Privatization in Developing Countries: What Are the Lessons of Recent Experience?

Saul Estrin and Adeline Pelletier

This paper reviews the recent empirical evidence on privatization in developing countries, with particular emphasis on new areas of research such as the distributional impacts of privatization. Overall, the literature now reflects a more cautious and nuanced evaluation of privatization. Thus, private ownership alone is no longer argued to automatically generate economic gains in developing economies; pre-conditions (especially the regulatory infrastructure) and an appropriate process of privatization are important for attaining a positive impact. These comprise a list which is often challenging in developing countries: well-designed and sequenced reforms; the implementation of complementary policies; the creation of regulatory capacity; attention to poverty and social impacts; and strong public communication. Even so, the studies do identify the scope for efficiency-enhancing privatization that also promotes equity in developing countries.

There is a large body of literature about the economic effects of privatization. However, since it was mainly written in the 1990s, there was typically limited emphasis on issues which have come to the fore more recently, as well as more recent developments in the evidence about privatization itself, much of it from developing economies. This motivated us to write this paper, which summarizes the evidence about the impact of recent privatizations, not only in terms of firms' efficiency but also with regard to the effects on income distribution. In addition, we are particularly attentive to the process of privatization in developing countries, notably with respect to the regulatory apparatus enabling successful privatization experiences.

When governments divested state-owned enterprises in developed economies, especially in the 1980s and 1990s, their objectives were usually to enhance economic efficiency by improving firm performance, to decrease government intervention and

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increase its revenue, and to introduce competition in monopolized sectors (Vickers and Yarrow 1988). Much of the earlier evidence about the economic impact of privatization concerned these topics and was based on data from developed countries and later, transition countries. These findings have been brought together in two previous surveys, by Megginson and Netter (2001) and Estrin et al. (2009) respectively. The former assesses the findings of empirical research on the effects of privatization up to 2000, mainly from developed and middle-income countries, while the latter concentrates on transition economies including China, over the 1989 to 2006 period.[1] However, the experiences from the wave of privatizations that have occurred in developing countries before and since these studies warrant a new examination of the impact of privatization in the context of the development process.

The tone of the privatization debate has evolved in recent years in international financial institutions as privatization activity has shifted towards developing economies, and as a consequence of the difficulties of implementation and some privatization failures in the 1980s and 1990s (Jomo 2008). As a result, more emphasis in policy-making is now being placed on creating the preconditions for successful privatization. Thus, in place of a simple pro-privatization bias characteristic of the Washington consensus (Boycko, Shleifer, and Vishny 1995), it is now proposed that governments should first provide a better regulatory and institutional framework, including a well-functioning capital market and the protection of consumer and employee rights. In other words, context matters: ownership reforms should be tailor-made for the national economic circumstances, with strategies for privatization being adapted to local conditions. The traditional privatization objective of improving the efficiency of public enterprises also remains a major goal in developing countries, as does reducing the subsidies to state-owned enterprises (SOEs).

This article therefore reviews the recent evidence on privatization, with an emphasis on developing countries. The first section presents some stylized facts. The next section examines the effects of privatization in terms of firms' efficiency and performance. In the following section, we go on to examine the distributional impacts of privatization. Policy recommendations are developed in the final section.

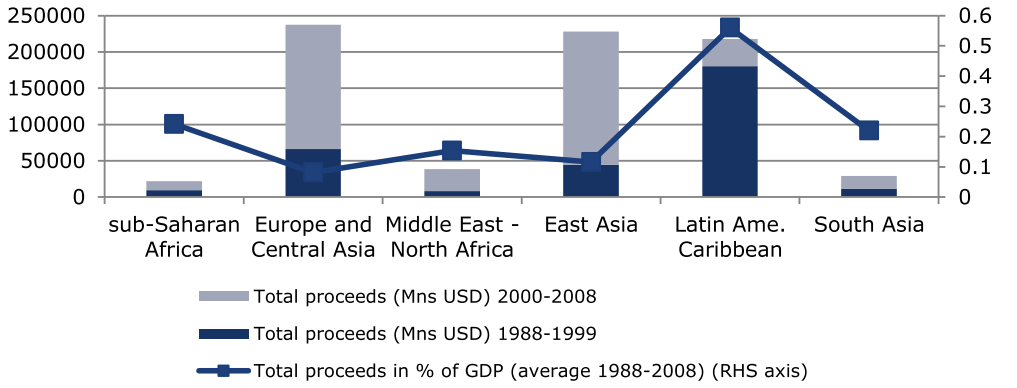
Privatization Trends: Stylized Facts

Privatization Trends Since the Late 1980s

The data on privatization prior to 2008 (with a regional breakdown) is sourced from the World Bank Privatization database but unfortunately this was discontinued in 2008 and no consolidated data is available after that date. Since we have not been able to find disaggregated data post-2008, we therefore present world aggregates, based on the Privatization Barometer database.

The early literature focused on developed economies and Western Europe represented roughly one-third of global privatization proceeds over the period 1977 to

Figure 1. Value of privatisation transactions in developing countries by region, 1988 to 2008



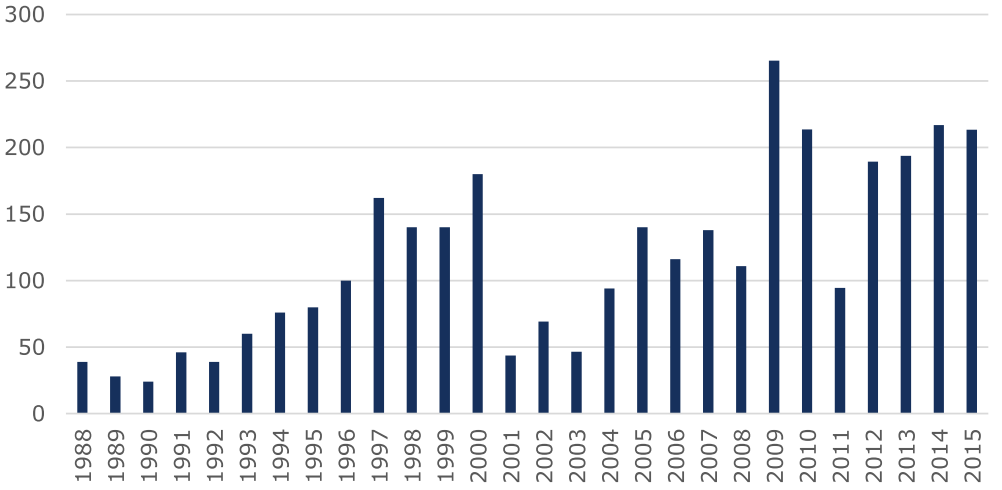
Source: World Bank, Privatization database. *Note:* comparable data not available after 2008.

2002 (Roland 2008). Even so, many of these deals only concerned minority stakes of SOEs (Bortolotti and Milella 2008). There were also spectacular numbers of privatizations during the transition process after 1990 in Central and Eastern Europe, with proceeds totaling $240 billion to 2008, in addition to widespread free or subsidized allocation of shares in former SOEs (Estrin et al. 2009). The revenues from privatization have been more limited in Africa, the Middle East and South Asia, with total proceeds below $50 billion for each (see figure 1).[2] However, proceeds are on par with or above Europe once they are expressed as a percentage of GDP.

For the rest of Asia, the picture is rather different. While South Asia has experienced only a limited number of privatizations (especially India), this was not the case in East Asia, where total privatization proceeds represented 30% of the world's total ($230 billion) over the 1988 to 2008 period. China, in particular, stands out. Over a 25-year period, the Chinese government has encouraged innovative forms of industrial ownership, especially at the subnational level, that combine elements of collective and private property (Brandt and Rawski 2008). New private entry and foreign direct investment have also been encouraged. As a result, by the end of the 1990s, the non-state sector accounted for over 60% of GDP and state enterprises' share in industrial output had declined from 78% in 1978 to 28% in 1999 (Kikeri and Nellis 2004). The OECD estimated the state-owned share of GDP had further declined to 29.7% by 2006 (Lee 2009).

Finally, in Latin America and especially in Chile, large-scale privatization programs have been launched, especially in the infrastructure sector, starting in 1974 in Chile and peaking in the 1990s. Between 1988 and 2008, the total privatization proceeds in Latin America amounted to $220 billion (28% of total world proceeds).

Figure 2. Worldwide Privatization Revenues 1988 to 2015 (billions of USD)



Note: 2015 is an estimate as August 30, 2015. Source: Privatization Barometer Available at: http://www.privatizationbarometer.com/.

One needs to be cautious, however, when interpreting the raw data because of differences in the size of economies. The differences between the privatization experience of Africa, Asia, and Europe become less striking when proceeds are normalized by GDP, though privatization revenue to GDP is high in Latin America, representing, on average, 0.5% of GDP over the period.

Privatization Trends Since 2008

The five years to 2015 have been marked by the predominant role of China in global privatizations, while the EU's share has been below its long-term average of 45% of the world's total proceeds, running at only one-third of worldwide totals, on average. According to the Privatization Barometer (PB) Report 2013–2014, global privatization total proceeds exceeded $1.1 trillion from January 2009 to November 2014, with $544 billion of divested assets between January 2012 and November 2014.[3]

In addition, the 20-month period beginning in January 2014 witnessed privatizations totaling $431.4 billion (PB report 2015). This is far more than any comparable period since the beginning of the privatization programs in the U.K. in the late 1970s (see figure 2), though as noted below, a significant part of this was driven by the unwinding of positions taken in banks by governments during the financial crisis.

China has consistently been one of the top privatizers from 2009 to 2015; it was the second-largest privatizer in 2009 and the first in 2013, 2014, as well as the

8-month period of January to August 2015. Aggregate privatization deals in China totaled more than $40 billion in both 2013 and 2014 and a spectacular $133.3 billion in the first eight months of 2015 through 247 sales. The bulk of these privatization revenues came from the public and private placement offering of primary shares by SOEs (PB report 2015). However, the state's equity ownership stake was generally only reduced indirectly, by increasing the total number of shares outstanding (PB report 2015). In fact, Hsieh and Song (2015) have shown that almost half of the state-owned firms in 2007 and nearly 60 percent of them in 2012 were legally registered as private firms. The term used in China for this ownership change is that the large state-owned firms are "corporatized" rather than privatized. The typical form this "corporatization" takes is that of a minority share traded in the stock market and merged into a large state-owned conglomerate, the controlling shareholder (Hsieh and Song 2015).

The next-leading country in terms of privatization proceeds after China is the United Kingdom, but it is far behind, with total proceeds of $17.2 billion in 2014 (against $7.8 billion in 2009).

In the EU as a whole, with countries addressing their government deficits post-2008, privatization proceeds rose to a five-year peak in 2013, to $68.0 billion, and a nine-year peak of $77.6 billion in 2014, while the annualized value of privatizations during 2015 (based on the first 8 months) reached $63.3 billion. This represents more than one-third of the global annual totals in 2014, but is only 20.0% of worldwide totals in the first 8 months of 2015, and lower than the long-run average EU share of about 44.6% (PB report 2015). This relative decline of EU privatization proceeds is also reflected in the fact that China alone generated revenues from privatization almost as great as did the EU countries combined during 2015 ($68.0 billion versus $77.6 billion for China; PB report 2015).

China and India were the two top emerging countries by total privatization revenues in 2015. The five largest single deals outside the developed world in 2014 were realized in China, with the recapitalization and primary share offering of CITIC Pacific Ltd, the private placement of BOE Technology Group, the primary-share initial public offering (IPO) of Dalian Wanda Commercial, and finally the primary-share IPO of CGN Power and of HK Electrical Investments Ltd.

In the following section, we focus on the privatization experience in Africa and South Asia. While the privatization programs in Eastern Europe, China, and Latin America are among the most important in terms of total proceeds, a rich literature already exists discussing them (see Estrin et al. 2009 on transition economies and Estache and Trujillo 2008 on Latin America). Moreover, while privatization in Latin America and Eastern Europe culminated in the 1990s, much privatization in Africa and South Asia is more recent (Roland 2008).

Privatization Patterns in Africa: A Few Countries Only

Privatization programs in sub-Saharan Africa (SSA) occurred in successive waves, with some countries privatizing much earlier than others (Bennell 1997). The first group to start such programs in the late 1970s to early 1980s was composed of francophone West African countries (e.g., Benin, Guinea, Niger, Senegal, and Togo) but their progress was limited. The second group, both Anglophone and Francophone countries (Ghana, Nigeria, Ivory Coast, Mali, Kenya, Malawi, Mozambique, Madagascar, and Uganda), started privatizing in the late 1980s. These programs were often influenced by pressure from the international financial institutions (Nellis 2008) though, as noted by Bennell (1997), no significant progress was made anywhere except Nigeria until the late 1990s. The final group, the "late starters", did not begin to privatize until the early to mid-1990s. Among this group, Tanzania, Burkina Faso and Zambia have shown a strong political commitment to privatization, whereas in the other three countries (Cameroon, Ethiopia, and Sierra Leone), only minimal progress was made in the 1990s.

Privatization in the 1990s: A Slow Start.
Only a minority of SOEs in SSA were subject to privatization over the period 1991 to 2001, and very little privatization has taken place outside of South Africa, Ghana, Nigeria, Zambia, and Cote d'Ivoire (Nellis 2008). African states have privatized a smaller percentage (around 40%) of their SOEs than in Latin America and the transition economies (Nellis 2008). In addition, privatization has generally concerned smaller manufacturing, industrial, or service firms. Bennell (1997) also reports that smaller SOEs were usually targeted during the initial stages of privatization programs in SSA because they were easier to sell. Five industries in particular were prominent in most programs: food processing, alcoholic beverages, textiles, cement and other non-metallic products, and metal products. These industries accounted for 60% of the total proceeds from the sale of manufacturing SOEs during 1988 to 1995 (Bennell 1997), if we exclude the exceptional and large sale of ISCOR (Iron and Steel Industrial Corporation) in South Africa.

Bennell (1997) explains that the slow progress in privatization in the 1990s was due to a lack of political commitment compounded by strong opposition from entrenched vested interests (senior bureaucrats in ministries and SOEs themselves, as well as public sector workers concerned about their job security). For instance, in Cameroon, only five of the thirty SOEs scheduled for privatization were sold by the end of 1995. In other countries such as Nigeria, the privatization program started well but then stalled. Despite the fact that Nigeria's program had been one of the most successful in SSA in the 1990s, it was suspended in early 1995 in favor of a mass program of "commercialization". In Madagascar, the privatization program was also

suspended in mid-1993 due to serious mismanagement and its subsequent unpopularity. In addition, Bennell (1997) reports that there were nationalist concerns about the possible political and economic consequences of increased foreign ownership as a result of privatization.

However, in the late 1990s, certain political constraints lifted. First, a growing number of governments in SSA started to undertake significant economic reforms, under the aegis of the World Bank and the IMF, in which privatization was an integral part. Reforms and privatization were also progressively being accepted by the population. In addition, important political liberalization, with multi-party elections, broke with the previous statist policies, and created some room for maneuver to implement privatization programs. Finally, the weak financial position of SOEs in many SSA countries and their rapid deterioration, in conjunction with the fiscal crisis the state experienced in the 1990s, also opened the way for a sell-off of SOEs to raise government revenues and reduce expenditures.

Despite this stronger commitment, Nellis (2008) notes that there were actually only a few privatization deals in Africa in the 1990s, mainly in infrastructure, and even in these the state retained significant minority stakes; around one-third of the shares on average were retained. Between 1988 and 1999, the total proceeds from privatization in SSA amounted to $9.8 billion, with the manufacturing and services sector accounting for 36% of the total, infrastructure 28%, the energy sector 17%, the primary sector 14%, and the financial (and other) sector 6% (see World Bank Privatization Database).

The Early to Mid-2000s; More Rapid Progress.

There were some important privatizations in SSA between 2000 and 2008, and total proceeds increased to $12.654 billion (see World Bank Privatization Database). Nigeria comprised 51% of this amount, followed by Kenya (10%), Ghana (9%) and South Africa (6%). Infrastructure[4] represented 73% of the total amount of the deals, followed by the manufacturing and services sector[5] (17%), the financial sector[6] (6%), energy[7] (4%) and the primary sector[8] (1%; see World Bank Privatization Database).

Privatization Post-2008: A Slowdown.

Privatization activity slowed in SSA with the economic downturn after 2008. One notable exception was Benin, with the privatization of the cotton and the public utility sectors. The concession for the operation of the container terminal of the Port of Cotonou and the majority stake in the cement company were awarded to a strategic private investor in September 2009 and March 2010, respectively, and the privatization of Benin Telecom was launched in 2009 (this is still ongoing; IMF 2010). Nigeria was also notable for its sale of 15 electricity-generating and distribution companies in 2013, raising $2.50 billion (see Megginson 2014). In Chad, the government

announced in 2015 that it was re-launching the sale of 80% of Société des Telecommunications du Tchad (Sotel-Tchad), after the previous attempt collapsed in 2010. Because the World Bank Privatization Database does not have data on privatization after 2008, one cannot compare the aggregated privatization proceeds post-2008 to those of earlier decades.

Privatization in South Asia: A Slow Opening

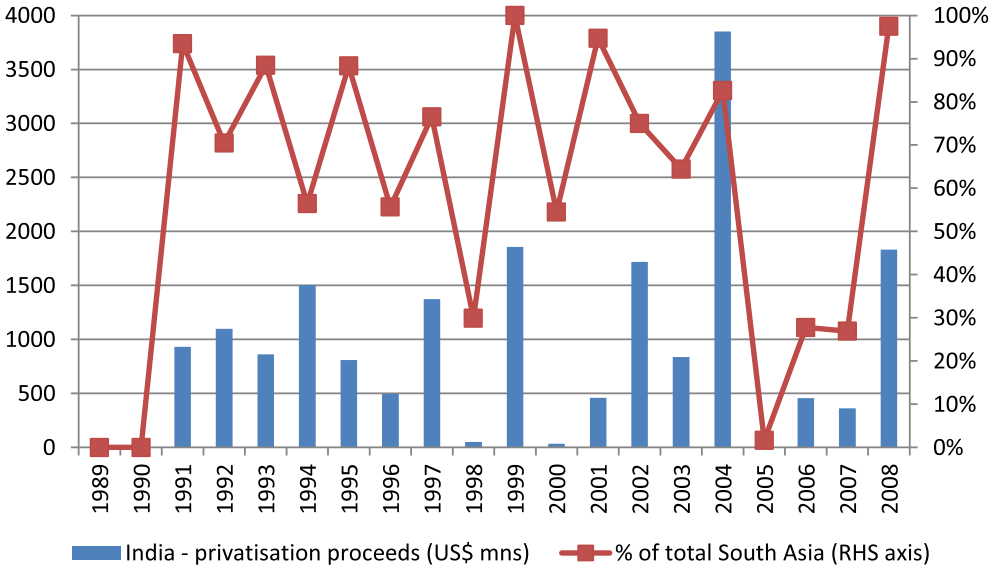
Privatizations in South Asia have traditionally been rare, despite the notable inefficiency of SOEs (Gupta 2008). The governments' reluctance to privatize can be partly explained historically, with the government's close involvement in the establishment of an industrial base in the postcolonial era, especially in India (Gupta 2008). Particular sectors had been reserved exclusively for SOEs, such as the infrastructure sector and capital goods and raw materials industries such as steel, petroleum, and heavy machinery. In addition, the government nationalized many loss-making private companies; more than half of the firms owned by the Indian federal government were loss-making in the 1990s.

Following the balance of payment crisis of 1991, the Indian government implemented a series of reforms under the Industrial Policy Resolution of 1991 to encourage private enterprise. Privatization was initiated mainly through two approaches: partial privatization and strategic sales. However, the former was very limited, with the government selling only minority equity stakes until 2000, and without transferring management control. Political uncertainty prevented the emergence of a coherent privatization policy. Majority stakes sales and the transfer of management control were only conducted after the elections of 1999, and even then, until 2004 the government retained an average ownership stake of 82% in all SOEs (Gupta 2008).

The stalled privatization program was revived in 2010 with a secondary offering of shares in National Thermal Power Corporation Ltd (NTPC), which owns 20% of India's power generation capacity (Gupta 2009). However, the sale of the $1.85 billion block of shares only reduced the government's stake by an additional 5%, leaving 85% still under government control. In addition, the process of privatization was viewed as poor, with the secondary offering subscribed only 1.2 times, and even this after assistance from government-owned financial institutions.

In summary, between 2000 and 2008, the proceeds of privatization in South Asia totaled $ 17.45 billion, the bulk being realized in India (see figure 3) (55%) followed by Pakistan (43%). Afghanistan, Bangladesh, Nepal, and Sri Lanka provided the remaining 2% (see World Bank Privatization Database). Between 2000 and 2008, the infrastructure sector represented 51% of the proceeds, followed by the energy sector (26%), the financial sector (12%), manufacturing and services (10%), and the primary sector (2%) (see World Bank Privatization Database).

Figure 3. Indian Revenues from Privatization



Source: World Bank Privatization database.

The Effects of Privatization: Efficiency and Firm Performance

Overall, as we report below, the studies on developing economies show that a move from state to private ownership alone does not automatically yield economic gains. Rather, a number of factors have been found to influence the success of privatization, namely:

- Which firms are privatized; there can be a positive (or negative) selection effect.
- Whether privatization is total or partial; evidence suggests that the former is more beneficial.
- The regulatory framework, which in turn depends on the institutional and political environment.
- The characteristics of the new owners; foreign ownership has been associated with superior business performance post-privatization, especially relative to "insider" ownership (privatization to managers and workers).[9]
- Effective competition. This has been found to be critical in bringing about improvements in company performance because it is associated with lower costs, lower prices, and higher operating efficiency.[10]

In the following sub-sections, we introduce the estimation techniques that have been used to measure the impact of privatization on firms' performance, and then examine privatization experiences in three sectors (banking, telecommunications, and

utilities) in developing countries. We also provide an analysis of the robustness of the evidence in the literature about the impact of privatization.

Measuring Efficiency and Firms' Performance Post-Privatization

As Megginson and Sutter (2006) note, researchers face numerous methodological problems when they analyze the economic effects of privatization. In particular, data availability and consistency, especially in developing countries, and sample selection bias—occurring, for example, if the "best" firms are privatized first—represent key issues. Other problems arise when using accounting data: the determination of the correct measure of operating performance, the selection of an appropriate benchmark and statistical tests are important challenges. These issues are germane to the interpretation of the results of the studies surveyed below.

A variety of methods have been used to measure the impact of privatization on firms' post-privatization performance and efficiency, measured in a number of ways including return on equity, output growth, labor productivity and changes in cost and income. We distinguish between two different empirical approaches. The first consists of comparing the performance of government-owned firms to that of privately-owned firms. The second approach consists of comparing pre-and post-divestment performance for companies privatized via share issues (public offerings; Megginson, Nash, and van Randenborgh methodology).

Comparing Government-owned Firms to Privately-owned Firms

An obvious way to examine the impact of privatization is to compare the performance of government-owned to privately-owned firms. Studies in this tradition compare post-privatization performance changes with either a comparison group of non-privatized firms or with a counterfactual. However, important methodological issues arise, especially in the earlier studies. First, it is difficult to determine the appropriate set of comparison firms, especially in developing countries where the private sector is limited. Second, selection effects and endogeneity may bias the comparison, as factors determining whether the firm is publicly or privately owned are also likely to affect performance (Gupta, Ham, and Svejnar 2008).

Single Country or Single Industry Comparisons of Costs and Productivity Growth of Private and Government-Owned Firms.

One of the first studies to compare SOE and private firm performance is that of Ehrlich et al. (1994). These authors used a sample of 23 comparable international airlines (18 from developed countries and 5 from developing/emerging countries) of different ownership categories over the period 1973 to 1983 for which they have data on cost and output for comparable goods. These authors find a

significant association between ownership and firm-specific rates of productivity growth. Interestingly, the empirics also suggest that the benefits derive primarily from complete privatization of the firm, and that a partial change from state to private ownership has little effect on long-run productivity growth. Other studies have employed a similar approach examining differences in efficiency between private and government-owned firms within a specific country, such as Majumdar (1996) for Indian firms and Tian (2000) with Chinese firms. These authors both find that private-sector firms are more efficient. However, these results are not highly robust from the perspective of contemporary methods, as they do not directly address selection issues.

Concerning studies using a counterfactual approach, one can cite the influential study by Galal et al. (1994), which was sponsored by the World Bank. These authors compare the actual post-privatization performance of twelve large firms in the airlines and utilities industry in Britain, Chile, Malaysia, and Mexico to a counterfactual performance. Further, they estimate net welfare gains in eleven of the twelve cases considered, equaling on average 26 percent of the firms' pre-divestiture sales. La Porta and Lopez-de-Silanes (1999) study privatization in Mexico and find that privatized Mexican SOEs rapidly close a large performance gap with industry-matched private firms that had existed prior to divestment. These authors find that output increases by over 50% and that the privatized firms reduce employment by half, while the remaining workers see a significant pay rise.

Cross-country, Multi-industry Comparisons of X-efficiency and Profitability Ratio of Private and Government-owned Firms.

Another approach has been to exploit a multi-industry, multi-national cross-sectional time series to analyze the effects of government ownership on efficiency. The advantage of this method is that it captures differences that are not apparent in single-country or single-industry series, and the results are therefore methodologically more soundly based. In their seminal work, Boardman and Vining (1989) use measures of X-efficiency and profitability ratios of the 500 largest non-U.S. manufacturing and mining corporations in 1983 ("The International 500"; Fortune 1983). Privately-owned firms are found to be significantly more profitable and productive than state-owned and mixed ownership enterprises, but mixed enterprises are no more profitable than SOEs. Another important study is that of Frydman et al. (1999), which compares the performance of privatized and state firms in the transition economies of Central Europe in 1994 using a fixed-effects model. To control for the possibility that better firms are selected for privatization, these authors compare the pre-privatization performance of managerially-controlled firms with those controlled by other owners. Frydman et al. (1999) find that privatized firms perform better than the state-owned firms but that the performance improvement is related to revenue improvement rather than cost reduction in privatized firms.

As noted, governments sequence privatizations strategically, often leading the most profitable firms to be privatized first (Gupta, Ham, and Svejnar 2008; Dinc and Gupta 2011). To control for selection and endogeneity biases, the latest studies have employed more advanced econometric techniques including differences in difference, triple differences matching methods, and instrumental variable methods.

For instance, Dinc and Gupta (2011) examine the influence of political and financial factors on the decision to privatize government-owned firms in India using data from the 1990–2004 period. They find that profitable firms and firms with a lower wage bill are likely to be privatized early and that the government delays privatization in regions where the governing party faces more competition from opposition parties. The results therefore suggest that firms' financial characteristics have a significant impact on the government's decision to privatize. This raises an identification issue for evaluating the effect of privatization on firm performance: if more profitable firms are more likely to be privatized, we may overstate the impact of privatization on profitability when we compare the performance of government-owned to that of privatized firms. The authors then proceed to use political variables as instruments for the privatization decision, adopting a two-stage least squares treatment effects regression. After addressing the selection bias, they find that privatization still has a positive impact on performance in India.

Comparing Pre-post Divestment Sales and Income Data for Companies Privatized by Public Share Offering

This set of studies examines the effects of privatization on firm performance by comparing pre- and post-divestment data for companies privatized via public share offerings. Each firm is compared to itself (a few years earlier) using inflation-adjusted sales and income data. The first study using this methodology is by Megginson, Nash, and van Randenborgh (1994). As Megginson and Netter (2001) note, this methodology suffers from several drawbacks, among which selection bias is probably the greatest concern, since privatizations through share sales—Share Issue Privatization (SIPs)—represent the largest companies sold during a privatization program. Another weakness is that the Megginson, Nash, and van Randenborgh methodology can only examine simple accounting variables (assets, sales, etc.), which is an issue when comparing accounting information at different points in time and in different countries. Most of the studies in this tradition also imperfectly account for macroeconomic or industry changes in the pre- and post-privatization window (see Megginson and Netter 2001, for a critique). These studies also cannot account for the impact on privatized firms of regulatory or market-opening initiatives that are often launched in parallel with privatization programs. However, the Megginson, Nash, and van Randenborgh methodology allows the analysis of large samples of firms from different industries, countries, and time periods and, while carrying the risk of

selection bias, SIP samples contain the largest and most (politically) important privatizations.

Most of these studies do identify a significant improvement in company performance, post-privatization, though methodological reservations remain. Research in this tradition has focused on specific industries (banking [Verbrugge, Owens, and Megginson 2000] and tele-communications [D'Souza and Megginson 2000]); has used data from a single country (Chile [Maquieira and Zurita 1996]) and employed multi-industry, multinational samples. However, the significance of many of the operating and financial improvements is not robust to adjustments for changes experienced by other firms over the study period.

A very recent work by Li et al. (2016) overcome the empirical limitations of the previous SIPs studies mentioned above by employing a triple difference approach. The authors are able to separate the pure privatization effect from the listing effect, using a database of 204 Chinese SIPs from 1999 to 2009 matched with otherwise comparable state-owned enterprises and privately-owned firms. The first double-difference compares the performance change of SIP firms before and after listing with the performance change of a control group of fully state-owned and unlisted SOEs to capture the combined "SIP effect" of going public and privatizing. The second double-difference compares the performance change of privately-owned firms before and after their listing with the performance change of a control group of privately-owned firms that remain unlisted. This captures the "pure listing effect". These authors obtain the "pure privatization effect" by taking the difference between these two double differences. Interestingly, they continue to find a positive impact from privatization using this exacting methodology: they find a significant positive increase in profitability post-SIP in divested Chinese state-owned companies, even after the negative IPO listing effect is taken into account.

Empirical Evidence to Date in Developing Countries

In this section, we summarize the empirical evidence to date about the effects of privatization on firms' performance and efficiency in developing countries, drawing on the discussion of methodology outlined above. The sectors covered include banking, telecommunications, and utilities. To examine the reliability of the evidence in drawing policy conclusions, we classify the papers reviewed into four categories depending on the quality of the sample and the robustness of the methods used.

The Banking Sector

The studies reviewed by Clarke, Cull, and Shirley (2005), which focus on developing countries and employ the Megginson, Nash, and van Randenborgh methodology or a stochastic frontier approach, find that bank performance usually improved

after privatization. For instance, Boubakri et al. (2005), applying the Megginson, Nash, and van Randenborgh methodology to analyze 81 bank privatizations in 22 low- and middle-income countries, find that some measures of performance improved after privatization, but that this pattern was not common across countries; environmental factors also played a role. The study by Beck, Cull, and Jerome (2005) in Nigeria shows that privatization can improve bank performance, even when the macroeconomic and regulatory environment is inhospitable and the government sells the weakest banks. However, Beck, Cull, and Jerome argue that an adverse macroeconomic and regulatory environment reduces the benefits of privatization.[11] Azam, Biais, and Dia (2004) also show (both theoretically and empirically) the benefits of having a strong, independent regulatory agency to ensure that privatized banks play an efficient role in financial development.

The studies surveyed by Clarke, Cull, and Shirley (2005) also find that bank privatization has a greater positive effect when it is total rather than partial. This result has been found in transition countries (Bonin, Hasan, and Wachtel 2005) as well as in Brazil (Beck, Crivelli, and Summerhill 2005) and Nigeria (Beck, Cull, and Jerome 2005)[12]. Furthermore, there is evidence that privatization boosts competition in the banking sector. For instance, Otchere (2005) examines share-issue privatizations in nine countries using the Megginson, Nash, and van Randenborgh methodology and finds that rival banks suffered abnormally negative returns following privatization announcements, which suggests that shareholders expected more intense competition and lower returns.

Thus, evidence suggests that performance improves more when the government fully relinquishes control; when banks are privatized to strategic investors rather than through share issues; and when bidding is open to all, including foreign banks (Clarke, Cull, and Shirley 2005; Megginson 2005). A more recent paper by Clarke, Cull, and Fuchs (2009), which examines the privatization of Uganda Commercial Bank (UCB) to the South African bank Stanbic, shows that these elements of best practice also apply when the banking sector is concentrated and under-developed. The government fully relinquished control to a strategic investor in an open sales process that allowed foreign participation, and the authors found that profitability improved post-privatization with no evidence that outreach declined. A similar impact of privatization to a foreign bank has been found in the case study of the privatization of Tanzania's national bank of commerce to the Dutch Rabobank (Cull and Spreng 2011).

The Telecommunications Sector

One of the first telecom studies focused on developing countries, by Wallsten (2001), used a panel of 30 African and Latin American countries from 1984 to 1997 with a methodology similar to Megginson, Nash, and van Randenborgh. Overall, the author

finds that competition is significantly associated with increases in per capita access and decreases in costs. However, privatization alone is associated with few benefits, and is negatively correlated with connection capacity. In addition, privatization only improves performance when coupled with effective and independent regulation and increases in competition.

More recently, Gasmi et al. (2013) have examined the impact of privatization of the fixed-line telecommunications operator on sector performance, analyzing the outcomes of privatization reforms in a 1985 to 2007 panel dataset on a selection of 108 countries (including OECD countries, Asia, Africa, Latin America). These authors find that the impact of privatization on sector outcomes (fixed-line deployment, cellular deployment, labor efficiency, price of fixed-line) was positive in the OECD countries, Central America, and the Caribbean, and in resource-scarce coastal Africa and Asia. However, the impact was negative in South America and in African resource-scarce landlocked countries, and no significance was identified in resource-rich African countries.

Gasmi et al. (2013) note that countries with successful privatizations have developed their infrastructure through the creation of appropriate institutional structures which have improved the effectiveness of infrastructure policies, and that the coverage of networks increased thanks to the additional capital available with privatization. In contrast, privatization outcomes proved to be poor in South America, in both resource-scarce landlocked African countries and resource-rich African countries due to weak contractual design and inadequate enforcement of policies in the infrastructure sector, as well as insufficient aggregate demand. In the absence of strong state capacity, competition appeared to be a more effective instrument to foster performance than privatization.

The extent of infrastructure privatization also diverged across regions. While almost all OECD countries have privatized their telecommunications utilities, the rate of privatization is only around 70% in Latin American, Asian, and African resource-scarce coastal countries. In African resource-scarce landlocked and resource-rich countries, the percentage of privatized infrastructure in telecommunications is even lower, at around 40% and 30%, respectively. Overall, the study by Gasmi et al. (2013) shows that there were limited privatization effects on network expansion, and that productive efficiency did not increase in all the regions post-privatization. As such, the authors conclude that there is no unique model of reform for infrastructure sectors.

The Utilities Sector

Turning to water privatization, Estache and Rossi (2002) estimate a stochastic cost frontier using 1995 data from a sample of 50 water companies in 29 Asian and Pacific countries. These authors find that efficiency is not significantly different in

private and public companies. Kirkpatrick, Parker, and Zhang (2006) use a questionnaire survey on water utilities in Africa, covering 13 countries and 14 utilities that reported private sector involvement, and undertake data envelopment analysis and stochastic cost frontier techniques. These authors do not find strong evidence of performance differences between state-owned water utilities and water utilities involving some private capital. The authors consider that this result is related to the technology of water provision, the costs of organizing long-term concession agreements, and regulatory weaknesses. In particular, the authors argue that the nature of the product severely restricts the potential for competition and therefore the efficiency gains.[13] This means rivalry under privatization must derive from the form of competition for the market—competition to win the contract or concession agreement. But, as the authors explain, transaction costs can be high in the process of contracting for water services provision; for example, the costs of organizing the bidding process, monitoring contract performance, and enforcing contract terms where failures are suspected. The importance of transparent competition for the market to achieve efficiency gains and prevent the grabbing of assets by political cronies was also evidenced by more recent research by Tan (2012) in the context of private participation in infrastructure (PPI) in water in Malaysia. The author shows that the efficiency gains of water privatization (measured by water loss and unit costs) were inconclusive over the period 2001 to 2008. Despite this, and the subsequent renationalization of water assets, PPI continues to be promoted—it is being recast in the form of management contracts—because it provides captive rents. This is also evidenced in the "cherry-picking" of segments and areas for privatization: private sector participation is concentrated in the more lucrative water treatment segment and higher income states, leaving the less profitable segments and (more rural) areas to the public sector.

In terms of privatizing electricity, the study of Zhang, Parker, and Kirkpatrick (2008) provides an econometric assessment using panel data for 36 developing and transition countries over the period 1985 to 2003. These authors examine the impact of these reforms on generating capacity, electricity generated, labor productivity in the generating sector, and capacity utilization. They find that, overall, the gains in economic performance from privatization and regulations are limited, while introducing competition is more effective to stimulate performance. In particular, they do not find that privatization leads to improved labor productivity or to higher capital utilization, or to more generating capacity and higher output, except when it is coupled with the establishment of an independent regulator. The authors conclude that when competition is weak, an effective regulatory system is needed to stimulate performance, while the regulation of state-owned enterprises without privatization is ineffective.

A more recent study by Balza, Jimenez, and Mercado (2013) examines the relationship between private sector participation, institutional reform, and performance of the electricity sector in 18 Latin American countries over the last four decades

(1971 to 2010) This also finds that, regardless of the level of private participation, well-designed and stable sectoral institutions are essential for improving the performance of the electricity sector. In particular, privatization is robustly associated with improvements in quality and efficiency, but not with accessibility to the service. In contrast, regulatory quality is strongly associated with better performance in terms of both quality and accessibility.

Summary

To bring together this evidence and evaluate its robustness as a basis for policy, we classify the papers reviewed in this section into four categories depending on the quality of the sample and the robustness of the methods used. Category I: single country data, basic statistics, or econometrics (or small sample). Category II: cross-country data, basic statistics, or econometrics (or small sample). Category III: single country data, more advanced econometric techniques. Category IV: cross-country data, advanced econometric techniques. The findings are reported in table 1 and taken together, provide qualified evidence that privatization can improve company performance, including from studies that use the most advanced econometric methods.

Thus, the evidence from empirical studies of privatization in developing countries suggests that the performance of banks improved significantly after privatization in many cases. However, the gains from privatization in the utilities sector (electricity and water) have tended to be limited. Finally, concerning the telecommunications sector, the impact of privatization on efficiency and coverage varies by region. It has been shown to be positive in Central America and in resource-scarce coastal Africa and Asia, but negative in South America and in African resource-landlocked countries. Thus, the impact appears to be context- as well as sector-specific. The main factors explaining this variation are regulatory quality (and behind that the quality of institutions), heterogeneity in effective competition, differences in the detail of contractual design, and in the characteristics of the new owners.

Privatization Process: Distributional Impacts

Thomas Piketty's recent book (2014), which has highlighted the importance of income distribution in the growth process, also discussed the impact of privatization on capital accumulation. In principle, privatization need not affect the stock of wealth in an economy, nor its distribution. State-owned firms are public assets which earn a return for their owners. Provided the assets to be privatized are valued in such a way that their price represents the discounted sum of the profits to be earned from them, then privatization means that the state is replacing an income stream with its discounted capital value in its asset portfolio. At the same time, the private sector is purchasing an asset which generates its full value over time from its annual earnings.

Table 1. Methodology and Classifications of Empirical Papers

Authors	Method	Data	Results	Category
Banks				
Azam, Biais and Dia (2004)	Measures of performance: log of bank net profits/total loans and log of ratio of bad loans/total loans. Regress the performance of banks on the lagged percentage of lagged foreign ownership (OLS and GLS specifications).	Africa (Benin, Burkina, Cote d'Ivoire, Mali, Niger, Senegal, Togo), 1990 to 1997. Small sample (49 observations).	Positive impact of foreign ownership on performance of banks, due to more risk-seeking strategies by foreign owners.	II
Beck, Cull and Jerome (2005)	Measures of performance: ROA, ROE, NPL. Megginson, Nash, and van Randenborgh methodology: period of eleven years: three years before and eight years after privatization.	Nigeria. Unbalanced sample of 69 banks with annual data for the period 1990 through 2001, with a total of 576 observations.	Performance improvements following privatization, but negative effects of the continuing minority government ownership on the performance of many Nigerian banks.	III
Beck, Crivelli, and Summerhill 2005	Measures of performance: ROE, ROA, overhead costs/assets Megginson, Nash, and van Randenborgh method Examines four options: liquidation, federalization, privatization and restructuring	Brazil, unbalanced panel of 207 banks with quarterly data over the period January 1995 to September 2003, with a total of 4,864 observations.	Privatised banks increased their performance, but not restructured banks.	III

Table 1. *Continued*

Authors	Method	Data	Results	Category
Bonin, Hasan, and Wachtel 2005	Measures of performance: cost and profit efficiency, ROA Four ownership types: foreign greenfield, domestic de novo, state-owned, privatised. Stochastic frontier analysis (SFA) to estimate bank efficiency.	Transition countries (Bulgaria, the Czech Republic, Croatia, Hungary, Poland, and Romania); 67 different banks from 1994 to 2002 (451 observations).	Foreign-owned banks are most efficient, and government-owned banks are least efficient. Voucher privatization does not lead to increased efficiency and early-privatised banks are more efficient than later-privatised banks (and no evidence of selection effect).	IV
Boubakri et al. (2005)	Measures of performance: ROE, net interest margin, credit risk. Examine three categories of controlling owners: foreign investors, local industrial groups, and the government itself. Megginson, Nash, and van Randenborgh methodology on a panel of banks. Period of seven years: three years prior to privatization and three years post-privatization, including the year of privatization itself).	81 bank privatizations occurring between 1986 and 1998, in 22 low- and middle-income countries.	Profitability increases post-privatization, but it depends on the type of owner (higher economic efficiency exhibited by banks owned by local industrial groups and foreign owners).	IV

Table 1. *Continued*

Authors	Method	Data	Results	Category
Otchere (2005)	Measures of performance: CAMEL criteria (Capital adequacy, Asset quality, Management efficiency, Earnings ability and Labor (employment levels and productivity). Stock market data. Megginson, Nash, and van Randenborgh methodology: 3 years pre-privatization operating performance data and 5 years post privatization. Examines pre- and post-privatization operating performance of the privatised banks relative to that of the rival banks.	Analyze 21 privatizations (and 65 rival banks) from middle- and low-income countries.	Statistically significant improvement in operating performance for the privatized banks in the pre- and post-privatization period, apart from reduction in loan loss provisions ratio. One reason for the lack of improvement might be the continued government ownership of these banks.	IV
Clarke, Cull and Fuchs (2009)	Measures of performance: ROA, NPL, total expenses/total assets. Case study of the privatization of Uganda Commercial Bank to Stanbic (South African bank). Employ regressions that show the evolution of UCB, Stanbic, and the post-merger bank in terms of profitability, portfolio quality, operating efficiency, and credit growth.	Uganda, 1996 to 2005, 555 observations (quarterly data).	Improvement in profitability and rate of credit growth compared to pre-privatization for UCB.	III
Cull and Spreng (2011)	Measures of performance: ROA, NPL. Examines the privatization of National Bank of Commerce. Test whether the privatization of the two successor banks to the original National Bank of Commerce resulted in improved performance.	42 banks operating in Tanzania between December 1998 and December 2006.	Sale to a foreign strategic investor (Rabobank from the Netherlands) resulted in improved profitability and reductions in non-performing loans, along with an increase in the ratio of loans to total assets.	III

Table 1. *Continued*

Authors	Method	Data	Results	Category
Telecommunications				
Wallsten (2001)	Measures of performance: mainline penetration, payphones, connection capacity, prices for local calls, labour efficiency. Megginson, Nash, and van Randenborgh, includes fixed effects.	1984 to 1997; 30 African and Latin American countries.	Privatization combined with an independent regulator is positively correlated with telecom performance measures. No clear benefits of privatization alone.	IV
Gasmi, et al. (2013)	Measures of performance: Mainline penetration cellular subscription, mainlines per employee, Monthly subscription to fixed, price of cellular. Empirical analysis of the impact of privatization of the fixed-line activity of the traditional telecommunications operator on output/efficiency/price. Fixed-effect and random-effect models, DIF-GMM.	1985 to 2007 panel dataset on a selection of 108 countries (OECD, Asia, Africa, Latin America).	Performance of privatization depends on regional factors related to market profitability, wealth, and geography.	IV
Utilities - water				
Estache and Rossi (2002)	Stochastic cost frontier	1995; 50 companies; 29 Asian-Pacific countries.	Efficiency is not significantly different in private companies than in public ones.	IV
Kirkpatrick, Parker, and Zhang (2006)	Stochastic cost frontier	2000; Africa; 76 observations, including 10 private-sector operations.	No strong evidence of differences in the performance of state-owned water utilities and water utilities involving some private capital in Africa.	IV

Table 1. *Continued*

Authors	Method	Data	Results	Category
Tan (2012)	Measures of performance: Nonrevenue water (NRW), unit costs, tariffs, water production capacity (the amount of water treated for distribution), length of pipes. Case study (graphs and statistics). Different ownerships: public ownership, corporatized, public–private, private.	1991 to 2010; Malaysia; 13 Malaysian states.	No evidence of improvement in efficiency and capital investment after privatization.	I
Utilities - electricity				
Zhang, Parker, and Kirkpatrick (2008)	Measures of performance: net electricity generation per capita of the population, installed generation capacity per capita of the population, net electricity generation per employee in the industry and electricity generation to average capacity (capacity utilization). The privatization variable used in the study was constructed as the percentage of generating capacity owned by private investors. Fixed effects (country and year) to deal with endogeneity.	Panel data for 36 developing and transitional countries, over the period 1985 to 2003.	Competition seems to be most effective to increase performance. On their own privatization and regulation do not lead to significant improvement in performance.	II
Balza, Jimenez, and Mercado (2013)	Measures of performance: real end-user prices for residential electricity (excluding taxes); percentage of households with access to electricity; electricity capacity generation; and electricity loss as a percentage of total electricity production. Privatization measured as the cumulative investment in the electricity sector as a percentage of average gross capital formation in the period 1984 to 2010.	1971 to 2012; 18 Latin American countries (panel of countries). Country-level analysis.	Countries with higher private investment tend to provide more efficient and better-quality electricity services.	II

Hence, privatization does not necessarily entail a net transfer of wealth between the public and private sectors.

However, the privatization process has not always followed these principles of public finance (Estrin et al. 2009). In the extreme, as in the programs in the Czech Republic or Russia, significant state assets were transferred to private hands at nominal or zero prices; in effect, a transfer of wealth from the state to the private sector. More generally, state assets have frequently been undervalued. This may have been in order to make the assets more attractive to the market, or because the SOEs were loss-making and the short-term requirement to balance the budget dominated long-term state asset portfolio criteria. In some cases, ideological arguments have also played a role; Margaret Thatcher and several of her admirers in transition economies viewed privatization as a policy mechanism for broadening the private ownership of shares in companies (Estrin 2002). Whatever the motivation, the undervaluation of state assets leads to a net redistribution of assets from state to private hands. Piketty argues that this was an important element in relatively larger growth of private wealth in Britain than in other Western European countries between 1970 and 2010. Furthermore, it was almost certainly a major factor in what he describes as the "considerable growth of private wealth in Russia and Eastern Europe. . . . which led in some cases to the spectacularly rapid enrichment of certain individuals (I am thinking of the Russian oligarchs)," (2014).

As the quotation from Piketty makes clear, the impact on income distribution of privatization depends on how the ownership of the assets is transferred from state into private hands; both the pricing and to whom the SOEs are privatized. In the extreme case when assets are transferred by voucher to each citizen equally from the state to private hands at a zero or nominal price, as in the Czech Republic, there is a transfer from public to private assets equal to the value of the privatized firms, but the impact on income distribution will be egalitarian because the process transfers shares to all citizens equally. In contrast, if assets are freely transferred to a single wealthy individual, the impact will be to severely worsen the distribution of income. In practice, state-owned assets that are transferred at below their market value are often also transferred to individuals who are already wealthy, leading to increasing inequality.

Political factors may play a significant role in this process, with corrupt elites seizing state assets for themselves, or using them to reward their cronies or political supporters. Thus, rather than being used to improve efficiency, privatization may be employed by the ruling group as a mechanism to redistribute wealth and resources. Acemoglu and Robinson (2012) point to the transfer of state assets into the hands of the governing elite (often associated with the deliberate continuation of monopoly power) as a mechanism of extractive political institutions; they cite the telecommunication privatization in Mexico and the huge amount of wealth accumulated by Carlos Slim ($47 billion in 2016 dollars) as an example.

But negative distributional effects may also occur for reasons of perceived efficiency enhancement, for example because the state believes that particular private individuals are those most likely to be able to improve company performance. This implies a trade-off between efficiency and equity objectives in the privatization process. Equity is supported by processes which engender dispersed ownership, while it is usually argued that efficiency is driven by concentrated ownership (Estrin 2002). The empirical evidence highlights this trade-off; improvements in the performance of privatized firms have been found to depend on subsequent ownership arrangements (Djankov and Murrell 2002). Notably, privatization to concentrated owners, such as to foreign firms or to small groups of strategic owners, yields greater improvements in performance than privatization to the general population via share offerings, or to managers and workers (Estrin et al. 2009).

Birdsall and Nellis (2003) place the issue of the distributional impact of privatization more formally into an efficiency/equity framework. The effect of privatization on income distribution between taxpayers and the new owners depends both on the initial price and on the post-sale stream of value produced. There is no unambiguous prediction about the distributional effects of privatization, which will instead depend on initial conditions, the privatization process and the post-privatization political and economic environment. Any assessment of the effects should be dynamic and highly country-specific, depending on the political and economic context and its history. However, they argue that there is scope for efficiency-enhancing privatization which also promotes equity in developing countries.

We review below the distributional impacts of privatizations through their effect on ownership, employment, prices and their fiscal effects (see table 2 for a summary).

A Review of the Distributional Impacts of Privatizations in the Last Decade

Ownership.

As Megginson (2000) notes, in countries that have privatized through asset sales, the process has frequently been non-transparent and plagued by insider dealing and corruption. Thus in Russia, the "loans for shares" programs enabled well-connected financiers to obtain controlling stakes in the country's most valuable firms for a price well below their true value (Megginson 2000). Moreover, the distributional impact of voucher privatizations has also been disappointing; in Russia and the Czech Republic, the returns on the vouchers were much lower than anticipated, and very small in comparison to what a very few well-connected groups of people obtained in the privatization process (Birdsall and Nellis 2003).

Employment.

Privatization can also affect the distribution of income through its impact on employment. As public enterprises tend to be overstaffed prior to privatization, private

Table 2. Summary of Distributional Impacts of Privatization (Spillovers)

Distributional impact	Progressive effect	Regressive effect
Ownership	If the sale is conducted in a transparent way, with a wide distribution of vouchers with positive returns.	If the asset is under-priced and rewards political cronyism. If the sale is non-transparent.
Employment	If newly-privatized firms become more efficient and dynamic, total employment might recover after the initial restructuring phase	The restructuring and consequent disproportionate layoff of specific categories of worker.
Prices	Privatization can lead to a fall in prices if it is accompanied by increased competition. In addition, if private management leads to efficiency gains, some of the savings can be passed on to consumers.	Prices may increase if they were previously below cost-recovery level.
Access	Access may increase if the privatized business is expanded through investments.	If the private owner decreases its engagement in specific market segments that are beneficial to the poor. In addition, poorer consumers can see their access reduced if privatization is accompanied by the end of illegal water and electricity connections.
Fiscal	If it leads to increased access by the poor to government services funded by new tax flows.	Privatization may affect real income (net of taxes) if it reduces the tax burden differentially across households. Privatization transfers control rights to private interests and eliminate public subsidies, benefiting taxpayers but reducing consumers' surplus if costs are increased.

ownership can lead to restructuring and consequently disproportionate redundancies for specific categories of worker (low-skilled, for instance). The study by Chong and Lopez-de-Silanes (2002) based on a survey of 308 privatized firms (covering 84 countries) over the period 1982 to 2000 showed that employment was reduced in 78% post-privatization, likely worsening income distribution (Birdsall and Nellis 2003).

That being said, if the newly-privatized firm becomes more efficient, total employment might recover after the initial restructuring phase. In addition, government-owned firms that do not privatize may also have to reduce workforce size. Research by Gupta (2011) on privatization in India covering the 20-year period of 1989 to 2009 shows that privatization increases employment significantly and is not associated with a decline in employee compensation.[14] Moreover, Gupta argues that an evaluation of the redistribution of wealth from the government to private

owners must also take account of the cost of subsidies to government-owned firms. However, the employment costs of privatization will be borne by specific groups of workers, while the benefits, in terms of reduced subsidies, are distributed across taxpayers. Hence, privatization may face opposition from organized interests who benefit from maintaining government ownership.

While Gupta's (2011) work is a single-country study, it has the merit of using more advanced econometric methods to control for dynamic selection bias by applying firm fixed effects and comparing privatized firms to a control group of firms that have also been selected for privatization but have not yet been sold. In addition, the share of private ownership is introduced with a lag to reduce the possibility of simultaneity between privatization and performance.

Prices and Access.

Privatization can also have different impacts on income groups through prices and access to services. First, privatization can lead to a fall in prices if it is accompanied by increased competition. In addition, if private management leads to efficiency gains, some of the savings can be passed on to consumers. However, prices may increase if they were previously below cost-recovery level. The distributional impact depends on how the consumption of the firms' goods and services varies by income levels. Access may increase if the privatized business is expanded through investments which could not be undertaken in public ownership. However, private owners may decrease their engagement in specific, low-return market segments, which may disproportionately affect the poor. Price increases are common following privatization in network or infrastructure industries, along with increases in the quality of services. On the one hand, subsidized services tend to benefit relatively wealthy consumers more than poorer ones; as such, they may be relatively more impacted than the lower-income segment by privatization. On the other hand, price increases following the privatization of electricity and water will increase the burden of poorer consumers, especially if it is accompanied by the end of illegal water and electricity connections (Birdsall and Nellis 2003).

Several studies in Latin America have shown that utility privatization has in fact led to network expansion and increased access to the service by the population, especially the rural poor (for Peru, see Torero and Pasco-Font 2001; for Argentina, see Chisari, Estache, and Romero 1999, Delfino and Casarin 2001, and Ennis and Pinto 2002; for Bolivia, see Barja and Urquiola 2001; for Mexico, see Lopez-Calva and Rosellon 2002). This increased network coverage has often been the consequence of market expansion enabled by private investment capital (see Clarke, Kosec, and Wallsten (2004)).

When access has increased significantly without a steep rise in prices, privatization has had positive distributional effects (Birdsall and Nellis 2003). However,

increased access has often been accompanied by substantial price increases (Estache, Foster, and Wodon 2002). In addition, an important negative distributional impact has been realized through the elimination of illegal connections to electricity and water networks by lower-income people. A recent paper by Hailu, Guerreiro-Osorio, and Tsukada (2012) on water service privatization in Bolivia in the late 1990s and early 2000s shows how tariff increases required for full cost recovery may lead to adverse privatization outcomes; in this case, the eventual renationalization of the company. To examine the impact of privatization on access, the authors use a difference-in-difference approach comparing two groups: households in cities where the utility was privatized, and households in other cities, with two points in time, before (1996) and after (2001 and 2005) privatization. These authors find a positive relationship between access to water and living in cities where the water utility was privatized. However, the water sector was renationalized in 2006, partly because of popular movements against the tariff increases required for full cost recovery and the failure of the concessionaire to meet targets stipulated in the contract.

Finally, Austin, Descisciolo, and Samuelsen (2016) point to the limits of privatization in sectors with public goods characteristics. Examining the privatization of healthcare in 99 less-developed nations over the 1995–2000 period, they employ two-way fixed effects ordinary least squares regression models. The fixed effects allow them to deal with unmeasured, time-invariant variables that are excluded from a regression model. They regress tuberculosis prevalence per 100,000 on the log of private health expenditures, the log of public health expenditures and a set of controls (economic development, education, HIV prevalence and access to water and sanitation). They find that, while public health expenditures reduce tuberculosis rates in developing nations over time, this is not the case for private health expenditures.

Fiscal Effects.

The fiscal effects of privatization on income distribution are indirect and come through changes in revenues and expenditures. In particular, privatization may affect real income (net of taxes) if it reduces the tax burden differentially across households, or if it leads to increased access by the poor to government services funded by new tax flows. The study of Davis et al. (2000) on 18 developing and transition countries showed that the net fiscal effects of privatization were receipts in the order of 1% of GDP. In some countries, the main fiscal benefits of privatization have been to eliminate subsidies. Subsidies in critical infrastructure services have often led to the rationing of under-priced services, hardly affecting poorer households that often had little or no access to these services, while the non-poor enjoyed the underpriced access. To the extent that privatization stops these flows of subsidies, it produces indirect benefits in terms of increased retained revenues (Birdsall and Nellis 2003), which could indirectly benefit the poor.

Policy Implications

The traditional literature, primarily concerning developed economies, argued that privatization had largely positive effects on the economic and financial performance of the companies involved, as well as wider spillover benefits, for example, via technological diffusion from foreign ownership of former SOEs and enhanced efficiency from the privatization of utilities and other forms of infrastructure. Moreover, privatization programs also frequently achieved additional objectives, including the generation of revenues to relax state budget constraints and a broadening of share ownership amongst the population. On this basis, privatization became an important element of reform programs in transition and then developing economies from the 1990s. The experience of the past twenty years leaves some of these conclusions unchanged, but leads us to a more nuanced evaluation of the effects of privatization in the context of economic development.

In particular, though state sectors are often very large in developing economies, it has been hard to establish widespread privatization programs in many parts of the world, partly because of political opposition. This has arisen for a variety of reasons. First, the record of privatization as it spread to middle income and then transition economies (including China) was not always so positive as in developed economies. The lesson of the transition economy experience was that privatization was not always a panacea: if the mode of privatization was inappropriate or the market environment not competitive, privatization might not enhance the performance of the firms involved (Estrin et al. 2009). Moreover, privatization programs were associated with scandals: inappropriate valuations led to the emergence of extreme inequalities of wealth. Second, in developing economies where the institutional environment, particularly with respect to regulation of monopolies, was sometimes even weaker than in transition economies, the benefits of privatization were even less automatic, depending on the sector, and were contingent to a significant degree on the design of the privatization program. Third, distributional issues are especially significant in developing economies, so privatization programs also had to consider distributional impacts in ways that had been less relevant for developed economies; opposition rested on issues raised by the efficiency-equity trade-off. Finally, political economy issues are perhaps of even greater consequence for policy choices in developing economies, and privatization programs are especially open to manipulation by extractive political institutions and elites in fragmented political environments.

This long list of concerns has meant that the spread of privatization programs to developing countries has been limited, both geographically and with respect to sectoral reach. The slowdown in privatization has no doubt been exacerbated by the global recession of 2008 and the resulting flight from risk, which has particularly affected stock markets in developing economies. Moreover, the evidence about the effects of such privatizations of economic performance is quite nuanced. To be

successful, a privatization program needs to align its objectives with its methods of privatization, taking into account the sector in which the company operates and the national, institutional, and political context.

Necessary Pre-conditions for Successful Interventions: Regulatory Agencies and Managerial Incentives

As Lopez-de-Silanes (2005) notes, good rules and contracts are key for a smooth and beneficial privatization process. However, government restructuring of SOEs prior to their sale is likely to be fraught with political difficulties because officials may try to extract private benefits. Although restructuring could increase revenues from the sale, Lopez-de-Silanes suggests that restructuring policies do not lead to higher revenues. In addition, Lopez-de-Silanes (2005) notes the importance of policies to complement privatization; of particular importance is the need to set up an appropriate regulatory and institutional framework for the post-privatization period.

Indeed, several papers have shown how a strong and independent regulatory institution can help address the negative impact of corruption on the privatization process. Wren-Lewis (2013) uses a fixed-effects estimator on a panel of 153 electricity distribution firms across 18 countries in Latin America and the Caribbean from 1995 to 2007. He regresses the log of labor employed on a corruption indicator, independent regular authority dummies (including dummies for good and bad regulators), and private ownership dummies and interaction terms. Wren-Lewis employs firm fixed effects to control for time-invariant unobservables. Because each firm is present in only one country or province, the corruption and regulation terms are estimated based only on changes in these variables within countries/provinces. He also includes year fixed effects to take into account time effects. Wren-Lewis shows that greater corruption is associated with lower firm labor productivity, but this association is reduced when an independent regulatory agency is present. However, because of broader institutional weaknesses, developing countries face many challenges in establishing a strong regulator. One limit of this study is that there may be important (unobserved) parts of the reform package that also impact productivity. As such, it should not be assumed that the (observed) reform will have the same impacts elsewhere.

Gassner and Pushak (2014) have examined the impact that the UK regulatory model has had in developing and transition countries, and the extent to which they have successfully followed its key features; competition, independence and efficiency of service delivery through incentive-based regulation. The authors note that while regulatory agencies have spread rapidly, the success of the UK regulatory model has been only partial in middle and low-income countries. They argue that the context of developing countries, with below cost-recovery tariffs and continued

state-ownership, makes it more difficult to establish truly independent regulatory institutions.

Thus, developing countries face many regulatory challenges; they often start with important operational inefficiencies and insufficient revenue generation. In addition, a majority of firms in potentially regulated sectors are still publicly-owned because they are not attractive enough for private sector investors, and because governments do not want to cede control of essential services. Under these circumstances, incentive regulation for efficiency savings is difficult: given the low tariffs, not enough investment can be undertaken to improve service delivery, and without private profit motives there is not a strong incentive for managers to bring about efficiency. Underpricing and poor operational performance are serious problems: according to the 2010 Africa Infrastructure Report published by the World Bank (2010), the underpricing of electricity costs the sector at least $2.2 billion a year in forgone revenues (0.9% of GDP on average).

Recently, the concept of hybrid regulatory models has been proposed as a solution to the challenges in developing countries (Eberhard, 2007). In hybrid models, regulatory contracts and independent regulatory agencies coexist. In a context where the institutional capacity is low and/or regulatory commitment is weak, an independent regulatory agency is supplemented by contracting out or outsourcing certain regulatory functions. An illustration of this is the 20-year water and electricity concession contract in Gabon, which requires external experts to monitor the service provider's performance in achieving coverage targets. The experts are paid from dedicated funds set aside from the concessionaire's revenues and produce only nonbinding studies. This monitoring mechanism is aimed at strengthening the independence and competence of the ministerial department responsible for supervising the contract. Policymakers may also obtain regulatory assistance from regional regulators or from other countries through twinning arrangements. For example, the Eastern Caribbean Telecommunications Authority (ECTEL) serves the member countries of the Organisation of Eastern Caribbean States as a shared regulatory body (Tremolet, Shukla, and Venton 2004).

Taking into consideration local management and incentives is also important for successful privatization. Liu, Sun, and Woo (2006) identify the motives of local government leaders and the constraints that they face during a privatization process. These authors conclude that local governments' motivation to privatize their SOEs depends on whether the ownership transfer sufficiently stimulates the growth of local tax revenues without sacrificing bureaucrats private control benefits. In addition, Dinc and Gupta (2011) in their study of privatization in India observed that no firm located in the home state of the minister in charge is ever privatized, which highlights the importance of local political factors in the privatization process.

What about Remaining SOEs?

To a certain extent, the recommendations about regulation and managerial incentives also apply to remaining SOEs. In fact, Bartel and Harrison (2005) argue that public-sector inefficiency is due to the softness of budget constraints and the degree of internal and external competition. This implies that efficiency gains in SOEs could be achieved by reducing or eliminating government financing for public enterprises, and/or increasing import competition.

Regarding agency-type problems, Hsieh and Song (2015) observed that one of the key reorganizations of state-owned "corporatized" firms in China was that the parent company (the controlling shareholder) of the firm incorporated as Limited Liability Corporation was to monitor the firm and be responsible for the compensation of the firm's senior managers. These managers were held accountable for the firm's bottom line, which reduced agency-type problems. The senior executives of the parent company, in turn, were directly appointed by the local government or by the Central Organization Department of the Communist Party.

Privatization to Foreign Owners

Work on transition economies established that when SOEs are privatized to foreign investors, the efficiency gains are particularly pronounced. The results on foreign ownership do seem, however, to be replicated in the developing economy context. Thus Du, Harrison, and Jefferson (2014) have found that foreign equity participation is associated with an improvement in productivity which is greater for SOEs than for non-SOEs in China's manufacturing sector, suggesting that foreign firms can play an important role in improving SOE performance. The benefits of privatization via transfer to foreign firms have also been observed in the case of banking in Africa (see Clarke, Cull, and Shirley 2005).

Part of the reason that foreign ownership improves productivity can be found in the relation between foreign ownership and corporate risk-taking. Boubakri, Cosset, and Saffar (2013) found that foreign (state) ownership is positively (negatively) related to corporate risk-taking, and that this relation is stronger in countries with better institutions. To the extent that corporate risk-taking is an important driver of economic growth, privatization via the transfer of ownership to foreign owners should yield important economic benefits through a reorganization of prevailing incentive structures and changes in the degree of risk aversion. Jaslowitzer, Megginson, and Rapp (2016) also observe that risk aversion and financial conservatism are one of the reasons that state ownership is associated with inefficiency. Using a matched panel of 624 firms, these authors find that state ownership curtails firms' responsiveness to investment opportunities. Despite these findings, in some developing countries the

sale of state assets to foreigners, which carries overtones of colonial legacies, can be a politically charged subject.

Concluding Comments

Privatization involves the transfer of productive assets from the state to private hands. Such transfers are, by their very nature, politically sensitive and subject to potential corruption and abuse. We outline below some important issues that policy makers in a developing country should consider when examining a proposed privatization. In so doing, we assume that the primary purpose of privatization is to enhance economic growth.

First, policy-makers need to examine and establish the preconditions for success, in terms of the business environment for competition, governance, and entry. The evidence suggests that privatization has greater benefits on firm performance in stronger business environments because the success of the process relies on effective corporate governance of the privatized entity, as well as effective market competition. Key issues at the national and sectoral level include:

- Depth and liquidity of the capital market (particularly important for privatization via IPO).
- Barriers to new domestic firm entry (formal entry costs, bureaucratic costs, possibilities for incumbents to restrict entry by the use of political relationships).
- Quality of the legal system concerning corporate governance, for example company accounting procedures, rules on minority shareholders, etc.
- Quality of business support, for example, legal firms, accounting firms, management consultants, recruitment firms.
- Openness to foreign direct investment, both via acquisitions (via privatization) or via greenfield (to create competition), and access to foreign portfolio capital.
- Depth and competitiveness of managerial market (pool of qualified managers).
- Strength and effectiveness of competition, and competition agency.
- Independence of anti-monopoly agency from state.

The quality and independence of the state's administrative apparatus is particularly important. Privatization makes considerable demands on the capability of the state, both in ensuring that the process is not captured by local elites, and in managing the relationship between the government and the firm at arm's-length post-privatization, for example, via regulation. Successful privatization requires competent government with low levels of corruption.

Turning to the privatization process itself, there is strong evidence that openness of bidding to all, including foreign firms, is a key factor of success.

Policy-makers also need to determine the appropriate privatization methods. Related to this, the pricing of the assets to be privatized are a crucial issue with respect to the transfer of assets from public to private hands, and the likely impact on the distribution of income and wealth. The chosen methods depend in part on the preconditions noted above. Countries with poorly developed capital markets are unlikely to be able to privatize through IPOs. The main methods of privatization, listed on the

basis of the evidence of the literature in order of likely favorable impact on economic growth and development are as follows:

- Sale to high-quality foreign firms.[15]
- Sale on domestic capital market via IPO.
- Sale to domestic businesses or business groups (trade sale).
- Sale to existing managers and/or workers.
- Free distribution of shares to the population (mass privatization).

There are obvious trade-offs. Free distribution ensures equality in the allocation of assets around the population, but is likely to lead to weak corporate governance. Selling to foreign owners, with appropriate safeguards, can raise company efficiency but may lead to job losses.

Privatization seeks to improve company efficiency via corporate governance. However, as we have seen, a number of side-effects may impact other key policy targets and these need to be considered in advance.

Social and Economic Side Effects. Higher efficiency/profitability may be obtained through lower levels of employment, lower wages, reduced public service provision and higher product prices, with negative distributional and social effects.

Competition Side Effects. Especially if the government is concerned with selling to foreigners and/or maximizing revenues, competition effects may be negative and serious.

Global Impact. Selling key assets such as banks or resource companies to foreign firms may restrict the range of domestic policy and hinder long-term development.

Political Side Effects. Selling assets to elites may concentrate political power and economic wealth into fewer hands.

Effects on Distribution of Income. An enhanced focus on the profitability of firms may lead to increased prices of important products for poor households, as well as reduced pay, worse employment conditions, and fewer job prospects.

Effects on Fiscal Balance. In principle, this should be unchanged because if the asset is priced correctly, the price should reflect the future expected earnings from the company. In practice, pricing may be set low to achieve distributional targets or to support elites and friends. This would worsen the government's balance sheet. At the same time, the new owners may be more productive than the state, and hence raise activity and profits, with a positive effect on GDP and government revenues.

Notes

Saul Estrin is a professor of management at the London School of Economics; correspondence to be sent to s.estrin@lse.ac.uk. Adeline Pelletier is a lecturer in strategy at the Institute of Management Studies, Goldsmiths College, University of London. This work was supported by the U.K. Department for International Development and the Overseas Development Institute. The authors would like to thank Tim

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1. Kikeri and Nellis (2004) have also conducted a wide-ranging assessment of privatization.

2. Each of these three regions representing between 3% and 5% of total world privatization proceeds over the 1988 to 2008 period.

3. The privatization barometer database provides world aggregate data on privatization and a country breakdown for developed countries. We are not aware of an alternative database providing such information. This was also confirmed by several academic and practitioner experts on privatization whom we contacted during the course of this research.

4. Infrastructure includes transportation, water and sewerage, telecommunications, natural gas transmission and distribution, and electricity generation, transmission, and distribution.

5. The manufacturing and services sector includes agribusiness, cement, chemicals, construction, steel, hotels, tourism, airlines, maritime services and other sub-sectors that are not infrastructure or finance related.

6. The financial sector includes banks, insurance, real estate, and other financial services.

7. The energy sector includes the exploration, extraction, and refinement of hydrocarbons, oil, and natural gas.

8. The primary sector includes the extraction, refinement, and sale of primary minerals and metals such as coal and iron ore.

9. The ownership pattern resulting from privatization often depends on the mode of privatization chosen. Thus, private sales usually lead to concentrated strategic owners, while mass privatization usually generates widespread ownership, at least initially. The impact of mode of privatization on national economic performance in transition economies is explored in Bennett, Estrin, and Urga (2007).

10. Note, however, that in the utilities sector (particularly for water), the technology and the nature of the product restrict the possibility of competition in the market and therefore the efficiency gains following privatization. In this case, competition for the market (to win the contract or concession agreement) has to be organized. Given the ambiguous results of privatization in noncompetitive markets in terms of improving economic performance (Megginson and Netter 2001), regulation may prove to be more effective (Kirkpatrick, Parker, and Zhang 2006).

11. The performance of privatized banks in the seven countries of the West African Economic and Monetary Union from 1990 to 1997 improved in the first year after privatization, but not after that.

12. Improvements in performance in Nigeria were observed in fully-divested banks, but not in the ones where the government retained minority shareholdings.

13. Whereas competition is feasible in telecommunications markets, it is usually cost-inefficient in the market for water services, given the scale of the investment in network assets required to deliver the product.

14. Privatization is also not associated with the profitability and efficiency of government-owned firms.

15. Note, however, that this method may suffer from a trade-off with competition objectives since foreign firms may seek local monopoly power. Such sales may be accompanied by conditions with respect to technology transfer, domestic content of inputs, employment, environment, etc.

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