. Two other countries of the former Yugoslavia (Serbia and Croatia) ranked highly in this regard — unsurprising, considering that their transition started later due to the break-up of Yugoslavia and the civil war in the 1990s. In contrast, Turkey abandoned its planned economy and state-dominated corporations in the early 1980s, which may explain the state’s relatively smaller share of GDP. However, the size of the SOE sector in Turkey may have increased considerably since 2016, as the government expropriated a number of companies belonging to businessmen facing terrorism charges after July 2016.

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14 Negative values on assets were omitted from calculations.
The size of national state sectors has not changed much in the EBRD regions in recent years. While the share of SOE assets to GDP changed markedly in a few countries between 2014 and 2016, this was largely due to significant changes in the sample size (Bosnia and Herzegovina, Moldova), GDP in US dollar terms (Ukraine) or both (Serbia) in the years in question.\textsuperscript{15}

The largest SOEs loom large over their peers... The five largest SOEs in each country account for 57 per cent of total SOE assets, on average. While this figure is less than 30 per cent in Poland, it is 85 per cent in Kosovo, mainly due to the latter’s relatively small number of SOEs\textsuperscript{16} (15 in 2016).

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\textsuperscript{15} Serbian and Ukrainian GDP shrank by 15 and 30 per cent, respectively, between 2014 and 2016 (in US dollar terms).

\textsuperscript{16} With data on assets.
...and the rest of the economy. On average, SOEs account for 54 per cent of top 10 company assets in their respective economies. In Turkey, the figure is almost negligible; in Poland, it is 85 per cent. SOEs tend to dominate the utility and transport sectors, but also feature heavily in other sectors, such as agriculture (Poland, North Macedonia), energy (Hungary, Poland, Slovenia, Kazakhstan), construction (Croatia) and trade (Kazakhstan).

The equity of non-financial SOEs averaged 27 per cent of national GDP in 2016. The top and bottom five countries are the same when it comes to SOE equity-to-GDP and assets-to-GDP ratios. The equity of SOEs equalled around 75 per cent of GDP in Montenegro and just 5 per cent in Turkey.
SOEs generate revenues of around 15 per cent of GDP. The scale of revenues to GDP ranges from 5 per cent in Kosovo to 33 per cent in Slovenia. In general, most revenues come from SOEs in the utility and transport sectors.

**Employment**

Non-financial SOEs account for 5 per cent of total employment, on average. Their contribution varies from 2 per cent in Greece to more than 14 per cent in Bulgaria. While some economies (Kosovo, North Macedonia and Moldova, for example) saw this share change significantly between 2014 and 2016, this was primarily down to changes in the number of companies providing employee data.

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17 Poland and Bosnia and Herzegovina were excluded from calculations as significantly fewer SOEs posted employee data in 2016 than in previous years, while Turkey was omitted due to lack of data.
Employee costs absorb a quarter of SOE revenues.\textsuperscript{18} The cost of employees ranges from 12 per cent in Latvia to around 40 per cent in North Macedonia and Montenegro. As data were scarce (available for only half of the countries) and had to be cleaned due to high values in some years in almost all countries, the results should be interpreted with caution.

SOEs appear to be very liquid in most countries. Except for Serbia and Moldova, the liquidity ratio\textsuperscript{19} in the countries observed exceeded 1, strongly suggesting that SOEs have enough cash or cash equivalents to pay their current liabilities and sustain operations. Even excluding extremely high or volatile data,\textsuperscript{20} the conclusions are similar.

SOEs collect their claims in around 100 days … SOEs in Hungary and Lithuania are fastest to collect receivables (less than one month), while SOEs in Montenegro and North Macedonia are slowest (more than seven months).

\textbf{Chart 11. Cost of employees}  
(Percentage of total revenue; 2014-16)

\textbf{Chart 12. Liquidity ratio}  
(2016)

\textsuperscript{18} Companies with employee costs of more than 1,000 per cent of revenues were excluded from calculations. Prerequisites for inclusion were a cost of employees higher than or equal to 0 and revenues higher than 0. Before data cleaning, there were substantial outliers observed in Hungary, Romania and Serbia, with average employee costs exceeding 13,500, 11,500 and 3,500 per cent of revenues, respectively.

\textsuperscript{19} The liquidity ratio is effectively the quick ratio: (current assets–inventories)/current liabilities.

\textsuperscript{20} Two cleaning methods were used: the exclusion of observations over 25 and companies with a coefficient of variation of more than 200 per cent.
... and pay their bills in around 85 days. The credit period for SOEs varies from 20 days in Latvia to around half a year in Moldova and Croatia. In most countries, the difference between the credit and collection period is more than two weeks, suggesting potential financial mismanagement or corruption issues. Similarly, in most countries, the credit and collection periods are long (from two to more than seven months on average), which may indicate potential liquidity issues in these economies. The latter is particularly true for countries of the former Yugoslavia: here, Croatia stands out, with SOEs needing around 180 days to collect receivables and pay their bills.

### Chart 13. Credit and collection periods

Source: Authors’ calculations based on the Orbis database.\(^{10}\)

Note: Chart 13 uses the ISO 3166-1 three-letter country codes published by the International Organization for Standardization.

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### Profitability

In most countries, SOEs made some profit in 2014-16. Total profit ranged from 0.1 per cent of GDP in Slovenia to 3.1 per cent of GDP in Ukraine. At the other end of the scale were a handful of countries where the SOEs made an overall loss. The most obvious examples were Serbia and Bosnia and Herzegovina, where annual SOE losses in 2014-16 were around 0.5 per cent of GDP.

### Chart 14. Profit/loss

Source: Authors’ calculations based on the Orbis database.\(^{10}\)

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\(^{21}\) Two countries were excluded from calculations due to unrealistic data (Estonia, as the credit period for many companies in 2011-16 had been slashed to 0-1 day) or a lack thereof (North Macedonia).

\(^{22}\) Annual average in 2014-16.
The ROA\textsuperscript{23} of SOEs averaged 1.7 per cent in 2014-16. Kazakhstan seems to have had the most profitable firms (with an ROA of more than 6 per cent), but they are likely to have received a significant boost from the currency depreciation of 2015 (of around 50 per cent). This is typical of countries and companies that see (commodity) exports increase in value due to depreciation; wage costs and domestic input prices adjust more slowly, boosting profits. Ukraine, in contrast, experienced even greater depreciation over the same period, but armed conflict meant companies were unable to capitalise on it.

The ROE ranged from 13 per cent in Kazakhstan to -30 per cent in Serbia. The considerable negative ratio in Serbia was a consequence of an outlier (a large SOE had an extremely low 2015 ROE of around -16.500 per cent). Excluding this, Serbian SOEs posted an average ROE of 7.4 per cent, faring much better on this indicator than on overall profitability. However, it could be that the ROE was propped up by the relatively high indebtedness of Serbian SOEs and, consequently, relatively lower equity levels. Hence, individual ROE ratios should be examined in the context of SOE indebtedness.

\textsuperscript{23} ROA and ROE were not automatically taken from Orbis, but recalculated to increase sample size.
Indebtedness

Serbian and Croatian SOEs are the most (financially) indebted, while the opposite is true for Turkish, Moldovan and Hungarian SOEs. The financial debt of SOEs in Serbia and Croatia was 23 per cent of GDP (compared with less than 1 per cent in Turkey, Moldova and Hungary and average financial debt for all countries of 8 per cent of GDP). In Serbia and Croatia, a large amount of debt is held by a handful of firms. In Croatia, three road companies hold US$ 5.6 billion of debt (more than 11 per cent of GDP) amassed during the rapid expansion and modernisation of the country’s road infrastructure. In Serbia, almost 60 per cent of all SOE debt is held by five SOEs; the largest two are in the utilities sector (electricity and gas) and have more than doubled their debt since 2010.

In most countries, the financial debt of SOEs did not change much from 2014 to 2016. Even when there was a more significant change, this was largely a consequence of changes in sample size and/or GDP. Slovenia and Latvia are notable exceptions, with SOEs deleveraging by 25-30 per cent between 2014 and 2016.

SOEs in some countries may find it difficult to pay off their debt. Results based on this indicator should be treated with caution, due to the lack of data in certain countries and the calculation requirements, which further shrank the sample.24 That said, Croatian SOEs may be worst off in terms of debt repayment, as the financial debt of SOEs with positive EBITDA is on average 90 times EBITDA.25 In contrast, Bulgarian SOEs seem to be in pretty good shape, with the debt of just 1.5 times EBITDA. Alternative calculations26 suggest that SOEs in Croatia, Greece and Serbia are least able to pay off their debt (with debt-to-EBITDA ratios between 5 and 6), while the opposite is true for SOEs in Bulgaria, Hungary and Romania (with ratios of less than 1). (See Chart 18 on page 18.)

24 The calculation was confined to firms that had financial debt higher than or equal to 0 (to eliminate unsound data) and positive non-zero EBITDA. Negative EBITDA was excluded, as it would have reduced national averages (whereas loss-makers are more likely to have repayment problems). Zero EBITDA was omitted, as a denominator cannot have zero value. Data were not available for Kazakhstan, Kosovo, Lithuania, Moldova or Turkey.

25 Values of more than 1,000 were excluded from calculations. The three Croatian road companies were not among the outliers. Prior to cleaning, Serbia ranked first, with financial debt of almost 180 times EBITDA due to the extremely high financial debt-to-EBITDA ratio (18,000) of one relatively large SOE in 2014.

26 The sum of a country’s SOE financial debt was divided by the sum of its EBITDA. The only condition was that a company had data on both variables in a given year.
SOEs’ total debt-to-EBITDA ratio is on average 4 percentage points higher than their financial debt ratio. In addition to financial debt, total debt includes other long-term liabilities (trade debts, pension loans, provisions and deferred taxes), which can be substantial. In 2016, the average total debt of SOEs was around 8 per cent of GDP. Again, Serbia and Croatia ranked highest, but the level of debt (at around 25 per cent of GDP) did not differ much from the financial debt level. In several countries, however, the two debt levels differed significantly. The biggest gap was recorded in the Slovak Republic (14 percentage points) as a result of huge other long-term liabilities accumulated by four SOEs (three of them in the transport sector).
Average SOE debt is 77 per cent of equity. In six countries, in 2016, SOEs’ debt exceeded their equity, with the highest debt-to-equity ratios in Kosovo and Romania (more than 150 per cent). Montenegrin SOEs, in contrast, held the least debt compared with equity (less than 15 per cent). However, debt-to-equity ratios are sector specific, so whether a ratio is deemed “high” depends on the industry in question (capital-intensive sectors have relatively higher ratios). Ratios should, therefore, be viewed on a country-by-country and sector-by-sector basis.

The term structure of SOEs’ liabilities is mixed. In around half of the countries studied, SOEs seem to have more short- than long-term liabilities, while the opposite is true in the other half. The magnitude of SOEs’ short-term liabilities in some countries may be down to the lower overall liquidity of the economies in question. This also means suppliers have to wait longer to be paid. For example, in Serbia, where companies are generally burdened with debt and illiquidity, SOE debt to suppliers and contractors in 2016 was 6.5 per cent of GDP. Still, the results on the term structure of SOE liabilities should be treated with caution, as in many countries only limited data are available for this indicator.

Chart 20. Debt to equity

Chart 21. Long-term liabilities

Source: Authors’ calculations based on the Orbis database.

27 Debt includes non-current liabilities (in other words, long-term financial debt and other long-term liabilities and provisions) and short-term loans.

28 Conditions applied in calculating averages include long-term debt higher than or equal to 0 and total liabilities of more than 0.
SOEs by sector

Utilities

Summary

- The number of utility-sector SOEs ranged from 7 in Moldova to 1,870 in Ukraine.

- In terms of assets and equity to GDP, the state-owned utility sector is the largest in Montenegro, Serbia and Bosnia and Herzegovina and smallest in Turkey, Kazakhstan and Moldova. While Turkey’s state-owned utility assets equate to less than 3 per cent of GDP, Montenegro’s figure is more than 50 per cent. Overall, the average size of the state-owned utility sector in asset terms is around 19 per cent of GDP. The equity of state-owned utilities equals 1 per cent of GDP in Moldova and 40 per cent of GDP in Montenegro, compared with an overall average ratio of 11 per cent.

- Slovenian state-owned utilities generate revenues of up to 14 per cent of GDP, while utilities in Kosovo contribute up to 3 per cent of total employment. State-owned utilities in Serbia, Montenegro, North Macedonia and Bosnia and Herzegovina also employ a relatively sizeable slice of their country’s workforce (around 2 per cent). In contrast, Kazakhstan’s state-owned utilities generate the least revenue and contribute least to employment (0.9 per cent of GDP and 0.1 per cent of total employment, respectively).

- Lithuanian and Estonian state-owned utilities are the most liquid (with a liquidity ratio of more than 5), while Serbian and Moldovan utilities are the most illiquid (with a liquidity ratio of less than 1).

- Latvian and Hungarian utilities are fastest to pay their bills and Kazakh utilities are fastest to collect their receivables (it takes them less than a month). State-owned utilities in Montenegro and North Macedonia, in contrast, need around 11 months to collect their receivables, while Greek utilities take more than 4 months to pay their dues.

- While state-owned utilities seem to be most profitable in Turkey and the Slovak Republic (average ROA in 2014-16 of more than 5 per cent), the opposite goes for Bulgaria and Moldova (average ROA equal to or less than –1.5 per cent).

- Estonian state-owned utilities are most indebted (total debt of 14 per cent of GDP); Turkish and Moldovan utilities the least (total debt of less than 1 per cent of GDP).

30 Results by sector should be treated with greater caution and examined in more detail due to the relatively smaller samples (sometimes comprising only a few companies) and potentially more pronounced data issues. The cleaning options applied to country-level results hold, as do the time periods observed (2016 for stock and 2014-16 for flow variables). Source for all charts: author’s calculations based on the Orbis database (published by BvD, a Moody’s Analytics company).
Chart 22. Number of SOEs*
(2016; utilities sector)

Chart 23. SOE employment
(Percentage of total national employment; utilities sector)

Chart 24. Return on assets
(Percentage; 2014-16; utilities sector)

Chart 25. Assets
(Percentage of GDP; utilities sector)

Chart 26. Liquidity ratio
(2016; utilities sector)

Chart 27. Total debt
(Percentage of GDP; utilities sector)

Source (Charts 22-27): Authors’ calculations based on the Orbis database.
Transport

Summary

- The number of SOEs in the transport sector ranges from 3 in Kosovo and Bosnia and Herzegovina to around 340 in Ukraine.

- In terms of both assets and equity, the state-owned transport sector is largest in Ukraine and smallest in Moldova and Kosovo. While state-owned transport assets in Moldova and Kosovo account for less than 2 per cent of GDP, in Ukraine they make up more than 36 per cent. In asset terms, the average size of the transport sector in the countries studied is 11 per cent of GDP. The equity of state-owned transport companies is less than 0.5 per cent of GDP in Moldova and Kosovo compared with 25 per cent in Ukraine and a country average of 6 per cent.

- Montenegrin state-owned transport firms generate the most revenues (5 per cent of GDP), while Bulgaria’s companies contribute most to total employment (2.8 per cent), both followed closely by Latvian state-owned transport companies. In contrast, transport SOEs in Kosovo produce only 0.3 per cent of GDP in revenues, while Polish state transport firms employ only 0.1 per cent of the country’s workforce.

- Croatia’s transport SOEs are the most liquid (with a liquidity ratio of more than 4.5), while Hungarian and Bosnian firms are the most illiquid (with a liquidity ratio of less than 0.7). Liquidty seems to be problematic (with a ratio of less than 1), too, for state-owned transport companies in Greece, Latvia, North Macedonia, Poland and Serbia.

- Latvian transport SOEs are among the fastest ones to pay their bills and collect their receivables (less than 20 days), while Turkish firms are among the slowest (needing around 11 months to collect and almost four months to pay their bills).

- While Estonia’s state-owned transport companies seem to be the most profitable (with an average ROA in 2014-16 of around 4.5 per cent), the opposite is true for transport SOEs in Kosovo (with an average ROA of –5.5 per cent).

- Slovakian transport firms are most indebted (with total debt of 12 per cent of GDP); Turkish and Kosovan SOEs are the least burdened (0.2-0.3 per cent of GDP).

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31 Moldovan SOEs were excluded, as only one company provided data on its liquidity ratio.

32 Moldovan SOEs were omitted, as data on total debt were only available for one company.
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Chart 28. Number of SOEs*
(2016; transport sector)

*With data on assets

Chart 29. SOE employment
(Percentage of total national employment; transport sector)

Chart 30. Return on assets
(Percentage; 2014-16; transport sector)

Chart 31. Assets
(Percentage of GDP; transport sector)

Chart 32. Liquidity ratio
(2016; transport sector)

Chart 33. Total debt
(Percentage of GDP; transport sector)

Source (Charts 28-33): Authors’ calculations based on the Orbis database.
SOEs by sector (continued)

Manufacturing

**Summary**

- The number of SOEs in the manufacturing sector ranges between 2 and 4 in Baltic states and Montenegro, and 665 in Ukraine.\(^{33}\)

- In terms of assets, the state-owned manufacturing sector is largest in Serbia (at close to 7 per cent of GDP), while in terms of equity, it is largest in Montenegro (at around 3 per cent of GDP). State-owned manufacturing is smallest in Estonia and the Slovak Republic (with assets corresponding to just 0.1 per cent of GDP). Serbian and Ukrainian SOEs have total negative equity of 3.8 and 0.5 per cent of GDP, respectively. Serbian manufacturing SOEs seem to stand out for all the wrong reasons in other respects too.

- Polish manufacturing SOEs generate the most revenue (6 per cent of GDP), while Serbian firms contribute most to total employment (1.2 per cent). In contrast, manufacturing SOEs in most countries make less than 1 per cent of GDP in revenues and employ less than 0.3 per cent of the total workforce.

- Bulgarian manufacturing SOEs are extremely liquid (with a liquidity ratio of 8) and Serbian SOEs are the most illiquid (with a liquidity ratio of less than 0.3). Liquidity seems to be an issue for SOEs in Ukraine, too (where the ratio is less than 1).\(^{34}\)

- Hungarian SOEs are the fastest to pay their bills (around 20 days), while Kazakh and Slovakian state manufacturers rush to collect receivables (in around one month).\(^{35}\) Serbian and Greek SOEs, meanwhile, need almost nine months to pay their bills, while Montenegrin, Croatian and Greek SOEs need more than six months to collect receivables.

- Bulgarian and Hungarian manufacturing SOEs seem to be very profitable (with an average ROA in 2014-16 of around 12 per cent), unlike Serbian state-owned manufacturers (with an average ROA in the same period of –12 per cent).\(^{36}\)

- While in most countries the debt of state-run manufacturers is fairly low (less than 0.5 per cent of GDP), in Serbia it is quite high (at almost 5 per cent of GDP).

---

\(^{33}\) Kosovo was omitted from the assessment, as there were no data on Kosovan state-owned manufacturers.

\(^{34}\) Although Latvian and Estonian manufacturing SOEs seem to score poorly on liquidity, in each case, this is down to one illiquid company (out of a total of two in the sector with data on assets).

\(^{35}\) Latvian and Estonian manufacturing SOEs need only 4 and 14 days, respectively, to collect receivables, but the result is affected by the small number of companies in the sample (2).

\(^{36}\) Again, the result for Estonian state-owned manufacturers was strongly influenced by developments at just one company.
Source (Charts 34-39): Authors’ calculations based on the Orbis database.
This study could be deepened and expanded in several ways. First, the sample could be enlarged to include missing SOEs and other economies in which the EBRD invests for which Orbis data are available. Second, more in-depth studies could be conducted, focusing on specific countries or sectors and providing more detail on areas that EBRD interventions could target. Third, SOE performance could be compared with that of national private-sector peers or SOEs in certain developed economies. Lastly, a cross-country analysis of the performance of state-owned financial institutions could be performed.
Conclusions

Almost three decades on from the start of transition, the non-financial state-owned sector remains substantial. Even though the economies in which the EBRD invests have recorded a significant increase in the private sector’s share of the economy over the past two decades, SOEs are still prevalent and many will continue to play an important role in future. While decisions on whether a public company is fulfilling its goal(s) and whether it should be privatised are political, the operational efficiency of SOEs should remain an economic issue. That is particularly important if public finances are strained or unsustainable.

There is room to improve SOE performance in many of the economies where the EBRD invests. This paper shows considerable differences in the economic variables associated with SOEs in economies from central Europe to Central Asia and SEMED. This suggests that there is significant opportunity in many economies to improve the operational efficiency of SOEs and enhance corporate governance. Ultimately, this would bolster public finances and benefit all citizens and businesses.
References

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World Economic Outlook, April 2018, Washington, DC

World Bank (2015)
## Annex 1.

### Definition of indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Formula/Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Collection period</strong></td>
<td>(debtors / operating revenue) * 360</td>
</tr>
<tr>
<td><strong>Credit period</strong></td>
<td>(creditors / operating revenue) * 360</td>
</tr>
<tr>
<td><strong>Debt to equity (gearing)</strong></td>
<td>(non-current liabilities + loans) / shareholders’ funds * 100</td>
</tr>
<tr>
<td><strong>Financial debt</strong></td>
<td>long-term debt + loans</td>
</tr>
<tr>
<td><strong>Financial debt to EBITDA</strong></td>
<td>financial debt / EBITDA</td>
</tr>
<tr>
<td><strong>Implied interest rate</strong></td>
<td>(financial expense / financial debt) * 100</td>
</tr>
<tr>
<td><strong>Liquidity ratio</strong></td>
<td>(current assets - stocks) / current liabilities</td>
</tr>
<tr>
<td><strong>Long-term liabilities</strong></td>
<td>non-current liabilities / (current + non-current liabilities) * 100</td>
</tr>
<tr>
<td><strong>ROA</strong></td>
<td>(profit before tax / total assets) * 100</td>
</tr>
<tr>
<td><strong>ROE</strong></td>
<td>(profit before tax / shareholders’ funds) * 100</td>
</tr>
<tr>
<td><strong>Shareholders’ funds (total equity)</strong></td>
<td>capital + other shareholders’ funds</td>
</tr>
<tr>
<td><strong>Total debt</strong></td>
<td>non-current liabilities + loans</td>
</tr>
<tr>
<td><strong>Value added</strong></td>
<td>profit/loss for period + cost of employees</td>
</tr>
</tbody>
</table>

Source: Orbis database and authors.
Annex 2.

<table>
<thead>
<tr>
<th>Sector</th>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>A</td>
<td>Agriculture, forestry and fishing</td>
</tr>
<tr>
<td>Energy</td>
<td>B</td>
<td>Mining and quarrying</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>C</td>
<td>Manufacturing</td>
</tr>
<tr>
<td>Utilities</td>
<td>D</td>
<td>Electricity, gas, steam and air-conditioning supply</td>
</tr>
<tr>
<td></td>
<td>E</td>
<td>Water supply; sewerage, waste management and remediation activities</td>
</tr>
<tr>
<td>Construction</td>
<td>F</td>
<td>Construction</td>
</tr>
<tr>
<td>Trade</td>
<td>G</td>
<td>Wholesale and retail trade; repair of motor vehicles and motorcycles</td>
</tr>
<tr>
<td>Transport</td>
<td>H</td>
<td>Transportation and storage</td>
</tr>
<tr>
<td>Tourism</td>
<td>I</td>
<td>Accommodation and food services</td>
</tr>
<tr>
<td>Other services</td>
<td>J</td>
<td>Information and communication</td>
</tr>
<tr>
<td></td>
<td>L</td>
<td>Real estate activities</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>Professional, scientific and technical activities</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>Administrative and support services</td>
</tr>
<tr>
<td></td>
<td>O</td>
<td>Public administration and defence; compulsory social security</td>
</tr>
<tr>
<td></td>
<td>P</td>
<td>Education</td>
</tr>
<tr>
<td></td>
<td>Q</td>
<td>Human health and social work</td>
</tr>
</tbody>
</table>

*Statistical classification of economic activities in the European Union
Source: Authors.
<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BvD</td>
<td>Bureau van Dijk, a Moody's Analytics company</td>
</tr>
<tr>
<td>EBITDA</td>
<td>Earnings before interest, tax, depreciation and amortisation</td>
</tr>
<tr>
<td>EBRD</td>
<td>European Bank for Reconstruction and Development</td>
</tr>
<tr>
<td>GDP</td>
<td>Gross domestic product</td>
</tr>
<tr>
<td>ILO</td>
<td>International Labour Organization</td>
</tr>
<tr>
<td>IMF</td>
<td>International Monetary Fund</td>
</tr>
<tr>
<td>ROA</td>
<td>Return on assets</td>
</tr>
<tr>
<td>ROE</td>
<td>Return on equity</td>
</tr>
<tr>
<td>SEMED</td>
<td>Southern and eastern Mediterranean</td>
</tr>
<tr>
<td>SOE</td>
<td>State-owned enterprise</td>
</tr>
<tr>
<td>NACE</td>
<td>Statistical classification of economic activities in the European Union</td>
</tr>
<tr>
<td>US</td>
<td>United States</td>
</tr>
</tbody>
</table>
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