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STATE-OWNED ENTERPRISES: TRADE EFFECTS AND POLICY IMPLICATIONS

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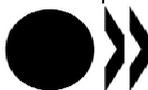
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ABSTRACT

With a growing integration via trade and investment, state-owned enterprises (SOEs) that have traditionally been oriented towards domestic markets increasingly compete with private firms in the global market place. Three principal questions emerge from the international trade perspective: (1) How important is state ownership in the global economy; (2) What types of advantages granted to SOEs by governments (or disadvantages afflicting them) are inconsistent with the key principles of the non-discriminatory trading system; and (3) What policies and practices support effective competition among all market participants? Using a sample of world's largest firms and their foreign subsidiaries, this paper shows that the extent of state presence in various countries and economic sectors is significant. Moreover, many of the countries with the highest SOE shares and economic sectors with strong SOE presence are intensely traded. The potential for economic distortions is hence large, if some of these SOEs benefit from unfair advantages granted to them by governments—an allegation that is often raised in political and business circles. Existing information on such advantages is often either anecdotal or limited to individual cases. As a groundwork for future analysis and building on the existing information and literature, this paper presents a conceptual discussion of how potential SOE advantages can generate cross-border effects. It also describes several cases when actions of SOEs as well as advantages allegedly granted to them by governments have been contested as inconsistent with national or international regulations, albeit with varying degree of success. This may be partially explained by the fact that existing regulatory frameworks that discipline some forms of anti-competitive behaviour of SOEs have been designed with domestic objectives in mind or were conceived at times when the state sector was oriented primarily towards domestic markets. The survey of existing rules at the national, bilateral and multilateral levels presented in this paper is a first step in determining whether there is a need to fill any gaps and in finding the most constructive ways of doing so.

Keywords: international trade, international investment, state-owned enterprises, ownership, WTO, competition policy, competitive neutrality

JEL classification: F13, F14, F21, F23, G38

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Executive Summary

The state sector has always been an important element of many economies, including the most advanced ones. There are legitimate economic and non-economic reasons for state ownership and views on the role of government in the economy may differ across countries and political systems. State-owned enterprises (SOEs) can act on the basis of commercial considerations, or they may have non-commercial priorities. In certain circumstances they can be granted advantages that can potentially hinder market access in importing countries or affect export competition. These advantages can take the form of direct subsidies, concessionary financing, state-backed guarantees, preferential regulatory treatment, exemptions from antitrust enforcement or bankruptcy rules, and others. Having effects on the global market, these may be incompatible with the principles of the WTO rules-based multilateral trading system, where countries have undertaken market access and other obligations under the condition of non discrimination and in respect of market principles.

The key questions from the trade perspective are thus:

- What are the concerns associated with cross-border activity of SOEs?
- What types of advantages granted to SOEs by governments may be inconsistent with the key principles of the non-discriminatory trading system?
- How important is state ownership in the global economy?
- What policies and practices support open markets for SOEs' legitimate international trade and investment and effective competition among all market participants?

Answering the first two of these questions exhaustively requires a comprehensive cross-country analysis of the types of advantages enjoyed by SOEs and, ideally, quantification of their cross-border effects. Existing information on such advantages is often either anecdotal or limited to individual cases. A compilation of new data would require further detailed research. As an initial approach and groundwork for future analysis, building on the existing information and literature, this paper presents a discussion of cross-border effects of SOEs and describes several examples of the use (or alleged use) of such advantages in the cross-border context.¹

To shed light on the third question, this paper uses a sample of world's largest firms and their foreign subsidiaries to assess the relative importance of SOEs by country, by broad sector of economic activity, and to consider their international trade and investment activities.

To shed light on the fourth question, the paper reviews existing policies that can be used to deal with undesired cross-border effects of SOEs.

The annex accompanying this paper [TAD/TC/WP(2012)10/ANN/FINAL] provides an overview of SOE sectors and SOE policies in different countries, including policies related to international expansion of SOEs. It presents a selection of case studies, which illustrate some of the regulatory difficulties arising from competition between SOEs and privately owned enterprises in international markets. Finally, it expands on some of the details of policies that can be used to deal with undesired cross-border effects of SOEs.

¹ For recent work on the role of SOEs in international investment see: "A Stock-taking of International Investment by State-Owned Enterprises and of Relevant Elements of National and International Policy Frameworks", DAF/INV/WD(2013)5.

Concerns related to cross-border activities of SOEs

There are several reasons why SOEs may be increasingly expanding to foreign markets, some of them relating to government policies *per se* and some to internal factors concerning these firms as well as dynamics of markets in which SOEs operate. From the trade perspective, the reasons for international expansion of SOEs are pertinent not in and of themselves but because of the effects associated with such expansion on competitive conditions in international markets

First, some countries may be using SOEs as a vehicle for pursuing non-commercial or strategic objectives and this may involve anti-competitive effects for their trading partners. Second, when SOEs expand to international markets, a number of issues which in a domestic context can either be contained or are not considered as problems, move to the forefront and become an international concern. Third, certain schemes of compensating SOEs for their public services obligations at home, which are proportional to the business volume rather than public service obligations themselves, may create a distortive and government supported incentive for commercial expansion, including to foreign markets. Fourth, support for SOEs in pursuit of economies of scale may be justified on general economic grounds from a domestic perspective but if this involves increasing market shares abroad it may be perceived differently in different constituencies.

All these objectives of SOEs can be pursued by governments by granting advantages and privileges such as: direct subsidies, concessionary financing, state-backed guarantees, preferential regulatory treatment, exemptions from antitrust enforcement or bankruptcy rules, and others. Each of these advantages can be seen as having a direct or indirect subsidisation effect through a reduction of fixed or variable costs of production. Consequently, SOEs benefitting from such advantages would have a competitive edge over foreign (and domestic) private competitors in home or international markets.

Evidence presented in this paper indicates that various actions of SOEs as well as advantages allegedly granted to them by governments, have at times been contested as being inconsistent with national or international regulations, with varying degree of success. This illustrates, first, that governments have at times pursued SOE strategies that were seen by others as being illegitimate or having anti-competitive effects. Second, it appears that some of these allegations were without merit or, if not, that the existing legal frameworks may be only partially fit to deal with cross-border effects of SOEs' activities.

SOEs in the global economy

Overall, the public enterprise sector in the OECD area has, overtime, become significantly smaller than in many emerging countries. Still, SOEs remain important across the board in a few OECD economies and in particular in network industries (energy, telecommunications, and transport) and the banking sector. In terms of international trade and investment, it is difficult to identify explicit strategies of OECD governments to expand the activity of their SOEs abroad. This does not mean that the governments have no means of shielding an SOE or a national champion from foreign competition, or of helping facilitate their expansion abroad.

Among the emerging countries considered in this paper, state presence in the economy remains significant, and has in some cases even increased in recent years. Some of these economies are seen to use state ownership to further developmental and other strategic goals. The majority of large SOEs are active internationally and engaged in trade and some emerging country governments pursue explicit policies of SOE internationalisation.

This paper uses multiple sources of information to develop a measure of state ownership covering companies most relevant to international trade and investment, and one that ensures maximum comparability across countries, sectors and forms of ownership. *Forbes*© *Global 2000* list of the world's

largest 2000 public companies is used as the principal source of financial information.² Importantly, these global firms are parent to more than 330 000 domestic or foreign subsidiary firms which are also covered in the analysis.

Of the 2000 largest companies, 204 have been identified as majority SOEs in the business year 2010-2011 with ownership spread across 37 different countries. The numbers vary significantly by country, with China leading the list (70 SOEs), followed by India (30), Russia (9), the United Arab Emirates (9) and Malaysia (8). The combined sales of the 204 SOEs amount to USD 3.6 trillion in the business year 2010-2011, representing more than 10% of the aggregate sales of the 2000 largest companies and exceeding the 2010 Gross National Incomes (GNIs) of countries like the UK, France or Germany. The value of sales (USD 327 billion) of these SOEs is equivalent to almost 6% of world GDP. Their combined market value (USD 4.9 trillion) corresponds to 11% of global market capitalisation of all listed companies.

China, the United Arab Emirates, Russia, Indonesia, Malaysia, Saudi Arabia, India, Brazil, Norway and Thailand are the ten countries with the highest *Country SOE Shares* (CSS).³ The OECD countries with a non-zero CSSs are Norway, France, Ireland, Greece, Finland, Korea, Belgium, Sweden, Austria and Turkey.⁴ The CSS does not reflect the share of the state in the whole economy but among a country's top firms and as such is a robust proxy for the relative importance of the state among a country's most international business players. Many of the countries with the highest SOE shares are also important traders. This is most notably the case for China—the world's second largest exporter, accounting for more than 10% of world's merchandise exports in 2010, and simultaneously the country with the highest country SOE share. This provides an indication as to why China is often mentioned in the context of possible cross-border effects of SOEs. The seven countries following China in terms of high SOE shares (the United Arab Emirates, Russia, Indonesia, Malaysia, Saudi Arabia, India and Brazil) together accounted for an additional 10.4% of world trade. Thus, the eight countries with the highest SOE shares collectively account for more than 20% of world trade.

The prevalence of SOEs also varies considerably across industrial sectors. Statistics on SOE sales, assets and market value among the world's largest companies have been used to calculate *Sectoral SOE Shares* (SSS). The five sectors with the highest shares are: *mining support activities*; *civil engineering*; *land transport and transport via pipelines*; *mining of coal and lignite*; and *the extraction of crude petroleum and gas*. Contribution of OECD SOEs to these shares is generally small, while the BRIICS contribution is significant, notably in natural resources and manufacturing.

Several manufacturing sectors with moderate SOE shares account for significant chunks of world merchandise trade. For example, the *manufacture of motor vehicles, trailers and semi-trailers* sector, with an average SOE share of 20%, accounts for close to 12% of world trade. Sectors such as *manufacture of fabricated metal products, except machinery and equipment*; *manufacture of basic metals*; *manufacture of electrical equipment*; *manufacture of machinery and equipment n.e.c.*; and *manufacture of other transport equipment* all have SOE shares above 7%; together they account for up to 60% of world merchandise trade of those goods.

The services sectors with the highest SOE shares also account for significant shares of world services trade. Examples include *civil engineering* and *architectural and engineering activities; technical*

² The data has been augmented by the OECD Secretariat with additional ownership, structural, financial and foreign subsidiary information from the *Orbis* database and, for ownership, from other primary sources. Robustness checks have been performed using a sample of more than 9 000 world's largest firms.

³ CSS are computed as equally weighted averages of SOE shares of sales, assets and market values among each country's top ten companies.

⁴ Only countries that are represented by at least 10 firms in the database are considered.

testing and analysis, two important sub-categories of *other business services*, which accounts for approximately 21% of world services trade. Transportation services, which include *land transport and transport via pipelines* as well as *air transport*, account for another 20% of this trade. *Financial service activities, except insurance and pension funding* account for approximately 7% of total services trade. Here, again, emerging economies' SOEs are, with some exceptions, the main contributors to the high sector SOE shares.

Overall, both for raw materials, merchandise and services, many sectors with strong SOE presence are in fact intensely traded. This suggests that there is a potential for economic distortions in world markets if the SOEs operating in these sectors benefit from unfair advantages granted to them by governments. In particular, the large state presence and international orientation of SOEs in some emerging economies—which use state ownership as an element of economic development policy, but whose regulatory frameworks are less developed and thus cannot ensure a consistent application of corporate governance and transparency standards—highlight the need for enhanced dialogue on cross-border effects of state ownership going beyond the OECD membership.

Existing approaches dealing with anti-competitive cross-border effects of SOEs

Regulatory frameworks that counter some forms of anti-competitive behaviour by SOEs in international markets, and which are discussed in this paper, include: OECD Guidelines on Corporate Governance of SOEs (OECD SOE Guidelines); national competitive neutrality frameworks (CNFs); national competition laws; the WTO Agreements; preferential trade agreements (PTAs); and bilateral investment treaties (BITs).

Some of these regulatory frameworks have been designed with domestic objectives in mind or were conceived at times when the state sector was oriented primarily towards domestic markets. Thus, they often offer only partial SOE provisions. Others contain more modern SOE disciplines, which however typically concern a small number of countries. Finally, various frameworks also differ considerably in the level of required implementation and effective enforcement capacity.

- National antitrust law can in principle be used to deal with the abuse of dominant position by SOEs, including in the international context, or to prevent anticompetitive effects associated with merger and acquisition activities of SOEs. However, traditional antitrust standards apply to profit maximising firms and competition laws of most countries aim at preventing price gouging. They are not aimed at preventing subsidies and artificially low prices—except where these are manifestly motivated by predatory strategies.
- OECD SOE Guidelines recommend the maintenance of a level playing field among state-owned and privately owned incorporated enterprises operating on a commercial basis, by listing and elaborating on a number of guiding principles in a number of areas. Yet, the Guidelines do not explicitly consider nationality of SOE competitors, are voluntary in nature and are not subject to regular assessment of implementation. They can be a useful tool for advocacy-oriented approach to minimising unwanted cross-border effects of SOEs among countries committed to the reform of the state sector, or as a benchmark to assess the quality of potential SOE investors, but they fall short of providing binding rules seen typically in international trade or investment agreements.
- Competitive neutrality arrangements introduced by some OECD jurisdictions aim to mitigate or eliminate competitive advantages of SOEs, including with respect to taxation, financing costs and regulatory quality. Some of the state-of-the-art competitive neutrality arrangements, most notably those of the EU and Australia, offer effective tools to level the playing field, including in respect of certain aspects of cross-border competition. Yet, far from all OECD countries have such arrangements in place and, where they exist, their scope, ambition and enforcement differ widely.

- In principle, WTO rules impose obligations on Member governments as opposed to private entities. Nevertheless, some WTO rules do address behaviour by certain non-governmental entities, some of which may be SOEs. In addition, WTO rules are generally ownership-neutral; the disciplines which they impose with respect to government regulations and actions do not distinguish between situations where the provider of the goods or services covered by the regulation or action is a public or a private entity.
 - For example, SOEs are covered by WTO subsidy disciplines when they are subsidy recipients, but when they act as conveyors of subsidies (e.g. providing cheaper inputs to other firms) the application of subsidy disciplines depends on the facts of each case. Also, services sectors, often with significant SOE presence, are disciplined as a general matter by existing WTO subsidy rules.
 - GATT Art. XVII on State Trading Enterprises (STEs) and its understanding specifically aim to limit the degree to which such enterprises, some of which may be SOEs, are used as vehicles to influence international trade. However, neither STEs nor state trading are clearly defined and this may in some cases represent a handicap in the application of the Article.
 - Some of the GATS provisions also help discipline SOEs. For example, GATS Art. VIII aims at regulating the behaviour of monopolies, whether public or private. Moreover, other GATS disciplines, such as the national treatment obligation and market access obligations, prohibit favouring domestic entities in certain situations, including SOEs. However, these obligations apply only in sectors where WTO Members have undertaken specific commitments in their GATS Schedules
 - China's WTO Accession Protocol to the WTO has specific disciplines that aim to deal with anti-competitive cross-border effects of SOEs. Yet, doubts have been expressed whether these provisions have sufficiently impeded trade-distorting policies that advantage Chinese SOEs. In the most recent WTO Accession Protocol of The Russian Federation, the discussion of SOE-related disciplines was also substantial, but the accession commitments focus primarily on existing WTO provisions, with the exception of the banking sector.
- Many existing preferential trading agreements include specific provisions on SOEs, attempting to fill gaps in existing multilateral provisions. For example, some agreements explicitly specify that their provisions apply similarly to SOEs, clarify some of the definitional lacunae in the WTO context, or include additional provisions pertaining to services and competition policies.
- Most bilateral investment treaties contain general non-discrimination clauses that can promote competitive neutrality, even though they are not specifically aimed at SOEs. In addition, most BITs refer to both state-state and state-investor relations and in many instances address directly issues of competition in countries with a considerable state presence in the economy. However, even in some of the most advanced BITs, the definition of state enterprises as well as transparency requirements or arbitral proceedings may fall short of imposing clear disciplines.

1. Introduction

1. “The rise of state capitalism—the spread of a new sort of business in the emerging world will cause increasing problems” read the title of the January 2012 special issue of *The Economist*. Indeed, an investigation of the world’s 2000 largest companies—the so-called *Forbes Global 2000*—and their domestic and foreign subsidiaries presented in this paper reveals that more than 10% of these firms are majority state-owned. The aggregate sales of these large, blue chip state-owned enterprises (SOEs) from around 40 OECD and non-OECD countries are equivalent to 6% of world GNI. These companies are among the largest and most influential world enterprises and several important emerging countries have very high shares of state ownership among their largest firms. The state sector has always been a key element of many economies, including of the most advanced ones. So why has state ownership recently come to preoccupy policy makers and business?

2. First, traditionally the state sector has been oriented towards domestic markets. But in a globalized world, characterised by a growing integration of markets via trade and investment, SOEs increasingly compete internationally with private firms. This happens in their domestic markets, in the home markets of the private companies, and in third markets, and often involves upstream or downstream business partners. Second, in some instances, the expansion of the state sector was related to government stimuli in the context of the financial crisis, as a result of which the state sector has grown rather than retrenched. Third, multilateral trade liberalisation under the GATT and the WTO, preferential trading agreements, and unilateral reforms have all resulted in dramatically reduced tariff barriers in developed and developing countries. Today, it is increasingly behind the border barriers (for example, regulatory barriers) that hinder trade, and in some instances these barriers appear to be related to state ownership.

3. On the other hand, there are legitimate economic and non-economic reasons for state ownership and views on the role of government in the economy may differ across sovereign countries and across political systems. So, why is state-ownership of concern to the trade community?

4. The main concern for the trade community is the anti-competitive effects of advantages granted to SOEs. In many countries SOEs obey the same set of rules—or even stricter rules—than their private counterparts, or can in some way be disadvantaged compared to private firms, for instance with regard to public good obligations. However, in many other instances SOEs enjoy government-granted advantages, which can give them a competitive edge over other firms. These advantages can take the form of direct subsidies, concessionary financing, state-backed guarantees, preferential regulatory treatment, or exemptions from antitrust enforcement or bankruptcy rules—to name only some.

5. Anti-competitive cross-border effects that can potentially be generated by SOEs can pose challenges both to private businesses and to the existing policy frameworks designed to foster competitive international markets. Where such damaging effects are significant and difficult to discipline within current legal and policy options, they may trigger commercial tensions and become a source of protectionism. The foreign public may want their governments to impose restrictions or trade barriers to prevent harmful interaction with foreign SOE, possibly resulting in a situation with negative externalities or even in a trade war. Thus there is a basis to call for international co-ordination of SOE policies and regulation. So far, evidence on cross-border effects remains either anecdotal or is limited to studies covering individual cases. Given that internationally active SOEs have caused occasional controversy, a more systematic cross-country analysis seems both timely and necessary.

6. Three principal questions emerge from the international trade perspective: (1) How important is state ownership in the global economy; (2) What types of advantages granted to SOEs by governments (or disadvantages afflicting them) are inconsistent with the key principles of the non-discriminatory trading system; and (3) What policies and practices support effective competition among all market participants?

7. Answering these questions decisively requires a comprehensive cross-country analysis of the types of advantages enjoyed by SOEs and quantification of their cross-border effects. Existing information on such advantages is often either anecdotal or limited to individual cases. A compilation of new data would require further detailed research. As an initial approach, this paper first presents a discussion of cross-border effects of SOEs and describes several examples of the use (or alleged use) of such advantages in the cross-border context. Then, using a sample of world's largest firms and their foreign subsidiaries, the empirical part provides an assessment of the importance of SOEs by country, by broad sector of economic activity, and considers their international trade and investment activities. Subsequently, the paper reviews existing policies that can be used to deal with undesired cross-border effects of SOEs.

8. The annex accompanying this paper [TAD/TC/WP(2012)10/ANN/FINAL] provides an overview of SOE sectors and SOE policies in different countries, including policies related to international expansion of SOEs. It presents a selection of case studies, which illustrate some of the regulatory difficulties arising from competition between SOEs and privately owned enterprises in international markets. Finally, it expands on some of the details of policies that can be used to deal with undesired cross-border effects of SOEs.

2. International effects of SOEs

9. There are various forms of state ownership. The state can either hold various levels of equity⁵ in enterprises incorporated according to normal corporate law, or pass enabling legislation to create a statutory corporation governed by a status outlining its objectives and formal requirements. Multiple definitions of SOEs are applied across countries, which complicates formulation of a meaningful uniform definition of SOEs that would cover the full extent of government control and enable cross-country comparison. Moreover, fostering competitive markets aims not at reducing the extent of state ownership *per se* but at eliminating unfair benefits bestowed by governments which may result in anti-competitive behaviour of state-owned or private firms (Box 1). Bearing these realities in mind, in order to spearhead a methodologically consistent assessment of the role of SOEs in global trade and investment, this paper adopts a working definition of SOE as a majority state-owned enterprise⁶, while also offering insights into other forms of state ownership and government-created competitive advantages.

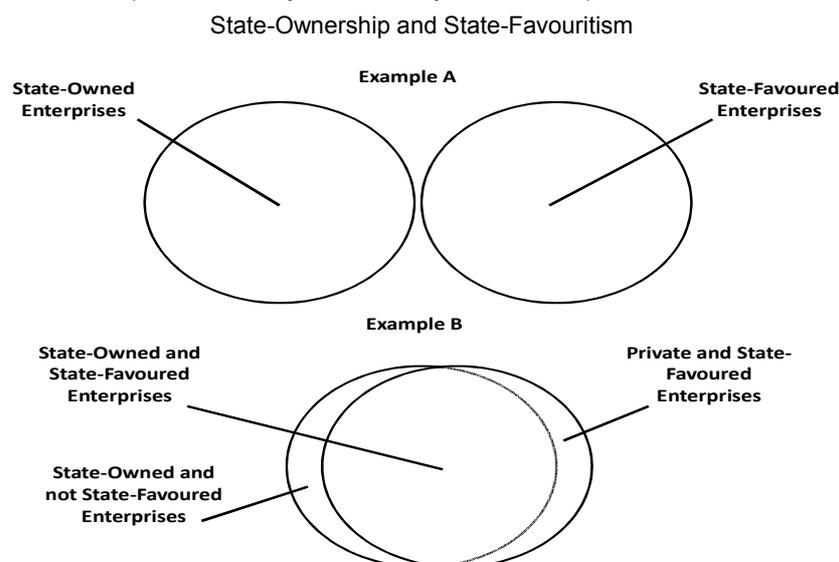
⁵ In the case of equity holding, government can either hold all shares, or have a majority or minority stake. Even when a government has a minority share in an enterprise, it can still be a controlling share, when a government is still the biggest owner or has a golden share, which allows de facto control regardless of formal voting rights.

⁶ As defined by ownership shares reported in our database of 2 000 largest world firms (see Section 3).

Box 1. State ownership as a lens for analysis of state influence

State ownership does not necessarily involve preferential treatment by the government. Entirely private firms can also be state-favoured, enjoying advantages granted by governments that give them a competitive edge over their competitors in domestic or international markets. Also, non-commercial obligations imposed on SOEs by government may at times be equivalent to a tax on, rather than a boost to, their commercial operations.

The diagram below illustrates different possible degrees of overlap between the sets of enterprises enjoying state-granted advantages and those owned by the state. In example A, none of the state-owned firms is state-favoured, and none of the state-favoured enterprise is state-owned. In example B, the majority of state-owned firms are state-favoured and the majority of state-favoured firms are state-owned. Which of these examples is relevant and what are the associated economic consequences is likely to be country and sector-specific.



Despite these considerations, considering state ownership has following data-related and substantial merits. First, given the difficulty of measuring various forms of government's favouritism and the near absence of empirical data on, for example, subsidies or regulatory exemptions granted to firms, state ownership can serve as a first-past proxy for state influence on firms. Second, the double role of the government as a regulator and owner of a commercial enterprise does entail potential conflicts of interests that are arguably absent in case of POEs, and creates a potential for favourable treatment. This is why strong corporate governance frameworks for SOEs in certain countries with large state sectors aim to discipline the behaviour of SOEs as well as the government (OECD, 2009).

2.1 Economic reasons for and against state ownership from the domestic perspective

10. There are many arguments for state ownership in the economy (e.g. OECD, 2005b; MacCarthaigh, 2011). On one side of the spectrum there are arguments related to various positive or negative externalities in the context of natural monopolies, public or merit goods. In this context, state ownership is a way of correcting market failures, particularly in the context of countries with weaker regulatory frameworks or where outsourcing of state activities to the private sector is difficult. State ownership is also sometimes argued for in cases where the private capital base is deemed insufficient or where SOEs can be a more reliable way of generating government revenue. There is also the argument evoked by some governments that SOEs are not necessarily less efficient than private companies and that the "government can be as good a capitalist as any" (Christiansen, 2013). Finally, state ownership is one type of market interventions which are used in pursuit of industrial policy (OECD, 2012a).

11. Many countries maintain SOEs where monopolies are considered desirable or natural. In fact, certain types of legal and natural monopolies may make state ownership the most efficient solution. In industries with substantial economies of scale, for example, optimal efficiency is reached when the output is supplied by a single monopolistic producer. Examples of these natural monopolies are sectors that require an interlocking supply network for the provision of goods and services (electricity or gas provision, railways,

etc.). Private monopolists may produce and price at levels which are not socially optimal. Government regulation can mitigate this though effective regulation in this regard can be hard to achieve or too expensive. In such circumstances state ownership may deliver outcomes that come closer to social optimality as compared to unregulated, or poorly regulated, private ownership.

12. State ownership can also offer a venue for the provision of public and merit goods. Various public goods are characterised by positive externalities associated with separation of consumption from payment, and by non-excludability of consumption. Under standard economic assumptions provision of such public goods by private firms is at sub-optimal levels. Similar is the case of merit goods, such as basic nutrition or health services, which private firms are likely to supply at suboptimal levels. Hence, governments may choose to supply such goods through SOEs.

13. SOEs can also be used to foster industries that are considered economically desirable and that would not otherwise be developed through private investment. An infant industry argument is made in favour of state involvement in markets. When nascent industries have externalities that cannot be incorporated in pricing strategies, or when information is asymmetric, or capital or insurance markets imperfect, private investors can be reluctant to invest. When these industries have potentially important spillovers within or across sectors, the state might decide to invest instead. In fact, it is often argued that many successful private sector firms in advanced countries owe their success, at least in part, to prior state ownership. This line of argument links SOE presence to economic development and thus suggests that the need for state ownership changes along different stages of economic development. Furthermore, private companies might for example be reluctant to invest in research, especially if the protection of intellectual property is considered weak, or if the gains from the research would be difficult to capitalise on. State-owned research institutions might then yield long-term benefits for the economy.

14. Although economic efficiency, as measured by standard performance indicators, may not be the primary objective of state ownership there is always a question of whether SOEs are the most economically efficient instrument of correcting market failures. Also, it is not unusual for SOEs to be present in sectors where competitive equilibria have the potential to be socially optimal, and where state-owned firms tend to be systematically outperformed by their private counterparts. These are important considerations for governments when addressing policies towards SOEs.

15. State ownership has traditionally been seen to entail less efficient business performance as compared to privately owned firms because of state ownership itself, regulation or business environment factors (Bartel and Harrison, 2005). Idiosyncrasies specific to state ownership can cause less effective management and weaker SOE performance. Objectives pursued by SOEs are often not well defined and can be transient in the context of changing policies and administrations (Gosh and Whalley, 2008; Megginson and Netter, 2001). SOEs have in many instances lesser budget constraints and enjoy direct or indirect, and often politically-motivated, state funding, which reduces incentives for performance. Official or unofficial exemptions from bankruptcy rules can further reduce performance incentives (Bai and Wang, 1998; MacCarthaigh, 2012; Liu et al., 2001). Furthermore, state firms tend to employ excess labour inputs (Boycko et al., 1996) and are exposed to pressure to hire management or employees according to politically-motivated reasons, rather than qualification (Krueger, 1990). In addition, shareholders of private firms internalise the costs of monitoring and conduct more efficient management control which results in improved management performance in private companies, as compared to the supervision of SOEs by bureaucrats (Shleifer and Vishny, 1986).

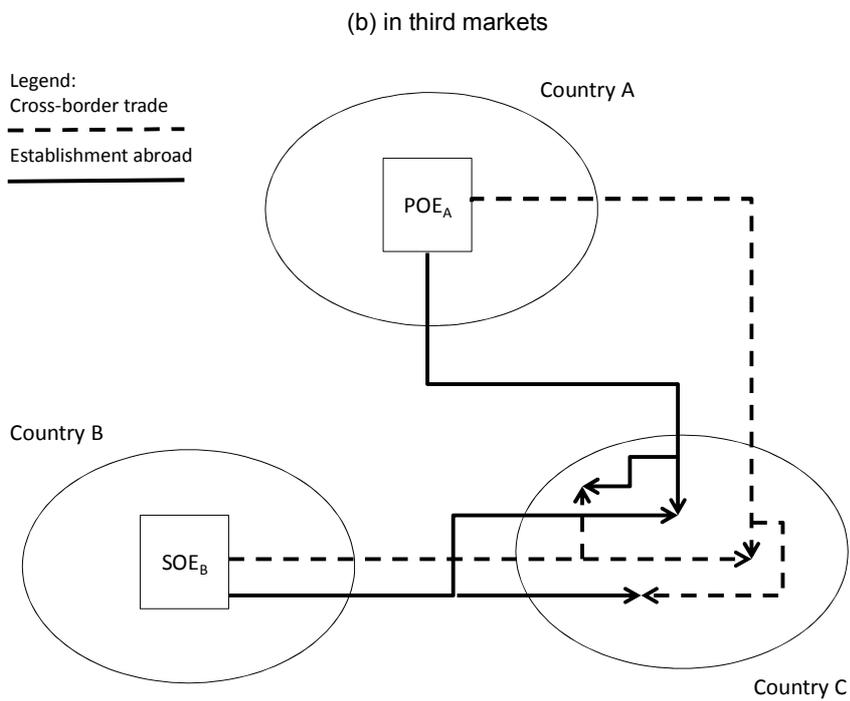
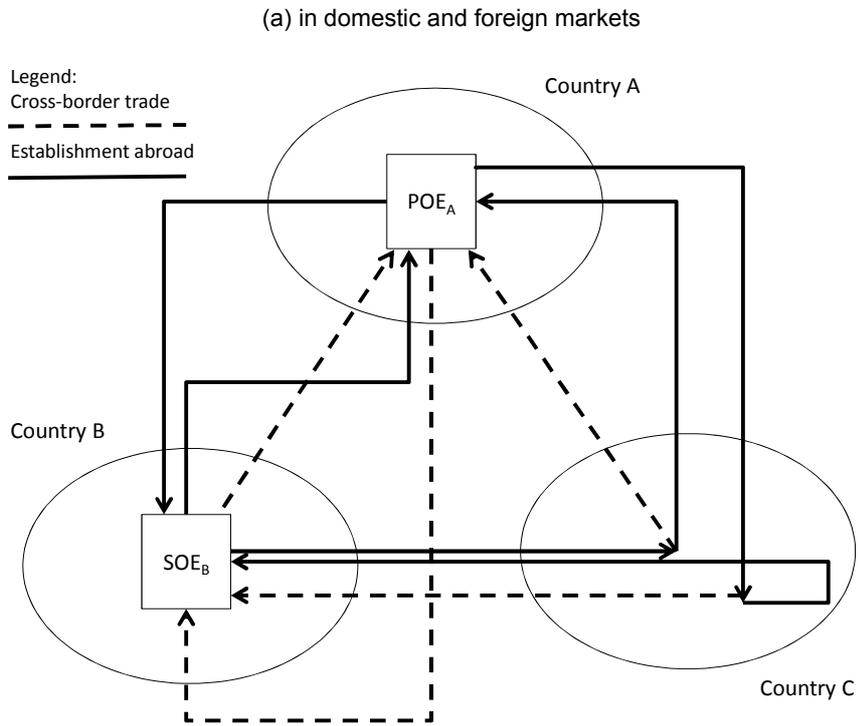
16. When state ownership is dominant in a particular sector, ineffective and poor performance can carry significant costs to the entire economy. An example would be the banking sector where ineffective allocation of capital and poor management can make access to capital for private firms more difficult, increase start-up costs and stifle entrepreneurship.

2.2 Concerns related to cross-border activities of SOEs

17. Whereas in the past SOEs have tended to serve only their domestic markets, often shielded from competition, today privately owned enterprises frequently find themselves competing with SOEs, both domestically and internationally. The mixed markets can take multiple forms including: competition through arms-length trade (e.g. exports or imports); competition with foreign SOEs established in POEs' domestic markets; competition with POEs established in SOEs' domestic markets; or competition through trade or investment in a third market (Figure 1). Thus, national SOE policies may have important cross-border ramifications and should be considered within the context of highly integrated international markets and production networks, as well as overlapping jurisdictions and legal frameworks (see Section 5).

18. Openness to trade and investment can generate important economic gains for individual enterprises and the economy as a whole, by enabling access to better technologies and cheaper inputs, more efficient specialisation and unleashing competitive pressures that raise productivity. This potential holds also for state-owned businesses and may be an important driver for a recent significant expansion of SOEs into international markets. Yet, at the same time the potential size and reach of losses due to trade distorting government policies, including through SOEs, are also larger than they used to be when national markets were less interconnected.

Figure 1. Modes of foreign competition between private enterprises and SOEs



19. Because firms exposed to international competition are more productive and more technologically advanced (see Box 2), SOEs-related distortions in contestable international markets may be associated with higher welfare costs as compared to distortions in closed markets. Additionally, such costs would not only accrue to the host countries of SOEs but also to their trading partners, constituting an incentive for international co-operation.

Box 2. Cross-border activity of SOEs—implications of firm-heterogeneity-based trade theory

The recent strand in trade theory initiated by Melitz (2003) focuses on firm-level interactions and lays out predictions about the relative size and productivity characteristics of national and international firms engaging in international trade and investment. How productivity characteristics may be influenced by policy has also received attention. One of the key propositions of the theory is that exposure to international markets induces a reallocation of market shares and profits towards the most productive firms which engage in export activity. Less productive firms serve the domestic market or are forced to exit. Various extensions of the Melitz framework provide additional insights for analysis of international effects of SOEs. Helpman, Melitz and Yeaple (2004), for example, show that most productive firms are more likely to serve foreign markets through subsidiary sales, less productive ones through exports, and the least productive ones serve only the domestic market. Bustos (2011) showed that low productivity firms are likely to use lower technology to serve only domestic markets. Firms with intermediate productivity levels use lower technology to serve the domestic market and to export while only firms with highest productivity levels invest in more expensive and better technology.

Empirical evidence on cross-border effects of SOEs that has emerged recently has confirmed some of these hypotheses. Controlling for sectoral specificities, Miroudot and Ragoussis (2011) examined the link between state ownership and export performance of firms using a large panel data set for three OECD countries (France, United Kingdom and Greece) and found that SOEs have both lower export propensity and lower export intensity as compared to private firms in these economies. Commander and Svejnar (2011) studied cross-firm performance, export and ownership patterns as well as aspects of the business environment using an extensive firm-level survey data set. Controlling for various unobservable effects they found that private ownership exerts a positive impact on firm performance when characterised by foreign participation. Yasuyuki et al. (2012) argue that privatisation of SOEs has a positive impact effect on export performance, driven by improved productivity, optimised firm size, more efficient debt management and other intangible management methods.

Miroudot and Ragoussis (2011) find also that negative effects of state participation in a specific sector go beyond SOEs themselves; private firms in sectors that are dominated by SOEs are less export oriented than firms in other sectors. The latter result provides yet stronger evidence for the hypothesis of relatively high costs of state ownership in the context of an open economy.

20. There are several reasons for why SOEs may be increasingly expanding to foreign markets, some of them relating to government policies *per se* and some to internal factors concerning these firms as well as dynamics of markets in which SOEs operate (e.g. OECD, 2009; OECD, 2010a). From the trade perspective, the reasons for international expansion of SOEs are pertinent not in and of themselves but because they allow to understand the effects of this expansion on competitive conditions in international markets

21. Some countries may be using SOEs as a vehicle for pursuing strategic, commercial or non-commercial, objectives abroad and this may involve anti-competitive effects. First, governments as owners of SOEs may grant them advantages (e.g. subsidies) which would allow them to outcompete foreign market contestants. They can also use SOEs to acquire know-how and proprietary technologies abroad in order to disseminate them widely in the home economy⁷ or to secure control over scarce natural resources for the country (e.g. OECD, 2010a: 4). It should be noted there may also be instances when SOEs or national champions may be stopped from pursuing a commercially viable international strategy for political reasons.

⁷ Most private companies would rather put them to internal use.

22. Second, when SOEs expand to international markets, a number of issues which in a domestic context can either be contained or are not considered as problems, move to the forefront and become an international concern. While certain forms of government support of SOEs can be an effective and efficient solution from a domestic perspective, it may not be so from the perspective of governments of their commercial partners because of negative impacts on enterprises or consumers abroad. For example, state support to prop up ailing SOEs for political economy purposes may be popular with the domestic constituency. At the same time it may be damaging for competition from the perspective of foreign market players.

23. Third, certain schemes of compensating SOEs for their public services obligations at home (e.g. delivery of postal service or transport services in remote areas which would not be commercially viable) which take the form of regulatory derogations or tax concessions may create a distortive and government supported incentive for expansion, including to foreign markets. This may be the case of schemes that are proportional to the business volume rather than public service obligations themselves.⁸

24. Fourth, support for SOEs in pursuit of economies of scale may be justified on general economic grounds from a static domestic perspective. However, if this involves increasing market shares abroad it may be perceived differently in different constituencies. This can be the case, for example, with state support to national flag carriers in small countries which may be justified by the positive externalities of connecting the economy to international markets and at the same time involves increasing the share in the world air transport market with potential competition controversy (OECD, 2010a).

25. All the above-mentioned objectives of SOEs can be pursued by governments through a number of advantages and privileges. Whereas legitimate reasons for state ownership exist, government-created advantages for SOEs can be perceived as unfair by other market actors.⁹ Examples of government-created advantages put forward in the domestic context include: outright subsidisation; concessionary financing and state-backed guarantees; preferential regulatory treatment; exemptions from antitrust enforcement or bankruptcy rules; captive equity which can result in anti-competitive and exclusionary pricing strategies; other forms of predatory pricing; or information advantages (OECD, 2005b, Capobianco and Christiansen, 2011).

26. Each of these advantages can be seen as having a direct or indirect subsidisation effect through a reduction of fixed or variable costs of production. Consequently, an SOE benefitting from such advantages would have a competitive edge over foreign (and domestic) private competitors in home or international markets.

27. Against this backdrop, it is not astonishing that a number of SOE-related tensions and trade disputes have arisen in the past. For example, selected subsidy-related cases involving SOEs described in this paper include a dispute between EDF and the European Commission over a USD 1.5 billion tax rebate granted to EDF by the French government, initially considered illegal state aid and successfully appealed by EDF in the European Court of Justice (See Annex Box 4). The WTO Dispute Settlement case *DS379 United States –Definitive Anti Dumping and Countervailing Duties on Certain Products from China* considered in this report found that certain Chinese State-Owned Commercial Banks (SOCBs) were conveyors of subsidies in the form of concessionary financing when providing loans at below-market interest rates to companies selling to international markets (Annex 2). The same WTO dispute settlement considered if certain Chinese SOEs were conveyors of subsidies under WTO law by providing inputs to other Chinese companies for allegedly less than adequate remuneration.

⁸ For a discussion of the appropriateness of alternative compensation schemes, see OECD (2012b).

⁹ As discussed in Box 1, similar advantages and privileges can in principle be granted to private companies.

28. Preferential regulatory treatment was claimed in the WTO Dispute Settlement (*DS413 China – Certain measures affecting electronic payment services*) where the United States challenged the regulatory requirement that dual-currency credit card transactions in Renminbi are handled by China UnionPay (CUP) which can be considered an SOE for the purposes of this paper.¹⁰ The claim that CUP represented an across-the-board monopoly supplier was rejected. Yet, the claim that CUP held a monopoly for one type of transaction was upheld and it was ruled that this, together with other regulatory advantages enjoyed by CUP, represented a breach of China's commitments under GATS Article XVI (market access) and Article XVII (national treatment) (See Annex Box 9). Another controversy involving Chinese SOEs was an allegation that immediately after the establishment of its anti-monopoly law in 2007, some of the SOEs did not adhere to the notification procedure required by the law, and that responsible authorities took no action despite several lawsuits brought to the courts by private competitors. Given that Chinese SOEs together with joint-ventures involving foreign firms are the two major players in China's mergers and acquisitions market such an exemption had non-trivial effects on competition in the international context (e.g. Taylor, 2011).

29. Finally, several WTO disputes concerned the more classical question of special privileges granted to, and state influence on the level or direction of trade of, so-called state trading enterprises (STE) as defined by Art. XVII of GATT. In the Korea Beef case (*DS160 Korea – Measures Affecting Imports of Fresh, chilled and Frozen Beef*) the activities and the management of tender procedures by an import state trading monopoly were considered to violate certain WTO rules on state trading. In the Canadian Wheat Board case (*DS276 Canada – Measures Relating to Exports of Wheat and Treatment of Imported Grain*) the US claimed inter alia that the export of wheat conducted by the CWB was inconsistent with rules on state trading. The WTO's ruling rejected the claim that Canada had violated the provisions on state-trading.

30. As illustrated above and expanded on in the Annex, various forms of advantages granted to SOEs by governments or provided to private firms via SOEs, have at times been challenged as incompliant with national or international regulations, with varying degree of success. This illustrates, on one hand, that governments have at times pursued SOE strategies that were seen by others as having anti-competitive effect on the international market; and on the other, that some of these allegations were not valid or that the existing legal frameworks may only partially be fit to deal with cross-border effects of SOEs' activities.¹¹

3. SOEs in the global economy

31. While several countries underwent large scale privatisation in the 1980's and 1990's SOEs remain significant actors in competitive markets, both domestically and globally. Furthermore, state ownership has in several instances expanded over the last decade or so. New policy strategies for selected firms and sectors have driven state ownership, particularly among emerging economies (Hsueh, 2011). This expansion includes also some governments' short term interventions in the context of the financial crisis. As a result SOEs are important actors in several domestic and international markets.

32. The state enterprise sector in the OECD economies today is significantly smaller than in emerging economies. Yet, it remains quite important in a few OECD economies and in a number of selected economic sectors, most notably in network industries (energy, telecommunications, transport) and the banking sector. The majority of remaining OECD SOEs are incorporated according to the ordinary company law and, thus, need to comply with regular corporate requirements.¹² Many of the OECD SOEs

¹⁰ The question of CUP's ownership status was not addressed in this dispute and the concept of SOEs is not found in the GATS.

¹¹ The latter aspect is taken up in more detail in Section 5.

¹² See Annex 1.

are also subject to as stringent, or even more stringent, financial disclosure and transparency standards as private enterprises. Similarly, accounting and auditing standards apply to SOEs to the same extent they apply to private companies, while SOEs may also undergo additional controls carried out by specific state audit entities.

33. Despite waves of privatisation and reform, state presence in the economy remains significant among emerging countries. In particular, the governments are seen to use direct ownership to further developmental and policy goals.¹³ While increasing numbers of SOEs in these countries are economically viable enterprises, a consistent application of corporate governance standards is nevertheless still lagging, in particular due to an intricate web of legal statuses and varying SOE definitions.

3.1 *Augmented database for world's largest state-owned and private firms*

34. One of the principal objectives of this paper is to build on existing definitions, qualitative information and data on SOEs to develop a more comprehensive quantitative picture of their importance in today's world economy that would inform the current policy debate. The principal two questions that need to be answered are: which countries own internationally active SOEs; and which economic sectors do these SOEs operate in? Yet, developing cross-country cross-sector measures for state-ownership is a non-trivial task. First, countries apply different definitions of state-ownership, which makes comparisons difficult (e.g. Christiansen, 2011). Second, comprehensive ownership data is scarce; countries that fully disclose and update key information on their state-owned enterprises are the exception rather than the norm.

35. This paper uses multiple sources of information to develop a measure covering companies most relevant to international trade and investment, and one that ensures maximum comparability across countries, sectors and forms of ownership. *Forbes*® *Global 2000* list of the world's largest 2000 companies is used as the principal source of financial information. The list is a worldwide ranking of public firms, calculated as the sum of rankings in four equally weighted aspects of economic size: sales, profits, assets and market value.¹⁴ The list contains firms from 66 countries and covers 72 different economic sectors. 1500 of these 2000 firms are based in OECD economies.¹⁵

36. The value of sales of these firms in the business year 2010-2011 corresponded to more than 51% of world GDP¹⁶ and their market value exceeded 80% of the market capitalisation of listed firms worldwide (Table 1). Furthermore, the value of annual sales of these firms was larger than the value of world trade in 2010 by a factor of 1.7 and larger than the value of global FDI flows by more than a factor of 20. In addition, the firms in the sample are parent to more than 330 000 domestic or foreign subsidiary firms (for more details on this aspect see Section 4.2). It is deemed that such a sample is sufficiently representative of

¹³ Id.

¹⁴ DeCarlo, S. (2012), "Methodology: how we crunch the numbers", *Forbes*, available at: <http://www.forbes.com/sites/scottdecarlo/2012/04/18/methodology-how-we-crunch-the-numbers/print/>, as of 28 April 2012. Underlying data are drawn from Interactive Data, Thomson Reuters Fundamentals and Worldscope databases via FactSet Research Systems. Publicly-traded subsidiaries are excluded if the parent firm consolidates the reporting (generally, where the parent controls more than 50% of the stock).

¹⁵ It is important to stress that the methodology used to compile the *Forbes Global 2000* list excludes some of the firms considered as the world's largest in other rankings.

¹⁶ Comparing SOE sales to countries' GDPs is only indicative since the former measure refers to turnover while the latter refers to value added. The relation between the two measures differs across different types of economic activity. For example, in retail trade the share of value added in sales can be considerably smaller than in extractive industries.

the global economy since the bulk of international economic activity, such as exports, imports or foreign direct investment, is typically driven by a small fraction of large firms.¹⁷

Table 1. Aggregate financial indicators for all firms, % of selected benchmark aggregates (2010)

	Total Sales	Total Profits	Total Assets	Total Market Value
GDP, global	51.1%	3.7%	218.6%	58.4%
Industry value added, global	187.3%	16.6%	801%	214%
Services value added, global	88.5%	6.4%	378.4%	101.1%
Manufacturing value added, global	323.6%	23.6%	1383.6%	369.5%
Agriculture value added, global	1263%	92%	5340%	1442.2%
Cross border trade, global	171.9%	12.5%	734.7%	196.2%
FDI flows, global	2261.3%	164.7%	9667.8%	2582%
Market capitalisation of listed companies, global	71.7%	5.2%	306.7	81.9%
Stocks traded, global	48.7%	3.5%	208.2%	55.6%

Sources: Forbes and WDI.

37. The Forbes dataset has been augmented with ownership information from the *Orbis*® database. The Orbis database contains structural, ownership and financial information on more than 63 million companies worldwide. A firm has been classified as an SOE when a state, a government or a public authority is, according to Orbis or other primary sources, the ultimate owner of that firm and holds more than 50.01% of the firm's shares. Firms with lower percentage of shares held by state are considered private.¹⁸

38. Ownership data provided by Orbis for each of the Forbes Global 2000 firms has been cross-checked with primary sources such as government reports or annual reports of companies and, in 44 cases where there were any disparities, overwritten.¹⁹ Each firm's country classification has been determined by the country of the owner (i.e. a firm based in the UK, whose ultimate owner is the government of Russia, is marked as Russian). In cases where the location of the owner is unknown, the country of firm registration has been used instead.

3.2 State ownership among the world's largest companies

39. Using the criteria and methodology described above, 204 out of the world's 2000 largest publicly listed firms were identified as SOEs. They originated from 37 different countries with China leading the list (70 SOEs), followed by India (30), Russia and the United Arab Emirates (9 each) and Malaysia (8). Overall, 35 industries—roughly half of all 2-digit NACE industries—had at least one SOE. It is important to underline that this listing does not cover SOEs that are not public. While this means that many of the large unlisted SOEs will not be covered (e.g. unlisted statutory enterprises, in postal services for instance,

¹⁷ Not only the number of firms that engage in international business activity is relatively small but, additionally, a small fraction of these internationally active firms account for a large share of cross-border trade and direct investment. For instance, of the 5.5 million firms that operated in the United States in 2000 less than 5% were exporters and the top 10% of these exporting firms accounted for more than 95% of aggregate US exports (Bernard et al., 2007). Similarly, only a sub-section of total European firms are exporters, and in 2003 a major chunk of not less than 80% of total European exports was provided just by the top 10% of exporters (Mayer & Ottaviano, 2008). Patterns of greenfield investment or mergers and acquisitions (M&A) are similarly concentrated. For instance, Renault's USD 5.4 billion investment in Nissan in 1999 accounted for 95% of Japanese FDI net inflows from France during that year (Head and Ries, 2008).

¹⁸ It is noteworthy that governments hold significant minority stakes in a number of firms (Christiansen, 2011).

¹⁹ All the sources on basis of which ownership data was augmented have been documented.

or utilities at sub-national level), this augmented dataset provides comparable information on SOEs that are likely most active in global trade and investment. The combined sales of these SOEs amounted to USD 3.6 trillion, representing more than 10% of the aggregate sales of the 2000 world largest companies, and exceeding the 2010 GNIs of countries like the UK, France or Germany. The value of sales of these SOEs was tantamount to almost 6 % of world GDP and was higher than global value added in agriculture by a factor of 1.4 or combined FDI flows around the globe by a factor of 2.5. Their market value corresponded to 11% of the market capitalisation of all listed companies worldwide (Table 2).

Table 2. Aggregate financial indicators for SOEs, % of selected benchmark aggregates (2010)

	Total SOE Sales	Total SOE Profits	Total SOE Assets	Total SOE Market Value
GDP, global	5.7%	0.5%	35.8%	7.8%
Industry value added, global	20.8%	1.9%	131.1	28.7%
Services value added, global	9.8%	0.9%	61.9%	13.6%
Manufacturing value added, global	36%	3.3%	226.5%	49.7%
Agriculture value added, global	140.3%	12.8%	884%	193.8%
Cross border trade, global	19.1%	1.7%	120.3%	26.4%
FDI flows, global	251.2%	22.9%	1582.6%	346.9%
Market capitalisation of listed companies, global	8%	0.7%	50.2%	11%
Stocks traded, global	5.4%	0.5%	34.1%	7.5%

Sources: Forbes, Orbis, WDI.

3.3 *SOEs among the world's largest companies*

40. Eighteen OECD countries in the augmented dataset have at least one SOE and, overall, SOEs account for about 3% of OECD firms in the sample.²⁰ Table 3 provides an indication of the economic weight of Global 2000 SOEs in OECD economies, comparing their sales, profits, assets and market values to their home countries' Gross National Incomes. While in most OECD countries the scale of the SOE presence is modest, there are a few notable exceptions. In terms of SOE assets, Ireland, the UK and US register high values relative to GNI but this is driven by a small number of large financial sector firms that, in line with our generic SOE definition, were recorded as SOEs in 2011—the year of ownership information in our dataset—as a consequence of nationalisation in the aftermath of the 2008-2009 financial crisis. These government support measures have been announced as temporary and some of them have been withdrawn since 2011. Yet, several other OECD countries' SOE are also relatively large. Korea records a significant volume of SOEs assets equivalent to 48% of the country's GNI, spread across several economic sectors. In Norway, oil and telecom SOEs' sales, assets and market values add up to one-quarter or more of annual GNI. Poland also records double-digit scores in terms of sales, assets and market valuation of its SOEs.

²⁰ For some comparatively small economies such as the Czech Republic, Greece, Norway or Poland, the SOE shares among these countries' firms are 20% or more, whereas the shares for other OECD countries are significantly smaller. It is noteworthy that a significant share of world largest firms are from the US and Japan, which together account for more than half of OECD firms on the Forbes Global 2000 list. Both of these countries have relatively few SOEs. See Annex Table 1.

Table 3. Forbes Global 2000 SOE sales, profits, assets and market value as a % GNI, OECD countries, 2011

Country	Sales	Profits	Assets	Market Value
Austria	1.1%	0.1%	3.8%	3.1%
Belgium	2.6%	0.9%	31.4%	2.9%
Czech Republic	5.6%	1.3%	15.4%	13.1%
Finland	3.3%	0.7%	11.5%	10.6%
France	7.9%	0.4%	23.0%	7.1%
Germany	0.1%	0.0%	0.3%	0.2%
Greece	5.8%	0.4%	23.2%	3.8%
Ireland	6.5%	-1.9%	133.2%	0.3%
Italy	0.4%	0.0%	0.8%	0.2%
Japan	0.5%	0.0%	0.8%	0.8%
Korea	6.8%	0.2%	48.3%	4.0%
Norway	25.0%	2.1%	32.7%	25.9%
Poland	12.4%	1.3%	27.2%	14.8%
Sweden	3.4%	0.7%	7.6%	8.1%
Switzerland	3.1%	0.6%	27.8%	7.1%
Turkey	0.7%	0.1%	0.8%	0.4%
United Kingdom	2.8%	-0.1%	96.8%	3.2%
United States	2.7%	-0.1%	38.5%	0.4%

Note: GNI data refer to 2010.

Source: Authors' calculations. GNI from World Bank, *World Development Indicators*, on-line.

41. The global importance of Brazil, China, India, Indonesia, Russia and South Africa (BRIICS) is manifested in the number of companies from these countries that are among the largest in the world. Out of the 2000 largest companies, 260 are from the BRIICS countries, with China and India accounting for the majority of these. 123, or 47%, of these largest BRIICS enterprises have been classified as SOEs according to our definition, with China and India accounting for, respectively 70 and 30 of them.²¹ The market value of SOEs amounts to 32% of GNI among all the BRIICS (Table 4). Furthermore, with the exception of South Africa, SOEs control relatively large amounts of assets in the BRIICS, with China, India and Russia leading the list. In total, the value of assets of all BRIICS SOEs listed on Forbes Global 2000 is equivalent to the value of their GNI.

Table 4. SOE sales, profits, assets and market value as percentage of GNI

Country:	Sales	Profit	Assets	Market Value
Brazil	12%	1.7%	51%	18%
China	26%	2.9%	145%	44%
India	16%	4.3%	75%	22%
Indonesia	3%	0.3%	19%	12%
Russia	16%	3.0%	64%	28%
South Africa	2%	1.7%	3%	1%

Note: Data from Forbes *Global 2000* are for the year 2011 and data from WDI for the year 2010.

Sources: Forbes *Global 2000* and WDI.

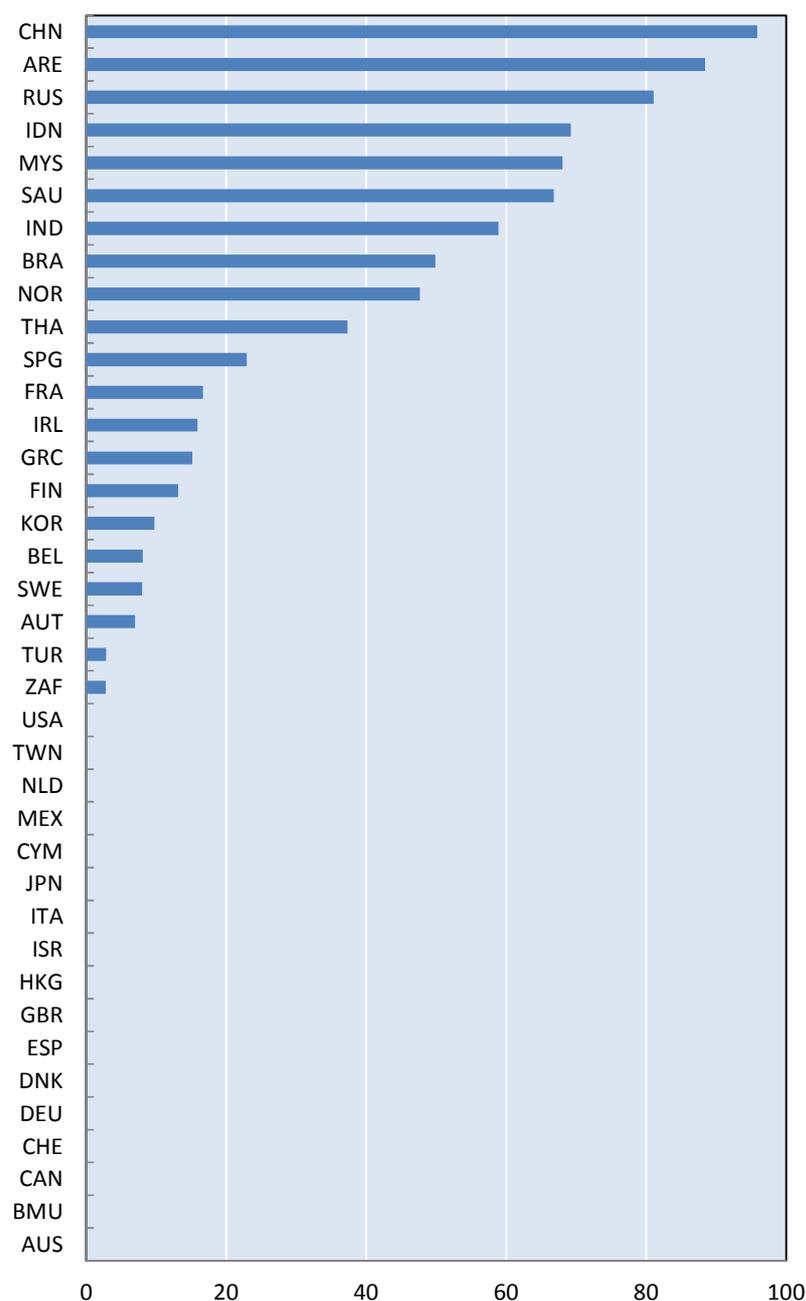
²¹ The shares of SOEs among the Forbes Global 2000 companies exceed 50% for China, India and Indonesia. They are also significant for Russia and Brazil, 39 and 19%, respectively. South Africa records a modest 6% share (Annex Table 2).

3.4 Country SOE Shares – SOEs among the largest companies in selected countries

42. The dataset is used to assess the importance of SOEs among the largest companies in individual countries or economies. To ensure comparability across countries, a sub-sample of the ten largest firms per country has been drawn, irrespective of ownership type and for a total of 38 countries. The covered countries include all those that have at least 10 firms on the Forbes Global 2000 list. They comprise 23 OECD countries, all 6 BRIICS countries and 9 other countries or territories. For each of these countries a *Country SOE Share* (CSS) is calculated. The CSS is an equally weighted average of SOE shares of sales, assets and market values among country's top ten companies.²² The CSS thus gives an estimate of significance of state ownership amid a country's largest business entities. It ranges from 0 (no state ownership) to 100 (all sales, assets and market value of country's ten largest companies are accounted for by SOEs).

43. 21 out of 38 countries have a *Country SOE Share* higher than zero (Figure 2). The ten countries with the highest CSS are China (CSS 95.9), the United Arab Emirates (88.4), Russia (81.1), Indonesia (69.2), Malaysia (68), Saudi Arabia (66.8), India (58.9), Brazil (49.9), Norway (47.7) and Thailand (37.3). Among the BRIICS economies, South Africa, with a considerably lower CSS of 2.8, is the only country that is not among the top 10 countries with highest CSIs. The OECD countries with a non-zero CSS are Norway (CSS 47.7), France (16.7), Ireland (15.9), Greece (15.2), Finland (13.1), South Korea (9.7), Belgium (8.1), Sweden (8), Austria (7) and Turkey (2.8)

²² Information on profits is excluded, given the extensive body of literature, which identifies differences in profitability across different types of ownership (e.g. Megginson and Netter, 2001).

Figure 2. Country SOE Share for selected 38 economies

Source: ORBIS, Forbes Global 2000 and author's information and calculations.

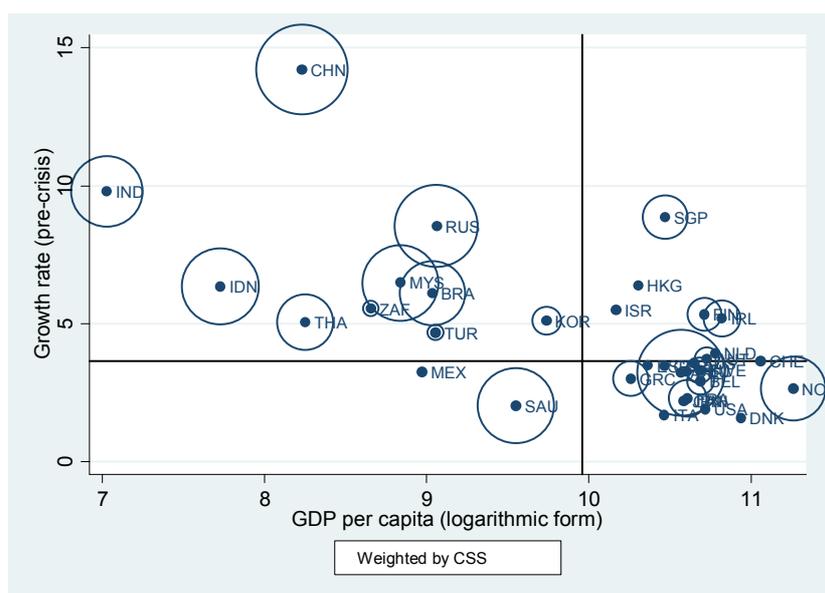
3.5 Country SOE Shares and key economic characteristics

44. The extent of state ownership may be related to country's history, its level of economic and institutional development, political system, macroeconomic situation, structural characteristics, comparative advantages, access to various resources, as well as its integration with international trade and investment markets. At the same time, state ownership may have very different ramifications depending on some of these listed institutional and economic factors. For example, from a trade perspective, it makes a difference whether a country with large state sector is also a large world market player. Determining any

causal relationships in this respect goes beyond the scope of this paper but it is interesting to consider how the calculated country SOE shares correlate with selected economic indicators.

45. Figure 3 juxtaposes the annual growth rate with GDP per capita, with the vertical and the horizontal lines indicating respective medians and bigger circles denoting higher CSSs. Countries or economies with high CSSs are clustered in the upper left part of the box, with growth rates above the median and income levels below the median stressing the point that the economic role of state has to be considered in the context of different stages of economic development.

Figure 3. Growth rate (pre-crisis) vs. GDP per capita, weighted by CSS



Note: Data from Forbes *Global 2000* are for the year 2011 and data from WDI for the year 2010 (GDP per capita) and 2007 (Growth rate). The black lines indicate respective medians.

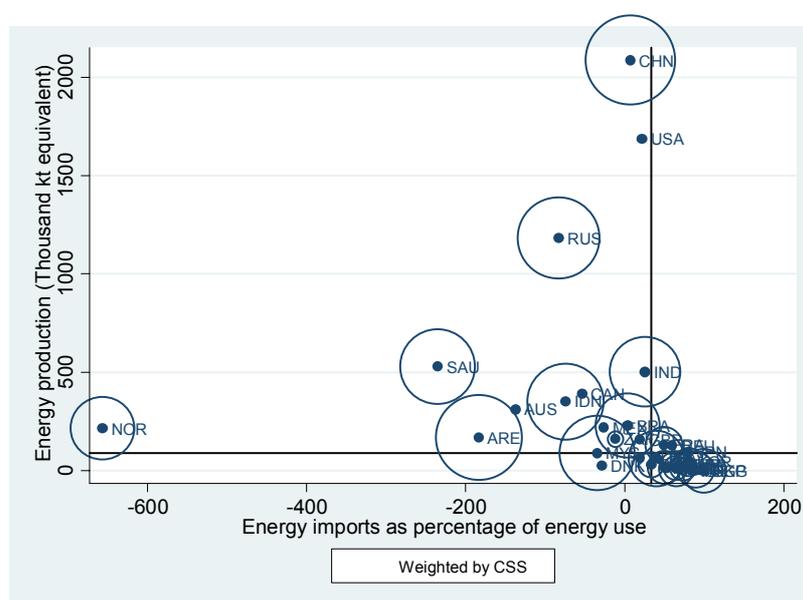
46. Countries or economies with high CSSs do not necessarily have high FDI inflows as percentage of GDP but their imports of goods and services as percentage of GDP are often below the sample median (Figure 4). The latter correlation bodes well with the correlation between measures of goods and services trade impediments and SOE shares in Figure 5. Figure 5 juxtaposes average tariff rates with the World Bank's Services Restrictiveness Index, measuring the extensiveness of countries' GATS commitments, where higher scores mean more ambitious commitments.²³ Figure 5 makes clear that many countries or economies with high CSSs have relatively high average tariff rates and less ambitious GATS commitments. This is not particularly surprising, given the correlations between trade openness and the level of economic development on the one hand and the level of economic development and the extent of state ownership on the other. Yet, the fact that economies with smaller SOE sectors tend to be more open may also imply that greater regulatory cohesiveness, which tends to reduce border and behind the border trade restrictions, boosts government's ability to delegate public functions to private sector actors.²⁴

²³ This is based on the World Bank index of GATS commitments reported in the World Trade Indicators database. The index is an imperfect measure of services trade restrictiveness but so far this is the only index that offers a broad sectoral coverage and comparability across countries.

²⁴ This is because regulatory efficiency allows the state to enter contractual relationships with private sector actors, instead of reverting to achieving its aims through direct ownership.

48. Traditionally, SOEs are dominant in the natural resource extraction and energy production sectors which can be associated with monopolistic rents and important economies of scale. These sectors are often listed as ‘strategic’, which might also explain high SOE incidence. In fact, 12 out of the world’s 25 largest SOEs of the augmented Forbes database are active in sectors of natural resource extraction, energy provision and related activities. Figure 6 portrays the correlation between the CSS and measures of economies’ energy production and imports. Many economies with high CSSs are clustered in the upper left corner of the graph, indicating low or negative energy imports and high levels of energy production, implying that large energy producers and net energy exporters tend to have large SOE sectors. Causality may run both ways, but an important point here is that state ownership is related to economic structure, comparative advantage and trade patterns with its partners.²⁵

Figure 6. Energy production (thousand kt equivalent) vs Energy imports as percentage of energy use, weighted by CSS



Note: Data from Forbes *Global 2000* are for the year 2011 and data from WDI for the year 2010. The black lines indicate respective medians.

3.6 Sector SOE Shares – SOEs among the largest companies in selected sectors

49. The prevalence of SOEs varies considerably not only across countries but also across economic sectors. To assess these differences a methodology similar to the one used for computing the *Country SOE Share* was applied. First, information on the sector of each company’s main economic activity was collected from Orbis (according to the 2-digit NACE Rev. 2 classification).²⁶ Then, sectors with less than 10 firms (SOEs or non-SOEs) were excluded,²⁷ leaving 41 sector categories for which equally-weighted averages of sectoral SOE shares in total sales, assets and market value were calculated. These average

²⁵ Another potentially interesting aspect is cross-subsidisation from energy to non-energy sectors and the question if and, to what degree, SOEs in energy producing sectors may be providing energy at prices below market rates to SOEs in other sectors.

²⁶ 14 companies of the sample could not be assigned to a specific sector.

²⁷ There were 128 firms active in sectors with less than 10 *Forbes 2000* firms.

shares range from 0 (not a single SOE operating in the sector) to 100 (all sales, assets and market value of firms in the sector are accounted for by SOEs).²⁸

50. The SOE shares by sector are first computed for firms from all countries, and then disaggregated into three country groupings: the OECD, BRIICS and other countries. When all countries are considered, only 11 out of the 41 sectors record a zero SOE share. The average SOE share across sectors is 10.7%, indicating that for every 10 firms operating in a sector there is approximately one SOE. As far as broadly-defined sectors are concerned, SOE shares are highest in natural resource extraction- and provision sectors as well as in construction. The five 2-digit NACE sectors with the highest SOE shares are: *mining support activities* (SOE share of 42.7%); *civil engineering* (40.8); *land transport and transport via pipelines*²⁹ (40.3); *mining of coal and lignite* (35.1); and the *extraction of crude petroleum and gas* (34.1).

51. Contribution of OECD SOEs to these shares is small in most sectors; they are present in 11 out of the 41 sectors and the average contribution to the sectoral SOE shares presented in Figure 7 is a mere 1.8 percentage points. Currently, the sector with the highest OECD contribution to the overall SOE share is in *provision of electricity, gas and steam* (OECD contribution of 18.3 percentage points). Other sectors with important OECD contributions are: *manufacture of tobacco* (15 percentage points)³⁰; *warehousing* (11.7); *manufacture of motor vehicles* (6.7)³¹, and *financial intermediation* (6.7).³²

52. BRIICS countries' SOEs are represented in 25 of 41 NACE sectors and the contribution of these countries' SOEs to sectoral shares are overall much higher, reflecting a higher overall prevalence of SOEs in these economies. There are also some important cross-sector differences between BRIICS and OECD country groupings. Namely, BRIICS SOEs are noticeably more present in natural resources and manufacturing sectors. In fact, high overall sectoral SOE shares in *mining support activities*, *civil engineering*, *land transport and transport via pipelines* as well as *mining of coal and lignite* are driven entirely by BRIICS' SOEs, most notably from China (Figure 7). In addition, BRIICS SOEs contribute heavily to overall sales, assets and market capitalisation in sectors such as *extraction of crude petroleum and natural gas* (BRIICS contribution of 26.5 percentage points); *manufacture of fabricated metal* (12.9), *financial intermediation* (12.4), and *telecommunication* (10.3). Similarly, this is the case for some heavy and electrical industries, such as: *manufacture of basic metals* (9.1 percentage points); *electrical equipment* (8.3); and *machinery and equipment* (7.7). Finally, *air transport* is also a category with a substantial contribution of BRIICS' SOEs (7.3 percentage points).

²⁸ This approach has been repeated, using a subsample with the 10 top performers in each of these sectors. The shares computed in this way were very similar (correlation coefficient of 0.97) and in the interest of space are not reported in the current paper.

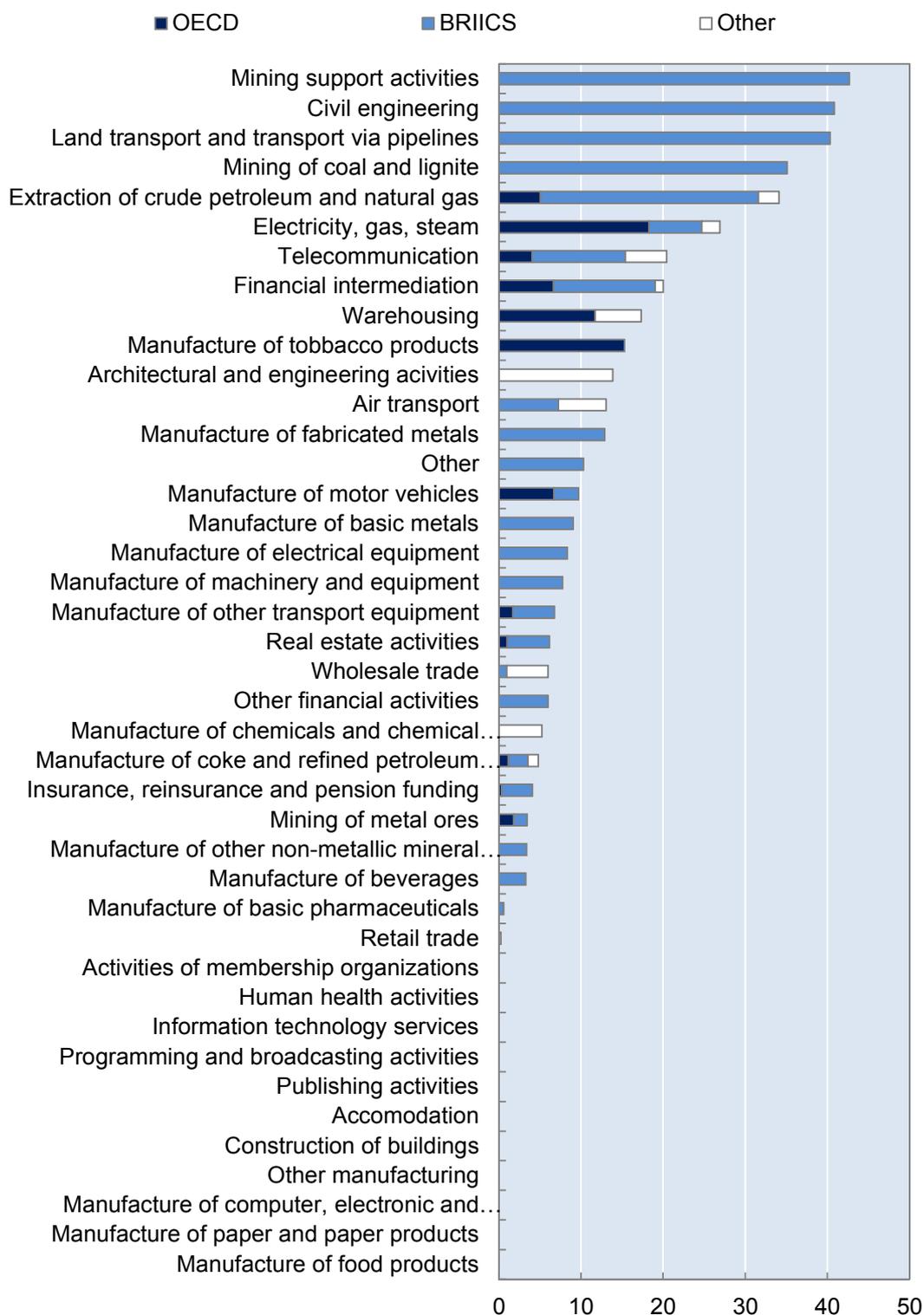
²⁹ This category includes some big petrol and gas providers such as, for example, Gazprom.

³⁰ This number is driven by Japan Tobacco which holds rank 228 on the Forbes 2000 list.

³¹ This reflects the 2009 bail-out and the ultimate ownership by the U.S. government of General Motors which was ranked 61st on the Forbes 2000 list for the business year 2010-2011. In December 2010 General Motors repurchased a substantial part of its shares and thus, according to our criteria, the firm lost its SOE status.

³² As discussed above this reflect the engagement of various OECD governments in the financial sector during the crisis. At the same time, because of the methodology used to compile the Forbes Global 2000 list some of the world's largest financial institutions are not included in the analysis.

Figure 7. Sectoral SOE shares in selected sectors



Source: Authors' calculations using World Development Indicators.

3.7 *Extension of the dataset and robustness checks*

53. The methodology used in this paper aims at providing comparable indicators of state ownership across countries and economic sectors while using a sample of the world's most important firms. This is why it is based on *Forbes Global 2000* financial data and on ownership data from ORBIS and other sources. Yet, to what extent are the indicators developed using world's 2000 largest firms robust if the sample is extended to smaller firms? Also, how robust is the financial information used in comparison to other sources? To answer both questions, an alternative indicator, based on a larger sample of firms, has been calculated and compared with the original CSS indicator.

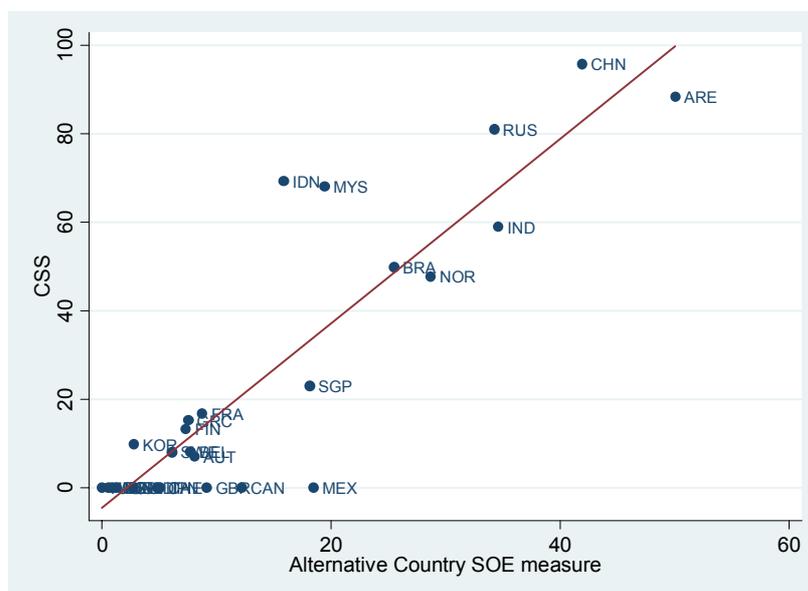
54. The sample has been extended to 9600 firms using the Orbis database, covering top 200 firms³³ in each of the 48 countries for which data is available. The same ownership criterion of more than 50% global ultimate state ownership has been applied³⁴ and key financial statistics such as firms' employees, operating revenue, gross profits, total assets and sales have been used to calculate the alternative share of state ownership.³⁵ Foreign firms have been included in this sample and, thus, our alternative share likely under rather than overestimates the extent of the state's ownership in a given country.

55. Not surprisingly, and taking into account the differences in the composition of indicators, the shares of state firms among the top 200 country firms tend to be smaller as compared to the original CSSs. Most importantly, both measures are highly correlated (coefficient of correlation of 0.9) (Figure 8). Consequently, both of these measures give very similar country rankings, especially for countries with highest CSSs.

³³ The ranking is in terms of turnover as reported in the Orbis database.

³⁴ Individual verification of ownership is not possible for this sample of 9 600 firms. Thus ownership is indicated as private when no indication of state ownership is provided by Orbis.

³⁵ The alternative country SOE share is the average of employees, operating revenue, total assets and sales shares. A caveat of this measure is that financial information contains, in contrast to the smaller dataset provided by Forbes, missing observations. This measure should therefore mainly be considered as an instrument to test for robustness of the earlier results.

Figure 8. Robustness test: CSS vs an alternative country SOE share measure

Source: Authors' calculations.

4. International activities of SOEs

56. One of the most salient economic developments since the 1980s has been the global integration of production chains and the spread of multinational enterprises. Today, one US dollar of value added in the OECD area is associated with approximately 28 cents worth of exports, up from 19 cents at the beginning of 1980s. This provides an indication of the extent to which economic activity has become more international. The number of multinational enterprises, broadly defined as firms that “control and manage production establishments in at least two countries” (Caves, 1996), grew between 1980 and 2004 by a factor of 4. In 2010, the amount of value added by multinational enterprises reached USD 16 trillion and the foreign subsidiaries of these firms contributed about 10% of world GDP and a third of world exports (UNCTAD, 2011).

57. SOEs, too, evolved from the traditional government-granted monopolies operating mainly in national markets and sheltered from foreign competition, towards state-owned corporations with objectives of foreign investment or expansion into world markets for goods and services. In some of the non-OECD countries with the largest SOE sectors, international expansion of state enterprises is an explicit policy objective (see Annex 1.5).

4.1 SOE prevalence and cross-border trade

58. Section 3 presented the methodology for assessing the prevalence of SOEs across 38 OECD and non-OECD countries, as well as across 41 industries based on a sample of the world's 2000 largest firms. This analysis showed that total sales of SOEs in the sample amounted to 19% of the value of global exports of goods and services. While data currently at hand do not allow us to assess the exact share of these sales associated with exports,³⁶ ca. 90% of SOEs in our dataset had at least one foreign subsidiary suggesting that international activity accounts for an important part of their endeavours. Should these SOEs benefit from unfair advantages granted by their governments, these data suggest a fair potential for distortions in

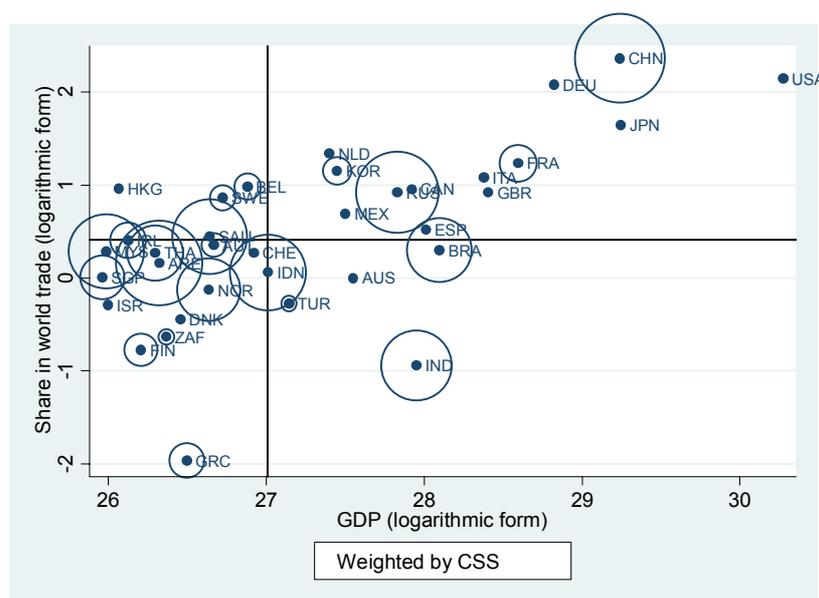
³⁶ While exports-to-sales ratio variable exists, for instance, in the Orbis database, the coverage of this statistic across the whole sample of firms is very poor.

world markets. This tentative hypothesis is further supported by some of the more refined statistics presented below.

59. Indeed, some of the countries with highest SOE shares are important traders (Figure 9). This is most notably the case for China. In 2010, China was the world's largest merchandise exporter, accounting for more than 10% of world's total merchandise exports; across the 38 countries covered in Section 3, China also had the highest weighted share of SOEs (96%) among its largest enterprises. This provides an indication as to why China is often mentioned in the context of possible cross-border effects of SOEs. Other economies with high SOE shares individually account for much smaller shares of world trade than China and display a strong heterogeneity with regard to their role in world trade, relative to their GDP. Yet, together, the seven countries following China in terms of high SOE shares (the United Arab Emirates, Russia, Indonesia, Malaysia, Saudi Arabia, India and Brazil) accounted for an additional 10.4% of world trade. Thus, the eight countries with the highest SOE shares collectively account for more than 20% of world trade. Among the OECD countries, France comes across as the countries with relatively high shares in world trade as well as moderate SOEs shares among its largest firms (Figure 9).

60. It is worth pointing out here that competitive neutrality disciplines and corporate governance standards are less well advanced in the non-OECD countries having high SOE shares, than in the OECD area. Additionally, some of these non-OECD countries explicitly set international expansion as one of their SOE policy objectives (Annex 1). This points to a fair potential for economic distortions in relation to SOEs.

Figure 9. Country's share in world merchandise trade vs GDP, weighted by CSS (2010).



Source: World Bank Development Indicators and authors' calculation. Note: black lines indicate respective medians.

61. Certainly, the observation that countries with high SOE shares account for a significant part of world trade does not indicate that state ownership is a serious cross-border issue. For example, this would not be the case if SOEs were disproportionately concentrated in domestic, non-tradable sectors. Yet, as explained in detail below, while our data confirm that this is the case for some sectors, our analysis also shows that SOEs are very active in sectors that account for significant portions of world trade. This underscores the

importance of engaging of these important non-member countries in discussion of the cross-border effects of the activities of these firms.

62. For example, there are several manufacturing sectors with moderate SOE shares that account for significant chunks of world trade. Figure 10 shows this for merchandise trade. It replicates the 2-digit NACE sectoral SOE shares presented in Section 3 and juxtaposes them with the estimates of shares of these sectors in world merchandise and services trade.³⁷ *Manufacture of motor vehicles, trailers and semi-trailers*, with an average SOE share of 20%, accounts for close to 12% of world trade. SOE presence in other important manufacturing sectors is almost entirely accounted for by the BRIICS. *Manufacture of fabricated metal products, except machinery and equipment*, *Manufacture of basic metals*, *Manufacture of electrical equipment*, *Manufacture of machinery and equipment n.e.c.* as well as *Manufacture of other transport equipment* all have SOE shares above 7%, while together they are estimated to account for up to 60% of world merchandise trade.

63. Several sectors with relatively little trade exhibit high SOE shares, as one might expect with a more traditional model of state ownership. Such is the case for *Mining support service activities*, *Mining of coal and lignite* and *Extraction of crude petroleum and natural gas* or *Electricity, gas, steam and air conditioning supply* with SOE shares of respectively 42%, 35%, 34% and 27%, but an estimated combined share of 7.5% of the value of world merchandise exports in 2010. It is worth mentioning here that these high sectoral SOE shares are also accounted for almost entirely by SOEs from the BRIICS (Section 3).

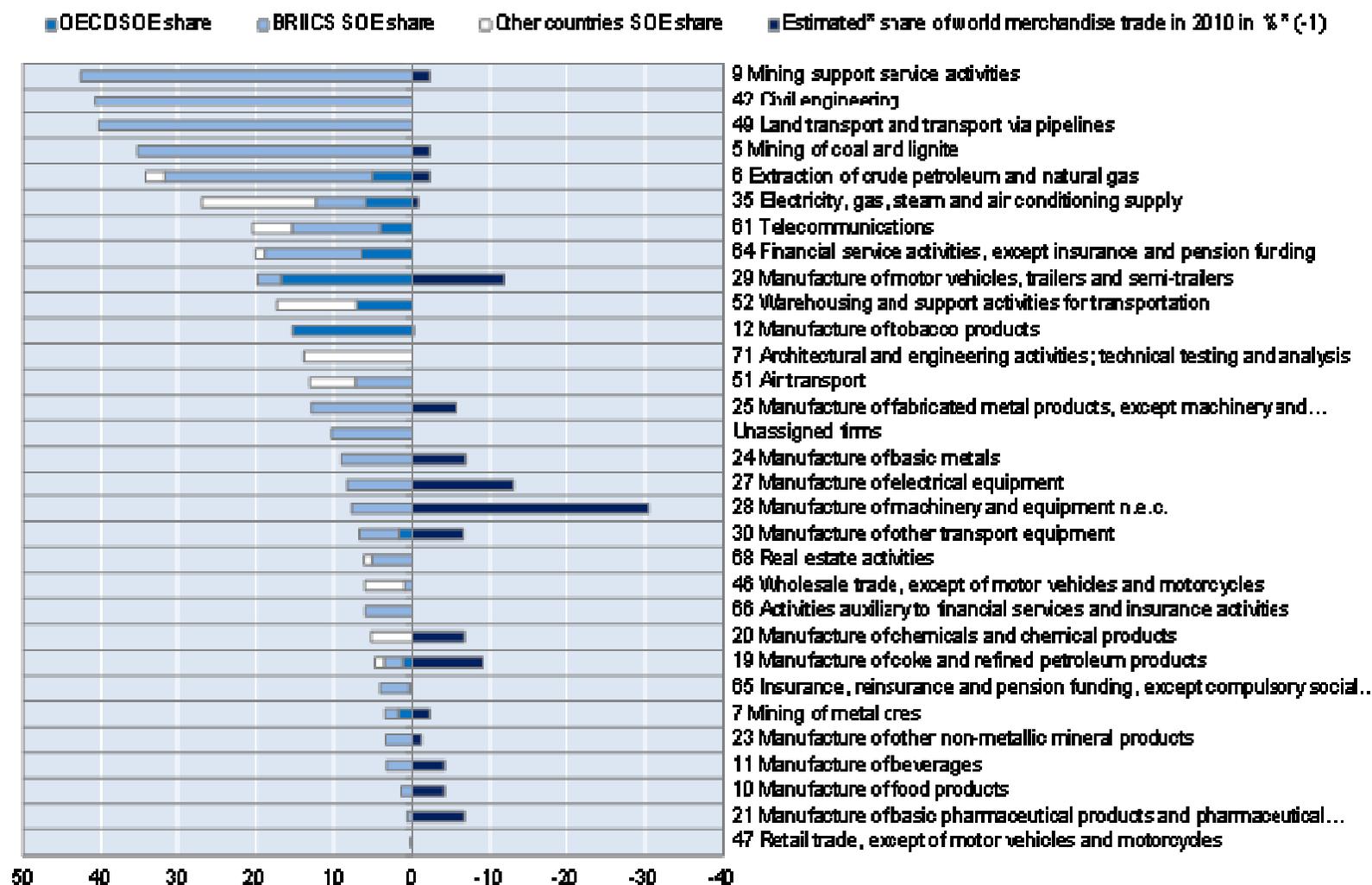
64. Figure 10 shows that SOE presence is very prominent in service sectors such as *Civil engineering* (SOE share of 41%), *Land transport and transport via pipelines* (40%), *Telecommunications* (20%), *Financial service activities, except insurance and pension funding* (20%), *Warehousing and support activities for transportation* (17%), *Architectural and engineering activities; technical testing and analysis* (14%), and *Air transport* (13%). Here again the BRIICS countries' SOEs account for most of the high shares, with the exception of *Electricity, gas, steam and air conditioning supply*, *Telecommunications* and *Warehousing and support activities for transportation*, where contributions by SOEs of the OECD and other countries are also significant.

65. While the value of cross border trade in services (Modes 1 and 2) is only a fraction of the value of world's goods trade, and while the IMF Balance of Payments (BOP) classification of services categories does not have a direct correspondence for all NACE sectors, it is nonetheless clear that some of the services sectors with highest SOE shares also account for significant shares of world services trade. For example, *Civil engineering* and *Architectural and engineering activities; technical testing and analysis* are two important sub-sectors of the BOP category *Other business services*, which accounts for approximately 21% of world services trade (Table 5). The BOP category *Transportation services*, which includes NACE's *Land transport and transport via pipelines* as well as *Air transport*, accounts for another 20% of world services trade. *Financial service activities, except insurance and pension funding* account for approximately 7% of total services trade.

³⁷

The latter are estimates since the existing classifications for which trade data are available, such as for example ISIC, do not map unambiguously into 2-digit NACE sectors. In particular, some 4-digit ISIC categories map into more than one 2-digit NACE category, resulting in certain degree of double counting. Thus, the trade share estimates should be treated as indicative only. Nevertheless, when combined with SOE shares, these trade figures do provide some interesting insights into the potential role of SOEs in international markets for specific types of products.

Figure 10. Sectoral Prevalence of SOEs and world merchandise trade



Source: Authors' calculations based on Forbes Global 2000, Orbis, UN Comtrade and IMF Balance of Payments.

66. In sum, as was the case for merchandise trade, some of the services sectors with relatively high SOE presence are in fact intensely traded. This suggests that there is a potential for economic distortions in the world markets if the SOEs operating in these sectors benefit from unfair advantages granted to them by governments. The visible importance of the BRIICS countries' SOEs in these sectors, their less advanced status with respect to corporate governance and competitive neutrality policies, and their pursuit of active international expansion of SOEs, all suggest that cross-border aspects may be an important element of debate on levelling the playing field between private and public businesses.

Table 5. Composition of world services trade in 2010, by category of service

Communications Services	2%
Computer and Information Services	3%
<i>Telecommunications</i>	2%
Construction Services	4%
Financial Services	7%
Government	3%
Insurance Services	2%
Other Business Services	21%
<i>Other Business Services, Miscellaneous Business, Professional, and Technical Services</i>	16%
Personal, Cultural, and Recreational Services	0%
Royalties and License Fees	9%
Transportation	20%
<i>Transportation, Other Transport</i>	5%
<i>Transportation, Air Transport,</i>	8%
Travel	28%

Source: Authors' calculations based on Forbes *Global 2000*, Orbis and IMF Balance of Payments.

4.2 Foreign subsidiary activity of SOEs

67. Having explored the presence of SOEs in sectors of the domestic economy that tend to be more important to international trade, now we turn to a set of questions related to SOEs presence abroad: to what extent are SOEs active abroad as owners of subsidiaries? How does this foreign ownership compare with their domestic ownership? How does this compare with privately-owned businesses? In order to shed some light on these questions, the firm-level dataset of world's largest companies has been augmented with information on domestic and foreign subsidiaries of SOEs and non-SOEs available in the Orbis database (see Section 3).³⁸

68. Inclusion of subsidiary information resulted in expansion of the dataset to more than 332 000 observations, where non-SOEs and SOEs from the OECD countries account for ca. 305 000 domestic and foreign subsidiaries. The corresponding statistics for the BRIICS and other emerging countries are respectively ca. 12 000 and 15 000 subsidiaries. More than 35% of all subsidiaries in our dataset (almost 119 000) have a mother company based in the US, reflecting the prominence of US firms among the world's largest companies as well as the degree of their connectedness with the global economy.

69. The median parent firm from the Forbes *Global 2000* list has 751 domestic or foreign subsidiaries in our dataset. Around 55% of all of the subsidiaries in the dataset—more than 181 000 firms—operate outside the parent company's home market. Again, US companies are most represented internationally with more than 46 500 foreign subsidiaries. Overall, firms from the OECD countries are the largest owners of foreign subsidiaries: 90% of foreign subsidiaries in our dataset have parents domiciled in the OECD area. Less than 2% of foreign subsidiaries, ca. 3 000 firms, have parents domiciled in the BRIICS, and approximately 10 000 foreign subsidiaries are from countries other than the OECD or the BRIICS.

³⁸ 111 entries with inconsistent subsidiary identifiers were excluded.

70. Only a fraction of foreign subsidiaries, ca. 3 000 firms, or less than 2% of the total, have SOEs as their parent companies. This is considerably lower than the share of SOEs among the *Global 2000* list, suggesting plausibly that private firms may be overall more active internationally than SOEs.

71. In order to assess the extent of international orientation of SOEs' direct investment in our sample, we conduct regressions at the firm-level. The dependant variable in a first regression is the number of a firm's domestic subsidiaries; in a second regression the number of its foreign subsidiaries; and in a third regression the ratio of foreign to domestic subsidiaries as a proxy for internationalisation. Independent variables are the mother company's sales, profits, assets, market value and a dummy that equals unity if the firm is an SOE and equals zero otherwise. Country and sector fixed effects control for respective country and sector idiosyncrasies.³⁹ The results (Table 6) show that the SOEs in the sample do not differ from private firms with regard to their number of domestic subsidiaries but their number of foreign subsidiaries and as such the ratio of foreign over domestic subsidiaries is significantly lower than for private firms. These findings suggest that the SOEs among the world's largest publically listed companies tend to be less internationally oriented than their private counterparts.

Table 6. Firm-level regressions on the internationalisation of SOEs

	Domestic Subsidiaries	Foreign Subsidiaries	Ratio Foreign over Domestic Subsidiaries
Sales	0.274*** (0.039)	0.335*** (0.047)	0.058 (0.045)
Profits	-0.166*** (0.041)	-0.036 (0.049)	0.069 (0.048)
Assets	0.343*** (0.041)	0.097** (0.044)	-0.215*** (0.043)
Market Value	0.141*** (0.049)	0.421*** (0.060)	0.355*** (0.058)
SOE	-0.83 (0.113)	-0.923*** (0.135)	-0.582*** (0.132)
Constant	-3.432*** (0.530)	-5.398*** (0.588)	-2.792*** (0.606)
F-test	13.67***	17,86***	14.44***
R ²	0.379	0.443	0.397

Source: Forbes Global 2000 and Orbis, authors' calculations. Regressions are OLS. Country and sector fixed effects are not reported for brevity. Statistical significance is indicated by $p < 0.01$ ***, $p < 0.05$ ** and $p < 0.1$ *.

72. In a next step of analysis, the last regression with the ratio of foreign subsidiaries over domestic subsidiaries as dependant variable is repeated but instead of using the total sample we separately test subsamples with OECD countries, BRIICS countries, and other countries. This allows us to observe potential differences among these groups. The results are shown in Table 7. The variable of interest, an indicator that equals 1 if the firm is an SOE, is statistically significant and has a negative coefficient in each of these estimations, meaning that SOEs are less internationally oriented than their compatriot private firms in each of three sub-samples. Yet, there are important differences with regard to the quantitative magnitude of this aspect: The SOE coefficients for the OECD and BRIICS countries indicate that SOEs in OECD countries tend to be relatively more domestically oriented than in emerging economies.⁴⁰

³⁹ All continuous variables are in their logarithmic form. Firms with negative profits are dropped from these estimations.

⁴⁰ Whereas these findings might suggest that SOEs' domestic markets as well as their export destinations are major venues for SOE-POE competition it is noteworthy that the results at hand do not allow for drawing inference about the dynamics of SOE internationalization over time. As such, a deeper analysis of trends of SOE internationalisation and SOE foreign investment strategies is warranted (see Annex for a qualitative analysis of different aspects of SOE outward orientation).

Table 7. Firm-level regressions on the internationalisation of SOEs: Sub-samples

<i>Dependant variable: Ratio Foreign over Domestic Subsidiaries</i>			
	Sub-sample: OECD	Sub-sample: BRIICS	Sub-sample: Other countries
Sales	-0.018 (0.051)	0.112 (0.132)	0.380*** (0.111)
Profits	0.071 (0.054)	0.207 (0.145)	-0.209* (0.109)
Assets	-0.180*** (0.048)	-0.190 (0.128)	-0.311*** (0.115)
Market Value	0.378*** (0.066)	0.232 (0.170)	0.482*** (0.149)
SOE	-1.211*** (0.260)	-0.612*** (-3.933)	-0.408* (0.244)
Constant	-3.014*** (0.737)	-3.933*** (1.142)	-1.436 (1.385)
F-test	19.04***	10.08***	5.85***
R ²	0.437	0.487	0.613

Note: Sources are Forbes Global 2000 and Orbis and authors calculations. Regressions are OLS. Country and sector fixed effects are not reported for brevity. Statistical significance is indicated by $p < 0.01$ ***, $p < 0.05$ ** and $p < 0.1$.*

5. Existing approaches dealing with anti-competitive cross-border effects of SOEs

73. As illustrated in Section 2, advantages potentially granted to SOEs (or disadvantages afflicting them) take various forms and different policy frameworks offer a variety of options for levelling the playing field. The current section summarises various regulatory frameworks that deal with certain aspects of international competition between POEs and SOEs. These include: OECD Guidelines on Corporate Governance of SOEs (OECD SOE Guidelines); national competitive neutrality frameworks (CNFs); national competition laws; the WTO agreements; preferential trade agreements (PTAs); and bilateral investment agreements (BITs). Annex 3 to this paper further expands on some of the specifics of these frameworks relevant in the context of SOEs.

74. Some of these frameworks have been designed with domestic objectives in mind (e.g. OECD Guidelines, CNFs, national competition laws) or were created at the time when state sector has been oriented primarily towards domestic markets (WTO agreements), and thus may offer only partial provisions in this regard. Some PTAs and BITs contain more modern SOE disciplines which however typically concern a small number of countries. The various frameworks differ also considerably in the extent to which they oblige countries to implement them. For instance, the OECD Guidelines or CNFs are adopted and implemented voluntarily, while SOE-related provisions in the WTO, PTAs and BITs others are legally binding, often with provisions for dispute settlement.

5.1 Competition law

75. National antitrust law can in principle be used by governments as well as by competitors and consumers in private actions to deal with predatory abuse of dominant position by SOEs, including predatory pricing strategies, and anticompetitive effects associated with merger and acquisition activity of SOEs. However, as Capobianco and Christiansen (2011) point out, there are several general issues with the application of competition law to anti-competitive behaviour of SOEs, which are all related to the fact that traditional antitrust law is predominantly focused on preventing dominant companies or cartels from restricting competition, and thus normally assumes profit-maximisation as a competitive benchmark. Hence, it may be of limited relevance in the case of SOEs because of several types of government-created advantages (e.g. soft budget constraints or subsidisation), which make them more likely to engage in the

so-called non-recoupment predation, not penalised under most competition laws.⁴¹ Similarly, calculation of costs benchmarks for SOEs can be difficult because of non-economic objectives or incentives, particular governance structure and the lack of accounting transparency.

76. Fundamentally, antitrust law can help remedy some of the anti-competitive effects of SOEs only if they are not exempted from its application. According to Capobianco and Christiansen (2011) in the OECD countries the enforcement of competition law is generally neutral as to ownership of companies and, barring a few exceptions, most OECD countries do not exclude public sector businesses from competition law. This is particularly the case for SOEs incorporated according to the ordinary company law (OECD, 2012). While practices in the OECD countries in this regard are relatively well documented, this is less so for some of the non-OECD countries with large SOE sectors and there have been reports of exemptions.^{42,43}

5.2 *OECD Guidelines on Corporate Governance of SOEs*

77. OECD Guidelines on Corporate Governance of SOEs (OECD SOE Guidelines; OECD, 2005a) constitute the first international benchmark to help governments improve the corporate governance of SOEs by providing standards and good practices, as well as guidance on implementation. The Guidelines recommend the maintenance of a level playing field among state-owned and privately owned incorporated enterprises operating on a commercial basis, by listing and elaborating on a number of guiding principles in a number of areas.⁴⁴ Capobianco and Christiansen (2011) assess that their implementation would go a long way towards addressing competitive issues associated with the distorted incentive structure of SOE management as well as conditions in access to finance, disclosure and cost-coverage of SOEs objectives.⁴⁵

5.3 *Other domestic arrangements aimed at fostering competitive neutrality*

78. Going beyond reforms of corporate governance of SOEs, some OECD countries as well as the European Union have established various types of frameworks that aim to identify and eliminate competitive advantages of SOEs with respect to taxation, financing costs and regulatory quality.⁴⁶ Comparison of competitive neutrality framework (CNF) of Australia and competitive-neutrality

⁴¹ The recoupment test establishes whether following an allegedly predatory pricing behaviour the predator would be able to eliminate competition to the extent that it collect at least enough profit to recover the losses it sustained by engaging in predatory pricing (Capobianco and Christiansen, 2011).

⁴² Some of the existing sources indicate that in China, for example, immediately after establishment of its anti-monopoly law in 2007, some of the SOEs did not adhere to the notification procedure associated with mergers and that there were doubts about whether the Ministry of Commerce responsible for handling anti-trust cases was actively trying to remedy the situation (Taylor, 2011). According to the same source there were several cases where no action was taken by the antitrust authorities against SOEs despite several lawsuits brought to the courts by private individuals. Yet, more recently a number of actions have been taken against Chinese SOEs by China's anti-monopoly authorities.

⁴³ For more on application of antitrust law to SOEs in cross-border context see Annex 3.1.

⁴⁴ These include: Ensuring an Effective Legal and Regulatory Framework; Principles of state Acting as an Owner; Equitable Treatment of Shareholders; Relations with Stakeholders; Transparency and Disclosure; The Responsibilities of the Boards of State-Owned Enterprises.

⁴⁵ For more on OECD Guidelines on Corporate Governance of SOEs see Annex 3.2.

⁴⁶ Recent report *Competitive Neutrality: Maintaining a Level Playing Field between Public and Private Business* (OECD, 2012) has identified and documented the various member country practices in realising competitive neutrality.

arrangements of the EU⁴⁷—the two are seen as the most advanced in the OECD area—indicates that they do *de jure* protect foreign and domestic companies operating in, respectively, Australia and EU, from anti-competitive conduct of Australia's and EU's SOEs. However, similarly to the case of reforms of corporate governance of SOEs discussed above, they have been adopted on a unilateral basis, they are non-binding and they do not deal with potential anti-competitive effects of foreign SOEs operating in these markets. Moreover, it is not clear whether these arrangements are an equally effective a tool when used by foreign firms in the domestic market or whether they are as rigorously applied when it is competition abroad that is in question.⁴⁸

5.4 *WTO disciplines*⁴⁹

79. There is no reference to the term “SOE” in the GATT/WTO text, but several agreements contain related concepts (e.g. state-trading enterprise, public monopoly, public body, etc.) which may overlap with the status of some SOEs. Hence, several WTO rules may be applicable and relevant to SOEs. From this perspective WTO rules that can be relevant in the context of potentially anti-competitive behaviour of modern SOEs can be categorised into five groups.

80. First, there are the WTO rules that are in principle ownership-neutral and, therefore, discipline some of the trade distorting government policies that may involve SOEs. For example, the national treatment or the most-favoured nation principles oblige all WTO Members to treat imports not less favourably than domestic like products or than other like imports, independently of whether the exporter was a POE, an SOE or a government. The Antidumping Agreement authorizes an importing Member to impose antidumping duties on "dumped" imports—whether the dumped imports were produced and exported, or exported, by a private firm or an SOE. Also, subsidies in the goods sector are regulated by the WTO irrespective of whether they are granted to an SOE or a POE.

81. Second, there are the WTO provisions that allow WTO Members to exempt SOEs' actions from the application of the WTO disciplines. For instance, Members can specify that their GATS specific commitments apply only to privately owned entities, which may restrict market access or national treatment of foreign SOEs.

82. Third, specific provisions under the GATT explicitly discipline some practices in which so-called State Trading Enterprises (STEs), some of which can but do not have to be state-owned, can be used by governments as vehicles to influence international trade. This is also the case for STEs under the Agreement on Agriculture. The principle here is that a State cannot hide behind such STEs to avoid its WTO obligations. However, neither STEs nor state trading are clearly defined and this ambiguity seems to represent a handicap in the application of the article. In a similar vein, the Subsidies and Countervailing Measures (SCM) Agreement disciplines subsidies in the goods sector involving financial contributions provided by either governments or *public bodies* which may be SOEs. Yet, when SOEs act as conveyors of subsidies (e.g. providing cheaper inputs to other firms) the application of subsidy disciplines tends to be more complicated. The WTO Agreement also contains special rules concerning tariffs on products traded by import monopolies, or other actions of public monopolies or other public bodies.

⁴⁷ EU's legal arrangements should be distinguished from explicit CNF approaches in that they cover some activities not related to ownership (e.g. state aid) and do not cover some of the inadvertent advantages related to SOEs (e.g. cheaper finance form commercial lenders related to ownership status, incumbency advantages, etc.).

⁴⁸ For more on CNFs of Australia and EU see Annex 3.3.

⁴⁹ This section as well as the Annex section 3.4 have benefitted from comments by colleagues at the WTO Secretariat. I should be noted that any opinions expressed here do not bind the WTO Members or the WTO Secretariat.

83. Fourth, generally WTO rules apply exclusively to governments. However, under certain circumstances, actions of SOEs can be "attributed" to states or governments, subjecting them to the same WTO rules as governments are subject to. Here state ownership is also not the determining factor, but it can be arguably related to the degree of state influence and makes such an attribution more likely.

84. Fifth, WTO Accession Protocols of China and Russia contain certain provisions which specifically refer to state ownership. Importantly, these accession protocols are an integral part of the WTO Agreement. Yet, doubts have been expressed whether even the relatively strong provisions in China's Protocol have sufficiently impeded trade-distorting policies that advantage Chinese SOEs.

85. Overall, each of the above types of WTO disciplines offers provisions that deal with certain aspects of international competition between POEs and SOEs. To what extent these provisions are complete and where there might be possibilities for extension in the future is developed in more detail in Annex A3.4.

5.5 SOE provisions in preferential trade agreements and bilateral investment treaties

86. A number of PTAs include specific provisions on SOEs as well as related regulations which can specify explicitly that provisions apply similarly to SOEs and to private firms, or they can provide exceptions for state enterprises or state monopolies (Solano and Sennekamp, 2006).⁵⁰ It is hard to say in general whether these provisions improve upon the existing WTO provisions in terms of disciplining unwanted effects of SOEs, but many of the provisions aim to extend WTO provisions by requiring that state enterprises and state monopolies do not discriminate according to the country of origin of firms of a shared PTA.

87. A number of PTAs comprise dispute settlement mechanisms that may represent alternative strategic venues for arbitration (Bush, 2007).⁵¹ Even though several PTAs include investment provisions, the major venue for the bilateral regulation of investment are bilateral investment treaties (BITs). In many instances, BITs directly address issues of competition in countries with a considerable presence of the state sector - the US model BIT, is an example, aiming *inter alia*, to "...sharpen the disciplines that address preferential treatment to state-owned enterprises, including the distortions created by certain indigenous innovation policies".

88. However, even in the case of this advanced model BIT, some argue that SOE-related provisions may fall short of effectively protecting investors in countries with important SOEs, such as China or India.

⁵⁰ For instance, the following PTAs have been identified by previous OECD trade policy research to contain provisions on state enterprises or state monopolies (Solano and Sennekamp, 2006): Albania – Bosnia and Herzegovina; Albania – Bulgaria; Albania – Croatia; Albania – Former Yugoslav Republic of Macedonia; Albania – Romania; Albania – Serbia and Montenegro; Albania – UNMIK (Kosovo); Algeria – EC; Australia – Singapore; Australia – US; Azerbaijan – Georgia; Bosnia and Herzegovina – Bulgaria; Bosnia and Herzegovina – Croatia; Bosnia and Herzegovina – Former Yugoslav Republic of Macedonia; Bosnia and Herzegovina – Moldova; Bosnia and Herzegovina – Serbia and Montenegro; Canada – Chile; Canada – Costa Rica; CariCom; CEFTA; Central America – Chile; Central America – Panama; Chile – EC; Chile – Korea; Chile – Mexico; Chile – US; Chinese Taipei – Panama; Colombia – Mexico – Venezuela; Croatia – EFTA; Croatia – Former Yugoslav Republic of Macedonia; Croatia – Moldova; Croatia – Serbia and Montenegro; EC – Jordan; EC – Morocco; EFTA; EFTA –FYROM; EFTA – Jordan; European Economic Area; Former Yugoslav Republic of Macedonia – Moldova; Former Yugoslav Republic of Macedonia – Romania; Former Yugoslav Republic of Macedonia – Turkey; Israel – Mexico; Israel – Romania; Korea – Singapore; Mexico – Uruguay; Moldova – Serbia and Montenegro; NAFTA; Romania – Serbia and Montenegro; Singapore – US; Trans-Pacific Strategic Economic Partnership.

⁵¹ Yet, some PTAs like the EC-Chile agreement exclude competition-related aspects from the agreement's dispute settlement and arbitration mechanism.

Scissors (2012), for example, points out to insufficiencies with regard to the definition of state enterprises, transparency requirements or arbitral proceedings.⁵²

5.6 National investment regimes

89. Some of the precursor OECD work on cross-border effects of SOEs was undertaken by the OECD Investment and Competition Committees with respect to foreign government controlled investment (OECD, 2008a; OECD, 2008b; and OECD, 2010b). The work of the Investment Committee in this area has aimed to keep markets open to foreign government-controlled investments, notably by reaffirming the relevance for them of OECD and international investment law principles that promote non-discrimination and liberalisation.⁵³ In particular, the work sought to help recipient countries develop policies that are both open and fair to foreign government controlled investors while also helping them to address any genuine concerns or risks that might be posed by their investments (e.g. relating to national security; 2008b). This work led to the adoption in 2008 of the *OECD Ministerial Declaration on SWFs* and, in May 2009, of the OECD Recommendation on *Guidelines for Recipient Country Policies Relating to National Security* (Gaukrodger, 2010).

90. The Investment Committee has since done further in depth work on recipient countries' concerns about investment by foreign SOEs and treatment of SOEs under investment agreements. This includes a detailed exploration of possible difficulties for host country law enforcement and civil proceedings if SOEs are eligible for protection under foreign state immunity⁵⁴, the usefulness of existing OECD instruments in gauging the commercial orientations of foreign SOE investors (with the support of the Working Party on State Ownership and Privatisation Practices⁵⁵) and the role of competition law in addressing some of these concerns.⁵⁶

5.7 Government procurement rules

91. Government procurement regulation at the national and international levels regulates the purchase by governments and state-owned enterprises of goods and services, including imports, and thus can be an important element of levelling the playing field between SOEs and POEs. There are public government provisions in the plurilateral Agreement on Government Procurement (GPA), regional trade agreements like North-Atlantic Free Trade Agreement (NAFTA), bilateral trade agreements like U.S.-Colombia Free Trade Agreement or EU-Mexico Free Trade Agreement, and domestic public procurement policies.⁵⁷

⁵² For more on SOE provisions in PTAs and BITs see Annex Section 3.5.

⁵³ The core OECD instruments for promoting non-discrimination and progressive liberalisation for international investment are the *OECD Declaration on International Investment and Multinational Enterprises* and the *OECD Codes of Liberalisation of Capital Movements and of Current Invisible Operations*. The relevance of non-discrimination and other provisions in OECD and other instruments will be explored further in future work undertaken by the OECD Investment Committee.

⁵⁴ Gaukrodger D. (2010), Foreign State Immunity and Foreign Government Controlled Investors. OECD Working Papers on International Investment 2010/2; <http://www.oecd.org/dataoecd/21/32/45036449.pdf>

⁵⁵ See [DAF/INV/RD\(2010\)1](#).

⁵⁶ See: www.oecd.org/daf/investment/foi and "A Stock-taking of International Investment by State-Owned Enterprises and of Relevant Elements of National and International Policy Frameworks", DAF/INV/WD(2013)5.

⁵⁷ For more on government procurement see Annex Section 3.6.

6. Conclusions

92. Multiple definitions of SOEs are applied across countries, which complicates formulation of a meaningful uniform definition of SOEs that would cover the full extent of government control and enable cross-country comparison. Moreover, fostering a level playing field in international markets aims not at reducing the extent of state ownership *per se* but at eliminating unfair benefits bestowed by governments which may result in anti-competitive behaviour of state-owned or private firms. In order to spearhead a methodologically consistent assessment of the role of SOEs in global trade and investment this paper adopts a working definition of SOE as a majority state-owned enterprise, while also offering insights into other forms of state ownership and government-created competitive advantages.

93. There are multiple conclusions emerging from the analysis of this report. On the one hand, SOEs' presence in international markets and their influence on cross-border trade and investment is still relatively undocumented. Analysts and policy makers alike are currently at a fact-finding stage, still establishing useful definitions and a common understanding of the observed trends. On the other hand, there is a significant interest and a sense of urgency about addressing cross-border effects of SOEs' activity in an adequate and timely way. Commercial advantages potentially granted to SOEs (or disadvantages afflicting them) take various forms and various policy frameworks offer a variety of options for levelling the playing field. Thus, it will be important in future work to narrow down this complex subject matter and focus on the most important and pressing issues.

94. Evidence presented in this paper indicates that various actions of SOEs as well as advantages allegedly granted to them by governments, have at times been contested as being inconsistent with national or international regulations, with varying degree of success. This illustrates, first, that governments have at times pursued SOE strategies that were seen by others as being illegitimate or having anti-competitive effects. Second, it appears that some of these allegations were without merit or, if not, that the existing legal frameworks may be only partially fit to deal with cross-border effects of SOEs' activities.

95. Using a sample of world's largest firms and their foreign subsidiaries, the empirical part of this paper assessed the importance of SOEs by country, by broad sector of economic activity, and by their international trade and investment activities. The results of the analysis show that many of the countries with the highest SOE shares are also important traders. Many sectors with strong SOE presence, including raw materials, merchandise and services, are in fact intensely traded. This suggests that there is a potential for economic distortions in world markets if the SOEs operating in these sectors benefit from unfair advantages granted to them by governments. The large state presence and international orientation of SOEs in some non-OECD countries highlight the need for enhanced dialogue on cross-border effects of state ownership going beyond the OECD membership.

96. Some of the regulatory frameworks that discipline certain forms of anti-competitive behaviour by SOEs in international markets, and which are discussed in this paper have been designed with domestic objectives in mind or were conceived at the times when state sector has been oriented primarily towards domestic markets. Thus, they often offer only partial SOE provisions. Others contain more modern SOE disciplines, which however typically concern a small number of countries and reflect specificities of their state sectors. Finally, various frameworks at the national, bilateral and multilateral level also differ considerably in the degree of required implementation and effective enforcement capacity.

97. All this suggests that future work could usefully focus on: documenting specific advantages inherent to SOEs that result in most cross-border distortions and comparing them with advantages granted to POEs; understanding the nature of SOEs-related trade distortions in specific sectors where state-ownership is established to have important cross-border implications; determining whether there is a need to fill gaps in existing policy frameworks dealing with cross-border effects of SOEs and finding the most constructive ways of doing so; and engaging in this debate key players outside the OECD membership.

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TABLES AND FIGURES ANNEX

Annex Table 1. Private enterprises and SOEs from the OECD and BRRIC countries among Forbes Global 2000 in 2011

Country	Forbes Global 2000 firms, by country	SOEs:	SOEs as share of each country's Global 2000 listed companies
Australia	40	0	0%
Austria	10	1	10%
Belgium	15	2	13%
Canada	68	0	0%
Chile	9	0	0%
Czech Republic	1	1	100%
Denmark	10	0	0%
Estonia	0	0	n.a.
Finland	12	1	8%
France	63	5	8%
Germany	52	1	2%
Greece	12	3	25%
Hungary	2	0	0%
Iceland	0	0	n.a.
Ireland	15	1	7%
Israel	12	0	0%
Italy	35	1	3%
Japan	260	1	0%
Korea	60	4	7%
Luxembourg	9	0	0%
Mexico	18	0	0%
Netherlands	28	0	0%
New Zealand	0	0	n.a.
Norway	10	2	20%
Poland	6	6	100%
Portugal	8	0	0%
Slovak Republic	0	0	n.a.
Slovenia	0	0	n.a.
Spain	29	0	0%
Sweden	27	1	4%
Switzerland	43	6	14%
Turkey	10	1	10%
United Kingdom	93	1	1%
United States	543	3	1%
Total (OECD):	1500	41	3%

Source: Authors' calculations based on Forbes *Global 2000* data.

Annex Table 2. Private enterprises and SOEs from the OECD and BRRIC countries among Forbes Global 2000 in 2011

Country	Forbes 2000 firms	SOEs	Share of SOEs
Brazil	37	7	19%
China	117	70	60%
India	57	30	53%
Indonesia	10	6	60%
Russia	23	9	39%
South Africa	16	1	6%
Total (BRIICS)	260	123	47%

Source: Authors' calculations based on Forbes *Global 2000* data.

Annex Table 3. Global top 25 firms in the business year 2010-2011

Forbes Rank	Company	Country	SOE	Sales	Profits	Assets	Market Value	Sector according to NACE Rev. 2
1	JPMorgan Chase	US	No	115.5	17.4	2117.6	182.2	Financial intermediation
2	HSBC Holdings	GB	No	103.3	13.3	2467.9	186.5	Financial intermediation
3	General Electric	US	No	150.2	11.6	751.2	216.2	Financial intermediation
4	ExxonMobil	US	No	341.6	30.5	302.5	407.2	Coke and refined petroleum products
5	Royal Dutch Shell	GB	No	369.1	20.1	317.2	212.9	Extraction of crude petroleum and natural gas
6	PetroChina	CN	Yes	222.3	21.2	251.3	320.8	Extraction of crude petroleum and natural gas
7	ICBC	CN	Yes	69.2	18.8	1723.5	239.5	Financial intermediation
8	Petrobras-Petróleo Brasil	BR	Yes	121.3	21.2	313.2	238.8	Extraction of crude petroleum and natural gas
8	Berkshire Hathaway	US	No	136.2	13	372.2	211	Insurance, reinsurance and pension funding
10	Citigroup	US	No	111.5	10.6	1913.9	132.8	Financial intermediation
11	Wells Fargo	US	No	93.2	12.4	1258.1	170.6	Financial intermediation
11	BNP Paribas	FR	No	130.4	10.5	2680.7	88	Financial intermediation
13	Banco Santander	ES	No	109.7	12.8	1570.6	94.7	Financial intermediation
14	AT&T	US	No	124.3	19.9	268.5	168.2	Telecommunication
15	Gazprom	RU	Yes	98.7	25.7	275.9	172.9	Land transport and transport via pipelines
16	Chevron	US	No	189.6	19	184.8	200.6	Coke and refined petroleum products
17	China Construction Bank	CN	Yes	58.2	15.6	1408	224.8	Financial intermediation
18	Wal-Mart Stores	US	No	421.8	16.4	180.7	187.3	Retail trade
19	Total	FR	No	188.1	14.2	192.8	138	Extraction of crude petroleum and natural gas
20	Allianz	DE	No	142.9	6.7	838.4	62.7	Insurance, reinsurance and pension funding
21	Bank of China	CN	Yes	49.4	11.9	1277.8	143	Financial intermediation
22	ConocoPhillips	US	No	175.8	11.4	156.3	109.1	Coke and refined petroleum products
22	Sinopec-China Petroleum	CN	Yes	284.8	10.9	148.7	107.7	Mining support activities
24	Volkswagen Group	DE	No	168.3	9.1	267.5	70.3	Manufacture of motor vehicles
25	Agricultural Bank of China	CN	Yes	49.4	9.5	1298.2	134	Financial intermediation

Note: Information on sales, profits, assets and market value is in billion USD. Source of financial information: Forbes. Source of ownership information: Orbis.

Annex Table 4. Global top 25 SOEs in the business year 2010-2011

Rank	Forbes Rank	Company	Country	Sales	Profits	Assets	Market Value	Sector according to NACE Rev. 2
1	6	PetroChina	CN	222.3	21.2	251.3	320.8	Extraction of crude petroleum and natural gas
2	7	ICBC	CN	69.2	18.8	1723.5	239.5	Financial intermediation
3	8	Petrobras-Petróleo Brasil	BR	121.3	21.2	313.2	238.8	Extraction of crude petroleum and natural gas
4	15	Gazprom	RU	98.7	25.7	275.9	172.9	Land transport and transport via pipelines
5	17	China Construction Bank	CN	58.2	15.6	1408	224.8	Financial intermediation
6	21	Bank of China	CN	49.4	11.9	1277.8	143	Financial intermediation
7	22	Sinopec-China Petroleum	CN	284.8	10.9	148.7	107.7	Mining support activities
8	25	Agricultural Bank of China	CN	49.4	9.5	1298.2	134	Financial intermediation
9	29	GDF Suez	FR	113.1	6.2	245.5	85.2	Electricity, gas, steam
10	34	China Mobile	CN	71.8	17.7	129.3	192.1	Telecommunication
11	51	Banco do Brasil	BR	68.9	7.1	488.7	48.5	Financial intermediation
12	60	Statoil	NO	90.4	6.5	110.3	83.8	Extraction of crude petroleum and natural gas
13	61	General Motors (*)	US	135.6	6.2	138.9	49.8	Manufacture of motor vehicles
14	68	China Life Insurance	CN	48.2	4.8	179.6	96.6	Insurance, reinsurance and pension funding
15	77	Rosneft	RU	46.1	10.4	93.9	85	Mining support activities
16	95	Saudi Basic Industries	SA	40.5	5.7	84.3	81.2	Manufacture of chemicals and chemical products
17	100	EDF Group	FR	87.2	1.4	319.9	78.2	Electricity, gas, steam
18	136	State Bank of India Group	IN	29.1	2.6	322.2	36.1	Financial intermediation
19	144	Cnooc	CN	27	8	41.8	101.3	Mining support activities
20	145	China Shenhua Energy	CN	23.1	5.8	51.6	82.3	Mining of coal and lignite
21	157	China Telecom	CN	32.5	2.3	61.8	47.2	Telecommunication
22	171	PTT PCL	TH	63.2	2.8	40.9	32.1	Wholesale trade
23	172	Oil & Natural Gas	IN	22.6	4.3	44.6	53.2	Mining support activities
24	178	Sberbank	RU	32.3	0.8048	234.4	74.4	Financial intermediation
25	179	Ecopetrol	CO	21.9	4.2	35.8	84.4	Extraction of crude petroleum and natural gas

Note: Information on sales, profits, assets and market value is in billion USD. Source of financial information: Forbes. Source of ownership information: Orbis.

* In, December 2010 General Motors repurchased a substantial part of its shares and thus, according to our criteria, the firm lost its SOE status.