

WP/19/53

IMF Working Paper

The Russian State's Size and its Footprint: Have They Increased?

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I N T E R N A T I O N A L M O N E T A R Y F U N D

The Russian State's Size and its Footprint: Have they Increased? *

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March 2, 2019

Abstract

The short answer: The size of the Russian State has not increased much in the last few years, but its economic footprint remains significant. Concretely, the state's size increased from about 32 percent of GDP in 2012 to 33 percent in 2016, not far from the EBRD's estimate of 35 percent for 2005-10. This is different from the mainstream narrative, which contends that the state's size doubled in the last decade. However, a deep state footprint is reflected in a relatively high state share in formal sector activity (close to 40 percent) and formal sector employment (about 50 percent). The deep footprint is also reflected in market competition and efficiency. Although sectors in which the state is present are more concentrated, concentration is large even in sectors where the state's share is low. This suggests the need to protect and promote competition, in particular in state procurement. Finally, state-owned enterprises' performance appears weaker than that of privately-owned firms, which may be subtracting from growth.

Keywords: Russian State, State-Owned Enterprises, Transition Economies

JEL Codes: H10, H11, P20, P27

*The views expressed in this Working Paper are those of the authors and should not be attributed to the IMF, its Executive Board, or its management. Working Papers describe research in progress by the authors and are published to elicit comments and to encourage debate. We thank to, without implicating, Vladimir Kolychev, Dmitry Timofeev, Ernesto Ramirez Rigo, Aleksei Mozhin, Izabela Karpowicz, Joseph Crowley, Laurent Kemoe, Lee Kwangwon, and the participants of the seminars held at the Russian Ministry of Finance and the Central Bank of Russia for their comments and suggestions. We also wish to thank Tatiana Chernisheva for excellent research assistance.

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1 Introduction

The mainstream narrative is that the Russian state is large and that its size increased considerably in the last few years. The increasingly large state, the narrative goes, has deepened the state's footprint, crowding out the private sector and negatively affecting economic dynamism. According to this view, the Russian state doubled in size to reach 70 percent of GDP. We believe that the claim was based on a comparison of estimates for Russia's state size in 2005 by the European Bank of Reconstruction and Development (EBRD (2007)), with the ratio of gross public sector revenues-to-GDP in 2012 as in IMF (2014b) (Table 1). Both figures, however, are inconsistent: While the former represents the state's share in value added, the latter refers to a measure of state gross revenues expressed as a ratio of GDP. Despite these shortcomings, these figures were widely reported by the press and analysts contributing to shape views on Russia.¹

The channels through which a state leave its footprint in the economy are numerous. The state's size is one metric to assess its footprint. However, the state can operate with varying degrees of efficiency, improving or worsening the economic footprint of a given state size. In broad terms one can classify state activity into that aimed at addressing typical government responsibilities, and that as owner-manager of entities operating in the production of goods and services. Barro (1991), Armev (1995), and Friedman (1997) all argue that there exists an inverted U-shaped association between the state's size and economic growth. Higher government spending is initially good for growth and investment because the absence of the rule of law deters private production, but that as government expands the rise in the tax rate negatively affects private investment, with the latter effect dominating when the government is very large. Facchini and Melki (2011) further argue that empirical analyses seem to support this view, but that the state's optimal size is country-specific.

Moreover, the links between state's size, market competition, and the efficiency in resource use are direct. The larger the state's size, the more it will matter for the overall efficiency with which economic resources are allocated and used. This is particularly relevant in financial markets, which have a key role in the allocation of the economy's savings. Shleifer (1998) argues that private ownership should be preferred to public ownership when the incentives to innovate and contain costs are strong. Guriev (2017) stresses that soft budget constraints as a type of dynamic commitment problem (as defined by Kornai (1979)), is present in the case of state-owned enterprises (SOEs) and the national budget, reducing the efficiency in resource use. Boycko et al. (1993) argue that if soft credit is available for firms pursuing state objectives, firms that cater to the state, rather than to shareholders, will obtain credit. This may result in an allocation of the economy's savings that is not optimal, hurting growth. A large state can result in individual SOEs, or state conglomerates, having a relatively dominant position in certain markets, potentially increasing market concentration and limiting competition. Also, a large state can either promote or limit competition

¹For instance, an article in an international news outlet pointed out that "...in 2012, the IMF calculated that the consolidated public sector accounted for nearly 70 percent of Russia's GDP. Though comparably detailed estimates are not available for earlier years, in the early 2000s, this share was around 30-40 percent" (<https://www.project-syndicate.org/commentary/crony-capitalism-hurting-russian-economy-by-anders-aslund-and-simon-commander-2016-05>); another international news outlet reported that, "Between 2005 and 2015, the private sector's share of the economy was cut in half in Russia...", and that "...the government and state-controlled companies accounted for 70 percent of economic activity." (<https://edition.cnn.com/2018/03/18/europe/putin-election-number-70-intl/index.html>); a Russian news outlet reported that, "The state has rapidly increased its presence in the economy. Together with state-owned companies, its share in GDP rose from 35 percent in 2005 to 70 percent in 2015." (<https://www.themoscowtimes.com/2016/09/29/russian-state-doubles-economy-presence-over-past-decade-a55529>). Discussing the transformation of the Russian economy in the years of transition, Shleifer and Treisman (2005) also refer to a gap between perception and facts with respect to the country's initial conditions, achievements, and challenges.

through state procurement rules, with consequences for market access, the development of small and medium-sized enterprises (SMEs), and innovation. OECD (2011) explains that given the magnitude of the money spent in public purchases, procurement rules "can impact the structure and functioning of competition in the economy".²

Russia's legal framework and development plans both support the view that a large state can affect competition and the use of resources. The "National Plan for the Development of Competition" argues that a large state can negatively affect competition as private companies do not enjoy the same state support as SOEs do. In turn, state procurement legislation (both for the government and SOEs) recognize that the state's demand of goods and services is large, and that it can have a significant impact on the economy.³ Accordingly, the procurement system aims at supporting competition by ensuring the participation of the largest number of potential suppliers, and developing new suppliers by setting mandatory SME quotas, among other objectives.

This paper estimates the size of the Russian state and discusses some of the channels through which it leaves its footprint in the economy. Although we do not evaluate whether the current size of the Russian state is optimal or not, we investigate whether the state's size has significantly increased, which would point out at an increase in the state's footprint. To that end we propose a methodology to assess the state's share in value added, and use it to estimate the state's size in Russia. After this, we discuss other channels through which the state may be leaving its footprint, namely the relation between state's share and economic concentration (discussing competition policies and state procurement rules), and SOEs' relative efficiency *vis-a-vis* other firms in the economy.

The paper is organized as follows. After this introduction, Section 2 briefly discusses the channels through which the state can leave its footprint in the economy. Section 3 presents the methodology to assess the state's size. Section 4 presents our estimates for the size of the state in Russia, and discusses a few channels through which the state may be affecting economic performance. Section 5 summarizes and concludes.

2 State's Size and its Footprint

The channels through which a state leave its footprint in the economy are numerous.⁴ The state's size is a good metric to gauge the strength of its footprint, but then the question is how to measure the state's size, and what to include within the definition of the state. A usual metric to measure the state's size is the ratio of government spending-to-GDP. This measure is popular because it is easy to compute and readily available, but can be misleading.⁵ Other, more encompass-

²The channels through which the state can leave its economic footprint are too many to consider in one paper. Obvious channels include tax policy, and budget spending composition. A large state's share in investment and employment has obvious repercussions in growth. SOEs with large balance sheets can be a source of macroeconomic risks, especially those operating in sectors subject to volatile conditions such as finance and energy

³The legal framework defining the rules for the protection of competition and state procurement in Russia is in GoR (1995), GoR (2006), GoR (2010), GoR (2011), GoR (2012), GoR (2013), and GoR (2017).

⁴Informal discussion usually refers to the "state", the "government", the "public sector" as interchangeable concepts, resulting in a great deal of confusion. In this paper we will use the term "government" to refer to general government as defined in IMF (2014a), i.e., including federal, regional, and municipal governments, as well as social security institutions. We will use "state" or "public sector" interchangeably to denote general government plus state-owned firms both in the non-financial and financial sectors. Moreover, from a National Accounts perspective, the state creates value added (supply side) and purchases goods and services (demand side).

⁵Although this is a good metric to measure government intervention in the economy, it is influenced by the size of transfers (including whether social security is private or not), and it is a very imperfect to gauge the state's value

ing metrics, gauge the importance of state employment in total employment, or the value added created by the state.

The state's size is one metric to assess its footprint. However, the state can operate with varying degrees of efficiency, improving or worsening the economic footprint of a given state size. In broad terms one can classify state activity in two groups: (i) that aimed at addressing typical government responsibilities (law, order, security, education, health), giving rise to budget spending (with a given composition), and to taxes (with a given structure) to finance it; and, (ii) that as owner-manager of entities operating in the production of goods and services (which could be produced by the private sector, even if state regulation or intervention was needed to correct for a market failure). Both of these types of activities result in direct state spending. In addition, there is what Friedman (1997) calls "indirect" public spending via regulations and mandates on private individuals and businesses.

The literature analyzes how these two categories (state's size and its efficiency) interact to yield better or worse social outcomes. In this regard, Barro (1991) studies the effects of spending in public services on private production and household utility, of taxation (to finance public services) on private incentives to save and invest, and their overall effect on economic growth. To that end he proposes an endogenous growth model that builds on Romer (1989), Lucas (1988), and Rebelo (1990), and assumes that the aggregate production function has constant returns to scale in private capital and public services. Infrastructure services, law enforcement, and national defense are inputs to private production and raise the marginal product of private capital.⁶ He finds an inverted U-shaped association between government spending and growth: per capita income growth initially rises with taxes because of the positive effect of public services on private productivity. But as taxes increase, per capita income growth eventually peaks and then declines because households are left with a lower fraction of income; this suggests the existence of a growth-maximizing (optimal) level of government spending.⁷ He argues that higher government spending is initially good for growth and investment because anarchy is bad for private production, but that as government expands the rise in the tax rate deters private investment, with the latter effect dominating when the government is very large.

In the same line of thought, Friedman (1997) argues that government plays an essential role, but that even if its average contribution (to economic growth) is positive, its marginal contribution turns negative if government grows too large.⁸ Similar to Barro (1991) and Friedman (1997), Vedder and Gallaway (1998) describe the "Armey Curve", an inverted U-shaped curve describing the association between government size and economic growth (Armey (1995)). The rationale behind the curve's shape is that the establishment of government and its early growth result in rising levels of income because without government there is no rule of law and protection of property rights, and thus, little incentive to save and invest due to the threat of expropriation. Rule of law and enforceable property rights result in an improved environment for investment. As government absorbs a larger share of national output, new taxes and borrowing lead to work disincentive effects, and thus, extra public spending reduces income growth. The output-enhancing features of government dominate for lower levels of spending, but at some point further expansion of govern-

added, as it completely ignores SOEs' activity.

⁶He further assumes that government runs a balanced budget, that public services are provided free of charge, and that are financed with a proportional income tax rate. For the usual public-goods reasons, the private market does not sustain the appropriate level of public services.

⁷The peak in the growth rate occurs when the marginal product of government spending is equal to one, i.e., when an increase in public services by one unit generates just enough extra output to balance the resources used by the government.

⁸Concretely, he postulates that the marginal contribution of government is negative "in going from 15 percent of national income to 50 percent". According to him economic growth suffers "in countries where the government does so many things that it has no business doing".

ment contributes to stagnation.

Facchini and Melki (2011) argue that underlying the inverted U-shaped curve of Barro (1991) and Armeij (1995) there are two curves. One curve denotes the benefits of correcting market failure, while the other curve measures the cost of state failure. The positive effect of public spending in correcting market failure diminishes as intervention increases, as further intervention decreases the size of the market. These actions (e.g., to provide public goods, regulate natural monopolies, mitigate asymmetric information, and correct externalities, among other) influence the composition of public spending. Symmetrically, the negative effects of state intervention due to state failure increase on the margin with size. State failure results when public choice does not optimally correct market failures; due to crowding-out; because of the effect of taxes on incentives and on transaction costs; due to rent-seeking activities; and, due to political transaction and bureaucratic costs. The optimal level of government spending (or more generally of state intervention) can be rationalized as the level above which the social costs of extra spending exceed the benefits from correcting market failures (i.e., some market failures may be too socially expensive to correct). Facchini and Melki (2011) further argue that the costs and benefits of state intervention are country-specific: While costs vary with the level of bureaucratic inefficiency, the willingness to pay taxes, and political transaction costs (among other), benefits depend on how well the price system works. They contend that the conflicting results of the empirical literature on the relation between government size and economic growth provide some support for both an inverted U-shaped association, and also, to country-specific optimal levels of state intervention.⁹

The discussion so far focused on government spending, but did not consider the effects of state ownership and management of firms producing goods and services. For instance, the model in Barro (1991) assumes that the government purchases public services from the private sector, and defines the conditions under which state ownership of firms does not matter for his results (i.e., the use of identical technology by the public and private sectors and capital mobility between sectors). Facchini and Melki (2011) clarify that the operational concept behind the inverted U-shaped curve should be state intervention, but they focus on empirical studies using the ratio of government spending-to-GDP as its proxy. In contrast, the operational concept to assess the strength of the state's footprint during the first years of transition was the state's share in value added, because an increase in the share of value added created by the private sector was assessed to be a good indicator of progress in transition (Brada (1996), EBRD (1994)). The state's value added is a more encompassing concept than government spending-to-GDP ratio, as it considers the activities of both the government and SOEs. Evidently, the efficiency with which resources are assigned and used in certain markets (or the overall economy) are associated with SOEs size: The larger SOEs' presence, the more they will matter for overall economic efficiency.

In this regard, there is an ample literature discussing the potential benefits and costs of private management and ownership, of "corporatization" (private control of cash-flows) and "privatization" (private ownership of assets), in contrast with state ownership and management. Shleifer

⁹Facchini and Melki (2011) look into 67 empirical studies analyzing the association of government spending (measured as budget spending-to-GDP) with growth, and find that studies on advanced economies that propose linear models and use recent, but short, time series find a negative association between government size and growth; they explain that this may be because the recent period captures the downward sloping portion of the "Armeij curve". Studies testing a non-linear relationship over longer periods of time find a range of 20 – 40 percent of GDP for the "optimal" government size. Vedder and Gallaway (1998) also estimate "Armeij Curves" for different categories of U.S. federal budget spending, for different U.S. states and for a number of European countries. Barro (1991) estimate growth regressions including as explanatory variables government consumption expenditures, government investment, government spending in education, government spending in defense, and transfers. He finds that public consumption is inversely related to growth and investment, while public investment tends to be positively correlated with growth and private investment; he argues that these results can be interpreted within his model.

(1998) argues that private ownership should be preferred to public ownership when the incentives to innovate and contain costs are strong. He contends that the economic debate between central planning and capitalism of the 1930s and 1940s focused on the role of prices but ignored the importance of ownership as the source of capitalism's "dynamic vitality", that is, the incentive to innovate in market economies. He stresses that social goals can be addressed through government contracting and regulation, without state ownership. Private ownership is also important when competition between suppliers, reputational mechanisms, and governance considerations come into play. Along the same lines, Shleifer and Vishny (1994) argue that the traditional view on SOEs as efficient entities that cure market failures in the context of governments maximizing social welfare is hard to square with empirical accounts of such firms, in market, socialist, and mixed economies. They contend SOEs are inefficient because they are encouraged to pursue more than just economic objectives, and this results in high operating costs and lower quality output. In many cases SOEs charge prices significantly below marginal cost to win the population's support. Shleifer and Vishny (*ibid.*) build a model to examine the behavior of private and public enterprises in situations where the state tries to influence firms to pursue state objectives. They conclude that corporatization and privatization result in an increase of firms' efficiency when governance problems impose costs, and when the state has a preference to subsidize the better performing SOEs. Importantly, they conclude that macroeconomic stability can promote increased firm efficiency by hardening budget constraints of all firms.

SOEs may also be subject to "softer" budget constraints than private firms. Kornai (1979) argues that firms face technology constraints, demand constraints, and a budget constraint. The latter can be "hard", if the firm's spending is delimited by its financial abilities, but it is "soft" if its losses are almost automatically compensated by the state. The concept was initially developed to describe economic behavior in socialist economies marked by shortage, but Kornai et al. (2003) explain that the soft budget constraint (SBC) is one of several dynamic commitment problems discussed in the literature. In this regard, Guriev (2017) states that the SBC as a dynamic commitment problem arise in market economies when creditors have incentives to restructure and refinance debt (or provide new loans) in case of failure by a borrower; in this context, the borrower understands the creditor's commitment problem, and thus, an *ex ante* tough stance by the creditor is not credible and cannot provide strong incentives for better performance by the borrower.¹⁰ He argues that this type of dynamic commitment problem is present in the case of SOEs and the national budget. Kornai et al. (2003) explain that there are many ways in which the budget constraint can be softened (through budgetary subsidies, soft bank credits, among other), and that consequently, the SBC can be a contributing factor in the accumulation of bad bank loans, demand inflation, and the creation of bubbles.

The presence of the state in certain markets can result in individual SOEs (or state conglomerates) having a relatively dominant position, potentially increasing market concentration and limiting competition. Boycko et al. (1993) stress that creating a competitive marketplace, both by encouraging domestic competition and opening to international trade plays a critical role in increasing firm efficiency. High concentration in public services and in sectors prone to natural monopolies is more common, but concentration in other sectors may call for policies to preserve and increase competition. A large presence of the state is particularly relevant in financial markets, which have a key role in the economy's capital allocation. Boycko et al. (*ibid.*) argue that in order for budget constraints to be hard, banks should make capital available to firms (either in the private or public sectors) on commercial terms. If instead capital is subsidized or directed, or soft credit is available for firms pursuing state objectives, firms that cater to the state, rather than to

¹⁰According to Guriev (2017) an example of the SBC in a market economy is the "zombie lending" phenomenon (Banks that are likely to be bailed out, continue to provide loans to under-performing firms instead of writing-off their non-performing loans).

shareholders, will obtain credit. In macroeconomic terms this may result in an allocation of the economy’s savings that is not optimal, hurting efficiency and growth. Moreover, although firms can improve the efficiency of their operation without new investment (by e.g., changing their product mix using existing equipment, or improve their inventory policy, among other), the incorporation of new technologies and firm expansion usually requires capital.

We conclude this brief discussion by pointing out that the state both supplies and purchases goods and services. The larger the state size, the larger the volume of goods and services that it purchases. OECD (2011) explains that given the magnitude of the money spent in public purchases, procurement rules ”can impact the structure and functioning of competition in the economy”.¹¹ It further argues that the ”distortion of the procurement process due to collusion or governance problems has a detrimental effect” in the way the economic functions. The failure to achieve best value for money can have ”a negative impact on the range and depth of services and infrastructure that a state can provide”. Restrictive procurement rules, or inadequate design of the procurement procedures can limit competition, constrain market access, SME development, and innovation.¹²

3 Measuring the Size of the State

We will use the state’s share in value added as our preferred metric to gauge the state’s size. This is a more encompassing measure of state involvement than the government-to-GDP ratio, as it considers the full extent of the state, and also allows to analyze the state’s participation in different economic sectors and their evolution. Most importantly, our up-to-date estimates can be compared with earlier estimates of this metric, allowing us to provide a better sense of the post-transition dynamics of the Russian state’s size.¹³

Ideally, obtaining the state’s share in GDP requires calculating the ratio between the sum of the value added created by the state across all economic sectors, and GDP, as in the following expression:

$$\theta_t^G = \frac{\sum_i^N VA_t(i)\theta_t(i)^G}{Y_t} \quad (1)$$

In expression 1, θ_t^G is the state’s share in GDP, $Y_t = \sum_i^N VA_t(i)$; N is the number of sectors; $VA_t(i)$ is the value added in sector i in t , and $\theta_t(i)^G$ is the state’s share in sector i ’s value added in t .¹⁴ The estimates for the state’s size will depend on how the state’s perimeter is defined, which will be reflected in the magnitude of $\theta_t(i)^G$.¹⁵ Clearly, general government services (e.g., public administration, defense) will be within the state’s perimeter in all cases. But there can be different criteria for firms owned totally or partially by the state. In a restrictive approach, $\theta_t(i)^G$ would result from considering as part of the state the value added created by SOEs that are only 100 percent state-owned. A less restrictive approach is to calculate $\theta_t(i)^G$ considering 100 percent

¹¹OECD (2011) proposes the following definition: ”Public procurement is the process of purchasing goods or services by the public sector, the aim of which is to secure the best value for public money”.

¹²In the sense of Barro (1991), lower quantity or quality of public services should negatively impact growth. Boycko et al. (1993) argue that the state often persuades private firms to pursue state objectives by offering them procurement contracts and other benefits (like regulatory and tax breaks and subsidies).

¹³Notwithstanding this preference, we will also use other indicators of state involvement when relevant

¹⁴We will use the terms ”GDP”, ”total output”, and ”total value added” interchangeably.

¹⁵In other words, $\theta_t(i)^G$ is a weighted average that depends on the criteria used to define the state’s perimeter.

of the value added of firms in which the state retains control (namely more than 50 percent ownership). A looser approach is to extend the state’s perimeter to 100 percent of the value added of all firms in which the state has some ownership, even if it is below 50 percent. A stricter approach is for $\theta_t(i)^G$ to result from considering as part of the state a portion of the value added equivalent to the exact stake the state has in the capital of a given legal entity, no matter whether that stake is above or below 50 percent.¹⁶

From the discussion above it is clear that the country’s National Statistical Institute is in the best position to calculate expression 1. However, given that generally there are no official estimates of the state’s share per economic sector $\theta_t(i)^G$, the task is to approximate the state’s share in value added using available official data. This approximation will be a “second best” to expression 1.

$$\bar{\theta}_t^G = \frac{\sum_i^N VA_t(i)\bar{\theta}_t(i)^G}{Y_t} \quad (2)$$

Concretely, the approach is to assess the state’s share using expression 2, where $\bar{\theta}_t^G$ is the estimate for the state’s share in GDP in t , and $\bar{\theta}_t(i)^G$ is the estimate for the state’s share in sector i in t . Implementing expression 2 requires to define: (i) the approach to approximate the state’s share in value added per economic sector; and, (ii) the state’s perimeter, (i.e. how entities are classified according to ownership).

4 The Russian State Footprint: A Discussion

4.1 The Size of the Russian State: A Review of Available Estimates

There were a few attempts to estimate the state’s share in Russia’s GDP. The longest time series (comprising the period 1991-2010) for the breakdown of value added between the private and public sectors in Russia correspond to estimates by the European Bank of Reconstruction and Development (EBRD). The EBRD estimated the private sector’s share in GDP (θ_t^{Pr}) for all transition economies in Eastern Europe (EE) and the Former Soviet Union (FSU).¹⁷ In the 1990s, the private sector’s share in GDP was a popular indicator to measure countries’ progress in transition out of central planning and into a market economy (Brada (1996), EBRD (1994)). Evidently, one can calculate the state’s share, θ_t^G , by subtracting $\theta_t^G = (100 - \theta_t^{Pr})$, as increases in the private sector’s share in GDP result in equivalent decreases in the state’s share.¹⁸

¹⁶For instance, if the public sector’s ownership in a legal entity is 51 percent, a strict measure of the state’s share in the value added of that entity would be that same 51 percent, while the remaining 49 percent would be considered as private

¹⁷According to the EBRD’s definition, the private sector included privately-owned and privately managed firms, even if they leased state capital, or supplied mainly to the state. Firms where the state had a minority stake (directly or through pension funds or other financial institutions) were classified as private. Where available, EBRD’s estimates were built on official data (EBRD (1994)). The EBRD discontinued producing these estimates after 2010.

¹⁸Brada (1996) cautions about the quality of data measuring the private sector’s share in value added during the first years of transition, as countries had the tendency to adopt definitions that maximized the reported size of the private sector, “to place the country’s transition efforts in the best possible light”. For instance, some countries classified corporatized SOEs as private, even if many (or all) of their shares remained in state control. He argues that using just the share of the private sector in the economy may convey misleading information about the progress in transition to a market economy, because *de jure* privatization may not create by itself the effective corporate governance that is generally associated with capitalism in developed market economies.

According to EBRD’s estimates, the Russian state’s share in value added passed from 95 percent in 1991 to 30 percent in 1997. In an account that corresponds to the first years of transition, Boycko et al. (1993) highlight the “extraordinary speed” at which state assets were privatized, and describe the first phase of privatization (“mass privatization”), which was mainly implemented through the distribution of vouchers to the population; they state that privatization was the “the most successful” reform in Russia in the early 1990s. Along the same lines, EBRD (1994) describes Russia’s progress in privatization in these years as “spectacular”. Acemoglu and Robinson (2013) point out that the first wave of privatization was followed by a second wave in 1995–97 (the “loans-for-shares” program), which ended with some commercial banks acquiring a number of large firms (mostly in the energy sector). After these two privatization waves, the state’s share in GDP remained stable through 2005, where it increased by 5 percentage points (pp) to reach 35 percent of GDP, following the re-nationalization of some firms in the oil and gas sector. After that, EBRD’s data shows that the Russian state’s share in income stayed unchanged at 35 percent through 2010.

More recently, using consolidated financial statements of the largest state-owned holdings and other assumptions, Krivoshapko and Westman (2017) assess the state’s share in GDP for a few selected years. They report that this share was about 33 percent in 2003, 31 percent in 2007 and 34 percent in 2016, which are all in the same order of magnitude with EBRD’s estimates. Using a different methodology, a study by the Center for Strategic Research (CSR (2018), a Russian think-tank) estimates that the state’s share in GDP expanded from about 40 percent in 2006 to 46 percent in 2016. This study claims that the state’s size stopped expanding in the last few years, but that the state’s role in resource allocation strengthened, including through stronger influence of SOEs and state development institutions, pseudo privatization, and expansion of regulation. It highlights that the number of state entities declined in 2010–16, but that the state’s direct and indirect participation in key sectors remains considerable.¹⁹ From a regional perspective, the presence of the state across Russian regions is diverse. Regions with lower per capita income (which receive relatively larger federal transfers) generally have a larger state size (Di Bella et al. (2018)).

From a cross-country perspective, although recent estimates of state shares in output are not available, the latest available EBRD data for 2010 shows that the state’s share in Russia’s GDP was similar to the average in transition economies. At the start of the transition, the Russian state’s share in GDP was among the largest in EE and the FSU. In the early 1990s Russia privatized at a much faster speed than the average transition country, but after 1997 other countries in this group caught up. Table 2 shows these trends.²⁰ In addition, available cross-country employment data for a group of middle income and advanced economies (OECD (2015)) suggest that the size of the Russian State is relatively large (smaller than Denmark’s and Norway’s, but larger than Sweden’s). The data also suggests that the state’s share in employment has decreased since the early 2000s. Other cross-country metrics suggest a more nuanced view. For instance, General Government expenditure in Russia represents about 35 percent of GDP (up from 30 percent in the early 2000s), a relatively moderate level when compared with peer countries.

¹⁹To estimate the state’s size, CSR (2018) only considers the largest 106 Russian companies in which state participation in ownership was 10 percent or more. Sales data is used as a proxy for value added, but the estimates are not weighted by actual value added per sector. In addition, using statutory financial statements for 2015, a different definition of state ownership (a state’s share larger than 50 percent), and a different sample (the largest 100 companies per economic sector), CSR (*ibid.*) reports a SOEs share in sales of 40 percent.

²⁰EBRD’s estimates show that transition economies that are resource-rich all had private shares in output for 2010 that were similar or below the average for transition economies. It is not uncommon for states in resource-rich countries at all levels of development to retain total or partial control of natural resources, resulting in a higher state’s share in output.

4.2 Gauging the Size of the Russian State

Available estimates of the Russian state’s share in the economy are subject to methodological and other issues. They are generally based on the use of revenues as an approximation of value added, without weighting state shares by value added per sector; they do not consider that value added is created by both the formal and informal sectors, and that the state only operates in the former; they overlook that the best approximation for the state’s share in different sectors may be different (e.g., revenue or employment); and, they do not adequately discuss the issue of state perimeter.

We will use official revenue from sales or employment data per economic sector to approximate the state’s share in value added. In this regard, expression 3 shows the approximated state’s share in value added per sector, where $X_t(i)^{G,j}$ denotes the variable $j = S, L$ used as a proxy for value added in sector i (with S denoting sales, and L employment), and where $X_t(i)^j$ is the corresponding total value added for sector i (for either S or L).

$$\bar{\theta}_t(i)^{G,j} = \frac{X_t(i)^{G,j}}{X_t(i)^j} \quad (3)$$

The approximated state’s share per sector will be used in expression 2, together with actual value added. Official data on aggregate sales and employment per sector are available by ownership. Both data sets use the same definition of ownership, but have different coverage depending on the sector. Official sales data has wide coverage for market sectors, but employment data has wider coverage for typical government activities. Thus, the choice between employment or sales as the most reasonable approximation for value added depends on the sector under consideration. For instance, the state’s share in the sales of services like education or health, or in public administration, is low, as these services are mostly provided free of charge and thus are not reflected in sales data; in contrast, health workers, teachers, and public servants working for state entities that provide services free of charge will be reflected in employment data. Moreover, since official sales data are not available for Banks, we will use the ratio of assets-to-total assets of the banking sector as a proxy instead.²¹

4.3 The Russian State’s Perimeter

The main ownership categories in official data include:

State and Municipal. They include state and municipal budgetary and extra-budgetary entities; unitary enterprises; and, the subsidiaries of entities that are 100 percent state-owned (e.g., Russian Road Company, Rosneftgaz, Russian Railways, and United Shipbuilding Corporation, among other).

Government corporations. They include non-profit state-owned organizations established by special laws to implement government policies (e.g., Deposit Insurance Agency (DIA), National Development Bank (VEB), Rostech, Roskosmos, and Rosatom, among other).

²¹A few clarifications: Using the state’s share in employment (or sales) to proxy the state’s share in value added will not result in fully accurate estimates as capital/labor and revenue/value added ratios across firms within a sector differ; and, sales data is available for legal entities operating in the formal economy, and thus, ownership ratios will be applied only on value added in the formal economy (this should not be a problem as the informal sector is fully non-state).

Mixed Russian. They include firms established jointly by state and non-state entities; and, firms established by state and foreign entities in which the foreign stake does not exceed 10 percent (e.g., Gazprom, Rosneft, and United Aircraft Corporation, among other).²²

Private Russian; and, Foreign and Foreign/Russian. Private Russian entities include those in which the state is not a shareholder (including those fully privatized); the subsidiaries of these entities; and, the subsidiaries of entities in which the state's stake is below 100 percent. This implies that most subsidiaries of entities like Gazprom or Rosneft (which themselves are classified as 'Mixed Russian') are classified as private.

This classification suggests that the state's perimeter should include state, municipal, and mixed Russian entities and government corporations. This results in a somewhat "loose" definition of the state, as the approximated state's share will include 100 percent of the value added of entities in which the state does not necessarily have a 100 percent stake. A justification for this approach is that even in cases in which the state's share is below 100 percent (or even 50 percent), the state will retain weight in decision making, influence, and access to resources, among other.

The ownership criteria described above also suggest that available sales or employment data by ownership may result in a lower-than-warranted approximation for the state's share in output. To correct for the fact that most subsidiaries of partially state-owned firms are classified as non-state, expression 3 is calculated to include within the state's perimeter the subsidiaries of the largest 20 non-financial state conglomerates, whose parent companies are classified as 'Mixed Russian'. These include Gazprom, Rosneft, Transneft, Inter RAO, Rushydro, Rosseti, Rostelekom, Aeroflot, Tatneft, Alrosa, United Aircraft Corporation, Helicopters of Russia, United Engines, and United Shipbuilding Corporation.

4.4 Is the Russian State Large? Has its Size Increased? The Results

Our results suggest that the Russian state's share in output increased marginally in the last few years, from 32 percent in 2012, to 33 percent in 2016. These results are in the same order of magnitude with EBRD's estimates for 2005-10, and more recently, with those of Krivoschapko and Westman (2017). Looking at the breakdown of the state's value added, the general government represented 13.5 percent of GDP in 2016 (slightly up from 13.1 percent of GDP in 2012), and SOEs accounted for 19.3 percent of GDP in 2016 (also up from 18.8 percent in 2012). Table 3 summarizes our estimates and previous estimates of the Russian state's share in value added.²³

To arrive at these results, we approximated the state's share in value added of "market" sectors by its share in sales, but we used the state's share in employment to approximate its share in value added of sectors dominated by general government activities ("Public Administration and Defense", "Compulsory Social Security", "Education", "Healthcare"; and, "Other Communal and Personal Services"). In terms of the state's perimeter, we considered all state, municipal, and mixed Russian entities and government corporations, as well as the subsidiaries of the largest 20 non-financial state-owned conglomerates whose parent companies are classified as 'Mixed-Russian'. For "Finances", the state's share in value added was approximated by the ratio of state-owned

²²This category might contain companies without state participation (NGO/private) but presumably the share of such companies should be small.

²³The general government's share in value added (i.e., a supply-side concept) should not be confused with the commonly reported general government spending-to-GDP ratio. The latter includes, in addition to wages, transfers (which do not create net value added), and government purchases of goods and services (which is a demand-side concept).

banks assets-to-total assets of the banking sector, as reported by the Central Bank.²⁴

The state's shares in formal sector activity and employment are quite large. By adjusting employment shares to correct for state ownership and data coverage, the state's share in employment climbs to 31 percent in 2016 (from an unadjusted figure of 28 percent). The upward adjustment is not large because, *inter alia*, of the significant size of informal employment (about 38 percent of total employment in 2016). However, these figures mean that the share of state employment in formal employment is quite high, close to 50 percent.²⁵ Likewise, the state's share climbs to about 40 percent when considering only value added originated in formal sector activities.

Table 4 reports the results of calculating expressions 2 and 3 by sector of economic activity. The state's share is large in extraction, natural monopolies, the financial sector and, naturally, in public services. The state is present, however, in most sectors of economic activity. There are many sectors that are largely private: agriculture and food processing, most manufacturing (excluding the defense and oil and gas processing), and trade. In the last few years, the state's share increased in oil and gas extraction and processing and in the financial sector. Indeed the state's share in the value added of oil and gas extraction and refining increased from about 35 percent in 2012 to close to 45 percent in 2016. The state's share in total value added excluding these sectors remained about constant at around 31 percent.

Several conclusions emerge from our estimates and from available data: (i) The share of the Russian state in GDP is much smaller than the 70 percent in the mainstream narrative, with our and other estimates pointing to a range of 30–35 percent; (ii) also in contrast with the mainstream narrative, the Russian state's share in output has remained broadly unchanged in the last decade, though the weight of the state increased in banking and oil and gas extraction and refining and decreased in other sectors; (iii) correcting for the size of the informal sector in value added and employment pushes the Russian state's share significantly up, to almost 40 percent of formal sector activity, and shy of 50 percent of formal sector employment; (iv) although the size of Russia's General Government is relatively small when compared with that in OECD countries, the state's share in total employment is relatively large, similar to that in Scandinavian countries; and, (v) state control in "strategic" natural resource industries increases the state's share in output; this is similar to what is observed in other resource-rich transition economies, as shown by available EBRD data.

Although we do not evaluate whether the current size of the Russian state is optimal or not, our results together with earlier estimates suggest that the state's footprint in the economy did not increase because of an expanded size. In other words, instead of focusing in large changes in the state's size and their impact on growth, as the Armeiy-Barro type of analysis does, we need to look instead on how the current state's size and its structure may be affecting (positively or negatively) the way the economy works.

4.5 State's Size, Concentration and Competition

In broad terms, one can look at whether the state's size affects concentration and competition, either as a supplier of goods and services, or while procuring them in the marketplace.

²⁴The reported estimates exclude entities with foreign and state participation, which are relatively few. Preliminary calculations suggest that including these entities in the state's perimeter would increase the state's size by about 1 percentage point. The influence of the state in these entities is likely to be more muted than in those classified as "Mixed Russian".

²⁵Available data suggests that, however, the state's share in employment has decreased since the early 2000s.

The Russian regulatory framework recognizes that private companies do not compete on equal terms with state companies, which enjoy state support. Policies call to decrease the number of state entities, and tasks the Federal Anti-Monopoly Service (FAS) to evaluate market competition by ensuring that every economic sector contains no less than three firms (one of which should be privately-owned); that the number of breaches of anti-monopoly legislation by the state decreases; and, that the share of SMEs in state procurement (both of government and SOE's) increases.

Russian legislation to protect and promote competition aims at preventing and suppressing monopolistic activities and unfair competition, and limiting the state's role in restraining competition. The Federal Anti-Monopoly Service (FAS) administers and enforces anti-monopoly legislation; regulates prices of natural monopolies; controls procurement of both the government and SOEs, including defense; and controls compliance with the law on foreign investment in strategic industries. The law prohibits the abuse of a dominant position, including by the state. FAS assesses competition in goods markets to detect a dominant position of a firm (or group of firms) or other factors damaging competition. Investigations are initiated to examine violations of anti-monopoly legislation; to approve mergers and acquisitions that may violate economic concentration benchmarks; and to decide on partition of firms. FAS also controls compliance with the law regulating natural monopolies. Competition-restricting agreements (cartels) could be punished by criminal penalties, including prison terms.²⁶

From the supply side, the Russian state's size contributes to concentration in several economic sectors. Table 5 shows that the state is more present in those sectors with the highest level of concentration (as measured by the Gini Coefficient).²⁷ The state's share is large in sectors deemed strategic (oil and gas extraction and processing, defense), in natural monopolies and public services (electricity, water and sanitation, heating, pipeline and railway transportation), in the financial sector (banking and other financial services), and naturally, in public administration, security, health and education.

Many of these sectors are subject to large economies of scale and decreasing marginal costs (natural monopolies, public services, natural resource exploitation), are usually concentrated sectors subject to state regulation, and in many cases, some state presence. A large presence of the state in the banking sector is more unusual. IMF (2018) describes that over two-thirds of Russia's banking system is dominated by state-owned banks (divided into development institutions, commercial banks, and hybrid banks).²⁸ It finds that despite the advantages that state-owned banks enjoy with respect to private banks (implicit and explicit state guarantees and access to relatively cheap

²⁶FAS is part of Federal Government, under the Prime Minister, who appoints its head. To assess competition, FAS defines the perimeter of the market; calculates concentration levels (using concentration ratios or the Herfindahl index); and, diagnoses a dominant position of a firm (a group of firms) on a case by case basis. A market share below 35 percent is usually not considered dominant, while a share above 50 percent is. FAS and CBR are responsible for ensuring competition in the financial sector, and they developed a road map to that end. They jointly establish criteria to detect dominant market positions, and to approve mergers and acquisitions. FAS evaluates whether the price of a financial service reflects monopolistic conditions.

²⁷Table 5 does not include banking sector data, a highly concentrated sector where, as it will be discussed below, state-owned banks play a large role. Other measures of economic concentration, like the Herfindahl index, are less appealing, as reporting units are considered individually. For instance, Gazprom holding is composed of more than 100 subsidiaries operating in extraction, refining and gas transportation. The consideration of holdings instead of each individual company should presumably result in higher measures of concentration. This is recognized by, e.g., Guriev and Rachinsky (2005) who, when analyzing market concentration, focus on market shares of individual owners rather than establishments.

²⁸The largest three state-owned commercial banks groups (50 percent of the system's assets), operate with no policy mandate and in similar market segments with private banks. A hybrid state-owned agricultural bank, with a policy mandate to focus on agribusiness, also engages in broader commercial activities. The state development institution does not compete with commercial credit institutions and does not collect retail deposits, has a broad policy mandate. The state's share in the banking sector increased in 2017, after the Central Bank rescued some large private banks.

government deposits, among other), most state-owned banks (except the largest) have lower profitability than private banks.

Moreover, Table 5 shows that economic concentration is high even in sectors in which the state's presence is relatively low, which is in line with results in Guriev and Rachinsky (2005). The state's share in economic sectors with the least economic concentration is on average quite low, but even in these cases economic concentration is relatively high, with Gini coefficients above 0.80 in most economic sectors.

Guriev and Rachinsky (*ibid.*) argue that high market concentration is explained by the presence of large horizontally and vertically integrated groups, dominating the largest industrial sectors. They further argue that concentration in these sectors should not be entirely detrimental to competition, because most of them are subject to global competition, and although they are large by Russian standards, none of them is a dominant global player (though they are important global players in oil and metals). They conclude that antitrust policies appear less important than competition policy ensuring a level ground field for all, as emphasized by Rajan and Zingales (2003). This seems to be in line with Treisman (2016), who argues that since the mid-2000s, the leading threat to the wealth of owners of large Russian conglomerates are market forces (despite of the fact that domestic market competition can still be strengthened).²⁹

Concentration appears to be more an issue from the demand side. As emphasized in Section 4.4, although the general government is not large by international standards, the relatively large SOEs result in a significant volume of state procurement. Indeed, total state procurement in Russia (excluding procurement of military equipment) represented 28.5 percent of GDP (on average) in 2015-18.³⁰

In this regard, government procurement legislation in Russia recognizes that the state's demand of goods and services is large, and that it can have a significant impact on the economy. The system aims at ensuring the accountability, efficiency, fairness, transparency, and effectiveness of state purchases. Procurement is also used for SME development, as SMEs enjoy a 15 percent quota. The system is designed to support competition by ensuring the largest number of potential suppliers, and implementing all procurement via anonymous electronic auctions (to become mandatory in 2019). Rules exist to ensure transparency and free access for state procurement, although special regulations apply for defense purchases. The Ministry of Finance controls contract execution and bidding prices, while FAS is tasked with the protection of competition (preventing bid rigging, conflicts of interest, and corruption). The Accounting Chamber controls procurement contracts *ex-post*.

Government procurement is also used to support the development of Russian manufacturing, limiting somewhat foreign competition. This is done through domestic content rules and price preferences. Restrictions on foreign goods and services exist in the form of "third is a crowd" rule (a foreign bid is ruled out in case there are bids by two Russian suppliers or the Eurasian Economic Union, EAEU). Russian suppliers enjoy a 15 percent price preference. In general, when preferences are used, procurement aims at Russian producers competitive in external markets.

SOEs procurement rules are more flexible than those for the government. The law regulates procurement by SOEs, state-regulated entities (including utility companies, monopolies), and entities

²⁹Guriev and Rachinsky (2005) point out that many of these concentrated sectors have economies of scale, and are where business empires originated in many countries in the late nineteenth century and the early twentieth century. They explain that quite a few countries experienced a period of high ownership concentration, but then eventually moved beyond it.

³⁰The source for these figures is the Russian "Unified Information System on State Procurement", and WTO (2016).

receiving state support (subsidies, credits, grants), among other. SOEs include parent companies and subsidiaries with a state's share higher than 50 percent. FAS decides on the application on the law.³¹ The law sets rules for SOEs' procurement including SME quotas (18 percent of total purchases), innovation support, and publication of procurement plans for five years ahead. Criteria to identify SMEs is the same as with government procurement. The law also sets information disclosure requirements and mandates SOEs to publish internal procurement regulations (resulting in more freedom to choose procurement types), and to implement procurement plans according to them.

Most SOE procurement contracts are settled through non-competitive methods. This is not a surprise as legislation allows SOEs the use of such methods. Concretely, only 4 percent of SOEs' procurement in 2017 was made via competitive methods (i.e., using tenders and auctions); 31 percent was concluded through single-supplier methods; while about 65 percent was made via other non-competitive methods (numbering about 5000 various procurement types), resulting in more than 95 percent of non-competitive procurement contracts.³² In volume terms, single-supplier procurement accounted for more than 50 percent of total procurement. To increase transparency and prevent collusion, the law regulating SOE procurement was amended to streamline and itemize competitive and non-competitive procurement methods.³³ Over 50 percent of SOEs' purchases were made by the top 5 largest SOEs (including Rosneft and three of its subsidiaries, as well as Russian Railways).

The effective use of competitive methods is somewhat better in government procurement, but supplier concentration is nonetheless high. The share of single-supplier procurement (around 25 percent at the stage of pre-announcement), increased to 60 percent of implemented procurement, as the law allows purchases if the auction fails but one appropriate bid was submitted (or remained after removing bids that did not fit formal requirements). A new auction occurs either when no bids were submitted, or no bids satisfied the requested requirements. Results also suggest strong supplier concentration, with 4 percent of suppliers accounting for 80 percent of government purchases. Electronic auctions were used for 55 percent of tender notices (CSR (2017)).

Competition in state procurement is further impaired by a partial definition of SMEs. This is the case, because although procurement legislation mandates SME quotas for state purchases, a subsidiary of a large holding fitting the legal SME definition qualifies to fill SME quotas.

Summarizing, the relatively large state means that stronger procurement rules, procedures, and controls, are essential to promote competition and efficiency. Legislation on government procurement recognizes that the state's demand of goods and services is large, and that it can have a significant impact on the economy. However, most SOE procurement occurs through non-competitive methods and supplier concentration is high. The allowed use of SME quotas by subsidiaries of larger firms, and the unconstrained use of price advantages for domestic suppliers, both limit market access, efficiency, and value chain development.

4.6 State's Size and Efficiency

We discuss in Section 2 that the efficiency and effectiveness with which the state operates contributes to how well the economy performs. State activity in fulfilling typical government func-

³¹However, FAS does not compile nor maintains a register of firms with a state's share (directly or indirectly) larger than 50 percent.

³²See GoR (2018).

³³Amendments became effective in 2018. Clarity on whether a procurement type is competitive or not should allow for a better state monitoring of SOEs corporate procedures.

tions, and as owner-manager of SOEs are both key inputs for overall economic performance. This section briefly discusses only the latter.

We look at basic performance indicators (Return-on-Assets, ROA; and, Return-on-Equity, ROE) computed from balance sheet data of a large cross section of Russian legal entities. A comparison of ROA and ROE in the period 2012–16 between SOEs and privately-owned firms suggest that latter outperform the former in most market sectors, and across activities with both low and high value added. Table 6 shows a subset of these results (ROAs for a few economic activities, at the 2-digit level for 2016). SOE performance appears similar to that of private sector companies in some sectors (e.g., crude oil and gas extraction, oil and coke refining), but in most cases the ROA of private sector firms is higher than that of SOEs. This is valid for both agriculture, manufacturing (e.g., the production of electrical equipment, machinery and equipment), and in public services (e.g., electricity, gas, steam, sewage). Better performance by privately-owned companies is reflected in a cumulative distribution of ROAs that is to the right of that for the state-owned entities, suggesting an empirical distribution of returns for SOEs that is to the left of that of the private sector.³⁴ Although with a different focus, Guriev and Rachinsky (2005) estimate the effect of controlling firms' total factor productivity growth by owner's type. Using early 2000s data, they find that performance by firms controlled by the federal and (especially) regional governments lag that of large private Russian conglomerates, and foreign-owned firms.

The distribution of firms per economic sector and their relative size suggests that there is large room for consolidation and efficiency gains. Table 7 shows the number of reporting state-owned enterprises per economic sector; the table also identifies the subsidiaries of the largest 20 non-financial SOEs that were added to compute the state's share in Section 4.4. Out of about 28,500 SOEs operating in market sectors, around 500 represent more than 85 percent of revenues, suggesting that many smaller firms operating in similar economic sectors could be consolidated with resulting efficiency gains. Better governance and management of state property could also increase efficiency. A large number of these SOEs are not joint stock companies (JSCs), but rather "unitary enterprises": A commercial non-corporate legal entity which is assigned property owned by the state or a municipal government (Heindler (2018)). Federal ministries and sub-federal governments use unitary enterprises to implement government functions.³⁵ While federally-owned unitary enterprises have declined in number since the 1990s, those at the regional level have significantly increased. Unitary enterprises are generally less transparent than JSCs, and often create a conflict of interest for the state (which is simultaneously property owner, consumer of the items produced, and market regulator). The absence of efficient corporate governance (such as a Board of Directors) complicates their control, and limited bankruptcy risks weaken their performance. Moreover, they could damage competition, especially in local markets, as they enjoy easier access to public procurement than other entities, as well as access to free state capital.³⁶

As a more competitive market place is developed and state management becomes more efficient, a clear exit strategy for sectors where there is no economic rationale for state ownership (including the banking sector), should be developed. The strategy should be competition-enhancing, as economic concentration is already high in most market segments. In this regard, the advantages and disadvantages of further privatization need to be carefully weighed in. In the midst of the transition years, Brada (1996) argued that emphasis should not be placed only in privatization, but that

³⁴Results for different years and for a larger cross section of sectors are available upon request

³⁵In Unitary Enterprises, assets remain under state or municipal ownership, which have the right for a profit share.

³⁶In 2014, the Federal Government adopted a roadmap to liquidate all federal unitary enterprises in a period of 5 years, but the absence of a single policy at the regional and municipal level remains a problem. FAS proposed either their liquidation or their conversion into JSCs (i.e., a form of corporatization), including by partial privatization.

market liberalization, hard budget constraints, and prudent macroeconomic policies are also essential for both resource allocation efficiency and the effective governance of firms. While arguing that privatization can be critical to increase efficiency and reduce state influence on firms, Boycko et al. (1993) recognize that competition policies, improving corporate governance, and eliminating state control of capital supply and allocation are as important. Acemoglu and Robinson (2013) argue that privatization (like deregulation) is proposed to improve economic efficiency and eliminate (government-imposed) distortions, but that at the same time, it may create private monopolies with worse economic consequences than public ownership, while negatively affecting income distribution. Consequently, Acemoglu and Robinson (*ibid.*) stress that a "purely economic approach" in guiding privatization decisions is inadequate, and that the form and the context of privatization are important factors to consider.³⁷

5 Summary and Policy Implications

Our results suggest that the state represented about one third of Russia's GDP in 2016, smaller than in the mainstream narrative but nonetheless significant. The Russian state represents close to 40 percent of formal sector value added and 50 percent of formal sector employment. SOEs are present in most sectors of activity. The state's share in value added was approximated by its share in sales for market activities, and by employment for non-market activities. Estimates include within the state's perimeter the resident subsidiaries of the 20 largest state-controlled non-financial companies, which are generally classified as private in official data. In the last 5 years, the state's share in value added increased significantly in energy and banking, but only slightly overall (from 32 to 33 percent of GDP). These figures are in the same order of magnitude with EBRD's estimates for the period 2005-10. Other metrics provide additional information. Cross country OECD data on state employment suggest that the Russian state is large when compared with a group of advanced and middle-income economies; cross-country data on general government spending (as a ratio to GDP) suggests, however, a relatively small state when compared with peers.

Although we do not evaluate whether the current size of the Russian state is optimal or not, our results together with earlier estimates suggest that the state's footprint in the economy did not increase because of an expanded size. Thus, we looked instead on how the current state's size and its structure may be affecting (positively or negatively) the way the economy works. Indeed, the state leaves its footprint in the form of lower efficiency in the use of resources, and in reduced market competition.

The Russian state contributes to concentration in several economic sectors, though concentration is high even in sectors with low state presence. Comparing the top 15 most concentrated economic activities with the 15 least concentrated shows that the state has a stronger presence in the former than in the latter. SOEs' presence is large in strategic sectors (energy, defense) and natural monopolies (electricity, gas, water, and railway transportation), but also in the financial sector. Even in sectors in which the state's presence is not large, economic concentration is high, despite the work of the Federal Anti-Monopoly Service (which administers and enforces anti-monopoly legislation). Given the relatively large state, procurement policies are essential to promote competition. State procurement represented about 28.5 percent of GDP in 2015-18. Legislation on government procurement recognizes that the state's demand of goods and services is large, and that

³⁷Hoff and Stiglitz (2004) analyze the interdependence between economic and political choices under conditions favorable to the emergence of the rule of law after privatization. Biais and Perotti (2002) analyze conditions where privatization may shift voters views.

it can have a significant impact on the economy. However, most SOE procurement occurs through non-competitive methods and supplier concentration is high. Moreover, the law allows for SME quotas to be used by subsidiaries of larger firms and the unconstrained use of price advantages for domestic suppliers, both of which limit market access, efficiency, and value chain development.

SOEs appear to underperform relative to non-state firms in a variety of economic activities. A comparison of gross returns on assets in various market activities at the two-digit level between state and non-state entities shows that the cumulative distribution of returns for SOEs is often to the left of that for non-state entities. Lower competition and efficiency are not the only channels through which the state's footprint may be negatively affecting economic performance. The large state presence in the financial sector may result in a biased allocation of savings that benefits large players, both state and non-state, further supporting economic concentration. Increased competition and private initiative should boost economic growth. State ownership creates, at times, a conflict of interest (owner and regulator) undermining competition. As a more competitive market place is developed and state management becomes more efficient, a clear exit strategy needs to be developed for SOEs operating in sectors where there is no economic rationale for state ownership, including the banking sector. The strategy should be competition-enhancing, as economic concentration is already high in most market segments. Although privatization may support private initiative, actions in this regard need to be carefully sequenced as outright privatization will likely result in more economic concentration. Efforts should be first geared at enhancing competition by promoting market entry, and leveling the playing field in public procurement by reducing supplier concentration and facilitating SME development. In addition, out of about 28,500 SOEs operating in market sectors, around 500 represent more than 85 percent of revenues, suggesting large room for consolidation, and efficiency gains through better management of state property. Conversion of the numerous regional unitary enterprises into JSCs should contribute to increase transparency, efficiency, and competition.

Table 1: Russia: Overview of State Finances, 2012 (Percent of GDP)

	General Government				Public Corporations ²				Consoli- dation	Public Sector ⁶ (Consolidated)
	Central ¹	Sub- national	Consoli- dation	Total ⁶ (Consolidated)	Non- Financial	Financial	Consoli- dation	Total ⁶ (Consolidated)		
Net Lending/Net Borrowing	2.7	0.4		3.0	-0.8	0.8		-0.1		3.0
Revenue	30.4	25.0	-10.9	44.4	23.1	5.6	0.0	28.6	-1.7	71.3
Expenditure	27.7	24.6	-10.9	41.4	23.9	4.8	0.0	28.7	-1.7	68.4
Net Financing	2.7	0.4		3.0	-0.8	0.7		-0.1		2.9
Acquisition of Financial Assets	3.6	1.4	-0.7	4.3	0.2	10.9	-0.8	10.3	-1.1	13.5
Acquisition of Liabilities	1.0	1.0	-0.7	1.2	1.0	10.2	-0.8	10.4	-1.1	10.5
Net Financial Worth	16.2	1.9		18.1	-31.2	-4.9		-36.1		-18.0
Financial Assets	30.5	8.7	-5.0	34.2	17.0	73.8	0.0	90.8	-25.2	99.7
Liabilities ⁵	14.3	6.8	-5.0	16.1	48.1	78.7	0.0	126.9	-25.2	117.7
<i>Of which: Shareholders' equity</i>					32.4	11.3		43.7	-11.4	32.3
Net Worth (excl. pensions)³	240.8	22.7		263.5	0.0	0.0		0.0		263.5
Nonfinancial Assets ⁴	224.6	20.8		245.4	31.2	4.9		36.1		281.5
<i>Of which: Subsoil assets</i>	200.0	0.0		200.0						200.0
Alt. Net Worth (incl. pensions)	-41.2	22.7		-18.5						-18.5
Pension liabilities	282.0	0.0		282.0						282.0

1/ Including Social Security Funds, consolidated

2/ Estimates based on the 26 largest corporations by liability.

3/ Net Worth refers to the difference between assets and liabilities (including shareholders' equity). For public corporations it equals to zero when the market price of equities is not available.

4/ Central government: including PPPs assets of 2% of GDP (estimation)

5/ Central government: including government pension liabilities of 3% of GDP and PPPs of 2% of GDP (estimation)

6/ The totals are consolidated, i.e. intra-flows/stocks within the related sector are eliminated.

Source: IMF (2014)

Table 2: State's Share in Transition Economies: Russia in Context

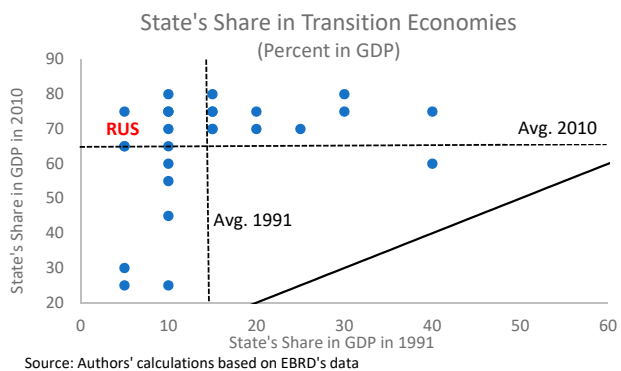
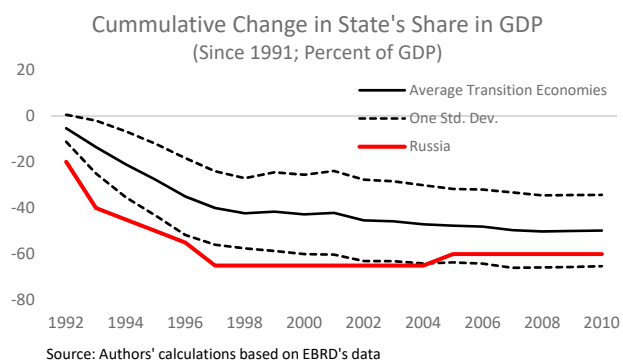
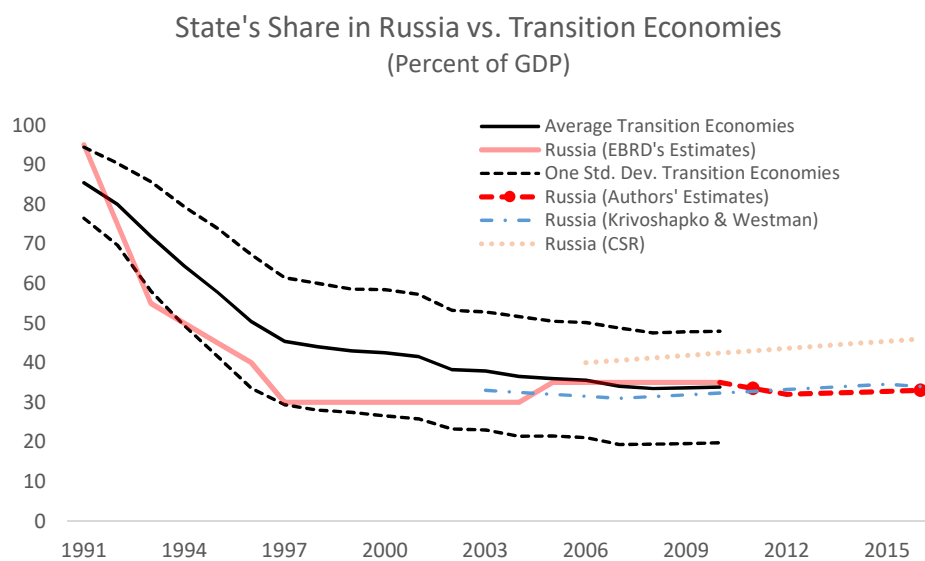


Table 3: The Size of the Russian State (Value Added Share, Percent)



Source: Authors' calculations and EBRD's data

Table 4: The Size of the Russian State (Value Added Share, Percent)

2016

Economic Sector	Raw Sales Shares	Adjusted Sales Share	Assets Share	Labor Share	Total
Market Sectors					
Agriculture, Hunting, Forestry, Logging	2	2			
Fishing, hatcheries, and related services	2	2			
Mining and Extraction	4	44			
Manufacturing	19	21			
Electricity, gas, steam and hot water	36	52			
Construction	4	4			
Wholesale and retail trade; Repairs	4	9			
Hotels and Restaurants	3	5			
Transport and Communications	34	48			
Finances			59		
Real estate, renting and related services	9	9			
Non-Market Sectors					
Public Administration, Defense, Social Security				99	
Education				92	
Health and Social Work				87	
Other Communal and Personal Services				48	
Households with employed persons				0	
Gross Value Added					33

2012

Economic Sector	Raw Sales Shares	Adjusted Sales Share	Assets Share	Labor Share	Total
Market Sectors					
Agriculture, Hunting, Forestry, Logging	4	4			
Fishing, hatcheries, and related services	3	3			
Mining and Extraction	8	34			
Manufacturing	18	20			
Electricity, gas, steam and hot water	37	57			
Construction	5	6			
Wholesale and retail trade; Repairs	6	11			
Hotels and Restaurants	14	16			
Transport and Communications	38	52			
Finances			50		
Real estate, renting and related services	10	11			
Non-Market Sectors					
Public Administration, Defense, Social Security				100	
Education				93	
Health and Social Work				90	
Other Communal and Personal Services				51	
Households with employed persons				0	
Gross Value Added					32

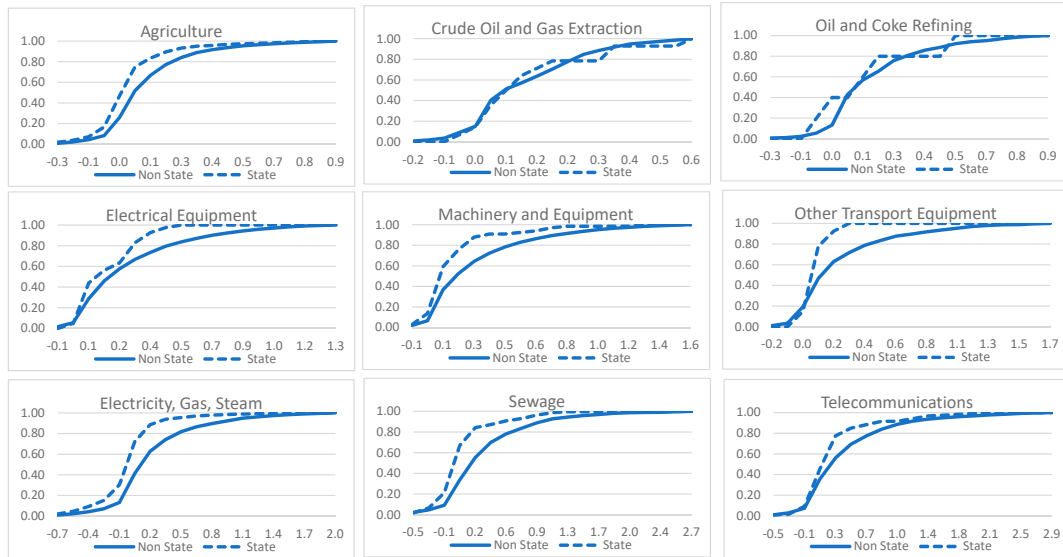
Source: IMF staff on the basis of official data.

Table 5: Russia: Market Concentration and State Ownership

15 Most Concentrated			15 Least Concentrated		
Economic Sector (2-digit level)	Gini	State's Share	Economic Sector (2-digit level)	Gini	State's Share
1 Telecommunications	0.95	22	1 Waste Disposal	0.70	26
2 Management Consulting	0.95	40	2 Security and Investigation	0.71	16
3 Insurance-Pension Funds	0.95	53	3 Hotels	0.78	5
4 Postal-Courier Services	0.95	73	4 Sewage	0.78	34
5 Electricity, Gas, Steam	0.94	57	5 Restaurants	0.79	6
6 Metallurgical Production	0.94	3	6 Employment and Recruiting	0.81	0
7 Land-Pipeline Transport	0.94	69	7 Production of TV, Films	0.82	2
8 Chemicals Production	0.94	14	8 Building Maintenance	0.82	6
9 Beverage Production	0.94	5	9 Coal Mining	0.82	3
10 Motor Vehicles	0.93	2	10 Forestry	0.83	3
11 Oil and Coke Refining	0.93	15	11 Real Estate	0.84	8
12 Air Transport	0.93	47	12 Specialized Construction	0.84	2
13 Crude Oil and Gas Extraction	0.93	67	13 Furniture Production	0.84	0
14 Research and Development	0.92	51	14 Polygraphic-Copying Information	0.85	3
15 Other Transport Equipment	0.92	55	15 Veterinary Activity	0.85	1
Median	0.94	46.5	Median	0.82	3.2

Source: IMF Staff on the basis of official data.

Table 6: Russia: Economic Performance and State Ownership



Note: A Curve to the left indicates lower cummulative returns.

Source: IMF Staff on the basis of official data

Table 7: Russia: Number of State-Owned Legal Entities (Official and Expanded Figures)

	State	Subsidiaries	State + Subsidiaries
<i>Market Activities</i>	28,125	445	28,570
Agriculture, Fishing, Logging	1,692	0	1,692
Mining	131	60	191
Manufacturing	2,015	43	2,058
Electricity, Gas, Hot Water	2,774	54	2,828
Water Supply and Sanitation	2,779	1	2,780
Construction	1,066	12	1,078
Trade and Repairs	2,119	72	2,191
Transportation & Storage	1,973	49	2,022
Hotels and Restaurants	697	6	703
Information & Communication	1,455	47	1,502
Financial & Insurance	490	13	503
Real Estate	5,026	16	5,042
Professional, Scientific & Technical Professions	5,095	67	5,162
Administrative & Related Services	813	5	818
<i>Non-Market Activities</i>	4,012	4	4,016
Total	32,137	449	32,586

Source: Authors' calculation on the basis of official data

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