

COMMENT BY

AMIT KHADELWAL While western economies have been struggling since the Great Recession, economic growth in emerging markets has been strong, particularly in those, like China, where the state plays a seemingly active role. In 2012, *The Economist* ran a special report charting the rise of powerful state-backed companies in emerging markets. As the report's author, Adrian Wooldridge, put it: "The era of free-market triumphalism has come to a juddering halt."¹

My table 1, reproduced from Przemyslaw Kowalski and others (2013), provides a sense of the importance of state-owned enterprises (SOEs) in some large developing countries. At the top are Chinese SOEs with sales that are 26 percent of gross national income, but the relative importance of state firms in Brazil, India, and Russia is also high. While scale can be important for businesses, the inefficiencies of SOEs are also well known. Reform-minded policymakers are looking at the evolution of China's state sector for lessons learned.

The broad strokes of China's state-sector reforms are well documented. During the mid-1990s, China faced a fiscal crisis stemming in part from widespread nonperforming loans issued to SOEs. According to Nicholas Lardy (2014), in 1998, 40.6 percent of China's SOEs were losing money, and these losses totaled 1.4 percent of gross domestic product. Evergreening of loans had become commonplace, and efficiency was abysmal. In response to these serious performance problems, the government sought to reform the state sector using a policy that would follow the maxim "Grasp the Large, Let Go of the Small." Small SOEs would be shuttered or privatized, and large SOEs would be merged into conglomerates and restructured. What restructuring would entail was not exactly clear, but it was thought to have meant a refocusing by SOEs to maximize profits instead of pursuing other objectives. At the time, SOEs still dominated manufacturing sectors in China, accounting for approximately 52 percent of employment, 42 percent of value added, and 60 percent of the real capital stock in China's industrial sector.² Given the scale of these firms, the reform appeared capable of having an impact on global output.

The success of the reform has been hard to pin down. Daniel Berkowitz, Hong Ma, and Shuichiro Nishioka (2014) find that the profitability of SOEs

1. Adrian Wooldridge, "The Visible Hand." *Economist*, January 21, 2012. <http://www.economist.com/node/21542931>

2. See table 1 in Berkowitz, Ma, and Nishioka (2014).

Table 1. SOE Sales, Profits, Assets, and Market Values as a Percentage of Gross National Income

	<i>Sales</i>	<i>Profits</i>	<i>Assets</i>	<i>Market value</i>	<i>Share in top 10 firms^a</i>
Brazil	12	2	51	18	50
China	26	3	145	44	96
India	16	4	75	22	59
Indonesia	3	0	19	12	69
Russia	16	3	64	28	81
South Africa	2	2	3	1	2

Source: Kowalski and others (2013).
a. Reports an equally weighted average of SOE shares of sales, assets, and market values among the country's top 10 firms.

did, in fact, improve markedly during the 2000s. Productivity also appears to have improved, though not nearly at the rate of the private sector.³ This is consistent with anecdotal evidence. I recently led a group of MBA students to China and witnessed the legendary inefficiency first-hand at a large SOE when the company sent several dozen employees to attend a two-hour meeting, despite having no apparent way to contribute to the conversation (few spoke or understood English). Richard McGregor’s 2012 book *The Party: The Secret World of China’s Communist Rulers* is full of stories about SOEs’ inefficiency and their lack of independence. Quoting one banker, he writes: “At all the major state companies, the party meetings are held regularly before board meetings” (page 85). Joseph Fan, Randall Morck, and Bernard Yeung (2011), among others, have echoed the view that SOE boards remain beholden to the Communist Party. Some argue that the benefits of these political connections may outweigh the inefficiency costs in a country like China. For example, Charles Calomiris, Raymond Fisman, and Yongxiang Wang (2010) find that stock prices of listed SOEs fell when the Chinese government announced the sale of government-owned shares among listed companies; normally, one would expect investors to reward such news.

While these studies analyze particular aspects of the policy—profitability, productivity, and corporate governance—what is missing from the literature is a quantitative assessment of state-sector reforms on China’s aggregate

3. See Figure 8 in Berkowitz, Ma, and Nishioka (2014).

output. After tallying up the direct effects, and after accounting for general equilibrium implications, just how effective were the SOE reforms for China's economy?

Chang-Tai Hsieh and Zheng Song fill this large gap. Their paper is a timely analysis that contributes to the intense debate concerning the future of China's economic growth. Their findings document dramatic changes within the state sector between 1998 and 2012, including these: (i) the share of revenue by SOEs fell from roughly 40 percent to 12 percent; (ii) the fraction of SOEs that were registered as private firms increased from roughly 15 percent to 60 percent; and (iii) there has been significant churn within the state sector: roughly 83 percent of SOEs operating in 1998 were either closed or privatized, and approximately one-third of firms operating in 2007 were newly established.

The authors filter these facts through the lens of a standard heterogeneous firm model to quantify the implications of SOE reforms on aggregate output. Two key facts emerge: total factor productivity (TFP) among SOEs improved, and revenue per worker—which in their model is equivalent to the marginal product of labor—converged to that of their private-sector counterparts. Yet despite improvements in performance, the authors' counterfactual analysis reveals that the reform had only limited effects on output. Essentially, this finding reflects the fact that marginal products among SOEs remain low relative to incumbent private firms. Reallocation toward these firms blunts the positive effects on aggregate output coming from any productivity gains.

Their model is transparent, and I have little to quibble with about their setup. One could imagine tweaking some of their assumptions in the model. For example, allowing for firm-specific markup variation or heterogeneous production technologies might increase the productivity gap between state and nonstate firms. Also, the decline in labor shares might possibly reflect not only the shedding of redundant workers but also preferential access to capital and an elasticity of substitution that exceeds one for these firms.⁴ On the other hand, the impact of SOE reforms might be larger in a multi-sector model in light of recent evidence from Heiwei Tang, Fei Wang, and

4. Berkowitz, Ma, and Nishioka (2014) argue that the elasticity of substitution between labor and capital exceeds one for these firms, and that SOEs cost of capital relative to labor fell after the "Grasp the Large, Let Go of Small" policy was implemented. If they are correct, I suspect that attributing part of the decline in labor shares to these two forces would lower the impact of the reform in their model.

Zhi Wang (2014) that SOEs dominate upstream markets. But I suspect that relaxing these assumptions is unlikely to change the headline result. Even in the best-case scenario, the “Grasp the Large, Let Go of the Small” policy explains only one-fifth of China’s aggregate industrial output growth. This seems small.

My main comments focus on this breakdown of the contribution of state-sector reforms. In interpreting the authors’ results, it is important to realize that in addition to the privatization program that directly addressed SOEs, the government simultaneously pursued additional reforms targeting the state sector. Rather than directly restructuring poorly performing firms, these additional policies sought to reduce the importance of the state sector by dismantling entry barriers. To the extent that these policies also improved the productivity and marginal products of SOEs, Hsieh and Song’s counterfactual would capture the combined effects of all reforms that addressed the state sector. But a key outcome of these policies was the direct formation of new firms in the private sector, which is instead captured by the residual component in their model. This makes it difficult to cleanly separate the effects of China’s policy reforms on the state and non-state sectors. As such, I suspect the authors’ framework provides a lower bound on the importance of state-sector reforms for China’s growth.

“RAPID WATERS SHOULD WASH AWAY DIRTY SANDS”⁵ Perhaps the largest of these reforms that occurred simultaneously with the privatization program was China’s trade liberalization and entry into the World Trade Organization (WTO) in 2001. China’s accession document contains many clauses directed at “leveling the playing field” for domestic and foreign private firms by reducing the monopoly power of SOEs. In fact, China was a vast outlier in the number of commitments it made in order to join the WTO, even relative to other developing countries.⁶ Upon entry, the many barriers to entry that had long protected its SOEs began to dissolve. For example, China agreed to dismantle its web of designated trading licenses that would allow private firms, irrespective of their size, to directly export and import in global markets.

The effects were pronounced. Customs data reveal that private-sector entrants were the major force in driving China’s export surge during the

5. A statement attributed to Chinese Premier Zhu Rongji in the 1999 government work report.

6. Tang and Wei (2009) note that China agreed to 147 WTO commitments, as compared with the median of 27.

Table 2. State-Owned and Private Exporters and Export Values, 2005^a

	<i>Exporters (number)</i>		
	<i>Incumbents^b</i>	<i>Entrants^c</i>	<i>Total</i>
State-owned firms	7,157	9,792	16,949
Private firms	24,232	102,846	127,078
Total	31,389	112,638	144,027
	<i>Exports (\$ billions)^d</i>		
	<i>Incumbents^b</i>	<i>Entrants^c</i>	<i>Total</i>
State-owned firms	142.7	64.6	207.3
Private firms	248.6	320.8	569.5
Total	391.3	385.4	776.7

Source: Author’s calculations, based on China customs data.
a. Table decomposes China’s customs-level exports in 2005 into two margins by ownership type.
b. Incumbent firms are those that exported in 2000 and 2005.
c. Entrants are firms that exported in 2005 but not in 2000.
d. Reports total exports by cell. State-owned firms include collectives. Private firms include domestic and foreign private firms.

2000s. My table 2 decomposes China’s exports in 2005 by ownership and firm margin. The upper panel shows that there were 144,027 exporters that year. About 12 percent—16,949 exporters—were formally registered as state-owned companies. Of the remaining private-sector exporters, the vast majority—102,846 out of 127,078—were firms that did not export a product in 2000.⁷ The lower panel decomposes export values. Of the \$776.7 billion in total exports, private entrants accounted for 41 percent (with private incumbents accounting for another 32 percent). Just five years earlier, the overall private sector only accounted for about half of total exports. This entry would be captured in the residual component of Hsieh and Song’s framework, but I would attribute this channel to removing barriers that

7. Due to data limitations, the decomposition relies on official registration. Hsieh and Song make an important point that registration can often mask ultimate ownership in China. Nevertheless, the vast majority of private firms in these customs data are likely to be privately owned, as opposed to state owned. Table 1 in Hsieh and Song’s paper indicates that there were roughly 12,000 manufacturing SOEs in 2007, which is much smaller than private firm numbers from customs data. Moreover, using the procedure in Ahn, Khandelwal, and Wei (2011) that removes nonmanufacturing intermediaries does not change the message of the table: of the 121,928 manufacturing exporters in 2005, 110,827 were private firms and of that number 87,247 were entrants.

protected SOEs. Moreover, the de-licensing episode is likely to have had a direct effect on private-sector productivity given evidence for the link between exporting and productivity gains in developing countries (such as De Loecker 2007 and Atkin, Khandelwal, and Osman 2015).

China's external commitments also help one to understand the political economy behind reducing the role of the state. Daron Acemoglu, Philippe Aghion, and Fabrizio Zilibotti (2006) show that vested interests can lead to development traps because they make it difficult to shut down inefficient but politically connected firms. The WTO tied the hands of reform-minded policymakers and helped them overcome domestic opposition.⁸ Premier Zhu Rongji, who spearheaded China's WTO entry, explicitly appealed to this logic in the quote noted above. Frustrated by bureaucratic opposition to SOE reforms, he viewed WTO accession as an important step toward reducing the role of SOEs.⁹ This argument suggests that China's entry into the WTO was as much about internal reforms as it was about "standard" external reforms, such as lower tariff barriers. Trade liberalization delivered not only the standard gains from trade predicted by textbook models but also helped correct misallocation within the economy.

The evolution of China's apparel industry illustrates this two-pronged effect of China's trade reforms. Starting in the 1950s, developed countries imposed stringent quotas on apparel produced in developing countries; the regime was known as the Multifiber Arrangement (MFA). Developing countries had to allocate export licenses to their domestic apparel firms. In contrast to Hong Kong's use of a transparent auction, China's case-allocation mechanism for distributing licenses was murky. For instance, there are anecdotes that firms controlled by the People's Liberation Army received quota licenses to bolster support following the 1999 Tiananmen Square incident.

Peter K. Schott, Shang-Jin Wei, and I (2013) quantify massive misallocation caused by the licensing regime. Following the removal of quotas for WTO members on January 1, 2005, China's exports immediately surged 119 percent compared to the 29 percent growth in other apparel products not bound by quotas. To identify the size of misallocation, our identification strategy compares export growth, by ownership and margin,

8. See Tang and Wei (2009) for a formal analysis of this argument.

9. See Fewsmith (2001) for a discussion of the politics surrounding China's WTO entry.

in quota-bound and quota-unbound products immediately before and after the quotas were removed.¹⁰ It is clear that the licensing institution protected SOEs. Their market shares averaged 62 percentage points in quota-bound products compared to 53 percentage points in unbound products. Immediately after the quotas were removed, SOE market shares in the two groups of products equalized. The data reveal substantial entry of private firms that had been blocked from exporting because they had lacked the connections to obtain quota licenses prior to 2005. Moreover, these entrants had high productivity, as indicated by their low quality-adjusted prices. Numerical simulations reveal that industry productivity would have been 15 percentage points higher without explicit protection to SOEs. (And this counterfactual ignores any direct effects on the productivity of state and private firms.) By simply eliminating the root source of misallocation, namely the quota licenses, the trade liberalization generated large improvements in output and productivity.

These complementary reforms—trade barriers, exchange-rate management, promotion of technology adoption, and so forth—make it tricky to identify the impacts of China’s privatization scheme on the state sector in isolation. While the “Grasp the Large, Let Go of the Small” reform surely mattered, so did these other reforms that broke state monopolies and lowered entry barriers for private enterprise. My view is that Hsieh and Song’s analysis reflects a lower bound on the role of state-sector reforms for China’s growth. It also leaves an important message for other countries seeking to reform their own state sectors: privatization policies matter, but so do complementary market-oriented policies that allow private firms to thrive.

Finally, although the role of the state-owned enterprises in China’s economy has changed dramatically since 1978, this is not to say that the role of the state is no longer relevant. Connections to the government remain vital for domestic and foreign private firms. Business people in China will tell you repeatedly that *guanxi* matters tremendously for the success of any project.¹¹ What is the relationship between private enterprises and bureaucrats? How

10. For example, men’s cotton pajamas were subject to quotas in the U.S. and Canada but not in the European Union. Comparing export growth by ownership and margin across destinations with narrowly defined products controls for any concurrent changes in supply and demand factors that may have occurred.

11. For example, a recent paper by Fisman and Wang (2015) carefully documents the value of political connections for firms wanting to circumvent regulation (to detrimental effects).

has it evolved over time? Will it impede or facilitate China's economic transition? Hopefully, future research will tackle these difficult but important questions.

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GENERAL DISCUSSION John Haltiwanger opened the discussion of Chang-Tai Hsieh and Zheng Song's paper by noting how struck he was by the high exit rates the authors found for small state-owned enterprises (SOEs) in China relative to large ones. In the United States, exit rates and job destruction rates are much higher for small businesses, since big businesses can downsize without shutting down, but Haltiwanger had found when he studied transitional economies during the 1990s that job destruction rates for large firms actually exceeded those for small firms. His interpretation was that the big state-owned enterprises were unable to survive in the new competitive environment. So this finding about China puzzled him. If the authors went back and examined job destruction rates by firm size, might they discover the same pattern he had?

Donald Kohn saw possible consequences for China stemming from the interaction of its financial reform and the SOEs. First, freeing up interest rates to rise to market levels might put pressure on SOEs that would lead them to shrink. On the other hand, concern that the SOEs might not be able to do very well in a freer financial market could slow down the party's reform of the financial sector.

David Romer summed up the rhetoric of reform in China this way: You start with a heavily centrally planned economy, decide to improve it by shifting resources to the private sector, and expect to see wonderful results. But the direct contribution from closing and privatizing SOEs is so small it is basically a rounding error in China's overall growth, which is astonishing. An equally interesting finding is that reforms within the remaining state sector may account for a big chunk of growth. But, Romer asked, what has been going on with the remaining 75 percent of the economic growth, which the authors acknowledge they have not explained? He saw two possibilities. One was that the private sector grew relative to the state-owned sector not by SOEs' being shut down and so freeing up resources but, as Haltiwanger said, just by laying off workers, making the SOE sec-

tor smaller and the private sector larger. In effect it would be another way of privatizing. A second possibility, however, is that there has been very rapid growth in the productivity of *all* firms, both state and private. In that case, China has not been following the “Capitalism 101” scenario at all, but something very different.

David Lagakos asked whether the paper’s findings were also present in a narrower set of industries where output (and hence productivity) is measured with the least error. He mentioned a tradition in the study of total factor productivity of examining narrowly defined industries where output is reasonably homogeneous, as has been done quite effectively in studies of the iron ore, steel, and concrete industries. The paper would be even more compelling if its findings showed up as well in some narrowly defined sectors such as these, where we are less worried about measurement issues.

Hsieh responded to David Romer’s question on the missing 75 percent by noting that 80 percent of China’s growth can be explained by the massive entry of new private firms, as discussant Loren Brandt stated. Moreover, it is a particular type of private firm: very large ones. Although that may not sound very insightful, it may be the answer to one of the biggest puzzles in China today. After all, none of the institutions classically required for a vibrant free-market economy—private property rights, an independent judicial system, and so on—yet exists in China.

Hsieh believes that 80 percent of growth is essentially the Sinovel story, multiplied many times over. Private entrepreneurs cut deals with Communist Party bosses and, as a result, most private firms today look like Sinovel in their structure. One could describe this as an efficiency-enhancing form of theft. Assets that were not being used efficiently under the institutional structure were stolen, and then the residual claimant set out to make the company work in the marketplace.

Responding to Kohn’s comment, Hsieh agreed that the main barrier to freeing up rates in the banking system is the vested interests of the SOEs. He saw two potential escape valves. One is what has happened over the last five or six years in China: the development of a shadow banking system. These banks have invested money in property, which has led to a great deal of overbuilt real estate in every city, and also invested in these new private firms. The shadow banks that Hsieh has been able to trace are murky institutions essentially owned by local governments, so their money is associated with the local party bosses. A second escape valve, at least for some firms, has been access to loans from the official banking sector. This too occurs by making deals with party bosses, who in exchange for favors provide access to credit from the state-owned banks.

His sense is that any improvement in the efficiency of the allocation of capital in China is likely to come from one of these two mechanisms, the shadow banking mechanism being the more important because it is so large. Yet it is also completely unregulated, so it comes with its own high risk, reminding him of the run-up to the financial crisis in Chile in 1982.

In response to Haltiwanger, Hsieh added that the exit rates for small firms in China, at about 25 to 35 percent per year, are actually much higher than in the United States. He agreed with Haltiwanger's suggestion to look at job destruction by firm size. He has already found that among SOEs, output per worker rose more than total output, indicating that growth has been enabled by a combination of downsizing and firm restructuring.

Brad DeLong admitted that the more good papers on China he has read the more uneasy he has become—and the less he feels he understands. One of the few historical patterns to repeat itself with regularity over the past three centuries has been that, wherever governments are unable to make the allocation of property and contract rights stick, industrialization never reaches North Atlantic levels of productivity. Sometimes the benefits of entrepreneurship are skimmed off by roving thieves. Sometimes economic growth stalls. Or sometimes profits are skimmed by local notables who abuse what ought to be the state's powers for their own ends. China has failed to make its allocation of property rights stick in any meaningful sense through the rule of law. Instead, it seems to have adopted a form of industrial neofeudalism.

Such a system should not work: The party bosses with special rights to enterprises should find themselves unable to referee disputes among one another. The same shortsighted rent-extraction logic should apply in China as has played out in Eastern Europe, sub-Saharan Africa, Southeast Asia, South Asia, and Latin America. And yet, somehow, it seems to be working in China.

Robert Hall said that while he appreciated DeLong's puzzlement about an economy lacking Adam Smith's free markets, property rights, and rule of law seeing such unprecedented growth as China's, cross-sectional research on productivity and output per worker has reached some different conclusions. Among them is the idea of a competent government that generates high levels of output per worker. China had an incompetent government under Mao but has moved in the direction of competence. For example, the government has allowed SOEs to be publicly traded, which enables the market to send a signal about what is going on inside of companies. And China is not the first example where government competence has mattered

in this way: the spectacular growth of Singapore was also founded on such competence and not just on Adam Smith.

Christopher Carroll introduced a new point: the circumstances under which transitional countries seem able to achieve rapid growth, when they have started from almost nothing, are very different from the circumstances that contribute to achieving or remaining at the North Atlantic frontier. Chinese output per capita in 1978 was not much higher than it had been in 1700, and therefore the institutions now in place there are not likely to get the country to the North Atlantic frontier. For the same reason, the institutions in Stalinist Russia never succeeded in getting the Soviet Union to the North Atlantic frontier, even though a lot of economic growth occurred in the Soviet Union.

Caroline Hoxby observed that in studies of productivity she did in the 1990s looking at different industries across countries, she had found that exposure to competition was probably the most important factor, even more important than ownership. If that is what has happened in China—that they have created competition in some of the industries—it could help explain the rapid productivity growth, whether it is occurring in the SOEs or in the private enterprises.

David Romer echoed DeLong's point that what is happening in China remains a dark puzzle. He recalled an NBER Macroeconomics Annual Meeting in the late 1990s where the broad consensus in the room was that Russia was doing everything right by moving rapidly to a market system, privatizing as quickly as possible, whereas China was making a terrible mistake and its success would not last. The reality has turned out very differently. He also had an additional question for the authors: How can Hsieh's statement that new private firms often took shape through theft from the state sector be reconciled with the paper's finding that only 3.2 percent of the country's growth stemmed from moving resources out of the state sector into the private sector, where they are more productive?

Hsieh responded to the comments. To clarify what he meant when he spoke of theft from the state sector, he said what an entrepreneur in China might do is similar to what an entrepreneur in the United States might do when he pitches an idea to a venture capitalist. In China that entrepreneur is also looking for investment. In every one of China's 3,000 cities there is a local Communist Party boss, and investment pitches are made to them over dinner. These deals can be implicit: "If you support my enterprise I'll be eternally grateful," and that gratitude later takes the form of (for example) paying for the boss's child to go to Stanford without ever being asked to. Sometimes deals are explicit: they can take the form of giving out

equity shares in the firm, although since that is officially illegal the shares would be in the name of the boss's wife's grand-uncle as shareholder. The question for economists is, How well does this kind of system actually work? This goes back to a more basic question: How much can these party bosses do for those entrepreneurs?

Hsieh agreed with Hall that local governments in China, while incompetent in certain things, have proven to be very competent when they put their mind to getting something done. This includes some activities that people in free societies consider terrible, such as enforcement of the one-child policy, which often takes up the largest number of government employees in a region. In purely administrative terms, carrying out that policy is incredibly hard work, because it requires inspecting every single home, so it reflects a certain kind of competence. Over the last 20 years that capacity has been channeled toward supporting certain kinds of businesses by making deals.

One might compare China's growth with what has been happening in South Korea over the last 30 years. The growth in South Korea has not come from the creation of new corporate groups but from the creation of new companies within the given groups. There, a company like Samsung, which alone accounts for 30 percent of South Korea's GDP, has been incredibly entrepreneurial in its ventures into new sectors and new products. Hsieh suggested that over the last 20 years something equivalent to that has been happening in China, where each local government is spinning off a web of private companies through this system of party-boss-sponsored investment. It may be different in the future, but over recent decades that is where most of the growth has come from. The SOE growth that his paper analyzed is only one small part of that.