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Underutilized Capital

[David Dollar](#) and [Shang-Jin Wei](#)

If the investment bias toward inefficient state enterprises ended, China could increase living standards substantially without sacrificing growth

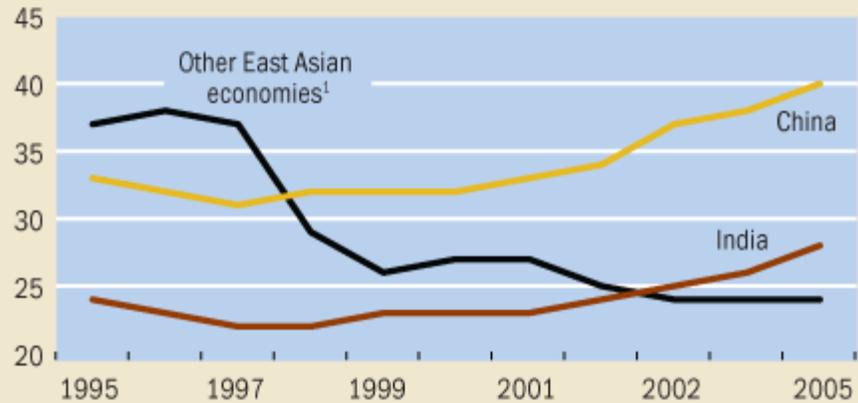
China is growing at such a breakneck speed that it may appear superfluous to suggest how to do better. The Chinese growth is in large part driven by capital accumulation and exports. The country's investment-to-GDP ratio has been high and rising in recent years, growing from less than 35 percent a decade ago to more than 40 percent in 2005 (see Chart 1). This is substantially higher than in advanced economies and even most other East Asian countries (which have averaged around 25 percent in recent years). Many China watchers worry that some of the investment, especially that by state-owned enterprises (SOEs), is not efficient because domestic private and foreign firms both have higher returns to capital than SOEs. Private and foreign firms could achieve the same output using less capital, thus freeing resources in China for other uses such as increased consumption. Improved efficiency would also result in higher profitability for the corporate sector and contribute to an improvement in the balance sheet of the banks that fund the firms.

Chart 1

Investing a lot

China invests a far higher proportion of its GDP than its neighbors.

(investment-to-GDP ratio, 1995–2005)



Source: IMF, *International Financial Statistics*.

¹Average for Korea, Thailand, and Singapore.

There are several reasons why SOEs may, on balance, be less efficient than domestic private firms:

They may face more administrative interference, such as restrictions on hiring and laying off workers and on switching product lines in response to changing market conditions.

SOEs often do not have a compensation scheme that encourages management to maximize economic efficiency and avoid overinvestment and "empire building."

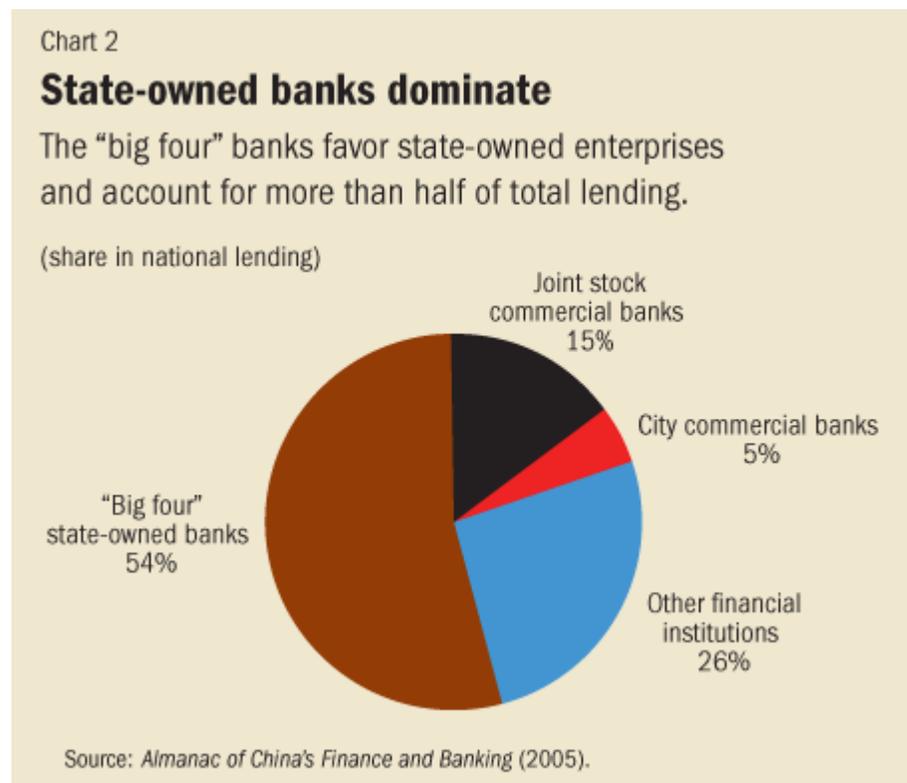
Some SOEs also have weak corporate governance that may provide opportunities for management to divert firm assets into their private pockets.

Banks owned mostly by the state, as well as the domestic capital market, favor state-owned firms, directly in the past and mostly indirectly now.

Thus, for these various reasons—weak corporate governance, inappropriate incentives at the SOEs, inappropriate incentives at the state-owned banks, and limited access of private firms to stock equity—there could be a gap in returns to capital across firms of different ownership. Such a return differential would imply that if the distortion to capital allocation were reduced, the massive national investment in China could be reduced without affecting growth outcomes. In this article, we report some new research that quantifies the gap in returns to capital in China and estimates possible gains in consumption that could result from removing the inefficiencies.

Uneven access to finance

The Chinese financial system, dominated by banks largely owned by the state, appears to continue to favor SOEs in spite of steady effort by the authorities over the years to increase the commercial orientation of these banks (see Chart 2). Although SOEs represent a declining share of national output—only about 40 percent in 2005 compared with 53 percent a decade ago and 70 percent in 1985—their borrowing from domestic banks accounts for more than half the total lending by these banks. Moreover, majority state-owned firms account for most of the publicly traded companies on China's two stock exchanges. Some of the bias toward SOEs may be related to the smaller size and higher risk of lending to some private firms. But it is common to hear private firms complaining about the difficulty they face in securing funding for both short-term working capital and long-term investment needs even when they have size and risk profiles comparable to their state-owned peers. In other words, more often than their state-owned counterparts, private firms are likely to have to forgo high-return projects because they cannot obtain funding.



Is there a significant difference in the returns to capital across firms of different ownership or firms in different locations? Has the country succeeded in removing the bias in its financial sector in favor of SOEs after nearly three decades of economic reforms?

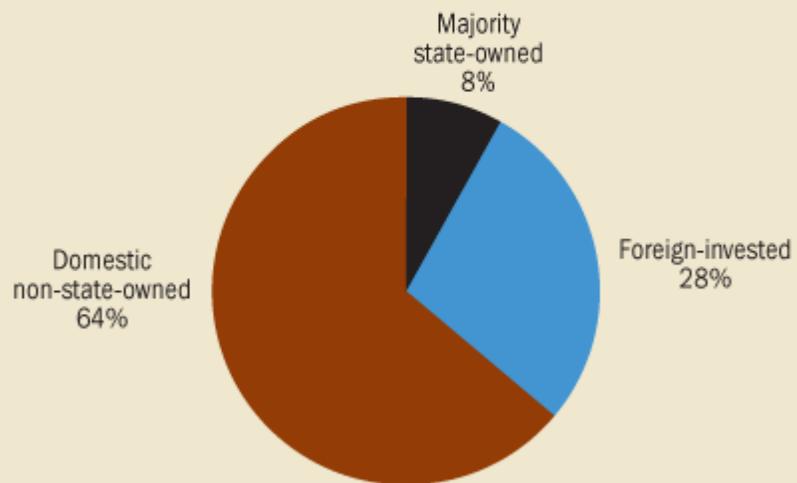
We investigated these questions using a data set derived from a survey that we designed and carried out in 2005. The survey covered

12,400 manufacturing firms in 120 cities across China. In this stratified, random sample, one-third of the firms are large, one-third medium, and one-third small. The first interesting result is that only 8 percent of the firms are majority state-owned, indicating that the manufacturing sector in China is now largely composed of private firms, both foreign and domestic (see Chart 3). But the state-owned firms tend to be much larger, so that they account for about one-third of all the capital stock covered by the survey (see Chart 4). They also account for about one-third of the ongoing investment, so they remain a significant part of the Chinese economy.

Chart 3

Most firms are private . . .

Of 12,400 manufacturing firms in the sample of 120 cities, only 8 percent were majority state-owned.

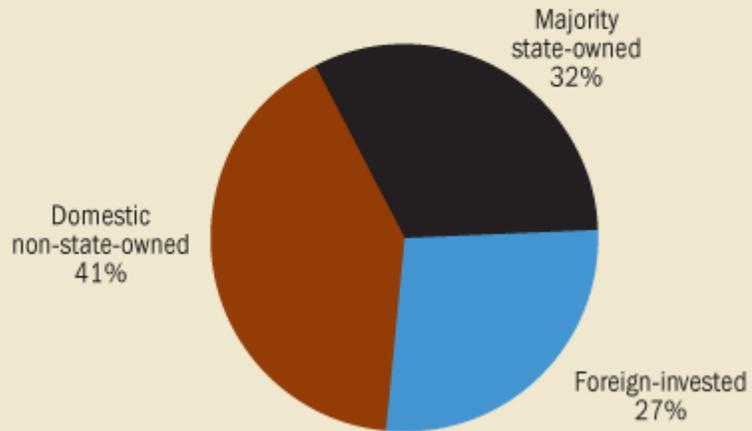


Source: Dollar and Wei (2007).

Chart 4

. . . but state-owned firms are bigger

State-owned companies account for one-third of the manufacturing assets.

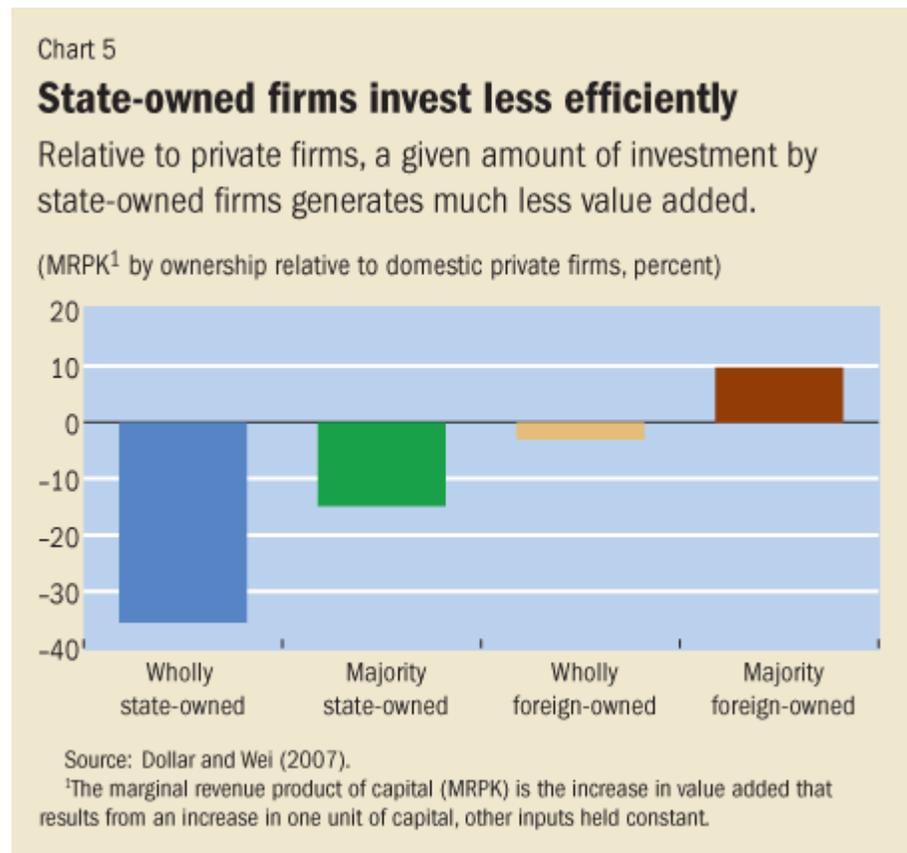


Source: Dollar and Wei (2007).

For every firm in a given sector and location, the study computed the return to capital as the value added minus the payment to labor, divided by the stock of capital. Firm-level returns were then regressed on a set of indicator variables representing sector-time pairs and locations, as well as a set of indicator variables representing firm ownership. The sector-year indicators capture the possibility that demand or supply shocks in a given sector-year could cause returns in that sector-year to be different from others. The ownership indicators measure the returns of various ownership groups relative to domestic private firms. These ownership groups are defined in a way that is mutually exclusive: wholly state-owned, majority state-owned, minority state-owned, wholly foreign-owned, majority foreign-owned (with no state shares), minority foreign-owned (with no state shares), and collectively owned.

Conceptually, managers would equate a firm's marginal revenue product of capital (MRPK)—the increase in total revenue that results from an additional unit of capital—to the sum of market interest rate, depreciation rate, and distortions in the capital market that the firm faces. If capital is efficiently allocated, then the returns to capital should be equalized across all firms, regardless of sector, location, or ownership. The difference in the returns between two firms in the same sector reflects mostly the difference in the cost of capital. For example, if SOEs receive more favored treatment than domestic private firms in borrowing from banks or in obtaining government approvals to be listed in the domestic stock market, then the returns for SOEs would tend to be lower than those of private firms, on average (see Chart 5). Using this framework, the study assesses three

types of inefficiency, or biases in capital allocation at the level of ownership, location, and sector.



A number of findings emerge:

Most important, *largely state-owned firms were found to have lower returns to capital than private or foreign firms*. The median rate of return for private firms is 63 percent. In contrast, the median values for wholly and majority state-owned firms are 37 percent and 52 percent, respectively. These numbers all appear large because they are computed before tax and depreciation and reflect all other distortions to cost of capital. The key point is that the returns to capital are not equalized across ownership types, and SOEs have substantially lower returns than private firms.

There is a significant location bias in capital allocation in favor of western provinces, even though returns there are the lowest. Firms in the eastern section of the country—the Yangtze River Delta region (Shanghai, Jiangsu, and Zhejiang) and Bohai Circle (encompassing Beijing and Tianjin)—have the highest returns to capital, and the remaining regions have intermediate levels of returns. Part of this location bias may reflect deliberate policies to channel funds to poorer regions, but the forgone efficiency costs have not typically been quantified.

There is also an allocation bias at the sector level. Many less-efficient sectors, such as printing and copying products and wood processing, tend to receive greater investment than more-efficient

sectors, such as black metallurgical refinery and leather and associated products. However, the sector-level bias is not as significant economically and statistically as the biases at the ownership and location levels. Some of the sector-level bias may be justified by environmental concerns or other considerations.

We have also studied the marginal revenue product of labor (MRPL)—the increase in total revenue that results from an additional unit of labor—across firms. The results indicate that wholly state-owned firms have both lower MRPL and lower MRPK than private firms, suggesting that they have lower total factor productivity and easier access to financing. On the other hand, partially state-owned firms have slightly higher MRPL but lower MRPK. This pattern is consistent with the interpretation that their total factor productivity is no lower than that of private firms, on average, but they have easier access to credit than their counterparts in the private sector.

Our findings do indicate that China has made considerable progress in reforming and privatizing state enterprises. The manufacturing sector is now largely in private hands. Many remaining state enterprises are profitable, suggesting that there has been some effective reform of corporate governance. That said, the productivity of capital in majority state firms is lower than the return in private firms, both foreign-invested and domestic, suggesting that the reform of the SOEs has not gone far enough.

Policy implications

So what does this mean for policy? On the one hand, the aggregate cost of the inefficient financial allocation, especially the bias at the ownership level, is sizable. For example, if China could raise the returns on the stock of capital currently employed by state firms (for example, by transferring some of the capital to private firms or by making further changes in the incentives faced by the managers of SOEs), then the country could reduce its very high investment rate substantially, by approximately 6 percent of GDP, without hurting its growth rate. Such an improvement in investment efficiency could lead to a faster rise in household consumption and living standards by a corresponding amount every year. China has a stated goal of "rebalancing" growth to some extent away from investment and exports and toward domestic consumption, and further reform of the financial system and of corporate governance in state firms would support this objective.

On the other hand, China's accession to the World Trade Organization has given rise to significant financial sector liberalization (in addition to greater trade openness). The scope of the liberalization is somewhat constrained by various regulations, such as a relatively large minimum capital requirement for banks. Nonetheless, by increasing competition from foreign-owned financial institutions, the financial sector liberalization may steadily provide the impetus

needed to prod domestic banks to rid themselves of inefficient lending practices, especially if the government accompanies the liberalization by moving away from the practice of bailing out failed banks. In the current environment of robust global and Chinese growth, most manufacturing firms are profitable; so lending to the less efficient ones might reduce bank profitability, but it does not necessarily lead to an increase in nonperforming loans. However, if there were any slowdown in the economy, state-owned banks might find their nonperforming loans increasing, and the risk of a financial crisis would increase as well.

Finally, in the current environment, about half of all enterprise investment—whether state or private—comes from retained earnings. Our finding is that state firms tend to reinvest their earnings even though the marginal return is low. These firms pay taxes but do not pay dividends to the owner or its representative, the government. One possible reform would be to require state firms to pay dividends, which could become a general source of revenue for the budget. China could use these funds to help finance its stated goal of improving social services, especially in rural areas. This would both directly and indirectly tend to raise consumption in China.

Many SOEs are taking on social objectives, such as reducing unemployment by overhiring workers. So part of their labor payment might be regarded as a disguised unemployment insurance. To the extent that these noneconomic functions are socially valuable, they should be taken into account in designing reform strategies for SOEs, some might argue. We are sympathetic, but note that decision makers need to calculate properly the social cost of the de facto subsidized financing of SOEs in terms of forgone household consumption. Compared with the alternative strategy of financing the expansion of the more efficient private sector and absorbing excess labor in this way, overfinancing SOEs is likely to be an inferior way to achieve these social objectives.

In summary, structural measures—such as further improving the lending practices of banks, easing access of private firms to the stock market, collecting dividends from state enterprises, and continuing to privatize firms—could help China meet its macroeconomic objective of continuing to grow rapidly, but with less investment and more consumption.

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David Dollar is the World Bank's Country Director for China and Mongolia, and **Shang-Jin Wei** is Assistant Director and Chief of the Trade and Investment Division in the IMF's Research Department.
