# 3

# Domestic Policies to Unlock Global Opportunities

***Globalization makes it increasingly important to get the "investment climate" right—***

Expanding global service and production networks can accelerate growth in developing countries that successfully harness competition to encourage efficient investment. Efficient investment does not simply mean more investment. In fact, recent research demonstrates surprisingly little short-run correlation between investment levels and growth (Easterly 1999). Instead, investment and its productivity are inextricably linked to domestic policies that, taken together, broadly make up the local investment climate.

Sound enabling policies—including good governance, institutions, and property rights—can help attract more private investment, both domestic and foreign. Policies that promote competition and entrepreneurship increase the efficiency of that investment. Complementary public investment, meanwhile, further contributes to overall productivity growth. Taken together, sound policies in these three areas contribute to a positive investment climate, which is essential to accelerating growth and reducing poverty (Stern 2001).

***—including having an enabling policy framework—***

A stable macroeconomic environment is essential for a country to realize its investment potential. Good public governance—including transparent rules, low corruption, and respected property rights—encourages investment and promotes economic growth. Many countries try to use specific investment policies, such as tax incentives, to attract investment or to channel it in particular directions. Such schemes are often poorly designed, inadequately implemented, and costly, and may largely benefit investors who would have invested anyway.

***—and promoting competition that will increase the productivity of private investment***

In many countries, policy and private barriers either have discouraged private investment or have channeled it into less-productive activities that reduce economic growth. Promoting a positive investment climate, however, does not imply a laissez-faire approach to the economy. Rather, it requires active government efforts to reduce barriers that stifle entrepreneurship and competition. Four policy barriers to competition are especially common: barriers to trade, restrictions on foreign investments, administrative barriers to entry and exit, and monopoly positions granted to state-owned enterprises (SOEs) and newly privatized firms. While privatization has usually improved the performance of divested firms, shortcomings abound in subsequent industrial performance. Those shortcomings may be associated with regulations that reduce competition and grant exclusivity before sale of the enterprise. In addition, private

barriers to competition—including price-fixing and other collusive practices—can induce resource misallocation. After establishing an adequate macro policy framework, countries that lower both policy barriers and private barriers to competition can usually minimize investment distortions. They can also see more capital inflows, more rapid growth in trade, and superior overall performance.

### *Public investment plays a critical role in increasing productivity*

The level and composition of public investment has changed over the past two decades. The wave of privatizations has reduced the level and scope of public investment through state enterprises, and many sectors once thought to be natural monopolies can now be exposed to competition. Public resources formerly used to subsidize loss-making SOEs can potentially be used where the private sector is unlikely to invest enough: education, rural roads, and expanded access to underserved areas in many networks. While always a challenge, investment in effective infrastructure and human capital projects has an especially high return.

## Investment climate and investment policies

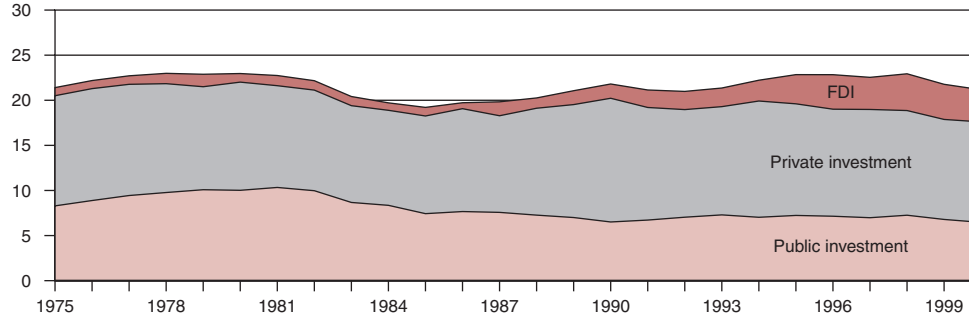
While foreign direct investment (FDI) flows to developing countries receive much attention and have special characteristics that can benefit recipients, most investment in these economies remains domestic in origin (figure 3.1).[1] This fact highlights the importance of policies likely to affect the level and productivity of all investment, not just foreign. Since the mid-1980s, the share attributable to public investment has remained fairly constant, while private domestic investment has declined slightly as FDI has grown.

### *Governance, corruption, and property rights matter—*

One critical dimension of the domestic policy environment is whether the government operates with transparency, credibility, and stability. Good governance—including independent agencies, mechanisms for citizens to monitor public behavior, and rules that constrain corruption—is essential to development (World Bank 2002b). Barro (1991) finds a positive relationship between growth and measures of political stability for 98 countries from

**Figure 3.1 Domestic capital is the largest source of investment in developing countries**

*(gross fixed capital formation, percent of GDP)*




*Note:* GDP is gross domestic product. These are the annual averages for 111 developing countries. Private investment is calculated as the difference between gross fixed capital formation and the sum of public investment and FDI. Public investment data measure total public investment, including SOEs.

*Source:* World Bank and International Monetary Fund data, and Everhart and Sumlinski (2001).

1960 to 1985. For example, as discussed in chapter 2, countries with stronger rule of law see more FDI (figure 2.17).

Transparency is among the most important components of the domestic enabling environment. Transparency relates to both the actions taken by authorities and the broader business environment of the host country. A nontransparent business environment increases the cost of information, diverts corporate energies toward rent-seeking activities, and can be conducive to corruption. Case studies suggest that companies may, for example, be willing to invest in countries with legal and regulatory frameworks that would not otherwise be considered "investor friendly," provided the investors can obtain a reasonable degree of clarity about the environment in which they will be operating. Conversely, extremely opaque business conditions can deter virtually all private investment, regardless of the extent of the incentives.

While these factors affect all participants in the host country's business sector, they are arguably more discouraging to outsiders who are not privy to locally available information and who have other choices about where to invest. As with earlier relations, causality can run both ways, because FDI may contribute to creating a more transparent environment. There are cases in which a foreign corporate presence encouraged more open government practices, raised corporate transparency, and energized the fight against corruption. More generally, by observing commonly agreed standards such as those in the Convention on Combating Bribery of Foreign Public Officials, implemented by the Organisation for Economic Co-operation and Development (OECD), multinational firms can contribute to raising standards for corporate social responsibility in host countries.

Corruption can deter foreign investors by increasing transaction costs and by raising uncertainty regarding the enforcement of contracts, the predictability of operating costs, and the likelihood of obtaining needed licenses and permits. Recent empirical research confirms that measures of corruption are significantly and negatively related to FDI inflows (Smarzynska and Wei 2000; Wei 2000). Lipsey (1999) observes a strong negative correlation between corruption and the location choice of U.S. affiliates across Asian countries.[2] Hausmann and Fernandez-Arias (2000) find positive, albeit weak, evidence that FDI as a share of gross domestic product (GDP) increases with institutional quality.[3]

Corruption and poor governance often go hand in hand with lack of investor protections and with poorly functioning institutions, thereby deterring competition and investment. No investor—domestic or foreign—is likely to risk assets if there is a high probability that those assets will be arbitrarily seized. Security of private property helps ameliorate asymmetric information between investors and the government and reduces investor uncertainties, thus reducing risk premiums and the overall cost of doing business. Empirical literature provides unambiguous support for this basic point, finding that the institutions protecting property rights are among the most critical for growth (Knack and Keefer 1995), that productivity and economic growth will improve when governments impartially protect and define property rights (Claugue and others 1999), and that countries without adequate property rights are likely to grow more slowly (Zak 2001). Moreover, historical evidence from industrial countries suggests that when investors face the threat of asset expropriation, they are likely to charge much higher prices to recoup investments quickly—if they choose to invest at all (Keefer 1996; Wallsten 2001c).

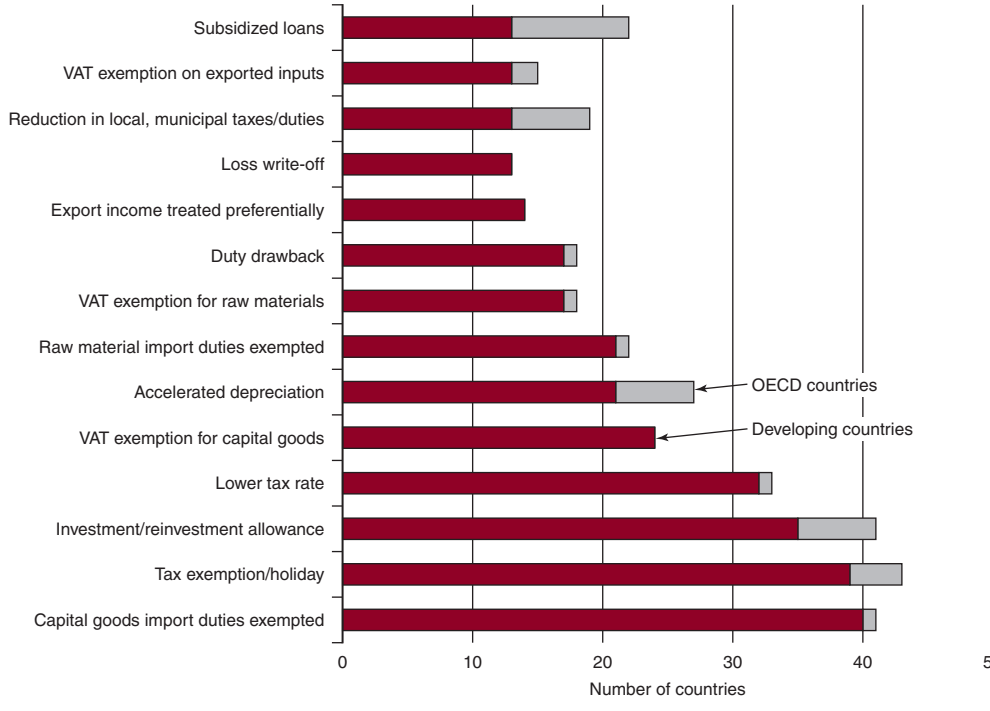
### *—but policies to channel private investment warrant caution—*

Building a strong and stable investment climate is neither easy nor quick. Governments may hope to jump-start the process or to compensate for a poor investment climate through targeted policies intended to draw investors

(usually foreign). Similarly, governments may compete for foreign investment in higher value added industries as a way of moving up the technology hierarchy of international trade and production. The lure of targeted policies is clear: incentives can be legislated quickly, and investment that occurs after the incentives are in place can be touted as a success. While actual success stories exist, they tend to be the exception rather than the rule because a combination of design flaws and implementation failures could limit the hoped-for response. Moreover, such schemes can be expensive, with the risk that costs will outweigh any benefits, that incentives will merely transfer money to private investors who would have invested anyway, and that incentives can lead to a "race to the bottom" as developing countries each try to give the biggest incentives to investors. In this section, we will consider three common policies: tax incentives to encourage FDI, subsidies to promote industrial "clusters," and measures to encourage industrial development through export processing zones (EPZs).

***Tax incentives for FDI.*** Given the perceived benefits of FDI, many countries have explicit policies to attract it. One recent study estimated that 116 countries take a proactive approach to FDI and offer incentives to foreign investors (Moran 1998). Figure 3.2 illustrates the variety and frequency of fiscal and financial incentives for FDI that developing countries offer. Typically, these policies focus on attracting particular types of investment—

**Figure 3.2 Incentives for FDI are varied and numerous**




*Note:* VAT is value added tax. Data on fiscal and financial incentives were compiled for 71 developing and 20 OECD countries. The most common incentives (used in at least 18 percent of developing countries) are shown in the chart.
*Source:* Bora (2002).

or changing investors' conduct—rather than on improving the general investment climate. Incentives designed to lure FDI can take the form of up-front subsidies that are designed to help multinationals defray some of their fixed costs (financial incentives), tax holidays (fiscal incentives), and other grants. The main goal of such policies is to alter either the magnitude or the location of inward FDI.

There are three main categories of FDI incentives: fiscal—policies that are designed to reduce the tax burden of a firm (including loss writeoffs and accelerated depreciation); financial—direct contributions to the firm from the government (including direct capital subsidies or subsidized loans); and others that do not fall easily into either category. In contrast to the industrial world, where the incentives offered are usually financial, the overwhelming majority of developing-country incentives are fiscal (see figure 3.2). In a recent study that included 71 developing countries, Bora (2002) concludes that fiscal incentives are the most popular, accounting for 19 of the 29 most frequently used incentives. Furthermore, the five most common incentives are all fiscal.

Despite the popularity of FDI incentives in developing countries, the evidence of their effectiveness remains ambiguous. The United Nations Conference on Trade and Development (UNCTAD 1996) reports that incentives can have an effect on attracting FDI at the margin, especially when one considers the type of incentive and the type of project. Conversely, Caves (1996) and Villela and Barreix (2002) conclude that incentives are generally ineffective once the role of fundamental determinants of FDI is taken into account. Furthermore, in a recent review of the literature on tax incentives and FDI, Morisset and Pirnia (2000) conclude that such instruments rarely make up for deficiencies in a host country's overall economic environment, and they fail to generate the desired externalities. Overall, recent evidence provides little support for those who believe that incentives will bring in extra FDI.

To some extent, the ambivalent perspectives may reflect differences in views regarding what is meant by an incentive. It is important to distinguish between the fiscal and financial incentives (which are usually firm specific) and the more general policies that promote business activity. Evidence is uncontested that general policies matter a lot in attracting investment. In a recent empirical analysis of the effect of U.S. state-level policies on the location of manufacturing investment, Holmes (1998) found that the manufacturing share of employment in states with a pro-business regulatory environment is one-third greater than that in a bordering state without that environment. Policies that encourage the adoption and adaptation of know-how—and other general incentives that apply across the board—are important and help foster a sound enabling environment. Examples include effective enforcement of contracts, absence of red tape, adequate infrastructure, and efficient training and education programs.

Under special circumstances, targeted FDI incentives may have positive effects. Many government officials seem to think that such incentives work, as illustrated by statements from a number of representatives in the Working Group on Trade and Investment of the World Trade Organization (WTO [1998]). Several studies find that fiscal incentives do affect location decisions, especially for export-oriented FDI, although incentives seem to play a secondary role (see Devereux and Griffith 1998; Guisinger and others 1985; Hines 1996). However, fiscal incentives appear unimportant for FDI that is geared primarily toward the domestic market; instead, such FDI appears more sensitive to the extent to which it will benefit from import protection. Thus, a more nuanced view of the efficacy of incentives may be in order. Although useful for attracting certain types of FDI, incentives do not seem to work when applied at an economy-wide level (see Hoekman and Saggi 2000).

Moreover, even when targeted, FDI incentives may impose excessive costs on governments, especially when fiscal incentives are provided through special tax provisions. Because benefits (a new manufacturing plant,

jobs created) are visible, whereas costs are hidden (tax revenues are forgone), governments may offer too much. Also, the existence of excessive FDI incentives is not just a developing-country phenomenon—in fact, such incentives are far larger in industrial countries. For example, in 1996, Mercedes-Benz received a subsidy of $300 million, which amounts to a subsidy of $200,000 per employee, from the U.S. state of Alabama for establishing an auto plant (Moran 1998). Similarly, following reunification, Germany paid a subsidy of $6.8 billion to Dow Chemical, which amounts to an astounding $3.4 million per employee (Moran 1998).

Additional concerns about the use of incentives emerge from their effect on the distribution of rents between governments, host-country firms, and large multinationals. Developing countries may be tempted to offer investment incentives to multinationals in part because of an expectation of technology spillovers to local firms. Yet, investment incentives to multinationals can put local firms at a competitive disadvantage, at least initially. The net effect is hard to estimate: perhaps incentives impose a short-run cost on local firms, which may gain from foreign investment in the long run.

A selective use of investment incentives can have strategic consequences among foreign firms, especially when multinationals are pervasive in markets with a high level of concentration. For example, an exporting foreign firm from a developing country (or a local host firm) may find itself at a disadvantage with respect to another foreign firm that experiences a decline in costs resulting from an investment subsidy. Thus, incentives can alter the distribution of rents among multinationals.

Finally, the use of investment incentives by developing countries poses a possible international coordination problem in two respects. First, as noted earlier, the possibility of excessive incentive "competition" among developing countries may increase the likelihood that the "winning" country will have given away far more than it receives. This area allows some scope for international action to prevent suboptimal outcomes (see chapter 4). Second, there is the possibility that incentives offered by high-income countries will end up retaining or attracting FDI that would be more efficiently used in developing countries (Hoekman and Saggi 2000). For example, labor unions and local interest groups may oppose plant closures by offering excessive incentives for firms to remain. Similar motivations underlie the use of trade policy instruments such as antidumping. It is important, therefore, to distinguish between the locational competition that may enhance efficiency and the use of investment and trade policies (such as antidumping) that alter the incentives for outward FDI. The latter policies are inherently inefficient because they protect industries that are no longer competitive, and they induce various related distortions that are well documented in the literature (Finger 1993).

***Clusters.*** In the past decade or so, the concept of industrial clusters has received a great deal of attention (see, for example, Porter 1990). While there is no standard definition of a cluster, it is usually characterized as a regional agglomeration of firms in related industries (along with complementary infrastructure and support services such as business, financial, and legal) that all work together in a virtuous cycle to attract new firms and to help existing ones grow. California's Silicon Valley typifies the high-technology cluster, with its concentration of high-tech firms, premier universities that actively interact with local businesses, and venture capitalists. Clustering, however, occurs in many other industries as well and is quite widespread (Ellison and Glaeser 1997; Krugman 1991, 1998). In the United States, evidence of knowledge spillovers within regions (Jaffe 1989; Jaffe, Trachtenberg, and Henderson 1993) and very small areas (Wallsten 2001b) is consistent with the idea that similar firms may benefit from proximity with one another.

Although the policy interest may be relatively new, clusters have been recognized for a

long time. In 1920, Alfred Marshall (as cited in Davenport 1935) hypothesized three reasons for the existence of clusters: the benefits from a pooled labor supply, access to specialized resources, and information flows among market participants. Today, these main benefits are still associated with clusters. In a successful cluster, these factors generate positive feedback loops because the concentration of people and firms will attract more people and firms (Arthur 1994; Krugman 1991).

With these potential benefits, it seems natural that policymakers would want to start clusters close to home. Unfortunately, there is little evidence that active efforts to create clusters tend to be successful. This result is in part related to the difficulty that governments everywhere have in "picking winners." Without any clear market signals about what activities or clusters might be viable, governments have a fairly poor track record. Bergman and Feser (2001) argue that "in less developed regions a policy decision to concentrate resources on key industries, instead of more general infrastructure needs or other strategies that would serve best a broad array of industries, brings with it significant risks against which the gains remain unverified." In industrial countries, research suggests that efforts to promote cluster development through science parks and public venture capital tend to be unsuccessful (Braun and McHone 1992; Felsenstein 1994; Wallsten 2001d).

Of course, this cautionary conclusion does not mean that emerging clusters should be ignored. Indeed, it may be that governments can draw on the problems such clusters face when prioritizing where to undertake reforms. In other words, cluster promotion may be more successful when directed toward areas in which significant activity is already ongoing, as well as areas where additional efforts on the margin by government may be the catalyst needed for further expansion. This type of selective intervention may underlie the success stories that do exist, such as Hsinchu Science Park in Taiwan, China (Saxenian and Hsu 2000).

In sum, while much evidence shows that clusters of firms are beneficial and occur naturally over time, there is little understanding of how to create them from scratch and no experience to suggest that governments have any expertise in selecting activities where clusters might flourish. Bigger payoffs are likely to come from interventions to improve the broader business environment. If governments are obliged to provide incentives to stimulate cluster development, they may do better by encouraging expansion of existing clusters, rather than by trying to pick winners and ending up simply transferring resources to the private sector without generating any positive externalities.

***Export Processing Zones.*** EPZs have become a prominent feature of many developing and transition economies, increasing from 175 in 53 countries in 1987 to 500 in 73 countries by 1995 (Kreye and others 1987 and OECD 1996, both cited in Schrank 2001). Along with this increased prevalence, it is not surprising that EPZs now account for fairly high shares of total employment in many countries—for example, as much as 6 percent in the Dominican Republic (de Ferranti and others 2002). Despite EPZs' ubiquity in the developing world, there is little agreement on whether EPZs are an effective development tool. While some view EPZs as the first step down a virtuous path of liberalizing domestic markets (Rodrik 1999), others believe that, by creating a special "property right" of value to those who participate, EPZs represent an escape valve that curtails broader reform efforts and that hampers overall liberalization and development.

The immediate benefit of EPZs to the host economy lies in job creation, greater foreign exchange earnings, and, possibly, higher real wages. In many instances, workers seem to perceive EPZ employment as an attractive opportunity. For example, Brown (2001, cited in de Ferranti and others 2002) finds that men and women employed in Mexico's *maquila* (manufacturing EPZ) sector earn 31

and 38 percent more, respectively, than their peers in non-EPZ sectors. Similarly, in a survey described by Sargent and Matthews (1999, cited in de Ferranti and others 2002), 73 percent of Mexican *maquila* workers interviewed reported their current job to be at least as good as their previous employment. Furthermore, worker welfare in EPZs is also improved through employer practices of providing worker benefits (such as medical insurance), stable work schedules, and weekends off. Moran (2002) evaluates worker conditions in EPZs in a number of countries and concludes that there is "extensive evidence that wages and working conditions in foreign-owned or foreign-controlled factories compare favorably with those of alternative occupations." Moran (2002) further notes that the demand for jobs is high and that workers tend to return to existing jobs following a holiday. English and de Wulf (2002) credit EPZs with creating more job opportunities for women in Bangladesh, with reducing female poverty in the Dominican Republic, and with raising wages for EPZ workers above wages for workers in the rest of the economy.

Beyond the direct effect of EPZs on job creation, a comprehensive evaluation of them should look at two additional criteria. First, do EPZs actually encourage firms to export (or to increase exports), rather than causing firms that already export to relocate into the EPZ so they can take advantage of financial incentives? Second, do EPZs produce spillover effects by drawing local manufacturers into the world markets, thereby indirectly bringing reform and enhanced competitiveness to a greater segment of the nation's producers? Schrank (2001) compares EPZs in the Dominican Republic and in the Republic of Korea, arguing that market size is a major determinant of EPZ success. Despite the good performance within the Dominican Republic's EPZ sector, few benefits appear to spill over into the rest of the economy. Korean EPZs, however, are increasingly integrated with local suppliers, thereby helping to transform much of the economy into world-level competitors. Schrank suggests that smaller countries may be unable to "transform feeble manufacturers into world market-oriented firms" and are less likely to draw themselves onto a "large-country growth trajectory."

Research does show that, in some instances, EPZs can be successful and can act as a catalyst for the rest of the economy (for example, Jayanthakumaran and Weiss 1997; Johansson and Nilsson 1997). Moran (2002) argues that EPZs will have only a limited effect unless they are supported by efforts to integrate them more fully into existing commercial and industrial hubs and unless they are located near existing or potential pools of better-educated labor. In particular, this argument implies that government efforts to use EPZs to encourage development of "backward" regions that are far from existing industrial centers (where the infrastructure is limited and skilled labor is scarce) are unlikely to be successful. The more successful EPZ experiments that Moran considers are in Costa Rica, the Dominican Republic, and the Philippines. Those examples show how EPZs have facilitated a shift in foreign investment away from lowest-skill operations that are limited to export enclaves toward higher-skill operations that are better linked to the rest of the economy and that provide both employment opportunities for higher productivity (and higher wages) and better worker conditions. Without such complementary efforts, EPZs risk becoming another entrenched interest that simply maintains trade barriers and delays broader market reforms.

Another view of EPZs focuses on their role as "transition property rights." It highlights their function in helping the country steadily improve its investment climate. That is, EPZs may act as a catalyst for the host economy, thus sparking a sequence of beneficial changes in the economy. The experience of Mexico is highly illustrative in this case: the transition began with establishing *maquilas* in a 2-mile border zone, which was next expanded to 12 miles, then to entire states, and eventually to the whole country. In this case, EPZs were able to help

improve the investment climate by acting as a bridge between the old and the new systems.

### *—and incentives cannot offset a poor policy environment*

Governments may hope to make up for an unfriendly investment environment through incentive mechanisms. But while there are clearly examples in which targeted interventions (such as fiscal incentives, EPZs, or support for clusters) may indeed lead to higher investment levels—and the jobs and related spillovers that go along with such levels—there is unfortunately little evidence that such initiatives can be systematically successful. Instead, the impression is that these interventions work best when they work in support of broader reform packages, either to catalyze support for emerging opportunities (such as clusters) or to create an initial constituency for reform that can be progressively expanded (such as EPZs). But more broadly, as Wells and others (2001) note, "Incentives will generally neither make up for serious deficiencies in the investment environment nor generate the desired long-run strategies." To encourage productive investment and benefit from globalization, governments must tackle the challenges of promoting competition and entrepreneurship and of undertaking complementarily productive public investment in areas such as education. We now turn to these issues.

## Promoting efficient private investment: harnessing competition

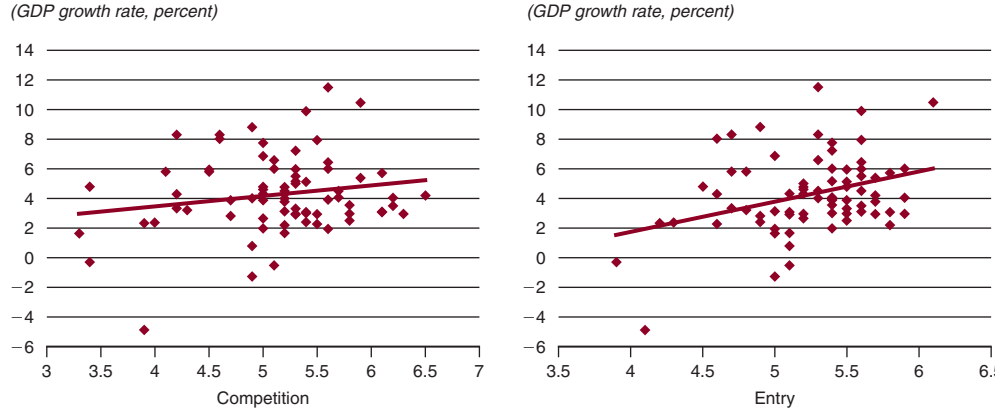
While a stable macro environment and good governance are important to attracting investment, policies that promote contestable markets and that protect against abuses of market power are required to ensure that new investment is both productive and efficient. Of particular importance in this regard are investment and competition policies, which are important elements of the investment climate and also are basic pillars of the economy's micro foundations that can have large effects on productivity and welfare. Industries generally function better when they operate in a competitive environment, and richer and faster-growing countries tend to have more competition and fewer barriers to entry. Changes in technology, global business organization, and regulation have created new opportunities for competition in areas that had formerly been seen as natural monopolies (infrastructure) or that were considered necessary to preserve domestic sovereignty (services, real estate, and the financial sector). Countries that do not change their investment policies and do not exercise well the powers and responsibilities of the state—such as regulating privatized industries, providing education, or enforcing conditions of competition—will forgo poverty-reducing growth opportunities.

At the broadest level, competition and ease of entry are both positively correlated with economic growth (figure 3.3). A host of policy and private barriers in developing countries work to restrict competition. Restrictions on trade and FDI rob an economy not only of potential sources of investment, but also of one incentive for firms to improve productivity. While causality goes both ways, both trade and FDI are correlated with higher productivity of firms in an economy. But potential competition does not come solely from interactions with the global economy. Many developing countries still protect incumbent firms—whether state-owned or private—by giving them monopoly power even when there is little rationale for doing so. While such actions may protect particular firms, they almost always impose net costs on everyone else in the country. Finally, other private barriers—such as collusion, price-fixing, and cartels—block competition and reduce welfare. This section of the chapter reviews some of these barriers to competition, and details how they can harm developing countries' economies.

### *Policy barriers to competition are a drag on productive investment*

Barriers to competition stemming from government policies can emerge either through

**Figure 3.3 Competition and ease of entry are associated with higher growth**




*Note:* "Competition" is the average response in each country to the question "In most industries, competition in the local markets is (1 = limited and price-cutting is rare, 7 = intense and market leadership changes over time)." "Entry" is the average response to the question"Entry of new competitors (1 = almost never occurs in the local market, 7 = is common in the local market)." Although competition and entry rankings suffer from methodological problems related in part to averaging of responses across respondents (see, for example, Lall 2001; Recanatini, Wallsten, and Xu 2000), those rankings can, nevertheless, provide a useful starting point for more rigorous investigations. One important question that these figures cannot answer is that of causality: do entry and competition make countries richer, do richer countries have more competition, or does something else altogether drive both growth and competition? What does emerge clearly is that poorer and more slowly growing countries seem to have less entry and competition.

*Source:* World Economic Forum (2002); World Bank SIMA indicators.

direct channels (such as when governments create state monopolies) or through indirect channels (such as when policy choices made in pursuit of other objectives end up limiting competition). In this section, we will focus on four channels through which competition is affected by policy choices:

- Import competition
- FDI competition
- Administrative barriers
- State monopolies and private barriers to competition.

### *Import competition can enhance productivity*

The important role that trade plays in promoting productive investment and growth has long been recognized. Using different measures of openness to trade, including both its relative size (as measured by import and export shares) and its degree of distortion (as measured by average tariff rates and dispersion), research strongly suggests that greater openness is associated with higher growth in both industrial and developing nations. Sachs and Warner (1995) find that openness is a highly significant determinant of growth and, combined with property rights, may even represent sufficient conditions for growth in poor economies. Kang and Sawada (2000) find a similar effect of openness on growth. They argue that, combined with financial development, openness increases growth rates in developing economies by decreasing the cost of human capital investment. Maloney (2001) offers regional support for the above result, citing evidence that Latin American economies that are more open and that possess a more developed knowledge infrastructure will grow faster. Consistent with this result, Cuadros, Orts, and Alguacil (2001) find that openness positively affects Latin American growth and trade through increasing FDI.[4]

Such aggregate results fail to answer the question of exactly how increased openness

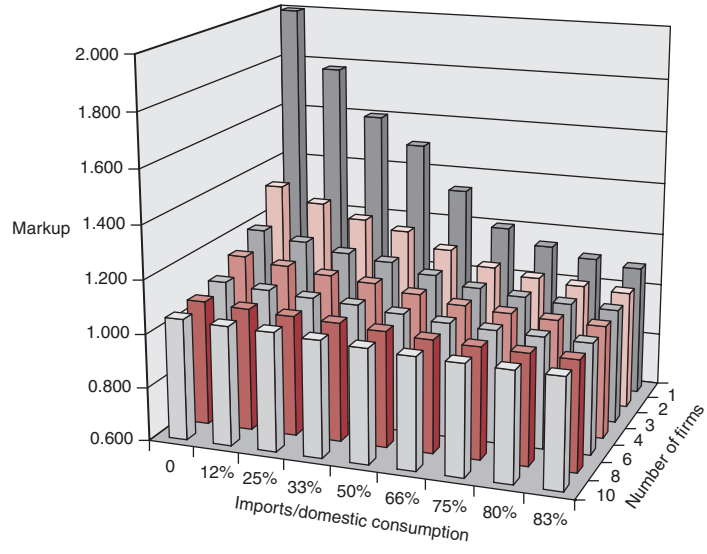
(however measured) is translated into faster growth. One approach emphasizes the learning and productivity gains that occur as domestic firms confront more competitive world market conditions, become more efficient, and begin exporting. Another more compelling approach emphasizes the rise in import propensities that often comes with trade liberalization. Increased imports place domestic firms under direct competitive pressures and indirectly induce technological innovation or cost-cutting restructuring that further enhances competitiveness and productivity.

Research finds that price–cost margins (markups above cost) tend to fall with import competition, though the direction of causality is not clear, and that foreign competition tends to improve manufacturers' efficiency (Tybout 2001). Hoekman, Kee, and Olarreaga (2001) found that import competition (defined as the ratio of import volume to domestic consumption in an industry) reduces industry markup. The effect of import competition is particularly powerful when a few oligopolists dominate markets. In figure 3.4, markups are lowest (measured on the vertical scale) when import competition is highest and when there are more firms (the front corner), and markups are highest when import competition is low and when the market is more oligopolistic (back corner).

Import competition pressures domestic firms to be more productive. A recent study of Brazilian manufacturing firms, for example, finds that foreign competition induces quick, marked improvements in domestic productivity and, over time, forces inefficient firms to shut down (Muendler 2002). Cross-country data are consistent with these findings, suggesting that higher tariff rates (which make imports more costly and thus less competitive), are correlated with lower productivity (figure 3.5).

In addition to the direct competition afforded by greater openness to imports, higher trade prevalence can create spillover opportunities through which domestic firms can gain access to (improved) technology without paying full cost. In general, imports from industrial

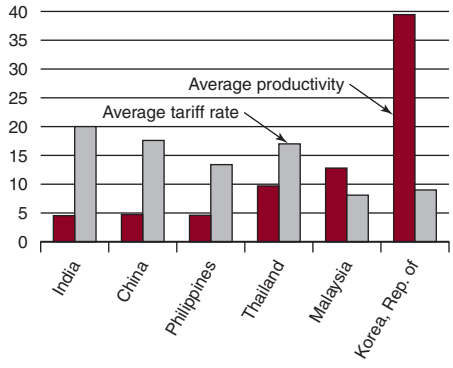
**Figure 3.4 Competition from imports checks markups in concentrated markets**




*Note:* Import penetration is defined as the ratio of import volume to the domestic output of an industry.
*Source:* Hoekman, Kee, and Olarreaga (2001).

**Figure 3.5 High tariffs are correlated with lower productivity**

*(percent)*




*Source:* World Bank staff, based on survey of more than 5,000 firms.

countries are positively related to technology diffusion and productivity growth (Eaton and Kortum 1996; Lumenga Neso, Olarreaga, and Schiff 2001). Sjöholm (1996) finds a positive relationship between bilateral import shares and patent citations for Sweden.[5] And Coe and Helpman (1995) find that industrial countries that receive a larger share of imports from countries with a high level of research and development (R&D) expenditures will experience faster productivity growth.[6] Despite agreement that imports are an important channel for technology diffusion, studies reach somewhat different conclusions on the conditions under which such diffusion is most likely to occur. Coe, Helpman, and Hoffmaister (1997) extend the results of Coe and Helpman (1995) to developing countries and find that developing countries' total factor productivity is positively related to their openness to trade with the industrial countries. Furthermore, productivity in developing countries increases as imports' share of GDP increases.

Some research finds that manufacturing productivity in developing countries depends on the complexity of imported machines (Navaretti and Soloaga 2001). Choudhri and Hakura (1999) show that imports are significantly related to productivity growth only in manufacturing sectors in which productivity increased moderately. Imports did not seem to affect productivity in sectors with low or high productivity growth. Using industry-level data, Keller (2000) finds that imports may boost technology diffusion if countries receive a relatively high share of total imports from a high-technology trading partner. Hakura and Jaumotte (1999) find that the share of imports from industrial countries has a positive effect on total factor productivity. Finally, Xu and Wang (2000) find that the share of imports of capital goods from high-technology countries is significantly related to productivity increases.

### *Competitive effects of FDI depend on policy—*

FDI can be a potential vehicle for increasing competition. Multinational corporations (MNCs) tend to be more efficient and productive than smaller, purely domestic firms. While MNCs' entry into the domestic market can put competitive pressures on local producers, the mere presence of MNCs does not necessarily increase competition. Because they often possess significant intangible assets (brand names, technology, managerial skills, and so forth), MNCs often supply different markets directly (through domestic production activities) rather than through exports. Such assets may permit MNCs to wield considerable market power. Openness to trade, low barriers to exit and entry, and other regulatory conditions can in turn help limit the capacity of MNCs to abuse market power in the domestic market.

While the relationship between competition and FDI remains complex, over time the competition-increasing association has become more prominent. Historically, FDI was often attracted to regions that were protected by high tariffs, as firms calculated that it was easier to set up a subsidiary than to pay the tariffs required to serve the market through exports. Such tariff-jumping investment was also motivated by the opportunity to service the domestic market behind the tariff barriers

while shielded from competition from abroad. This type of FDI has a long history: in the post–World War II period, many developing countries encouraged both domestic and foreign firms to invest in high-priority industrial sectors by imposing high tariffs, quantitative restrictions, and other nontariff barriers, along with providing various additional incentives (Caves 1996).

Investment induced in such a way, however, is unlikely to be efficient and, therefore, is less capable of providing a basis for sustained growth. First, the empirical evidence suggests that tariff-jumping FDI is "likely to be transient, lasting as long as the artificial policy-induced incentives" (Balasubramanyam 2001). Second, it can harm welfare by increasing consumer prices. In an era of much higher tariffs than generally exist today, Lall and Streeten (1977) found that more than one-third of the 90 foreign investments they studied actually reduced national income. This reduction was mainly from excessive tariff protection that allowed high-cost firms to produce for the local market at very high prices, even though they could have imported much more cheaply. An even higher share of domestic projects that they reviewed had negative value added. Encarnation and Wells (1986) found that 25–45 percent of 50 projects studied (depending on analytical assumptions) reduced national income; again the main culprit was high protection.

### *—and benefits are higher when trade barriers are lower*

One clear implication is that if countries are open to foreign investment, trade barriers can and should be kept low. Such openness to international competition will keep MNCs from using high protective tariffs to exert market power domestically and will discourage them from joining domestic vested interests that are lobbying for policies that perpetuate costly rent-seeking activities. The cost of not doing so can be enormous, as illustrated in box 3.1.

## Box 3.1 Trade restrictions shield MNCs from competitive forces at enormous cost: the case of Argentina

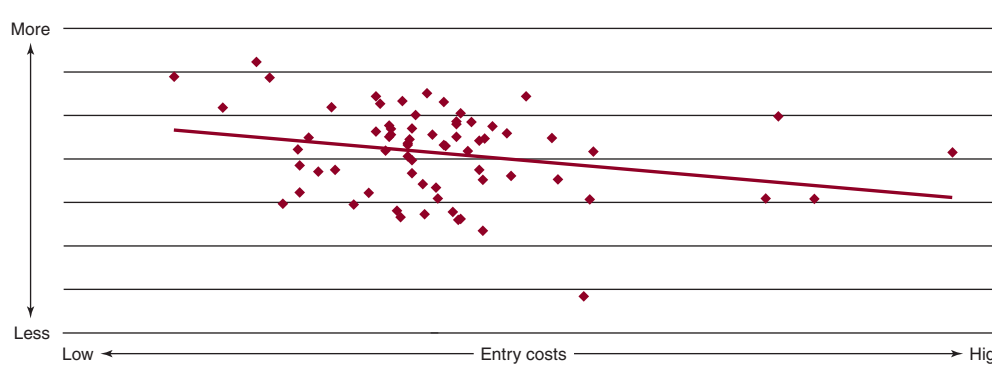
Trade and tax policy often interact in ways that magnify their competition-restricting effects. Newfarmer (2001) illustrates the importance of policy in determining the net contribution of multinational corporations (and domestic firms) by using the example of Argentina in the 1980s. In an effort to encourage settlement of Tierra del Fuego, the southernmost tip of the country (partly in response to territorial disputes with Chile), the government set up a special production zone for assembling electronic products with generous tariff protection and tax subsidies. Firms were encouraged to assemble many types of electronic goods for resale to the highly protected Argentine market at enormous markups. As a result, televisions in Argentina routinely exceeded international prices by 150–400 percent. The regime protection and subsidies were so lucrative that foreign (and some domestic) firms bought finished products in Japan; shipped them to Panama, where they were broken down; and then shipped them to Tierra del Fuego for subsequent reassembly and resale in the mainland of Argentina. By 1990, estimates of the cost to the (then-bankrupt) Argentine treasury ranged from 0.5 to 1 percent of gross domestic product. The winners in this scheme were the producing companies and a few thousand workers in Tierra del Fuego; the losers were Argentine consumers and businesses that had to pay high prices, thousands of workers who would have otherwise gotten jobs in more internationally competitive new activities on the mainland, and the Argentine poor, who, among others, had to pay the tax of high inflation to close the fiscal accounts.

In recent years, the incentives for tariff-jumping FDI have declined. Barriers to trade have come down considerably. As the importance of production networks has risen, foreign investors have found barriers to entry and less-competitive environments less appealing. In more recent studies, foreign investment is deterred by high taxes or nontariff barriers on imported inputs and is attracted to more-open economies. In reviewing cross-country regressions on the determinants of FDI, Charkrabarti (2001) argues that, after market size, openness to trade has been the most reliable indicator of the attractiveness of a location for FDI (see Kolstad and Tøndel 2002). As figure 3.6 illustrates, there is now a significant negative relationship between high entry costs[7] and the attractiveness of a market to foreign investors (controlling for other factors such as market size, macroeconomic stability, and human capital).

MNCs can have an indirect effect on competition by affecting ownership and market structure. For example, with a blend of deeper financial pockets, marketing skill, and superior product or process technology, MNCs may drive a significant number of domestic competitors out of business. To the extent that this outcome is based on advantages associated with greater efficiency, and if the resulting market structure remains reasonably competitive, these effects are generally positive. Furthermore, MNCs could spark the entry of productive suppliers, encourage greater innovation, increase the variety of available products, and drive down prices. However, if a domestic firm's exit is driven more by the market power of the MNC and if the exit results in greater market concentration, then the long-run result may be less competition.

The case study literature provides both positive and negative examples. After reviewing the evidence, UNCTAD (1997) concludes that although there is substantial evidence that the entry of MNCs yields new products and improvements in existing products, there is no systematic evidence on whether it ultimately reduces consumer prices. The overall effect should not be judged at one moment in time. In the short run, some less-efficient producers will likely be driven out of the market, while over time, more productive entrants will emerge. There is evidence that domestic suppliers to MNCs enjoy higher productivity, both in levels and growth (see Blalock 2001; Smarzynska 2002). Thus, the net effect of FDI on competi-

**Figure 3.6 High entry costs inhibit FDI inflows**




*Note:* Partial correlations control for market size, human capital, and macroeconomic stability. The entry cost measure used in the figure refers to the costs of obtaining the necessary permits and licenses and other procedures required to set up a new establishment. See Djankov and others (2002).
*Source:* World Bank staff.

tion, per se, depends on the level of international competition in the industry and on the ability of domestic firms to increase their productivity in response to increased competition.

Perhaps because the channels through which FDI affects competition will vary depending on the institutional environment—tariff structure, market size, competition policy—the empirical findings about the effect of FDI on growth are also mixed. FDI should contribute positively to growth, because it can bring capital, technology, skilled management, and technical staffs, plus business practices that are usually more modern. Indeed, several econometric studies have shown that, controlling for other factors, FDI flows are positively associated with economic growth (for example, see UNCTAD 1998 and World Bank 2001 for all developing countries; Van Ryckeghem 1994 for Latin America; and Chunlai 1997 for China).

However, the direction of causation is not clear: does FDI cause more rapid growth because of its associated characteristics, or is FDI simply attracted to more rapidly expanding markets to exploit growth opportunities? The answer is probably both. Theory does not provide a simple answer because the institutional settings and endowments are quite varied and complex (see Cooper 2001). One problem, for example, is that those elements in the investment climate that are conducive to FDI are also conducive to more domestic investment and to greater growth in productivity. Many of the methodological critiques that Rodriguez and Rodrik (1999) and Cooper (2001) apply to cross-sectional studies of trade openness and growth also apply to the somewhat less abundant literature on the relationship between FDI and growth.

### *Administrative barriers are usually high in developing countries—*

Entrepreneurship is an important contributor to economic growth and welfare improvements in transition and developing countries. For example, new firms created 10 million new jobs in Vietnam in the first seven years of reform and "have usually been the fastest-growing segment in transition countries" (McMillan and Woodruff 2002). The scale of entry that occurs when reforms promote competition can be impressive. Deng Xiaoping expressed his surprise that "all sorts of enterprises boomed in the countryside, as if a strange army appeared suddenly from nowhere" less than a decade after the first reforms in China in 1978 (Zhou 1996 as quoted in McMillan and Woodruff 2002). Key to promoting entrepreneurship and to improving productivity is an environment that facilitates entry and exit of firms (see, for example, Lansbury and Mayes 1996). Through this process, poorly performing firms leave the market and dynamic new ones enter. Unfortunately, many developing and transition governments fail to recognize that firm births and deaths are an inevitable corollary of entrepreneurial risk-taking. Instead, those governments erect a maze of administrative obstacles to starting, operating, and closing firms.

A growing body of literature documents the difficulty that entrepreneurs face in establishing firms in developing countries (for example, Djankov and others 2002; Emery and others 2000; Friedman and others 2000). Djankov and others (2002) compiled data on entry regulations in 85 countries and discovered enormous variation in the number of procedures required to start firms across countries, ranging from a low of 2 in Canada to as many as 21 in the Dominican Republic (with Bolivia and Russia close seconds at 20 each). The time required to establish a firm ranged from 2 business days in Canada to 152 in Madagascar. These procedures can be extremely costly to the economy. The cost of official procedures (that is, not including bribes) for setting up a new business was 266 percent of per capita income in Bolivia. Djankov and others (2002) found that stricter regulation of entry is correlated with more corruption and a larger informal economy. Moreover, "countries with more open access to political power, greater constraints on the executive,

and greater political rights have fewer required procedures for entry regulation—even controlling for per-capita income—than do the countries with less representative, less limited, and less free governments" (Djankov and others 2002). In a study of such obstacles in Africa, Emery and others (2000) discovered that "when added together, this whole maze of often duplicative, complex, and nontransparent procedures can mean delays of up to two years to get investments approved and operational."

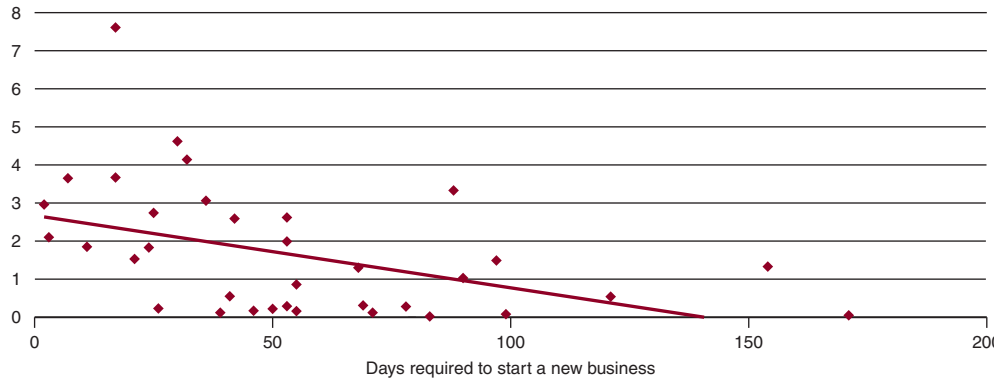
Although policymakers and advisers tend to emphasize market entry, exit is important as well because it releases resources that can be used in more productive ways. Healthy economies have a high "churn rate" of firms, and research demonstrates a strong positive link between entry and exit (Love 1996). Moreover, as Caves (1996) has pointed out, barriers to exit can be barriers to entry both by absorbing the scarce resources necessary to start new enterprises and by making it difficult for new firms to compete. Entry barriers, moreover, can become exit barriers (see figure 3.7). Claessens and Klapper (2002) find a smaller share of firms in bankruptcy proceedings in countries where it takes longer to start a firm, thus suggesting that keeping newcomers out of the market protects inefficient incumbents.

While exit barriers can be harmful, dealing with a firm's exit is not simple. Ideally, bankruptcy and insolvency procedures rehabilitate viable but financially distressed firms and liquidate unviable firms. In practice, deciding which firms are viable is difficult. Djankov, Hart, and Nenova (2002) note that many countries have crude insolvency laws that push financially distressed companies directly into liquidation, while other countries allow completely unviable companies to enter rehabilitation procedures. In the latter case, such companies are often liquidated only after a long and expensive period of rehabilitation. In recent years, there is a growing movement in insolvency reforms to introduce rehabilitation procedures in countries that do not have them, but to allow creditors to replace management during the rehabilitation process (Djankov, Hart, and Nenova 2002).

Barriers that limit firms' operating flexibility exist even when entry and exit is not at stake. Friedman and others (2000) compile

**Figure 3.7 Barriers to entry can become barriers to exit**

*(ratio of bankruptcies to number of firms)*




*Note:* Averages for 35 industrial and developing countries, 1990–99. The data panel used for calculation of averages is unbalanced: that is, the entire range of observations (1990–99) was not available for some countries. The measure of days required to start a new business is taken from Djankov and others (2002).
*Source:* Claessens and Klapper (2002).

indices of taxation levels and overregulation (essentially, indices of the business environment) of firms in 69 countries. Although Friedman and others (2000) find no evidence that higher tax rates drive firms underground, ". . . every available measure of overregulation is significantly correlated with the share of the unofficial economy and the sign of the relationship is unambiguous: more over-regulation is correlated with a larger unofficial economy." The important result here is that higher tax rates do not seem to drive away investors, but the myriad and often arbitrary array of obstacles to starting and running a business do.

### *—and have real costs*

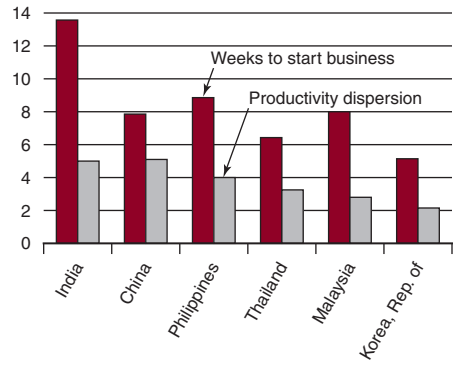
The administrative obstacles have real costs to the economy, which means that even potentially competitive firms often cannot compete because any efficiency advantages they may have are consumed by the costs of administrative hassles. Indian firms, for example, are potentially competitive in a range of labor-intensive industries; the combination of their labor productivity and their wages makes them low-cost producers at the plant level. The value added per unit of labor cost is lower in India than in East Asian competitors such as Malaysia, the Philippines, and Thailand. However, in practice this potential competitiveness is often offset by investment climate bottlenecks, resulting in lower Indian exports. Several dimensions are of particular relevance. The regulation of factor markets, particularly of labor and land, severely restricts the entry and exit of firms. For example, firms with more than 100 employees have not been allowed to retrench workers without government permission. Meanwhile, the lack of creditor rights and the severe backlog in judicial cases mean that India has one of the lowest levels of bankruptcies internationally. The Confederation of Indian Industry estimates that proceedings can easily take more than two years, and more than 60 percent of liquidation cases before the High Courts have been in process for more than 10 years. It is easy to see how such costs could quickly undo other advantages that these firms might have when competing in world markets.

A telling indicator of whether markets are competitive in a country is the productivity dispersion of firms within an industry. In a competitive market with reasonably free entry and exit, dispersion should be low because unproductive firms either become more productive or leave the market. Higher dispersion indicates that less-efficient producers are not being forced to improve their productivity or to exit the market. Firm-level studies in a number of countries bear this out.[8] Subsidies or strict regulations that impede entry or exit can ultimately bolster high-cost producers. When such firms remain in the market, more productive firms may not have either the adequate incentives or the ability to increase productivity or to grow. However, as competition increases, firms face greater incentives to innovate and greater penalties for failure to do so. Loss of protection and greater competition from foreign firms can drive inefficient domestic producers to better exploit scale economies, eliminate waste, reduce managerial slack, adopt better technologies, or shut down. As a result, productivity dispersion should shrink as productivity levels rise in the face of greater competition.

Productivity dispersion—a measure of inefficiency—tends to be associated with barriers to competition, such as the administrative barriers to start a business for India, China, the Philippines, Thailand, Malaysia, and Korea (figure 3.8). In Indian textiles, garments, and electronics, the higher performers have value added per worker that is five times that of lower performers. The dispersion of productivity is lower in four East Asian countries where the World Bank has conducted similar surveys. In Thailand and Malaysia, the productivity dispersion ratios are just below 3, and in Korea not much more than 2. Thus, more competitive countries in the group (as proxied by weeks to start a business) have lower levels of productivity dispersion than do the less-competitive countries.

**Figure 3.8 Barriers to entry and exit allow inefficient firms to stay in the market**

*(for productivity dispersion, percent; for weeks, number)*




*Note:* Productivity dispersion serves as a measure of inefficiency—more productivity dispersion means more inefficient firms are allowed to stay in business.
*Source:* World Bank staff, based on survey of more than 5,000 firms.

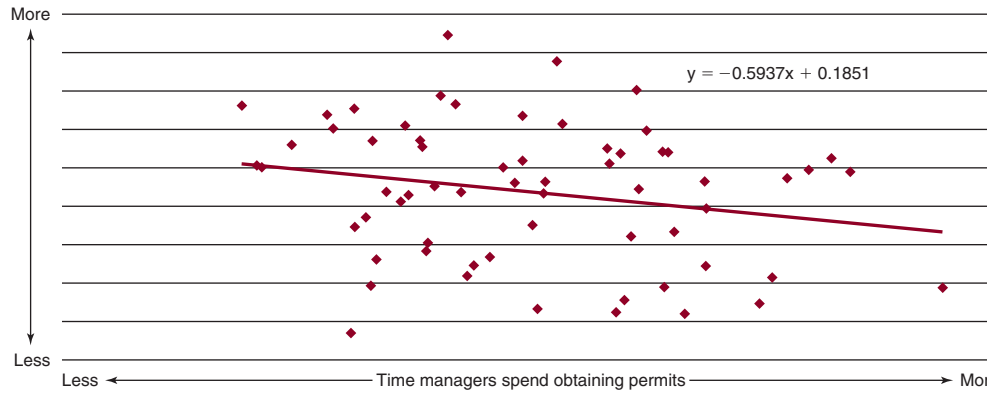
These obstacles can deter foreign investors. Morisset and Lumenga Neso (2002) have compiled data on the permits and procedures required for entry, access to land and infrastructure, and operation in 32 developing countries. These administrative procedures vary across countries, with especially severe delays in obtaining land and building permits. They have found evidence that increased administrative barriers deter foreign investment.

These findings are supported by a World Bank survey study that finds a similar result in a larger sample of 69 developing countries: there is a significant negative correlation between the amount of management time spent on obtaining the necessary paperwork and the levels of FDI (figure 3.9).

Another obstacle to competition is manifested in product delivery costs that go beyond producers' control and yet can have an enormous effect on their overall competitive positions. The effect of the quality of transportation, as well as the performance of government agencies such as customs administration, can more than offset the cost advantage that producers enjoy at the factory gate. Indian textiles provide one such example. India's value added per unit of labor cost is lower than almost all its East Asian neighbors. However, if one takes into account the longer delays in clearing customs and the higher shipping costs, Indian textiles are much less competitive on international markets.

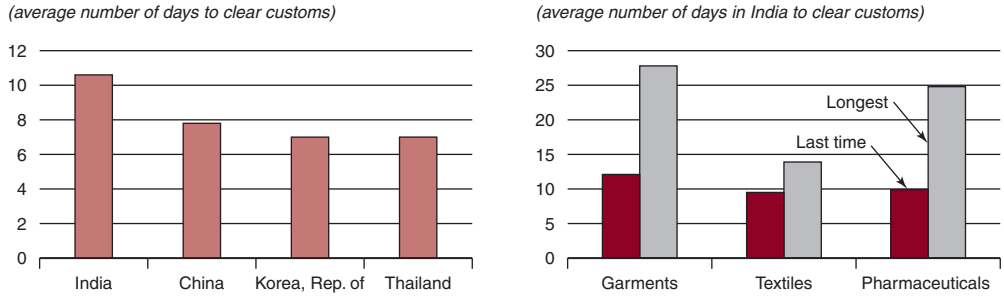
**Figure 3.9 Difficulties in obtaining licenses and permits discourage FDI**

*(FDI)*




*Note:* Partial correlations control for market size, human capital, and macroeconomic stability.
*Source:* World Bank staff.

**Figure 3.10 Inefficient customs hurt Indian exports**



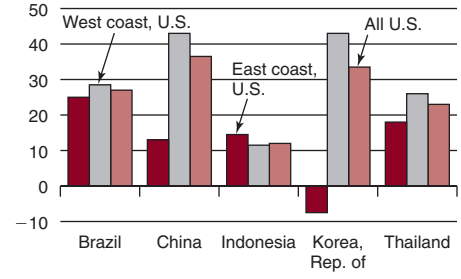

*Source:* World Bank staff; figures based on firm survey data.

Furthermore, World Bank surveys report information on the number of days needed to clear customs (see figure 3.10). Here, India scores poorly relative to Korea and Thailand, with the time about 50 percent longer in India (and triple what many OECD countries report).[9] But the issue is not only the average time, but also the variances in clearance time. Figure 3.10 shows the longest delay in the past year for a typical firm in three sectors in India. Although the average clearance time is 11 days, the longest delays averaged almost 28 days for garments and 25 days for pharmaceuticals.[10]

The transportation costs associated with shipping a container of textiles to the United States from India are more than 20 percent higher than shipping costs from Thailand and 35 percent higher than shipping costs from China (figure 3.11). Variations in maritime distances explain only a small part of the gap. Delays and inefficiencies in the ports account for a higher share of the difference in port productivity. Together, inefficient customs and ports can hurt the investment climate and can erode comparative advantage.

**Figure 3.11 Inefficient ports raise India's transport costs far above competitors' transport costs**

*(percent cost advantage compared with India of shipping textiles to the United States)*



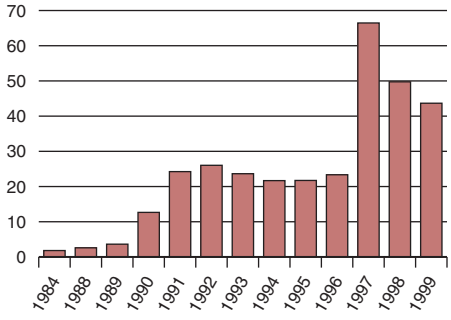

*Source:* World Bank staff.

### *SOEs use resources inefficiently—*

Another way in which states make competition and entrepreneurship difficult is by their direct ownership of many firms and industries. By 1990, SOEs consumed nearly 20 percent of gross domestic investment in developing economies while producing just more than 10 percent of GDP (World Bank 1995). But state ownership on such a scale was not sustainable. Many SOEs required large subsidies from cash-strapped governments to stay afloat, thus constraining government spending on other priorities. For example, it was estimated that "diverting SOE operating subsidies to basic education . . . would increase central government education expenditures by 50 percent in Mexico, 74 percent in Tanzania, 160 percent in Tunisia, and 550 percent in India" (World Bank 1995).

**Figure 3.12 Privatization revenues soared in the 1990s**

*(in nominal billions of dollars)*




*Source:* World Bank privatization database.

Driven in part by the high and unsustainable fiscal costs of state ownership, countries around the world embarked on a massive privatization wave. Privatization revenues in developing and transition countries increased from almost nothing in the early 1980s to more than $60 billion in 1997, before decreasing somewhat to $50 billion in 1998 (figure 3.12). It was estimated that by 2000, cumulative privatization revenues worldwide had exceeded $1 *trillion* (Megginson and Netter 2001). The bulk of privatization in developing countries occurred in services, particularly infrastructure.

### *—and privatization improves firm performance—*

Overall, privatization has dramatically improved the performance of former SOEs. State enterprises were substantially less efficient than private firms. Shirley and Walsh (2000) reported that most of the extensive literature finds private firms superior to state firms. Of 52 empirical studies, 32 found that the performance of private and privatized firms is "significantly superior to that of public firms," and 15 studies found "either that there is no significant relationship between ownership and performance, or that the relationship is ambiguous (different evidence supports both public and private superiority). The dominance of studies finding superior private performance is robust across all subcategories" (Shirley and Walsh 2000).

Privatization usually improved financial and operating performance in privatized firms (see Megginson and Netter 2001 for a comprehensive review of the literature). This result holds in industrial and developing countries alike (Boubraki and Cosset 1998a, 1998b; Megginson and Netter 2001). The finding is robust across case studies, cross-sections of firms from different industries within a given country, cross-sections of firms from different countries, and performance of firms before and after privatization (Sheshinski and Lopez-Calva 2000). Moreover, other research suggests that privatizations tend, overall, to increase welfare (Galal and others 1994). In other words, privatization tends not only to improve the performance of privatized firms and to benefit investors, but also to make the country better off.

### *—and is more successful when combined with competition*

Simply pointing out the overwhelming evidence demonstrating improvements in privatized firms, however, masks important differences across industries in the challenges and pitfalls of privatization, especially with regard to introducing competition. Some sectors, such as manufacturing, generally lack any economic justification for state ownership from the outset. SOEs that have been privatized into such competitive markets—while being freed from unprofitable government controls or social "mandates"—tend to perform quite strongly. Indeed, studies show that the most robust results occur from privatization in competitive sectors (Kikeri and Nellis 2001).

### *Infrastructure industries present special challenges*

However, in infrastructure sectors such as telecommunications, electricity, gas, and transport, existing SOEs traditionally were

considered "natural monopolies." It was almost an article of faith that, in these industries, a single firm could provide services at the lowest cost. In most of the world outside of North America, such natural monopolies translated into state-owned monopolies from the 1920s through the 1980s. But by the late 1980s, the combination of technological change, a clearer understanding of the costs of state ownership and monopolies, and a widespread failure of SOEs in developing countries to deliver reliable services to consumers in natural monopolies made privatization and competition both technically feasible and politically desirable. The benefits from this process are clear: studies suggest that privatization or contracting out of public services, including many infrastructure services—if done right—can yield efficiency gains equivalent to 10 to 30 percent of previous cost (Bartone and others 1991; Carnaghan and Bracewell-Milnes 1993; Domberger and Piggott 1994). When real competition is not or cannot be introduced, it is more likely that privatization will be less effective, and well-run public firms may do as well as private ones (Kwoka 1996). But even in these circumstances, many private projects have outperformed public enterprises. Examples include the water sector in Argentina, Côte d'Ivoire, and Guinea (Clarke, Menard, and Zuluaga 2000; Noll, Shirley, and Cowan 2000).

At least two broad difficulties exist in promoting competition when privatizing infrastructure utilities. First, not all components of infrastructure industries are equally amenable to competition; therefore, privatization might not be appropriate for all activities in a sector. For example, relatively low-cost wireless technologies make most elements of telecommunications potentially competitive, whereas generation of electricity is more likely to support competition than is transmission of electricity. The key to successful reform in any sector is, therefore, an adequate reform of market structure to maximize the potential for real competition. Market structure reform tries to distinguish—and to varying degrees separate—the true, natural monopoly elements of a system from the competitive segments. Second, even when competition is feasible, a dominant incumbent in a network industry often has both the incentive and the means to thwart competition.

With privatization more likely to be successful in competitive sectors and with infrastructure sectors, in general, less amenable to competition, it is not surprising that experiences in infrastructure privatization offer more mixed outcomes. Perhaps not unexpectedly one key determinant of privatization success has been the degree of competition introduced in the regulatory regime. As Ambrose, Hennemeyer, and Chapon (1990) note, "[S]imply moving a monopoly from the public to the private sphere will not result in competitive behavior." Another factor affecting success relates to the sequencing of sector reforms (including privatization) and the creation of the regulatory institutions that are necessary to achieve the broader objectives, including promoting competition. Policy reforms such as privatization often have proceeded faster than the necessary supporting institutions manage (see, for example, Wellenius 1992). This outcome is hardly surprising because privatizing a firm, complicated though it may be, is a relatively straightforward and discrete task when compared with building a regulatory agency where none existed. Nonetheless, varied experiences with privatization in the infrastructure sector caution developing countries to develop a system of checks and balances before privatizing sectors in which competition has until recently been a foreign phenomenon.

For several reasons, governments may sell off state monopolies and may grant whole or partial monopoly privileges to new private incumbents. The government may face substantial pressure to maximize privatization revenues, and the first metric by which the success of the sale is likely to be judged is the sales price. Privatizations tend to be controversial, and the government may be wary of

being accused of giving away the crown jewels if the sale price is too low. This wariness, plus a need to build support for privatization, may create an incentive to generate a high sales price, even at the expense of future improvements in the network. These pressures may have been especially intense during the first privatizations when there was little evidence that privatizations could be successful or that failing state-owned firms could attract private investors.

Consider the growth rate of networks in telecommunications when investors were given "exclusivity"—temporary monopoly rights—compared with when they were not. In a sample of about 20 countries that privatized their telecommunications firms, one study found that although private investors were willing to pay more for an exclusivity period (figure 3.13), telecommunications investment was substantially lower in countries that gave exclusivity periods than in countries that did not (Wallsten 2000). In other words, investors were likely paying for the expected stream of monopoly profits, not for the right to invest.

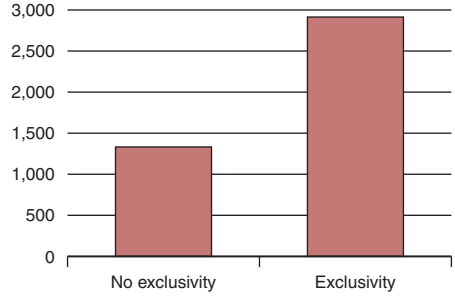
Another reason for granting monopolies is the mistaken belief that restricting competition can stimulate investment. As Noll (2000) notes, both the firms operating in a competitive environment and the monopolists face the same cost of capital, and neither will invest unless the expected revenues make the investment worthwhile. The monopolist's market power makes it less, not more, likely to undertake a given investment because monopoly profits are typically obtained by providing lower quantities of the good or service at higher prices. A firm with a guaranteed monopoly is also likely to invest less because it does not have to worry about more efficient competitors stealing market share. Even the threat of entry—which is typically the situation when reforms are introduced—can be enough to induce the incumbent to invest.

Indeed, in telecommunications, empirical work consistently demonstrates that competition, typically in the form of mobile providers (which have much lower fixed costs than wire line firms) is extremely successful in improving telephone penetration (for example, Fink, Mattoo, and Rathindran 2002; Galal and Nauriyal 1995; Li and Xu 2001; Ros 1999; Wallsten 2001a, 2001c). Figure 3.14 illustrates how the penetration of the mobile telephone market in Africa is influenced by competitive versus monopolistic regimes.

However, introducing competition—even when technically feasible—can be difficult. Incumbent firms can use their considerable

**Figure 3.13 Granting monopoly rights brings in revenues**

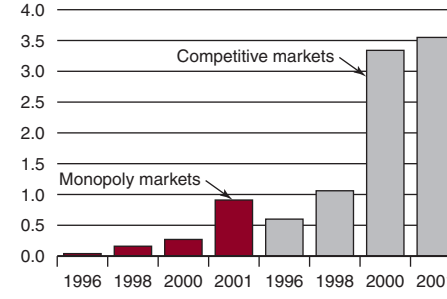
*(dollars per line)*




*Note:* Average price paid in telecom privatizations.
*Source:* World Bank staff.

**Figure 3.14 More competition means more phones**

*(mobile subscribers per 100 inhabitants)*




*Source:* African Telecommunication Research Project Database, DECRG, World Bank.

market power to ensure that competition never succeeds. Taking full advantage of the competitive forces in the global economy requires introducing a regulatory framework that maximizes competition. Establishing a clear regulatory framework in advance of privatizing companies is key to achieving a competitive outcome. Wallsten (2002) studied 200 countries from 1985 to 1999 and has found that, in telecommunications, creating a regulatory capacity before privatization is significantly and positively correlated with subsequent performance (using measures of capacity and investment). Moreover, earlier existence of a regulator seemed to increase the price received for privatized telecommunications firms by reducing uncertainty over the future stream of earnings.[11] Regulatory agencies are discussed in more detail on page 27 and page 33.

### *Private barriers to competition are often difficult to identify and can be pernicious*

Even if policy barriers to competition are removed, private firms—usually in concentrated industries—can raise barriers to competition. In particular, dominant firms can exercise their market power to prevent entry by competitors in order to keep prices and profits high. Such anticompetitive behavior may be especially prevalent among newly privatized firms in industries that are traditionally dominated by a single firm, such as telecommunications. Another form of private barriers is collusive behavior—often in the form of cartels—to fix prices and discourage entry.

Early research explored links first between concentration and profitability and then between concentration and prices. The underlying hypothesis in this line of research was that firms in highly concentrated markets would earn higher profits (implying monopoly profits) and would be able to charge higher prices. In general, empirical work supported this view, finding that firms in highly concentrated markets were more profitable and charged higher prices (for example, Weiss 1989). In addition, Newfarmer and Marsh (1994) found a statistically significant relationship between concentration and firm profitability in Brazilian manufacturing (table 3.1). Similar results were reported by Connor (1977) for Brazil and Mexico.

**Table 3.1 Profitability on equity, concentration, and market share (percent): Brazil, 1971–78**

| Four-firm concentration ratio (CR4)[a] | Relative market share (RMS)[b] | | | | |
|---|---|---|---|---|---|
| | 10 | 30 | 50 | 70 | 90 |
| 20 | 12.3 | — | — | — | — |
| 40 | 12.9 | 14.9 | — | — | — |
| 60 | 13.5 | 14.5 | 15.5 | — | — |
| 80 | 14.1 | 15.1 | 16.1 | 17.1 | — |
| 100 | 14.7 | 16.7 | 17.7 | 18.7 | 19.7 |

a. CR4 is the ratio of four largest plants to total industry sales, weighted by the four-digit group product group to sales of firm.
b. RMS is the ratio of firm's sales to industry sales, weighted by four-digit product sales of the firm.
*Source:* Newfarmer and Marsh (1994). Figures are based on regression coefficients holding other structural variables (for example, size, leverage, capital intensity) at their means.

Interpreting these results, however, requires care. Both concentration and profits could be high because firms exercise market power and block entry, or because better, more efficient firms are more likely to succeed, to capture higher market shares, and to be more profitable (Bresnahan 1989; Feeny and Rogers 2000). Nonetheless, empirical research—primarily in industrial countries—demonstrated that there is a great deal of market power in some industries and that anticompetitive conduct can lead to high price–cost margins (Bresnahan 1989). And, as Weiss (1989) noted, "[I]n smaller lands and/or in nations with less enthusiasm for antitrust [than in industrial countries], the problem must surely be greater."

Many believe that markets in general are less competitive in developing countries. With the exception of Brazil, China, India, and Indonesia, domestic markets tend to be small, with low human capital, poor infrastructure, volatile economies, and few manufactured inputs produced domestically. Surprisingly,

though, some evidence suggests that manufacturing sectors, on average, are not less competitive than elsewhere. As Tybout (2000) notes, "[B]ecause of institutional barriers, labor market regulations, poorly functioning financial markets, and limited domestic demand, the industrial sectors of developing countries are often described as insulated, inefficient oligopolies. To date, however, there is little empirical support for this characterization. Turnover is substantial in developing countries that have been studied, unexploited scale economies are modest, and evidence of widespread monopoly rents is lacking." Nonetheless, he notes, "[I]t would be foolish to conclude that market power is a non-issue in developing countries."

### *Collusive behavior and domestic cartels limit competition*

A single firm abusing a dominant market position is not the only way firms can engage in anticompetitive practices. Vertical restraints between manufacturers or suppliers and downstream distributors in the form of exclusive dealing and geographic market restrictions can also raise barriers. In addition, firms that would be price-takers individually—and unable alone to control any significant part of the market—can work together to control the market, thus increasing prices and discouraging entry. Collusive behavior is not uncommon, and competition authorities in developing countries have prosecuted several cases of price-fixing, as the illustrative list in table 3.2 suggests. In one colorful example of a bid-rigging conspiracy in the electrical equipment industry (high-voltage switchgears), participants used the phases of the moon to determine which firm's turn it was to submit the "low" bid.[12]

During the past decade, a number of developing and transition market economies have adopted or strengthened existing competition laws (see box 3.2). More than 90 countries have such legislation; more than half the laws were enacted since 1990. Although the core provisions of these laws (addressing issues of horizontal and vertical restraints, of abuse of dominant market position, and of mergers and acquisitions [M&A]) are similar, their scope, institutional design, budgets, staffing, and other resources vary widely. Competition laws generally complement and buttress other policies, such as policies on deregulation, privatization, and trade and investment liberalization, that enhance competition. However, the overzealous application or misapplication of competition law in the context of weak administrative capacity can also have serious negative consequences. Effectively implementing competition law requires an adequately funded agency with well-trained, knowledgeable, and experienced staff members. This is a challenge in industrial countries and even more so in the developing world.[13] In this regard, some developing countries have made noteworthy progress, but it is still too early to form an overall view of the effectiveness of their competition agencies. International investors have raised the issue that the proliferation of competition laws has led to higher costs for M&A transactions—a primary vehicle for FDI. And in some cases, the decisions arrived at by the competition authorities are highly questionable.

The remedy for anticompetitive conduct of firms necessarily depends on a country's capabilities. As the first order of business, all countries are well advised to look for ways to reduce policy barriers to competition. Small-market countries in particular can look to trade to discipline domestic pricing. Governments in countries with weak regulatory capacity, high levels of corruption, and poor accountability would be better advised to do the following: first, limit the powers of a competition agency to review of government policies for their competitive consequences and, second, concentrate on improving information and reporting requirements of firms so that increased transparency will attract entry. Trying to establish more comprehensive competition authorities in countries without an appropriate legal-economic framework may simply create another avenue for corruption

**Table 3.2 Cartel enforcement in selected developing countries**

| Country | Year | Market | Actions |
|---|---|---|---|
| Bulgaria | 2000 | Intermediate transportation | Price-fixing |
| | 2000 | Phone cards sales | Price-fixing |
| | 2002 | Gasification | Contracts with non-compete clauses |
| China | 1998 | School building | Bid-rigging conspiracy |
| | 1998 | Engineering construction | Bid-rigging conspiracy |
| | 1999 | Brickyard | Bid-rigging conspiracy |
| Estonia | 1999 | Taxi services | Price-fixing |
| | 1999 | Road transport | Price-fixing |
| | 2000 | Milk products | Price-fixing |
| Indonesia | 2000 | Pipe and pipe-processing services | Bid-rigging |
| Latvia | 1998–99 | Aviation | Cooperation in organization of passenger flights |
| | 1999 | Courier post | Agreement between two postservice companies |
| Peru | 1995–96 | Poultry market | Price-fixing, volume control, and conspiracy to establish entry barrier |
| | 1997 | Building and construction | Bid-rigging |
| | 1999 | Taxi tours | Price-fixing |
| Romania | 1997 | Mineral water | Price-fixing |
| | 1997–2000 | Drugs | Conspiracy in market-sharing in pharmaceutical distribution |
| Slovenia | 2000 | Electricity | Price-fixing |
| | 2000 | Organization of cultural events | Cooperation and establishment of entry barriers |
| South Africa | 1999 | Citrus fruits | Conspiracy relating to the purchase, packaging, and sale of citrus fruits |
| Taiwan, China | 1997–98 | Wheat | Buyer's cartel imposing quantity control and quota system |
| | 1998 | Mobile cranes | Bid-rigging |
| | | Liquefied petroleum gas | Price-fixing |
| Ukraine | 1999 | Electronic cash machines | Price-fixing |
| | 2000 | Kaolin | Noncompete contract |
| Zambia | Not available | Poultry | Agreement foreclosing competition |
| | 1997 | Oil | Price-fixing |

*Source:* OECD (2001).

and rent seeking. Governments in countries with stronger regulatory capacity have many options that go beyond policy review for competitive consequences and for improved disclosure. They may be able to prosecute price-fixing and other horizontal restraints, as well as prosecute restrictive marketing and other vertical restraints that hobble entry.

### *Regulatory agencies may help promote competition, but one size does not fit all*

One way that regulatory authorities can play a positive role in encouraging competition and investment has to do with bringing competition to industries that are dominated by a small number of firms or to industries in which cartels have developed. For example,

## Box 3.2 Competition policy and competition law share similar objectives across countries

In recent years, many countries have enacted specific legislation to safeguard and encourage competition. Enforcing competition (or antitrust and antimonopoly) laws can increase welfare and can improve efficiency by combating the negative externalities generated by anticompetitive firm behavior. The focus and objectives of competition agencies entrusted with this task vary across countries: some, such as Canada, New Zealand, and the United States, place the emphasis on consumer welfare and economic efficiency, while others, such as Brazil and the European Union (EU) member countries, look to serve the broader "public interest." But even with these differences in scope, the underlying principles are similar.

The conduct provisions of competition law relate primarily to the following:

- *Horizontal agreements* are entered into by firms to fix prices (and agree to similar practices such as bid-rigging; restricting output; and allocating market shares, geographic markets, or customers). Such agreements represent an unambiguous welfare loss to consumers in terms of reduction in price or output competition. Firms that enter into these agreements are severely prosecuted and, in some countries (Canada and the United States), such conduct is treated as a criminal offense, with CEOs liable for imprisonment. However, such anticompetitive behavior is often difficult to investigate because managers generally avoid written communication. As a consequence, some countries have adopted amnesty or leniency programs for cartel members who are the first to "blow the whistle" against other members. Encouraging new entry by removing both private and policy barriers may be the best policy to combat horizontal agreements because collusive behavior drops as the number of firms rises.
- *Abuse of dominant (AOD) market position* (that is, monopolistic practices such as market foreclosure and predatory pricing) is more difficult to enforce because authorities must focus not on the firm's size or dominance itself (which is not illegal) but rather on the "abuse" of a dominant position. Competition agencies must have the expertise to distinguish between dominance resulting from superior business practices and dominance from erecting anticompetitive barriers.
- *Vertical restraints* between manufacturers, suppliers, and distributors (such as resale price maintenance, exclusive dealing, and geographic market restriction) can be tricky because such measures can improve efficiency just as easily as discourage competition. The emerging consensus is that adverse effects are more likely to dominate if the participant firms enjoy a certain degree of market power. Therefore, vertical restraints should be evaluated within the context of AOD market competition laws.

The structural provisions relate primarily to the following:

- *Mergers and acquisitions,* where the principal concerns arise in horizontal transactions, and *joint ventures* compose two structural approaches. Two different views are prevalent. First, when transactions significantly reduce firm numbers or increase concentration, competition may substantially decrease. Second, transactions may be strongly motivated by efficiency goals, and substantial anticompetitive outcomes are likely only if there are barriers to entry or to new competition. Because most horizontal M&A activity will lessen competition but may also increase efficiency, a cost-benefit approach is often pursued in which mergers are exempted or are permitted to proceed on a restructured basis if the efficiency gains are likely to be greater than the competition losses.

*Source:* Khemani (2002).

Galal and Nauriyal (1995) compare the performance of the telecommunications sector in several countries before and after reforms as they explore how well countries were able to balance regulatory objectives: commitment, information asymmetry, and pricing issues. In their sample, they find that the country (Chile) that resolved all three issues achieved

the greatest improvement, while the country (the Philippines) that did not experienced the worst performance. Countries that resolved some issues but not others experienced mixed success. A more recent study of competition, privatization, and regulation hints at the importance of effective regulatory institutions (Wallsten 2001a). Like other research (for example, Petrazzini 1996; Ros 1999), the study finds that competition resulting from privatization positively affects network growth, but it also concludes that privatization brings greater benefits in the presence of an independent regulator.

Given the potential importance of regulatory institutions in promoting competition, it may seem surprising that regulation has been given relatively little emphasis in developing countries. Three factors may have worked to diminish the focus on regulation. First, the privatization wave was picking up strength just as the United States and other industrial countries were engaged in a process of deregulation, which often meant removing government controls to allow the industry to compete or to encourage new entry. Second, privatization in developing countries often faced competing objectives because governments want not only to maximize revenues from privatizing state-owned firms but also to improve the delivery of service by firms in the industry. The easiest (and most common) means to increase the firm's value for private investors is to include monopoly rights in service provision, but, unfortunately, precluding competition is likely to retard investment.

Third, the challenge of building effective regulatory agencies is enormous and will not automatically lead to better outcomes. These agencies are costly, require tremendous capacity in terms of human resources, and probably work best in the presence of complementary organizations such as competition agencies. Moreover, there is little evidence that, in general, regulatory agencies in developing countries have been successful. Regulation often takes the form of regulating entry, and, as Djankov and others (2002) document, regulation "is generally associated with greater corruption and a larger unofficial economy, but not with better quality of private or public goods. . . . The principal beneficiaries [of regulation] appear to be politicians and bureaucrats themselves."

This observation does not mean that developing nations are doomed to failure when building effective regulatory institutions. It also does not detract from the general point that introducing competition in potentially competitive sectors that are dominated by a single firm requires competent regulation that both protects consumers and assures investors that their assets will not be expropriated. Instead, as already discussed, it suggests that such agencies should focus on promoting entry, not regulating it, and that they themselves should operate in an especially transparent fashion to gain credibility. This feat is not easy to achieve, and such agencies must find the delicate balance between accountability and independence from short-term political pressures.

## Public investment in infrastructure and human capital

While the government plays a crucial role in providing a general framework to encourage investment and in establishing the conditions that use competition to create efficiency, its role as a direct investor is pivotal in shaping investment climate. There is some question as to what effect public investment has on private investment (see box 3.3). Moreover, all governments make public investments that work through several channels: Governments can invest directly in physical and human infrastructure provision. In addition, their involvement in less-tangible areas (providing policy stability, setting standards, and establishing legal and regulatory frameworks) affects opportunities even in areas in which direct government involvement is minimal. In this section, we will evaluate the scope and rationale for government engagement in the areas of infrastructure and human capital provision.

## Box 3.3 Does public investment "crowd out" or "crowd in" private investment?

While direct government investment in the economy is necessary, direct expenditures should be targeted carefully, because resources are scarce. In particular, governments should not invest where the private sector is willing and able to go. A government can crowd out private investment in two general ways. First, it can invest in areas where the private returns are likely to be high. Such investments may tempt politicians because they can then tout "successful" investments on the basis of their high returns. But such successes are illusory because private investors would have undertaken the investments anyway, and there is an opportunity cost from the suboptimal use of scarce government resources. Second, using high government deficits and borrowing to fund public investments can indirectly crowd out private investment by means of macro channels such as pushing up interest rates—and thereby raising borrowing costs—or creating credit constraints for private investors. Conversely, some government spending can also crowd in investment by attracting additional private investment that would not otherwise occur. The government may need to build certain parts of the infrastructure to attract private investors, to build roads that connect rural areas to markets, and to make education universally available.

In any particular country, it is likely that some public investment choices will crowd out private investment, while other choices will have the opposite effect. It is, therefore, not surprising that the empirical research on which effect dominates is mixed. Aschauer (1989) argues that while public investment reduces private investment almost one-to-one by encouraging the private sector to take advantage of public capacity instead of building its own, it is also true that public capital (and infrastructure capital in particular) complements private capital in the production of goods and service. Hence, public investment raises the marginal product of private investment so that—despite the direct negative effect—the long-term consequence of an increase in public investment on private investment is positive.

These results, however, were based exclusively on the United States, and a subsequent wave of cross-country tests of the crowd-out or crowd-in hypothesis has thus far failed to yield any clear conclusions. Recent results from the developing world are ambiguous and show little consistency. For example, Ahmed and Miller (2000) find general evidence of crowding out, but note that public infrastructure expenditures, such as spending on transport and communication, seem to crowd in private investment.

Ghura and Goodwin (2000) report a crowd-in result for a sample of 31 countries, but find more variation on the regional level: Asian and Latin American countries exhibit crowding out, while Sub-Saharan Africa shows that public and private investment are complements. In a slightly smaller sample, Herrera and Garcia (2000) find crowding out in both Latin America and East Asia, with the effect much stronger for Latin American countries. Everhart and Sumlinski (2001) add SOEs to the definition of public investment and, with a sample of 62 developing countries, find that corruption exacerbates crowding out. In fact, the effect of the corruption interaction variable is so significant that in the long run there may well be no crowding out if no corruption is present.

Finally, Wang (2002), using annual data for East Asian economies (developing as well as industrial), finds evidence of substantial gains from positive externalities generated by the public sector, therefore hinting at crowding in. However, he cautions that in the long run the influence of private production on public capital expansion is stronger than the reverse, which might indicate a causal chain in which higher private demand leads to greater public investment.

There is thus no consensus within the literature on whether crowding in or crowding out dominates. Empirical results are often sensitive to sample choice and vary with regard to individual countries and time periods. Hence, whether crowding in or crowding out dominates may depend on complex interactions between private and public investment. It is possible that, up to a certain level, higher public investment may encourage private investment and growth. However, when undertaken in excess (or when existing capacity is used inefficiently), any additional increases in the level of public capital may crowd out private investment.

*Source:* World Bank staff.

### *Infrastructure affects opportunities for growth*

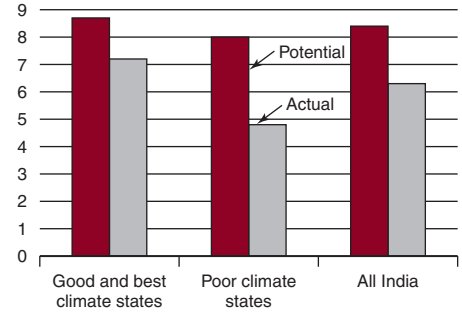
The quality and availability of infrastructure has a major effect on investment opportunities in the private sector. World Bank (2002) notes that "improvements in infrastructure services can help promote competition in other markets, and there is evidence that infrastructure has a positive impact on growth and poverty reduction." In a sample of 100 countries, Easterly and Rebelo (1993) attach an important role to infrastructure capital—particularly transportation and communications—in economic growth. Elements of infrastructure such as paved roads, telephone density per worker, and adequate generation of electricity have been found to have a strong effect on growth (see Easterly and Levine 1997; Canning 1999; and Canning and Bennathan 2000). Even in industries that have very low requirements for energy and transportation services, such as the software industry, the quality and availability of infrastructure play a key role in selecting firm locations because firms rely on satellite facilities to export their products (Balasubramanyam 2001). In addition to promoting economic growth, greater coverage of infrastructure services is also a key determinant of FDI (Balasubramanyam 2001; Stein and Daude 2001).

Infrastructure is a key determinant of the quality of a nation's investment climate. A recent survey study that linked quantitative measures of the investment climate to firm investment and growth experiences demonstrates the potential for improvements in infrastructure. The study, which is based on more than 1,000 firms in 10 Indian states, finds that if each state could attain the "best practice" in India in terms of regulation and infrastructure, the national economy could grow about 2 percentage points faster (see figure 3.15). The gains would be particularly large in the states with weaker investment climates (an extra 3.2 percentage points of growth), thus reflecting the fact that the move from current to best practice in India would be a large improvement. But even in the states with stronger climates, there is significant room for improving the climate in particular areas: moving to the best Indian practice would add 1.5 percentage points to the growth rate for these states. Note that in many ways this is a conservative counterfactual scenario because it would raise states to the levels of regulation and infrastructure quality that are already observed in India. If India could achieve Chinese or Thai levels in various investment climate areas, its potential growth acceleration would be even more dramatic (World Bank 2002a).

The efficiency of infrastructure capacity utilization is just as important as (if not more important than) the capital stock itself. Easterly and Levine (2001) propose that "creating conditions for productive capital accumulation is more important than accumulation per se and policymakers should focus on encouraging TFP [total factor productivity] growth." Hulten (1996) notes that those low- and middle-income countries that use infrastructure inefficiently pay a growth penalty in the form of a much smaller benefit from infrastructure investments. More than 40 percent of the growth differential is due to the efficiency effect, making it the single most

**Figure 3.15 Better infrastructure means higher growth**

*(annual average GDP growth rate 1992–98, percent)*




*Note:* Survey of more than 1,000 firms in 10 Indian states. "Potential" refers to attainment of the "best practice" in India in terms of infrastructure and regulation.
*Source:* World Bank staff.

important explanatory variable in differential growth performance. Similarly, Aschauer (2000) attributes an important role to the efficiency variable, although he cannot reject the hypothesis of parallel importance of the quantity and effectiveness of public capital at conventional levels. Aschauer (2000) also calculates the growth-maximizing level of public capital, which is vastly exceeded by the actual sample average of 46 developing countries. Thus, it would seem that the average country in his sample has overspent on capital expenditures, thereby lowering the productivity of its public investment program.

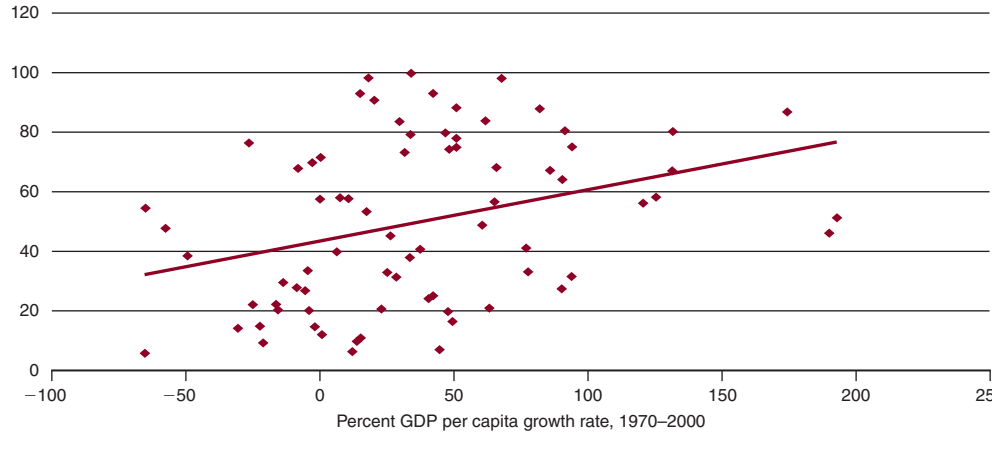
### *Investments in human resources are critical*

Human capital is widely recognized as an important determinant of development and growth. Seminal work by Mankiw, Romer, and Weil (1992) demonstrated a significant improvement in the explanatory power of the Solow growth model when it included measures of human capital. Similarly, many endogenous growth models have benefited from the inclusion of an education variable (see, for example, Romer 1990). Barro (1991) found that for a sample of 98 countries, the growth rate of real per capita GDP during 1960–85 was positively related to initial human capital (proxied by 1960 school-enrollment rates). Figure 3.16 illustrates this concept by showing a clear positive relationship between the 1970 literacy rate and the growth in GDP per capita between 1970 and 2000 for 75 developing countries.

Easterly and Levine (2001) caution that economic growth differences across countries cannot be easily explained by factor (including human capital) accumulation and should focus instead on technology and productivity growth. However, the success of dissemination of more advanced technologies in developing economies is largely determined by the absorptive capacity of the host country. That is, to realize the growth potential of new technology, the country must possess a high enough stock of human capital to be able to assimilate the technology. For example, Borensztein, De Gregorio, and Lee (1998) show that the magnitude of the effect of FDI on growth depends on the available stock of human capital in the host country. Within an endogenous growth model, the researchers

**Figure 3.16 Greater literacy is associated with higher growth**

*(1970 literacy rate, in percent)*




*Source:* World Bank data.

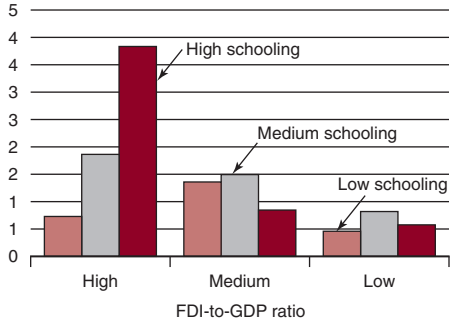
obtain a positive and highly significant coefficient on the interaction variable between FDI and human capital. The results suggest that "the flow of advanced technology brought along by FDI can increase the growth rate of the host economy only by interacting with that country's absorptive capacity."

Several other studies have looked at the relationship between FDI and human capital. For example, Coughlin and Segev (1999), Noorbakhsh, Paloni, and Youssef (2001), and Kolstad and Tøndel (2002) show a positive link between FDI inflows and the stock of human capital in the host country. Balasubramanyam (2001) notes that human resources are a key determinant of FDI.

Countries with the highest levels of both schooling and FDI grew much faster than countries with the lowest levels in the period 1970–89 (figure 3.17). Human capital is also important as an interaction variable between FDI and domestic private investment. Countries with high levels of human capital seem to experience crowding in of domestic investment by FDI, while countries with less human capital suffer the opposite effect (Herrera and Garcia 2000). Thus, high levels of human capital may help increase the overall level of investment through a crowd-in mechanism. Countries with higher human capital also have lower fertility rates and higher ratios of physical investment to GDP. Some evidence suggests that additional government expenditure on education induces additional private expenditures on education. For instance, Foster and Rosenzweig (1996) show that in India higher returns to primary schooling actually induce increased private investment in schooling.

**Figure 3.17 Education raises the productivity of FDI, which leads to higher growth**

*(per capita GDP growth rate, in percent)*




*Note:* The low, medium, and high categories for FDI-to-GDP ratio are below 0.01 percent, 0.01 percent to 0.2 percent, and more than 0.2 percent, respectively. For the schooling variable, the low, medium, and high categories are below 0.4, 0.4 to 1, and more than 1, respectively.
*Source:* Borensztein, De Gregorio, and Lee (1998).

Despite the overwhelming consensus that human capital is one of the keys to sustained economic growth, finding a robust empirical relationship between education and growth has proven difficult (see Easterly 2001 for a review). One striking example lies in comparing East Asia to Sub-Saharan Africa: Between 1960 and 1985 East Asia's per capita GDP grew more than 4 percentage points quicker than incomes in Africa, yet Africa's educational capital growth was actually higher than Asia's (Pritchett 1999). However, part of the answer to this puzzle emerges from the multidimensionality of the investment climate: education matters only if people are given opportunities to use their skills in productive industries in a supporting enabling environment. Easterly (2001) contends that economies with low black-market premiums[14] on foreign exchange grow faster with higher schooling levels, while economies with high black-market premiums grow slowly regardless of the levels of education. That is, "schooling pays off only when government actions create incentives for growth rather than redistribution."

## Policies to promote competition

While competition and entrepreneurship are essentially private sector activities, they require markets that function well. And it is up to governments to ensure an environment in which markets remain contestable

and entrepreneurship is rewarded, which is not easy. Entrenched interests are powerful, and it is often hard to determine whether any particular program is largely in the public interest or in the interest of a much smaller, but more vocal, private constituency. In general, though, following certain basic principles can help promote competition and growth.

Governments and government agencies should operate with transparent rules, should minimize corruption, and should respect property rights. They should also make it easier to start and run businesses. The maze of bureaucratic paperwork that is often required to start businesses in developing countries seriously deters entry into many industries. Moreover, such administrative hassles can be especially pernicious: in some cases they may punish small, local entrepreneurs who lack the resources to overcome such high hurdles. Having more government agencies that can block a firm's path will lead inexorably to more points at which a firm is required to pay bribes to move the process forward.

The government's role extends beyond setting up a generally investment-friendly environment. Until the past decade or so, SOEs have had monopolistic positions in many industries throughout the developing world. The recent wave of privatizations not only has led to large efficiency improvements in these firms and their provision of services, but also has opened those industries to competition. The greatest improvements in service have occurred in industries in which the government promoted competition along with privatization and in which it avoided giving the privatized firm any special monopoly rights. Privatizations are often difficult and controversial. However, governments should be aware that while they can usually increase the price that investors are willing to pay for a privatized firm by giving the firm a monopoly, that same exclusivity usually lowers subsequent investment. That is, investors will be paying for the stream of monopoly profits, not for the right to invest more.

Competition and regulatory agencies can be instrumental in reducing abuses of market power and in ensuring that markets remain contestable. Agencies can work toward this general vision by focusing on two objectives: protecting consumers while ensuring that the regulatory and market rules are credible to investors. These objectives, however, may be difficult to balance when interests compete for regulatory favor. Moreover, there is the risk that a new regulatory agency will become another avenue for corruption, especially in countries with very poor investment climates. An agency will be better able to accomplish its objectives of correcting market failure while avoiding government failure if it meets several criteria. In particular, it must operate in a transparent manner, be accountable, be independent from short-term political pressures, have limits on its discretion, and have adequate capacity to do its job.

The downside associated with failing to meet these criteria can be severe. For example, investment will be difficult to attract if regulatory policies can be easily changed to benefit any given politician's short-term objectives. Likewise, an agency that is not transparent and accountable runs the parallel risks either of frightening away investors or of being captured by the industry it is supposed to regulate at the expense of consumers. Without limits to its discretion, meanwhile, an agency may seek to expand its influence into new areas and may become primarily another obstacle to development and an avenue for rent seeking. Finally, if the agency lacks the capacity to do its job, it will simply be ineffective.

This range of criteria highlights the point that—especially in regulatory and competition agencies—one size does not fit all. The optimal type of regulatory and competition agency (if any) depends not only on the conditions of the market (for example, to what extent an individual firm can exercise market power to thwart entry), but also on the extent to which the country is likely to be able to credibly design and run an institution that meets these criteria. Larger, more stable

countries with effective existing bureaucracies are more likely to be able to meet all the criteria. Other countries may face great difficulties. The resources required to build and adequately staff an agency can be quite sizeable, potentially making it unrealistic for a small, poor country. Some have suggested that when resources and skills are scarce, countries could work together to create regional agencies in order to share the costs and responsibilities. Countries with severe problems of corruption and with a lack of transparency, meanwhile, may have difficulty convincing consumers and investors that a new agency would behave differently from how the government behaved in the past. A government intent on overcoming this reputation and on encouraging competition may make some progress in two ways: increasing the amount of publicly available information on both firms and government agencies, and taking special steps to ensure the transparency of any new initiatives while emphasizing the discretionary limits of those agencies.

## Notes

1. Note that these investment categories are not strictly comparable because the FDI flows are taken from balance of payments statistics and include foreign inflows intended for both new investment and acquisition of existing assets. Meanwhile, the other investment figures are derived from national accounts and refer only to new investment. The "domestic private" category is calculated as a residual and, therefore, may not match figures available from other sources.

2. However, his corruption indicator is correlated with other explanatory variables so that the coefficient on corruption is not significant once other explanatory variables are included in the equation.

3. The rise in FDI is moderated because improvements in institutions are also associated with a reduction in FDI as a share of total capital inflows because other types of capital inflows are more sensitive to institutional quality.

4. Not everyone is persuaded by these cross-country regression results. For example, Rodriguez and Rodrik (1999) argue that some indicators of openness are highly correlated with other indicators of economic performance—including macroeconomic policy—or that they imperfectly reflect a country's trade policy regime. The high correlation of components of the Sachs and Warner index with policy and institutional variables yields an upward bias in the estimation of trade restriction effects. Meanwhile, tariff and nontariff barriers, the two variables that directly measure trade openness, have little explanatory power when considered separately in cross-country regressions.

5. Patent citations refer to a requirement in some patent offices that inventors include in their patent application the citations of the patented technology that they used in developing their invention (see Branstetter 2000). These citations are used as evidence of technological spillovers.

6. However, Keller (1998) finds that the role played by import shares in determining productivity levels is limited. Using the Coe and Helpman (1995) model with randomly generated import shares, he also finds a positive relationship between foreign R&D and productivity.

7. The entry cost measure used in figure 3.6 refers to the costs of obtaining the necessary permits and licenses and the other procedures required to set up a new establishment. See Djankov and others (2002) for further details.

8. See Hallward-Driemeier, Iarossi, and Sokoloff (2002) for a longer discussion; Levinsohn (1993); Haddad and Harrison (1993).

9. Of the various regulatory agencies that are seen as obstacles, customs officials ranked second—only behind labor regulators—as a major constraint to doing business in India.

10. Delays are similar for clearing imports through customs. With such uncertainty, firms are likely to need to keep greater inventories of materials on hand, thus incurring significant storage costs and tying up resources that could otherwise be put to more productive use.

11. This will not always be the case, of course. A country could easily enact a regulatory regime that deters investors and increases the risk premium. Yet, on average, regulatory certainty seemed important to investors.

12. See Scherer and Ross (1990), chapters 7 and 8, for a description of this case and others about collusion.

13. Some commentators have suggested that it is a mistake to encourage developing and emerging market economies to enact competition laws because the risks of misapplication are high as a result of weak institutional capacity. Such laws may also become another form of government intervention in markets and may give rise to corruption. However, such objections could also be applied to other policy areas such as tax collection, bank regulation, and so forth. The main

implication instead is that it is important, first, to design a system of checks and balances, including measures for accountability and transparency, and, second, to support institutional building of capacity.

14. The black-market premium here is seen as a proxy for available opportunities for legal and productive employment.

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