SUMMARY: This chapter focuses on both the determinants and the consequences of informality from the perspective of private firms. The chapter begins by arguing that firm informality encompasses not only the large number of unregistered microfirms described in chapter 5, but also those medium-size and large firms that fail to comply with at least some government regulations. This is illustrated by recent estimates of a large incidence of tax and social security evasion among Latin American firms of all sizes. The chapter then reviews the evidence on the factors that may lead private firms to exhibit different degrees of informality, and analyzes the channels through which regulatory noncompliance can affect individual and aggregate productivity. Finally, the chapter lays out the possible approaches that policy makers could adopt to tackle the issue of firm informality.

While informality is often associated with small, unregistered microfirms, tax and social security evasion is commonplace among larger Latin American firms. This chapter reviews the main firm characteristics associated with informality among those firms, using data from recently concluded enterprise surveys in a number of Latin American countries. Not surprisingly, we find that the incidence of tax and social security evasion varies considerably across and within countries, and it is generally higher for small, low-productivity firms that started their operations without a formal registration.

With regard to the factors that may help explain this variation, we find that informality tends to increase with the quantity of labor and product markets regulations, and to decrease with the quality of governance—for example, the prevalence of the rule of law and the level of democratic accountability. Moreover, firm informality is positively related to the incidence of corruption, but it can be curtailed by the improvement of market support institutions—the courts, financial markets, and the development of links between small and large firms. Finally, we show that recent initiatives to reduce red tape and introduce simplified tax and registration systems for microfirms have led to statistically significant increases in the number of new formally registered firms, although further research is required to establish whether the corresponding effects are permanent or temporary, and to resolve existing controversies on their magnitude. In particular, some recent estimates suggest that the simplification of entry regulation leads more former high-ability wage workers to open formal businesses, but it has small or no effects on the formalization of unregistered businesses.

We argue that there are reasons to expect important overall productivity gains if a larger fraction of firms would formalize and if resources could be shifted away from low-productivity informal firms toward the formal sector. This could be the case in a context where increasing returns to scale are relevant, at least among very small firms, and informality is accompanied by a preponderance of small firms. Moreover, unfair competition from informal firms could slow down the process of creative destruction by which inefficient firms are replaced by their more efficient
Informality and, negatively affect the incentives of formal firms to innovate and adopt new technologies. Finally, growth could increase as previously informal firms gain increased access to markets and services. These positive links between formality and growth are supported by firm-level evidence presented in this chapter. Indeed, we find that firms that started operations without formally registering—at least initially—and those located in regions or sectors where informality is more prevalent exhibit, on average, much lower productivity than their peers. Moreover, exogenous increases in formality levels caused by changes in the costs of microfirm formalization are also found to lead to improved firm performance.

In practice, however, policy makers may need to act on several fronts at the same time in order to tilt the cost–benefit analysis of firms toward formality by combining both positive and negative incentives—respectively, “carrots” and “sticks.” Thus, the impact of interventions aimed at reducing the costs of being formal through the removal of regulatory constraints may be larger when accompanied by measures to enhance evenhanded enforcement of regulations and increase the potential benefits of joining the formal sector—for example, through improvements in access to credit, contract enforcement mechanisms, and technical assistance. In particular, recent evidence from randomized experiments suggests relatively high returns to capital among very small Mexican microenterprises, which implies that considerable increases in income could be obtained through incentives to the formalization of small businesses and expanded access to microcredit. These efforts, however, may have larger effects on the subset of higher-productivity informal firms (or high-ability wage earners considering entry into the microfirm sector) that may be closer to the margin separating the formal from the informal sector—for example, because they have more to win from formalizing or because the opportunity costs of operating informally are higher for them. Moreover, for very-low-productivity informal firms it is possible that, as argued in the previous chapter, a larger impact on overall formality levels could be achieved in the medium-to-long term through actions aimed at increasing job opportunities in the formal sector.

Informality among registered firms

The informal sector is often associated with the large number of unregistered small businesses found in most urban centers of the developing world. Thus, what people often have in mind when thinking about the informal sector are small, unregulated firms that avoid most taxes and labor regulations, and do not comply with most government regulations. Informality, in this approach, is seen as affecting mostly the very low end of the firm-size spectrum.

In a more general approach, as argued in chapter 1 of this volume, it is reasonable to define the informal sector as encompassing all the firms that, at least to some extent, choose to operate outside of the scope of existing regulations. Thus, medium-size and large firms can be considered informal even if they are appropriately registered, provided that, for instance, they underreport their sales for tax purposes; do not register all their workers with the social security administration; or do not comply with some government regulations regarding mandatory operating licenses or permits, as well as product quality and safety regulations.

For analytical purposes, however, it is useful to divide the informal sector into two different subsectors. The first is the informal microenterprise sector, which we described in the previous chapter and is composed of mostly informal, unregistered microenterprises. The second informal subsector, which Djankov et al. (2003) denominate the “unofficial economy,” is made up of firms that are only partially informal, in the sense that they are formally registered but keep a fraction of their workers and sales hidden from government regulators, and/or fail to comply with at least some government regulations related, for instance, to mandatory permits and licenses. While unofficial firms tend to be mostly small, in some countries and regions this subsector can include medium-size and even large companies.1

Data recently collected through surveys of registered firms in seven Latin American and Caribbean countries confirm that many small, medium-size, and even large firms also exhibit some degree of informality. This is illustrated in figure 6.1, which shows that sales and employment underreporting (for tax purposes) is commonplace among registered medium-size and large firms in selected Latin American and Caribbean countries of different sizes and levels of income.2

The high variation in levels of tax and social security evasion suggested by this figure, across countries with relatively similar levels of income, implies that cross-country differences in informality are not driven just by levels of economic development. In Brazil and Panama, for instance, firms reportedly evade as much as 30 to 40 percent of their taxes, compared to less than 20 percent in Uruguay and Peru, and less than 5 percent in Chile.3 As discussed in the next section, possible explanations may be associated with the size of tax and social security burdens, labor legislation,
governance issues related to red tape and corruption, levels of regulatory enforcement, and the value attributed by firms to market- and government-provided services.

A second finding derived from figure 6.1 is that, for most countries, the data suggest, as expected, that tax and social security evasion is more prevalent among smaller firms. In Bolivia and Mexico, for instance, about 35 percent of sales go underreported among microenterprises, compared to around 10 to 15 percent among firms with 100 workers or more. However, in Panama, Peru, and Uruguay, the data do not suggest a clear pattern linking underreporting rates to firm size. Thus, large firms appear to evade taxes and social security contributions at rates that are comparable to those of smaller enterprises—between 10 and 15 percent in Peru and Uruguay, and above 30 percent in Panama.

The negative relationship between underreporting rates and employment size in the case of Argentina, Bolivia, Colombia, and Mexico is maintained when the firms’ time in business, location, and sector are controlled for in a regression framework (figure 6.2). Thus, hypothetically doubling the size of a firm leads to a reduction in underreporting rates of more than 5 percentage points in Bolivia and 4 in Mexico, with roughly one-half of those effects obtained for the cases of Colombia and Argentina, respectively. A small effect is also found for Uruguay, where the underreporting of sales for tax purposes diminishes by 1.5 percentage points as firms hypothetically double in size. The time that a firm has been in business, however, is not found to be significantly related to informality levels, with the only exceptions being Colombia (where for each additional decade since starting up firms appear to reduce their sales underreporting by about 1 percentage point, and Mexico (where the opposite effect is obtained—increasing underreporting with time in business, at a rate of 1 percentage point for each additional decade since starting up).
Another relevant finding common to at least five countries is that firms that start operating in the informal sector exhibit higher rates of sales and employment underreporting than other firms of the same size, sector, and location, even many years after having registered, and after controlling for sector and location characteristics. Indeed, even after controlling for the time that firms have been in business—on average, more than 20 years, and about 8 years after having registered—starting without a formal registration is associated with rates of tax and social security evasion that are between 6 and 25 percentage points higher than for firms that registered at the time of starting up (figure 6.3). This suggests that efforts to facilitate early registration of new firms have the potential to reduce informality both through increasing the number of tax-paying firms and through reducing tax evasion levels among registered firms.

Within given sectors, however, and for given firm size and time in business, we find that firms with higher levels of labor productivity exhibit, in general, lower rates of tax and social security evasion. This is illustrated in figure 6.4, where we report the estimated effects on the rates of sales and employment underreporting of a hypothetical doubling in output per worker (controlling for firm size, time in business, location, and sector of activity). The effects are not significant for Panama, nor for sales underreporting in Bolivia and Colombia. However, for all the other cases, we find that doubling firms’ labor productivity—a change of about one standard deviation in that variable—is associated with underreporting rates that are, on average, 2 percentage points lower.

As suggested above, the negative correlation between productivity and informality is subject to different interpretations. On one hand, more productive firms may arguably have more to lose from operating irregularly (a topic that we discuss in the next section while summarizing the main firm-level determinants of informality). On the other hand, however, it is also possible that productivity is affected by whether firms operate formally or informally, as well as by the general level of informality prevailing in their region and sector (a topic that we cover in the third section of this chapter).

**Firm-level determinants of informality**

Why do some firms comply with government regulations while others opt for going underground? It is reasonable to assume that private firms voluntarily chose to operate in the formal or the informal sector based on rational profit-maximizing calculations, not unlike those underlying investment and production decisions. In particular, the extent to which firms comply with government regulations is likely to depend on their weighing of the various costs and benefits associated with operating formally or informally. Some of the main factors that firms are likely to take into account are the nature of the regulatory framework,
the extent to which regulations are enforced, and the various opportunity costs associated with operating in the underground economy.

**Benefits and costs of informality for private firms**

Among the main advantages that firms may consider when opting for informality are the possibility of reducing or eliminating tax payments and social security contributions, and the possibility of avoiding costly and burdensome government regulations, including but not restricted to those affecting labor markets. Some of the main “benefits” from informality are thus directly linked to the value of taxes and social security contributions that irregular firms are able to avoid.

Other indirect “benefits” are related to cost savings derived from avoiding the often complex administrative procedures associated with tax and regulatory compliance, and to the added flexibility enjoyed by informal firms in their employment and production decisions. Thus, for instance, informal firms arguably enjoy lower hiring and firing costs, and they have more degrees of freedom when setting wages and work hours. Moreover, informal firms may be able to reduce their costs—and potentially increase their sales—as a result of not having to comply with government-imposed standards for products and production processes. And, last but not least, informal firms may be able to circumvent the red tape associated with obtaining government permits and licenses. As documented by the World Bank’s Doing Business reports, many of those procedures are often costly and time-consuming, which may lead some firms to opt for operating informally in order to avoid them.

Potentially countervailing the above cost savings, informal firms need to deal with the risk of being caught and closed down. Since better enforcement of regulations increases the expected value of the fines and other losses derived from being detected by regulators, it reduces the incentives for operating informally. However, since it is neither feasible nor efficient for governments to supervise all individual firms, enforcement tends to be concentrated on larger firms. As a result, informality has the effect of limiting firm growth, both because smaller informal firms are less likely to be caught by government inspectors and because the uncertainty associated with informality discourages investments in illiquid assets. Moreover, in the particular case of informality with respect to labor regulations, irregular firms are likely to have a harder time attracting more educated workers and engaging them in a longer-term relationship—and that in turn affects their incentives to invest in training and capital goods.

High levels of corruption may also play a role in shaping firms’ incentives for operating informally. Indeed, when caught by government inspectors, irregular firms may have the option of bribing those inspectors to evade fines and other hassles, which may reduce the risk associated with operating informally. Second, in countries where formal firms face a high risk of being extorted by corrupt officials, entrepreneurs may decide to operate informally exactly to reduce their vulnerability to extortion. In fact, there is evidence that this is the case in several so-called transition economies where one of the main motivations for firms’ going underground is to “dodge the grabbing hand” (see Friedman et al. 2000; Johnson et al. 2000; and Johnson, Kaufmann, and Shleifer 1997).

Besides the risk of being caught, informality entails other private costs. Thus, operating in the underground economy eliminates—or at least greatly reduces—access to the courts and other formal contract enforcement mechanisms. This may increase the vulnerability of informal firms in their transactions with other private parties as well as with government. As a result, they may be forced to restrict their transactions to the potentially limited set of trading partners that are deemed trustworthy. This has negative implications not only in terms of social welfare, as it leads to forgoing potential gains from increased trade, but also in terms of reinforcing the above-mentioned factors that tend to limit the expansion of informal firms.

Another important cost associated with informality is given by the narrower set of formal financing mechanisms available to informal firms. Indeed, bank and other formal financial institutions are generally not willing to grant credit to companies that lack proper documentation, including that related to government registration and licensing, tax compliance certificates, and audited financial statements, all of which are generally lacking in the case of informal firms. Moreover, if to evade taxes companies do not register all assets as belonging to the company, their ability to use them as collateral for bank loans may also be limited. Similarly, in the case of firms that hide a fraction of their revenues to elude taxes or other regulations, financial statements may misrepresent their financial soundness and economic prospects, thus reducing their attractiveness to prospective lenders. The same applies to prospective investors, which reduces informal firms’ ability to raise equity capital.
Informality can also forbid firms from benefiting from government support programs targeted at small and medium enterprises (SMEs), as those programs are often restricted to registered tax-paying firms. This can be a serious obstacle to the growth of informal firms, at least if one assumes that SME support programs effectively compensate for market failures that limit the ability of those firms to access formal credit markets and acquire the technologies and human capital needed for their expansion. However, if firms do not place a large value on participating in SME-supporting government programs, or if market support institutions in general are not well developed—for example, credit markets do not function well or contract enforcement mechanisms are slow and costly—then the cost of being excluded from those institutions as a result of operating informally is lower, and a larger share of output is likely to be found in the underground economy.

Evidence on the relative importance of the various costs and benefits of informality—or, equivalently, the main advantages and disadvantages from formalization—is presented in figures 6.5 and 6.6, based on information provided by firms surveyed by the International Finance Corporation in 65 municipalities in Bolivia, Brazil, Honduras, Nicaragua and Peru. The figures report the average degree of importance of various factors on a scale from 0 to 4, separating firms with and without employees (beyond the owner). Among the main advantages of formalization, the surveyed firms mention the avoidance of fines and bribes, followed by the possibility of gaining new clients and expanding operations—to which, interestingly, firms with at least some employees give more importance than owner-only firms. As for the main disadvantages associated with formalization, the factors to which the enterprises interviewed attribute more importance are the need to renew their licenses every year and the tax obligations resulting from formality—the second one being more important for firms with employees.

Also cited as important advantages of formalization, although less frequently than the above-mentioned factors, are the possibility of improving access to credit and using contract enforcement mechanisms— the second one being more important for larger firms. However, when asked about the most important advantage of formalization, only 14 percent of the surveyed firms say that they are motivated by the desire to expand or seek new clients, 8 percent mention access to credit as the top reason for formalizing, and just 1.5 percent mention access to the courts. In contrast, 47 percent of the firms say that the top reason underlying their decision to register their enterprise is “to comply with the law” and 29 percent want to avoid fines or bribes. Thus, it appears that the risk of being caught prevails over positive incentives associated with access to markets and services, a finding that, in general terms, applies both to

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**FIGURE 6.5**

Advantages of formalization reported by IFC-surveyed firms

- Avoid paying fines
- Compliance with the law
- Avoid paying bribes
- Gain new clients
- Improved access to credit
- Operation on a greater scale
- Legal power to demand contracts upheld

Source: Authors’ calculations, using the World Bank’s Enterprise Survey Database.

**FIGURE 6.6**

Disadvantages of formalization reported by IFC-surveyed firms

- Annual license renewal
- Payment of taxes
- Regular inspection
- Accounting
- Compliance with labor laws

Source: Authors’ calculations, using the World Bank’s Enterprise Survey Database.
owner-only and to larger firms—the former being slightly more afraid of fines, the latter being more concerned about bribes, and both giving limited importance to issues related to access to credits and the courts.

The relative importance of the various private costs and benefits associated with informality is likely to vary with a number of firm characteristics, including size, time in business, and productivity. Thus, for instance, compared to larger firms, microenterprises may face a smaller risk of being caught by government inspectors when operating irregularly. However, they are likely to have a harder time amortizing the fixed costs associated with regulatory compliance—for example, the costs of firm registration, permits, and licenses—that may be a non-issue for large firms. Moreover, the red tape and monetary costs associated with formalization probably have a larger effect on recently created firms, which may choose to avoid them until they have accumulated sufficient evidence regarding their actual profitability and likelihood of staying in business.

Similarly, firms with inherently low productivity and/or growth prospects are likely to have a lower demand for credit and business development services, as well as for contract enforcement mechanisms, thus being less affected in their informality decisions by the level of development of market support institutions—the courts, financial markets, and the like. This would explain, for instance, why firms belonging to the upper tier of the microenterprise sector are more likely to operate formally, or why registered firms with relatively low levels of productivity are more likely to report higher rates of tax and social security evasion. As formalized by Rauch (1991), to the extent that taxes and regulations are enforced mainly among large, formal sector firms, entrepreneurs with higher managerial ability are endogenously allocated to big firms where they are able to compensate for the corresponding higher regulatory costs. In contrast, smaller and informal businesses are more likely to be run by less-talented entrepreneurs, which would be compensated by the lower costs of informal operations.

It is worth noting that, from a policy point of view, programs aimed at reducing informality by means of affecting its private benefits—for instance, by reducing barriers to entry into the formal sector—may prove ineffective if the costs of operating informally are too low—for instance, because regulatory enforcement and the odds of getting caught are low or because firms place little value on market- or government-provided services available to formal firms. This point is illustrated in the upper panel of figure 6.7, where a reduction in the benefits from informality proves insufficient to induce firms to formalize because the costs of informality—or, equivalently, the advantages of operating formally—are too low. In those cases, as illustrated in the lower panel of figure 6.7, for policy reforms to have binding effects on firm behavior, efforts may need to be directed both at reducing the benefits and at increasing the costs of operating informally.7

As an example, establishing the existence of very high registration costs does not, in itself, imply either that this is why firms don’t register or that not registering is a fundamental determinant of average small firm performance. De Soto’s (1989) telling anecdotes—for example, the sidewalk vendor who wishes to pay his/her taxes as a way of securing quasi-property rights to his/her pitch—do suggest that the high costs of formalization may impede informal firms from enforcing their property rights and accessing public services, and may limit their access to markets, thus negatively affecting their performance. However, one must bear in mind that registration costs are only one of the factors that informal firms are likely to consider when assessing whether to enter the formal sector. And, depending on the importance of other costs and benefits associated with formality, registration costs may not be the binding constraint for most small informal firms, perhaps because enforcement is limited in any case.

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**FIGURE 6.7**

Impact of changes in costs and benefits of informality

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<th>Benefits</th>
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<tr>
<td>Firms remain informal</td>
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<td><img src="image2.png" alt="Graph" /></td>
<td><img src="image3.png" alt="Graph" /></td>
<td><img src="image4.png" alt="Graph" /></td>
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<tr>
<td>Firms become formal</td>
<td><img src="image5.png" alt="Graph" /></td>
<td><img src="image6.png" alt="Graph" /></td>
<td><img src="image7.png" alt="Graph" /></td>
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Source: Prepared by authors, based on hypothetical cost and benefit figures.
This view is supported by recent evidence on Mexico reported by McKenzie and Woodruff (2006). Using a survey of informal microfirms, they show that the vast majority of them give as the principal reason for not being registered that registration is too expensive or time-consuming (respectively, 2 and 8 percent of surveyed firms), nor that the costs of operating as registered businesses are too high (4 percent of firms), but that they are too small to make it worthwhile (75 percent).

A somewhat different picture emerges, however, from household survey data from Argentina, where most unregistered microfirm owners report that they have remained informal because registration is too expensive (57 percent) or complicated (4 percent), compared to 39 percent who state that they do not register because it would be useless. Data from the Dominican Republic suggest a breakdown similar to Mexico’s: only 8 percent of informal microfirm owners report that they remain informal to avoid taxes and social security costs, while 20 percent want to save the time and money involved in formalization. In contrast, almost two-thirds indicate that they are too small to make formality worthwhile, they don’t need to be formal, or they don’t register because no business like theirs does. Interestingly, 92 percent state that their businesses have not suffered as a result of being informal, and 38 percent indicate that they have actually benefited from their informal status—mainly through lower taxes and the avoidance of government regulations. Similarly, a survey of Guatemalan informal entrepreneurs, performed by the National Economic Research Center, indicates that the majority of them do not perceive any concrete benefit from complying with government regulations (CIEN 2006).

The above evidence leaves open the hypothesis that, depending on each specific country context, registration costs may or may not be binding for most small firms and, in some cases, they could at best be a marginal contributor to informality. If this is indeed the case, further incentives may be needed to entice small firms to enter the formal sector, including both positive and negative incentives—the carrots and sticks mentioned above. While the latter involves increased government enforcement of regulations and potentially higher penalties for evaders, positive incentives range from tax reductions to changes in labor market regulations and improvements in private and public services available to formal firms (for example, credit, contract enforcement, technical assistance, and so forth).

It is worth noting, however, that “pushing” all firms into the formal sector may not necessarily be feasible or good social and economic policy. Indeed, if, as argued by Levenson and Maloney (1998), formality operates as a normal input in the production function of firms, it is possible that the intrinsic cost structure of many informal microenterprises may never, in fact, dictate that they grow large enough to need most of the formal institutions of civil society. Thus, for instance, given their very restricted markets, many of those microfirms may find it more efficient to use informal contract enforcement mechanisms and to operate on the basis of internal sources of finance. As a result, forcing them to formalize or trying to bring them into formal credit or capital markets would amount to “pushing on a string,” and it could lead large numbers of self-employed workers into open unemployment, while pushing formal sector wages downward.

Potentially countering these effects, however, one could argue that overall productivity could increase in the corresponding economies, as surviving microenterprises—the “upper tier” of the sector—become more efficient, thanks to formality, and as the goods and services previously produced by “lower-tier” microfirms are offered by larger and more productive firms. Which effect prevails depends, however, on whether formalization does indeed increase the productivity of some “upper-tier” microfirms, and on whether informality does generate considerable negative externalities on the rest of the economy (topics that we cover in the next section of this chapter).

Cross-country evidence on the determinants of informality

Despite convincing cross-country evidence confirming the relevance of several of the above-cited potential costs and benefits of informality, the data suggest that, to affect the size of the underground economy, policy makers may need to act on several fronts at the same time. The effects of regulations, for instance, appear to depend on the quality of governance. Moreover, as argued above, small changes in only some of the private costs or benefits of informality may not have a binding effect on firms’ decisions regarding regulatory compliance. The presence of a positive relationship between the regulation of firm entry and labor markets, on one hand, and the size of the informal sector, on the other, has been illustrated by Botero et al. (2003) and Djankov et al. (2002). These
authors were the first to construct large cross-country databases covering, respectively, the legal requirements for registering new firms (together with the time and costs involved in the corresponding procedures); and data on employment, collective bargaining, and social security laws. Djankov and his coauthors show that, for given levels of per capita income, the informal sector tends to be larger in countries where registering a new firm involves a larger number of procedures or where employment and industrial relations laws are more rigid. These results suggest that, at least on average, entry and labor regulations are not driven mainly by public interests, nor are they means for increasing the efficiency with which society operates.

Using a smaller sample but new estimates of the size of the informal sector for 14 Latin American and Caribbean countries, Loayza (1996) shows that informality is positively associated with levels of taxation and labor market regulations, and negatively correlated to the strength and efficiency of government institutions. Loayza and Rigolini (2006) confirm these results in a dynamic framework, showing that, in the long run, informality is negatively and robustly related to the flexibility of business regulations, the value of public services associated with law and order, and the capacity of governments to monitor and enforce formal taxes and regulations.

One caveat to the above results is that the long-run links between regulations and informality may apply differently in countries characterized by strong or weak institutions, with good or bad governance systems. This is exemplified by the finding of Friedman et al. (2000), in a sample of 69 countries, that higher tax rates are not correlated with a larger unofficial economy, and may, in fact, be linked to a smaller informal sector. They interpret this result by suggesting that, across the countries in their sample, the incentive to evade high tax rates is outweighed by the larger benefits of formality in countries where higher tax revenues help finance productivity-enhancing public goods and a strong legal environment. Indeed, they find that most of the available indicators of bad governance—including corruption, overregulation, and weak legal environments—are positively and robustly related to the size of the informal sector. Thus, high tax rates can coexist with small unofficial economies, provided that rules and regulations are not enforced in a discretionary way and that levels of corruption are kept under control. In other words, as argued elsewhere in this report, where tax regulations and enforcement are perceived as being fair—thus increasing “tax morale”—low levels of tax evasion and informality can be achieved without necessarily reducing tax burdens, thereby allowing for an adequate provision of productivity-increasing public goods.

The above findings imply that both the quantity and the quality of regulation matter for explaining cross-country differences in the size of the informal sector. In particular, reducing the quantity of regulations may be a good way of diminishing informality in countries characterized by bad governance, but it may have a much smaller—or even a null or negative—impact where the quality of institutions is high. This is illustrated by the findings of Loayza, Oviedo, and Servén (2005) that labor and product market regulations are positively related to the size of the informal sector only for countries with low governance quality, below a threshold that corresponds roughly to the levels of Greece, Japan, and Spain. To measure the quality of governance, Loayza, Oviedo, and Servén use indicators of the absence of corruption in the political system, prevalence of the rule of law, and level of democratic accountability. They argue, and their results seem to confirm, that in countries with better quality of governance, regulations are more likely to be driven by valid social goals, as opposed to the interests of particular groups, and their enforcement is probably more transparent and less discretionary. In contrast, where corruption is high, and democracy or the rule of law is weak, increasing the quantity of regulations is likely to stimulate informality. Consistent with the findings of Friedman et al. (2000), Loayza, Oviedo, and Servén (2005) also find that higher levels of fiscal regulations are associated with smaller informal sectors in countries with good governance, but fiscal regulations are unrelated to the extent of informality in countries where the quality of governance is sufficiently low—the threshold corresponding to the levels of Colombia and Pakistan.

**Firm-level evidence on the determinants of informality**

Using survey-based, firm-level data for five Eastern European countries, Johnson et al. (2000) confirm some of the above cross-country results. They find, for instance, that among Russian and Ukrainian manufacturing firms, respectively, an average 41 and 29 percent of sales go unreported for tax purposes, compared to between 5 and 7 percent of sales...
in Poland, Romania, and Slovakia. This is not surprising, Johnson and coauthors argue, given that managers in Russia and Ukraine face much higher taxes, report much higher levels of bureaucratic corruption and Mafia extortion, and exhibit a lower trust in their legal and court systems. However, firm-level regressions on the determinants of informality using the same data for three of the five countries cited above suggest that only the prevalence of corruption—measured through firms’ reporting of extralegal payments for services or government licenses—has a significant relationship with the percentage of sales unreported for tax purposes, with no effects found for taxation or court efficiency.

Enterprise survey data for Latin America and the Caribbean also suggest that corruption is positively and significantly related to informality. As seen in table 6.1, in five of the seven countries for which data are available (the exceptions being Panama and Peru), companies reporting that bribing of government officials to “get things done” is a common practice in their line of business exhibit rates of revenue and worker underreporting that are between 4 and 8 percentage points larger than those of other firms. As suggested by Johnson et al., (2000), this result could be due to firms’ underreporting some of their activities (sales and workers) in order to hide them from corrupt officials. Alternatively, if causality runs in the opposite direction, bribes could be a condition for remaining partially informal. Moreover, a complementary explanation is that firms that view the government as corrupt may also place a lower value on the public goods that it provides, and thus have lower incentives for contributing to its financing.

To evaluate the effect of labor regulations on informality, we construct a dummy variable for firms stating that those regulations significantly affected their hiring and firing decisions during the previous year. Both for the pooled sample and for three individual countries—Argentina, Colombia, and Mexico—we find that firms constrained by labor regulations evade a higher fraction of taxes and/or social security contributions. In most cases, the cost of severance payments is the aspect of labor market regulations firms most frequently report as the biggest obstacle to hiring more workers (figure 6.8). The only exception, among the eight countries for which data are available, is Mexico, where severance costs are surpassed (as an obstacle) by the costs of health insurance contributions. Health costs are second in importance to severance payments in Colombia, Panama, Paraguay, and Peru. The relative importance of other labor issues varies across countries, with regulations on temporary work being mentioned more frequently in Argentina and Bolivia (after severance costs), as well as in Colombia and Panama, and retirement benefits being the issue of second-most importance in Uruguay.

In the case of Panama, we also find some evidence of a link between informality and the enforcement of tax regulations. Indeed, in this country we find that informality decreases with the percentage of firms in the corresponding city and sector that have been visited or inspected by tax officials during the previous year. For each percentage point increase in the probability that a firm is visited by tax inspectors, the fractions of unreported sales and workers are reduced by between 1 and 2 percentage points. This result is consistent with evidence on the higher prevalence of informal salaried workers among Brazilian firms located in areas where labor regulations are less tightly enforced. Indeed, Almeida and Carneiro (2005) show that, for each 10 percent increase in the number of fines per 1,000 firms issued due to irregularities associated with unregistered workers, the fraction of informal employees falls by 1.2 percent as a proportion of total employment.

Interestingly, Almeida and Carneiro also find that the lower level of informality resulting from a tighter enforcement of labor regulations is associated with a decrease in labor productivity—a reduction of 3.6 percent for each 1 percentage point decrease in the proportion of informal employment—and lower investments in capital and technology. This result is consistent with the findings of Scarpetta and Tressel (2004) that higher labor adjustment costs resulting from stricter employment protection legislation may lead, at least in some industries and countries, to lower levels of total factor productivity. In other words, it appears that, in some specific contexts, the added flexibility resulting from informality—which is one of the above-mentioned private benefits from regulatory noncompliance—can facilitate the introduction of new technologies and enable firms to operate more efficiently. These benefits, however, may not necessarily prevail over the various above-mentioned costs of informality, which, as argued below, may lead to a negative relationship between informality and overall productivity.

The results in table 6.1 also provide some support to the hypothesis that, where market support mechanisms and links with large firms are better developed, informality
TABLE 6.1

Firm-level correlates of sales and employment underreporting

<table>
<thead>
<tr>
<th>Variable</th>
<th>Argentina</th>
<th>Bolivia</th>
<th>Colombia</th>
<th>Mexico</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Underreported</td>
<td>Underreported</td>
<td>Underreported</td>
<td>Underreported</td>
</tr>
<tr>
<td></td>
<td>sales (1)</td>
<td>employment (2)</td>
<td>sales (3)</td>
<td>employment (4)</td>
</tr>
<tr>
<td></td>
<td>Underreported</td>
<td>Underreported</td>
<td>Underreported</td>
<td>Underreported</td>
</tr>
<tr>
<td></td>
<td>sales (5)</td>
<td>employment (6)</td>
<td>sales (7)</td>
<td>employment (8)</td>
</tr>
<tr>
<td>Corrupt. dummy</td>
<td>6.436</td>
<td>5.655</td>
<td>4.462</td>
<td>6.603</td>
</tr>
<tr>
<td></td>
<td>(0.000)***</td>
<td>(0.000)***</td>
<td>(0.088)**</td>
<td>(0.033)**</td>
</tr>
<tr>
<td>Labor regulations dummy</td>
<td>1.957</td>
<td>4.793</td>
<td>0.791</td>
<td>4.659</td>
</tr>
<tr>
<td></td>
<td>(0.267)</td>
<td>(0.004)***</td>
<td>(0.799)</td>
<td>(0.204)</td>
</tr>
<tr>
<td>Tax insp. (avg. n)</td>
<td>0.014</td>
<td>-0.054</td>
<td>0.089</td>
<td>-0.370</td>
</tr>
<tr>
<td></td>
<td>(0.898)</td>
<td>(0.615)</td>
<td>(0.701)</td>
<td>(0.176)</td>
</tr>
<tr>
<td>Contract enforcement</td>
<td>-0.086</td>
<td>-0.116</td>
<td>-0.170</td>
<td>0.100</td>
</tr>
<tr>
<td>(avg. %)</td>
<td>(0.510)</td>
<td>(0.352)</td>
<td>(0.348)</td>
<td>(0.640)</td>
</tr>
<tr>
<td>Large clients dummy</td>
<td>-5.775</td>
<td>-2.954</td>
<td>1.271</td>
<td>-1.378</td>
</tr>
<tr>
<td></td>
<td>(0.001)***</td>
<td>(0.087)*</td>
<td>(0.673)</td>
<td>(0.698)</td>
</tr>
<tr>
<td>Bank loans (% of firms)</td>
<td>-7.292</td>
<td>-10.611</td>
<td>-34.587</td>
<td>1.148</td>
</tr>
<tr>
<td></td>
<td>(0.461)</td>
<td>(0.259)</td>
<td>(0.232)</td>
<td>(0.973)</td>
</tr>
<tr>
<td>Observations (n)</td>
<td>744</td>
<td>744</td>
<td>432</td>
<td>432</td>
</tr>
<tr>
<td>Correlation of residuals</td>
<td>0.50 (0.00)</td>
<td>0.43 (0.00)</td>
<td>0.64 (0.00)</td>
<td>0.67 (0.00)</td>
</tr>
</tbody>
</table>

(Continued)
TABLE 6.1
Firm-level correlates of sales and employment underreporting (Continued)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Corruption dummy</td>
<td>-2.246</td>
<td>0.469</td>
<td>2.281</td>
<td>2.948</td>
<td>7.300</td>
<td>3.085</td>
<td>4.832</td>
<td>4.835</td>
</tr>
<tr>
<td></td>
<td>(0.680)</td>
<td>(0.932)</td>
<td>(0.234)</td>
<td>(0.171)</td>
<td>(0.017)**</td>
<td>(0.311)</td>
<td>(0.000)**</td>
<td>(0.000)*****</td>
</tr>
<tr>
<td>Labor regulations dummy</td>
<td>-4.139</td>
<td>2.513</td>
<td>-2.015</td>
<td>1.141</td>
<td>1.209</td>
<td>2.385</td>
<td>1.937</td>
<td>3.196</td>
</tr>
<tr>
<td></td>
<td>(0.438)</td>
<td>(0.641)</td>
<td>(0.288)</td>
<td>(0.593)</td>
<td>(0.624)</td>
<td>(0.332)</td>
<td>(0.062)*</td>
<td>(0.000)*****</td>
</tr>
<tr>
<td>Tax Inspections dummy</td>
<td>-1.840</td>
<td>-1.270</td>
<td>-0.024</td>
<td>-0.022</td>
<td>0.439</td>
<td>0.337</td>
<td>0.050</td>
<td>0.022</td>
</tr>
<tr>
<td>(average n)</td>
<td>(0.007)**</td>
<td>(0.065)*</td>
<td>(0.800)</td>
<td>(0.834)</td>
<td>(0.132)</td>
<td>(0.246)</td>
<td>(0.237)</td>
<td>(0.608)</td>
</tr>
<tr>
<td>Contract enforcement</td>
<td>-0.861</td>
<td>-0.366</td>
<td>-0.052</td>
<td>-0.073</td>
<td>-0.568</td>
<td>-0.698</td>
<td>-0.119</td>
<td>-0.072</td>
</tr>
<tr>
<td>(average %)</td>
<td>(0.191)</td>
<td>(0.582)</td>
<td>(0.612)</td>
<td>(0.528)</td>
<td>(0.195)</td>
<td>(0.111)</td>
<td>(0.009)**</td>
<td>(0.122)</td>
</tr>
<tr>
<td>Large clients dummy</td>
<td>-2.075</td>
<td>-4.501</td>
<td>-2.107</td>
<td>-4.267</td>
<td>0.191</td>
<td>0.055</td>
<td>-2.814</td>
<td>-2.709</td>
</tr>
<tr>
<td></td>
<td>(0.635)</td>
<td>(0.308)</td>
<td>(0.280)</td>
<td>(0.052)*</td>
<td>(0.949)</td>
<td>(0.985)</td>
<td>(0.004)**</td>
<td>(0.006)*****</td>
</tr>
<tr>
<td>Bank loans (% of firms)</td>
<td>68.822</td>
<td>-15.790</td>
<td>-14.453</td>
<td>1.006</td>
<td>11.987</td>
<td>11.923</td>
<td>-0.594</td>
<td>-4.351</td>
</tr>
<tr>
<td></td>
<td>(0.240)</td>
<td>(0.789)</td>
<td>(0.423)</td>
<td>(0.960)</td>
<td>(0.572)</td>
<td>(0.573)</td>
<td>(0.904)</td>
<td>(0.383)</td>
</tr>
<tr>
<td>Observations (n)</td>
<td>417</td>
<td>417</td>
<td>575</td>
<td>575</td>
<td>268</td>
<td>268</td>
<td>4,278</td>
<td>4,278</td>
</tr>
<tr>
<td>Correlation of residuals</td>
<td>0.55 (0.00)</td>
<td>0.52 (0.00)</td>
<td>0.60 (0.00)</td>
<td>0.58 (0.00)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(p-value of independence test)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Authors' calculations, using the World Bank's Enterprise Survey Database.

Note: Firm size, time in business, labor productivity, formality status at time of starting up, sector, and location are also controlled for. Estimation was performed for each country, using seemingly unrelated regressions. Probability values are in parentheses.

* p < .1.
** p < .05.
*** p < .01.
tends to be lower. In particular, firms that operate in sectors and regions where the use of third-party contract enforcement mechanisms is more frequent have lower tax and social security evasion rates. On average, for the pool of the seven countries for which we have data, an increase of 10 percentage points in the fraction of firms that use third parties to solve commercial disputes—a change of about one standard deviation in that variable—is associated with a reduction of about 1 percentage point in the fraction of unreported sales. Moreover, while we do not find evidence for any impact of access to financial services on informality, the results in table 6.1 suggest that companies that sell mainly to large firms (that is, companies with more than 100 employees) exhibit rates of underreporting that are about 3 percentage points lower.

As for differences in tax evasion rates across sectors, we find in the pooled sample that the highest rates of sales underreporting are in the construction and transport sector, followed by manufacturing, and then by commerce and services. The only significant difference is obtained for manufacturing, which shows higher social security evasion than all other sectors. At the country level, somewhat different patterns emerge in some cases: in Argentina, tax evasion is highest in manufacturing; in Bolivia, employment underreporting is highest in services; and in Mexico, tax evasion is lowest in services. The above cross-sector differences are obtained after controlling for firm characteristics (for example, firm size, productivity, and location, among others), as well as for such sector-specific factors as the incidence of corruption and the strength of regulatory enforcement (see regressors in table 6.1). Thus, there must be other unobserved characteristics of firms operating in those sectors that make them more likely to evade government regulations. While we can only speculate about such unobserved factors, they could include, for instance, a greater ability to avoid government enforcement (as in the case of firms engaged in local urban transport, short-term construction contracts, or locally distributed manufacturing goods), and competitiveness challenges faced by previously protected industries in the context of trade liberalization (as in the case of manufacturing firms using tax evasion as a way to compete with low-cost foreign manufacturers).

The results discussed above also suggest that the factors driving the underreporting of sales and workers are very similar. Moreover, the firms’ decisions to evade taxes and social security appear to be quite interrelated, as revealed by the fact that the residuals of the corresponding regressions are highly correlated (table 6.1). These findings lend credence to the hypothesis that firms behave strategically when evading taxes (income taxes, value-added taxes, and so forth) and hiring workers off the books, and that they understandably seek to be consistent in the information they report to the tax and social security authorities to protect themselves from possible audits. Moreover, firms probably decide simultaneously on their levels of tax and social security evasion, taking into account both tax and labor market regulations and enforcement.

A note of caution is in order, however, with regard to the regressions reported in table 6.1, as their explanatory power is relatively small, with $R^2$-squared statistics ranging from 5 to 20 percent. Thus, while those results illustrate the relevance of a number of factors underlying the large size of the informal sector in several countries of the region, we are unable to explain as much as 80 percent of the tax and social security evasion behavior of the corresponding firms.
Impact of simplified registration and tax systems

While the existing statistical evidence suggests that reducing the time and cost required for firm registration can contribute to increases in the number of formally registered firms, the magnitude of the corresponding effects is still subject to some controversy. In particular, both Bruhn (2006) and Kaplan, Piedra, and Seira (2006) have analyzed the effect of a Mexican program that allows firm registration procedures to be completed within three days—the so-called Rapid Business Opening System (Sistema de Apertura Rápida de Empresas [SARE]) program implemented in about 30 Mexican cities. Kaplan, Piedra, and Seira find that SARE has led to statistically significant, albeit quantitatively small, effects in the flow of new registered firms, which would increase by between 4 and 8 percent as a result of SARE, implying about two to five new firms registered and 12 to 19 new formal jobs created per municipality per month. They show that the effects of SARE have been concentrated in the first 10 months after its implementation, which, they argue, suggests that the impact of the program is limited to the formalization of a small fraction of the existing stock of informal firms.

Bruhn (2006), nevertheless, reaches somewhat different conclusions on the impact of SARE, possibly as a result of the use of a different data source (employment surveys as opposed to official administrative records) and a different estimation technique (one based on the different timings of implementation of the program across Mexican cities). Bruhn focuses on the effect of SARE on the fraction of registered businesses, as captured by Mexico’s national employment survey. She finds that the program had a much larger effect than the one reported by Kaplan, Piedra, and Seira—namely, a 5.6 percent increase in the stock of registered businesses. This implies that SARE can be credited for about 1,000 new registered firms per county, on average. Moreover, Bruhn shows that past informal business owners are not more likely to register their businesses after SARE, but former wage earners with conditionally high wages do become more likely to open a formal business. The fact that Bruhn’s estimates imply effects that are much larger than those obtained by Kaplan, Piedra, and Seira can also be attributed to the different types of businesses that are covered in the databases used in each of those reports. Indeed, while Kaplan, Piedra, and Seira look at firms registered with the Mexican Social Security Institute (IMSS), Bruhn’s employment data also cover the large majority of microenterprises that do not have salaried employees, and for whom registration with IMSS is not mandatory. One possible, albeit somewhat surprising, interpretation of the conflicting conclusions reached by Kaplan, Piedra, and Seira and by Bruhn is that SARE could have had a sizable effect on the creation of new owner-only formal businesses, but a much smaller impact on the formalization of existing informal microfirms. In any case, it appears that further research is needed to evaluate the impact on informality of simplified firm registration programs, such as SARE.

Complementary evidence concerning the impact on informality of red tape reduction programs has been obtained from the analysis of the Brazilian Integrated System for Tax and Social Security Payments for Micro and Small Firms (Sistema Integrado de Pagamento de Impostos e Contribuições as Microempresas e Empresas de Pequeno Porte [SIMPLES]) program. In a manner different from SARE, however, this program combines simplified firm registration with lower taxes and social security contributions for micro- and small enterprises, allowing for an 8 percent reduction in the overall tax burden faced by eligible firms. Both Fajnzylber, Maloney, and Rojas (2006a) and Monteiro and Assunção (2006) find that, at least during the year following the implementation of SIMPLES, the program led to statistically significant increases in formal registration rates of between 6 and 13 percentage points, depending on the sample and methodology. While further research may be needed to establish whether the effects of SIMPLES were permanent or temporary, the above evidence suggests that there is a potential for increasing microfirm formalization by combining red tape reduction with tax relief measures for microfirms.

Programs to simplify and reduce tax burdens for small contributors, including individuals and small firms, have been implemented in recent years in a number of Latin American and Caribbean countries. These countries include Argentina (the Monotributo program), Bolivia (the simplified tax regime for small firms in selected activities [RTS]), Colombia (simplified value-added regime for small contributors), Costa Rica (RTS), Chile (simplified income tax), Ecuador (simplified value-added tax), Mexico (simplified tax regime for small contributors), Nicaragua (single payment system for value-added and income taxes), Honduras (simplified sales tax), Paraguay (single tax for owner-only firms), Peru (simplified unique tax and special income tax regimes), and Uruguay (small-enterprise tax system). Given the evidence from the Brazilian case, it appears that most countries
in the region could benefit from a revision of their simplified tax systems for micro- and small enterprises in order to better suit them for the objective of increasing formality—for instance, by combining them with simplified firm registration systems, such as Mexico’s SARE.

Impact of informality on firm productivity and economic growth

As argued above, many lower-tier microfirms may choose to operate informally as a result of their limited levels of productivity and growth potential—levels that translate into a small demand for market- and government-provided services that have formality as a precondition. Not surprisingly, when deciding to formalize, they are often more motivated by sticks—avoiding fines and bribes—than by carrots like access to credit or formal contract enforcement. This, however, does not mean that increasing formality does not in itself have the potential for increasing overall productivity, through both static and dynamic channels—a possibility that we review next, both conceptually and from an empirical point of view.

Static versus dynamic effects

To the extent that informality is associated with a preponderance of small firms, there is a concern that it could lead to considerable efficiency losses. This prediction, however, depends on whether returns to scale are constant or increasing. As reviewed by Tybout (2000), the literature on the subject is divided between simulation studies, which often assume decreasing average costs, and survey-based estimates, which generally suggest that the benefits from increasing plant size are relatively small. Thus, while one-person establishments are usually found to be less efficient than firms with at least some employees, returns to scale among the latter firms are very close to unity and, at most, mildly increasing.

This is not to say that increasing returns to scale are not the norm in some specific industries, notably the most capital-intensive ones. However, because of their limited access to capital and skilled labor, and to avoid cost disadvantages, micro- and small firms tend to locate in industries where efficiency losses associated with low scale production are limited. This is facilitated by the fact that demand for such products is negatively correlated with countries’ per capita incomes, as Engel effects direct consumer demand toward simpler products that can be efficiently produced with labor-intensive technologies. In other words, in countries where lower levels of overall productivity drive a large number of firms into informality, consumer demand is also likely to be directed toward products and services whose production does not exhibit increasing returns to scale, so one should not expect large static losses from informality driven by low firm size alone.

Besides potential static inefficiencies associated with the nonexploitation of economies of scale, a parallel concern is that unproductive firms are able to compete with their lower-cost peers by means of avoiding taxes and regulations. Thus, informal firms may be able to stay in business despite having higher operating costs—driven, for instance, by lower levels of entrepreneurial ability. This could slow down the creative destruction process by which innovative, high-productivity firms expand to the detriment of less-productive ones. In other words, to the extent that increases in regulatory enforcement drive out of business a large number of firms that self-selected into informality because of having lower productivity than firms of the same size operating in the same sectors, one could expect potentially large negative effects on aggregate productivity. One caveat to this argument, however, is that, as shown by Almeida and Carneiro (2005) for the case of labor regulations, informality may allow firms greater flexibility in their employment and production decisions, which, in turn, could lead them to operate more efficiently. Whether this effect dominates other factors that could lead to a negative link between informality and firm productivity—for example, the self-selection of unproductive firms into informality, the incentives to operate at a small scale to avoid detection, and the inability to gain access to factor and product markets—is a question that only empirical evidence can help resolve.

A parallel concern is that high levels of informality could also have negative consequences on the incentives of formal firms to innovate and adopt new technologies, which also could reduce overall productivity growth. Several studies have emphasized these potentially negative dynamic implications of informality. Thus, Capp, Elstrodt, and Jones (2005), Elstrodt, Lenero, and Urdapilleta (2002), Farrell (2004), Kenyon and Kapaz (2005), and Palmade (2005) see informality as one of the main causes for the gap in productivity levels between developed and developing countries, inducing distortions in investment decisions and limiting the growth potential of the corresponding economies. Studies performed by the McKinsey Global Institute suggest that informality accounts for around 50 percent of the productivity gap.
between countries like Turkey, Portugal, and the United States; and for 30 percent of the productivity gap between Brazil and the United States (Farrell 2004).

The main argument proposed by these studies is that firms that join the informal sector tend to become "trapped in a self-reinforcing dynamic that confines them to subscale, inefficient, low-productivity work" (Farrell 2004, p. 30). Moreover, informality also has negative effects on the investment decisions of formal firms, as it reduces their market share and profitability. The relative cost advantages enjoyed by informal firms as a result of not paying taxes and not incurring the costs of regulatory compliance, however, allow them to stay in business despite their low productivity, which, as mentioned above, could distort competition and limit the process of creative destruction. Moreover, as more productive firms also have fewer incentives to invest in innovation and technology adoption, the McKinsey studies (reviewed in Farrell [2004]) suggest that informality leads to an overall reduction in economic growth.

One caveat to these arguments is that, from a theoretical point of view, technology adoption and innovation could either decrease or increase as a result of unfair competition by informal firms. In particular, as argued by Cunha (2006), if technological change takes the form of the discovery—or introduction into the country—of improved qualities for intermediary goods, informality may have the effect of impeding the ability of the frontier quality producer to set a price that would force all other producers—of lower qualities—to leave the market. The impact on research and development investments—by including the expenditures involved in adapting foreign technologies to local conditions—is, however, ambiguous. Indeed, while informality decreases the market power and profit levels of frontier producers, it also increases the life span of frontier products by augmenting the quality improvements that are needed to debunk current market leaders. As a result, investments in research and development—and growth—could increase or decrease, depending on which effect dominates.

**Aggregate growth effects**

Despite the widespread belief that a large informal economy hurts economic growth, cross-country comparisons do not find a robust association between informality and growth. Figure 6.9 shows the estimated impact of informality on growth, using two diverse informality indicators: self-employment and the Schneider (2005) estimates of the proportion of GDP produced by the underground economy in the period 1999–2000. In accordance with common wisdom, under both indicators informality appears to have a negative impact on growth: on average, the regressions suggest that decreasing informal economic activity by 10 percent of GDP is associated with 0.6 percent higher economic growth.
Nonetheless, the estimated coefficients tend not to be robust. In none of the presented regressions is the coefficient associated with self-employment significantly different from zero at the 5 percent level. To be sure, when we use the macroeconomic estimates of informality, the basic regression without added explanatory variables shows a negative and statistically significant association between informality and growth. However, the relationship loses its significance when we control for education, financial depth, or corruption. Thus, while previous studies have found a negative relationship between informality and growth, they have relied on a very narrow pool of observations (Loayza 1996) or have not controlled for relevant correlates of growth, such as regulation, human capital, and initial GDP per capita (Schneider and Klinglmair 2004). It is worth noting, however, that the fact that we do not observe large effects of informality on growth after controlling for other standard growth determinants may just reflect our inability to empirically distinguish between the direct effects of those variables and indirect effects through informality. In other words, one of the channels through which some of those standard drivers of growth operate could be increasing informality—for example, low human capital reducing the opportunity cost of self-employment, or corruption diminishing the incentives to comply with regulations—but this would not be apparent in the results reported in figure 6.9.

**Empirical evidence on creative destruction in Latin America and the Caribbean region**

The arguments on the negative dynamic effects of informality offered above should lead us to expect a less vibrant process of industrial evolution in developing countries than in industrial countries—a process that should be reflected in higher productivity dispersion and lower firm turnover. The evidence, however, suggests that the average distance to “frontier” production technologies is similar in studies of developing and OECD countries, with average technical efficiency levels equivalent to about 60–70 percent of the corresponding best practices (Tybout 2000). These measures, it must be noted, are usually based on data that exclude microenterprises and low-productivity, owner-only firms, so they probably underestimate productivity dispersion.

As for the evidence on the rates of firm and job creation and destruction, the evidence on whether it is lower or similar in least-developed countries is ambiguous. Roberts and Tybout (1997) show that rates of firm turnover and market shares of recent entrants into the formal sector are surprisingly large in developing countries, such as Chile and Colombia. These results, however, do not necessarily constitute evidence that the creative destruction process, initially described by Joseph Schumpeter, is alive and well in those countries, as the observed high turnover rates could be the result of high macroeconomic instability and of the preponderance of small firms—which have inherently higher rates of failure. Thus, when corrected by volatility, turnover rates are not larger in Latin America and the Caribbean than in industrial countries. Moreover, while there is evidence that entrants in Chile and Colombia are slightly more efficient than incumbents, and that new low-productivity firms tend to go out of business rapidly, the impact of this process on overall productivity is found to be relatively small.

**Firm-level effects of informality**

As evidenced in figure 6.10, firms that report having started operations without formally registering—at least initially—exhibit, on average, much lower levels of output per worker, even after controlling for firm size, time in business, sector, and region. In other words, those that start up informally are clearly at the bottom end of the productivity distribution of the corresponding industries and regions. The difference in labor productivity between those firms and the ones that have always operated formally is 29 percent, on average, for the seven Latin American and Caribbean countries analyzed here. The effects are largest...
in Peru (50 percent), and, while lower in the remaining countries, they are statistically significant in four out of seven countries, the exceptions being Uruguay, Panama, and Colombia (not shown).15

Registered firms that report having started informally are only 6.6 percent of all formal firms (in the pooled sample), and respond for just 4.3 percent of total sales and 3.6 percent of employment. Thus, the increase in aggregate productivity derived from hypothetically excluding them from their sectors—for example, by a stricter enforcement of entry regulations—would be relatively small: about 0.8 percent, on average.16 However, to the extent that labor productivity is higher in registered firms that started up informally but eventually registered, than in similar firms that started informally but never registered, the potential impact on productivity of fully enforcing entry regulations could be much larger. Thus, for instance, in a hypothetical scenario where all nonregistered informal Mexican microfirms with no more than five employees (which represent about 21 percent of total employment in that country) were to go out of business due to stricter enforcement of entry regulations, and assuming that employment would shift to firms with a 35.5 percent productivity advantage (based on the estimate for Mexico reported in figure 6.10, which we consider a lower bound for the productivity differentials between formal and informal firms), the resulting aggregate productivity could be as large as 6 percent.17 Off course, these are very imprecise, back-of-the-envelope calculations that are aimed only at illustrating a much more general point—namely, the possibility that informality is associated with lower levels of aggregate productivity, which should be considered in any analysis of its social costs and benefits.

Informality, however, also takes the form of tax and social security evasion among registered firms. In this respect, it would be useful to know what would be the impact of marginal reductions in tax evasion on firm and aggregate productivity. With that purpose, we estimate the effect of average tax and social security evasion in a given sector and region on the level of productivity of individual firms operating in the corresponding areas. The results are presented in figure 6.11 for our pooled sample of seven countries. We find that each 10 percent increase in average evasion rates is associated with reductions in labor and total factor productivity of 7 and 10 percent, respectively. These effects are not subject to the criticism of a possible reverse causality from low firm productivity to higher firm informality. Indeed, our informality measure is aggregated at the industry and region levels so it could hardly be affected by individual firm productivity. The results suggest that there are significant potential productivity gains to be obtained from increased enforcement of tax and social security regulations.

Further evidence on the presence of a causal link between informality and firm performance has been obtained using microenterprise survey data. In the case of Mexico, Fajnzylber, Maloney, and Rojas (2006c) show that microfirms that report paying taxes exhibit higher levels of profit, even after controlling for employment size and capital stocks. This result is robust to the use of estimation techniques that control for the impact of unobserved personal and firm characteristics—for example, managerial ability—that could affect both the decision to formalize the firm and its performance. Quantitatively, we find that firms that pay taxes exhibit between 15 and 60 percent higher productivity levels, depending on the estimation method and the performance variable used—either firm profits as reported in detailed microfirm surveys or self-employment income as reported in the Mexican Employment Survey (figure 6.12). In addition, there is evidence that owners of formal firms are less likely to go out of business.

One of the channels through which formality could increase firm performance is by facilitating access to factor and product markets. Cull, McKenzie, and Woodruff (2007) show that access to credit among small Mexican retail firms
is much higher among formally registered firms. While this correlation could reflect the presence of unobserved personal and firm traits linked to both formality and access to finance, it is also consistent with informality reducing microfirm access to formal loans. Thus, for instance, if microlenders make formal registration a requisite for granting loans, formalization could allow credit-constrained microfirms to exploit the sizable returns to investment that have been estimated by Cull and coauthors—between 20 and 33 percent per month for investments of about $140, using data from a randomized experiment.

Evidence consistent with some of the findings for Mexico has also been obtained for Brazil on the basis of exogenous increases in formality rates associated with the introduction of a simplified tax and registration system for micro- and small firms (the above-mentioned SIMPLES). Indeed, econometric estimates that take advantage of changes in the incentives to formalize, introduced by this program, show that it significantly increased access to credit among eligible firms, and altered the amount and composition of investment toward larger and longer-term projects (Monteiro and Assunção 2006). Moreover, Fajnzylber, Maloney, and Rojas (2006a) show that increases in formality driven by SIMPLES are associated with a higher use of paid labor, higher levels of capital intensity, and increased labor and total factor productivity. In particular, increases in the rates of microfirm registration that can be attributed to SIMPLES are estimated to be associated with a 5 percent increase in paid employment, a 15 percent boost in total factor productivity, and a 35 percent increase in labor productivity (figure 6.13). At least in the Brazilian context, however, only a small fraction of the revenue-increasing effects associated with formality can be attributed to increased access to credit markets and government-provided technical assistance. In contrast, the greater willingness of formal firms to operate out of a fixed locale is responsible for as much as 50 percent of the increase in revenues among formal microfirms and for a third of the corresponding total factor productivity increase.

Conclusions

The empirical evidence on aggregate negative growth effects of informality is not conclusive, as informality tends to lose significance when other standard growth determinants are controlled for. This, however, could be due to the fact that many of the standard drivers of growth are also likely to affect informality—for example, low levels of human capital or institutional quality leading to both lower growth and higher informality—and it is difficult to separate their direct growth effects from those that operate through larger informal sectors.

The microeconomic empirical evidence, on the other hand, is still quite limited due to the econometric difficulties associated with distinguishing the effects of low
productivity on informality (see chapter 5) from the reverse effects operating from informality to productivity. However, the available evidence suggests that considerable efficiency gains could be derived from the transfer of production from low-productivity informal firms to their more productive formal peers. Similarly, the evidence indicates that the concerns associated with possible negative externalities generated by high levels of tax and social security evasion could be well justified, as firms operating in industries and regions characterized by high levels of sales and employment underreporting exhibit lower levels of labor and total factor productivity. Moreover, there is evidence indicating that exogenous increases in formality are associated with better firm performance, which should, in principle, translate into higher rates of economic growth.

In this context, the interest of policy makers and development practitioners in designing policies and programs to facilitate the formalization of small businesses and increase regulatory compliance by larger firms appears well justified. In particular, the fact that efforts to decrease regulatory burdens have recently become very popular does not come as a surprise. Burdensome regulations and costly bureaucratic requirements are indeed an important determinant of informality that may create barriers for increasing formal entrepreneurial activity. One challenge that governments face in this respect is that of assessing their existing and new regulations to determine the extent to which they are justified by public interests, associated, for instance, with the protection of public safety or the environment. Dealing with this challenge may require comprehensive regulatory assessments aimed at distinguishing relevant from anachronistic regulations, as well as at identifying those regulations that reflect private rather than public interests, and that could represent important barriers to formalization. Examples of such initiatives include national regulatory reviews, such as those implemented in leading transition economies.¹⁸

Similarly, many developing countries are now engaged in reducing the time and cost needed by businesses to obtain various government-issued permits and licenses.¹⁹ Indeed, even well-designed and legitimate regulations may create barriers to formalization if they are badly enforced or administered, creating excessive costs and uncertainty for private businesses. Thus, a complementary approach to reduce firm informality—to be pursued in parallel to regulatory reforms—is the implementation of administrative simplification programs aimed at reducing the transaction costs associated with operating legitimate businesses. Internet-based technologies and one-stop shops can be effective tools to implement such programs, although their effectiveness can be greatly increased if they are used in conjunction with comprehensive reviews and revisions of existing administrative processes.

We argue, however, that although eliminating unnecessary regulations and reducing excessive red tape could contribute to reducing the size of the informal sector, those actions should not be the exclusive focus of policy makers engaged in attaining that objective. Indeed, the costs of regulatory compliance are only one among other factors that may affect formality decisions. In particular, to attract more businesses into the formal economy, it is crucial to increase the potential benefits of regulatory compliance. This implies facilitating the ability of micro- and small enterprises to tap into formal credit markets and improving the provision of business development and training services available to formal firms. Moreover, it is important to facilitate access to product markets through public procurement opportunities and supplier development programs aimed at increasing links with larger private firms. Other ways of increasing the benefits of formality include improving the quality of legal services available to small businesses and creating mechanisms to provide information to entrepreneurs wishing to formalize their businesses, thereby encompassing advisory services on taxes and regulations, as well as information about financial and nonfinancial services available to them.

Overall, a wider and integrated approach appears to be necessary to switch the incentives of a large fraction of informal firms in the direction of formality. Such an approach would likely have to combine both carrots (for example, lower costs of formalization, better and more efficient government services, and higher access to market- and government-provided services for formal firms) with sticks (such as increasing government enforcement of regulations and the expected cost of being caught). Moreover, as argued later in this volume, it is crucial that both the enactment and the enforcement of regulations are perceived to be fair, as this is vital for maintaining “tax morale” and increasing regulatory compliance.

The correct mix of policies, however, is likely to vary across countries and over time, depending on the relative importance of the various determinants of informality. Moreover, other aspects of public policy should be taken into account, including those related to the social consequences
of drastically reducing the size of the informal sector, which, at least in Latin America, is currently responsible for a large fraction of employment and income-generating opportunities for poor households. In other words, policies aimed at reducing firm informality should be considered in conjunction with the labor market and social protection issues associated with the possibility that large contingents of previously informal workers would have to shift to other segments of the labor market.

Notes
1. As in the study by Djankov et al. (2003), we leave outside the scope of this chapter those "underground enterprises" that are devoted to criminal activities.
2. Since firms are understandably reluctant to reveal information regarding tax and social security evasion, as well as informal payments to corrupt officials, the corresponding survey questions are phrased in terms of the practices of "typical firms in this establishment's line of business." This is a standard approach taken to measure the prevalence of corruption used, for instance, by Johnson et al. (2000). Note also that figure 6.1 reports simple averages across firms.
3. The high levels of tax evasion for Brazil are, to some extent, puzzling as tax revenues in that country have increased considerably in recent years, reaching 34 percent of gross domestic product (GDP) in 2002, driven partly by improvements in tax administration efficiency. However, respectively, 40 and 25 percent of federal tax revenues come from indirect cascading taxes and from social security contributions and other payroll taxes that firms, as suggested by the survey data, appear to be quite successful in evading.
4. The controls are those described in table 6.1.
5. De Soto (1989) is the seminal reference on the links between government regulations and informality. In their survey on the topic, Schneider and Enste (2000) list taxes, social security contributions, and the intensity of regulations (including those of labor markets) among the top causes for growth in the "shadow economy." Loayza (1996) offers a theoretical model illustrating those effects and provides supporting empirical evidence for Latin America. Additional cross-country evidence on the links between tax and regulatory burdens and the size of the informal economy is provided by Botero et al. (2003), Djankov et al. (2002), and Loayza, Oviedo, and Servén (2005).
6. The surveys were done in the context of municipal administrative simplification projects supported by the International Finance Corporation.
7. In the theoretical model proposed by Sarte (2000), for instance, changes in the fixed cost of entering the formal sector do not affect the level of informality—their effect is nonbinding—when the cost of operating informally is relatively low.
8. These databases have been expanded and updated annually through the World Bank's Doing Business project.
9. Loayza and Rigolini (2006) use the following empirical measures for the above-mentioned variables: the Fraser Institute's index of credit, labor, and regulatory flexibility; the International Country Risk Guide's index of law and order; and the ratio of government expenditures to GDP.
10. The index of product market regulations is a composite of indexes of regulations in the areas of firm entry, trade barriers, financial markets, contract enforcement, and bankruptcy.
11. A related point made by Schneider and Enste (2000) is that complex tax systems can make legal tax avoidance in the official economy more profitable, and thus create disincentives for informality. As a result, fiscal reforms that combine lower tax rates and simpler tax systems could not necessarily lead to smaller informal sectors; the Austrian 1989 reform is mentioned as an example.
12. Within manufacturing, the food and beverage industry exhibits the highest levels of evasion, even after controlling for firm and sector characteristics.
14. The relationship remains weak when changing the reference period from 1990–2003 to 1999–2003 or when using five-year averages for the period 1990–2004. As the macroeconomic estimates of informality are cross-sectional, regressions with five-year averages can only be performed with self-employment.
15. It is worth noting that the estimated effects for most countries are based on a sizable number of initially informal firms: between 5 and 14 percent of all firms, or 355 in the pooled sample, 72 in Argentina, 72 in Bolivia, 66 in Mexico, and 104 in Colombia. Our estimates are arguably weaker in Panama, Peru, and Uruguay, where there are, respectively, 9, 20, and 12 of those firms (between 2 and 3 percent of all firms).
16. This is assuming that the employment share of the initially informal firms is taken over by competitors, which, per our estimations, have a 29 percent productivity advantage (figure 6.9).
17. This assumption is subject to the criticism that, as argued in the beginning of this section, informal microfirms tend to locate in industries where efficiency losses associated with low scale production are minimized. Moreover, note that we are assuming that all those working in informal microfirms would find employment in formal firms. We base the estimated employment share of informal microfirms on figures on registration rates from the Encuesta Nacional de Micronegocios—27.5 percent for owner-only firms and 62.7 percent for firms with two to five workers—and on Encuesta Nacional de Empleo Urbano—based estimates of the employment shares of firms in those size ranges—respectively, 15.3 and 27.5 percent.
19. See the World Bank's Doing Business reports for global reviews of country-level reforms and benchmarking exercises.

References
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