CHAPTER 5

Prioritizing structural reform

Capital flows to transition (and developing) countries are likely to be considerably lower than before the crisis. That makes it important for rescue and stabilization, which have dominated the policy agenda since the global economic crisis hit the region, to give way to structural reforms and make the business environment attractive to investors.

Questions

- What are the most important bottlenecks to growth?
- What sectoral and institutional changes occurred in the ECA countries during the years of abundant capital flows?
- Have institutions that underpin the business environment by providing public goods converged to those in nontransition economies at similar per capita incomes two decades after the fall of the Berlin wall?

Findings

- The three years preceding the crisis (2005–08) saw the socialist legacy of high endowments of infrastructure and labor skills disappear. Concerns about those inputs constraining firm expansion became greater than in nontransition economies.
- The record of building market economy institutions has been mixed. Concerns about tax administration and customs regulation—traditionally higher than in nontransition economies—fell to the levels in nontransition economies. But concerns about the legal environment and corruption rose and are now higher than in nontransition economies.
- The structure of financing for fixed investment in transition economies has converged toward nontransition economy norms: the reliance on retained earnings has fallen and that on bank finance has risen. This occurred in parallel with a decline in the use of informal finance, reflecting a shift to the formal economy.

Rescue and stabilization have dominated the policy agenda since the global economic crisis struck the region. While the precise contours of the future are uncertain, capital flows to transition and developing countries will likely be considerably lower due to the reduced appetite for risk and will go to countries with the most attractive business environment. Indeed, evidence of

greater discrimination among countries is already in country spreads (annex 1.1). Policymakers thus need to reinvigorate structural reforms. They need to address constraints to growth that firms identified as the tightest on the eve of the crisis. But two decades since the fall of the Berlin wall, it is also instructive to ask whether the business environment in the transition economies still retains elements of the socialist legacy—or whether it has converged to that in nontransition economies at similar per capita incomes.

Interpreting business environment surveys

How the business environment in ECA's transition countries evolved during the years leading up to the crisis and how it compares with nontransition countries after two decades of transition are based on the responses of 10,000 firms in 28 transition countries to the fourth Business Environment and Enterprise Performance Survey (BEEPS) by the World Bank and EBRD, for the most part in 2008, and around 51,000 firms in 74 nontransition countries to the World Bank's Investment Climate Assessments over the last decade.[1] The other economies surveyed ranged from very poor countries with a GDP per capita of $250 or less to major industrialized countries with a GDP per capita above $15,000.

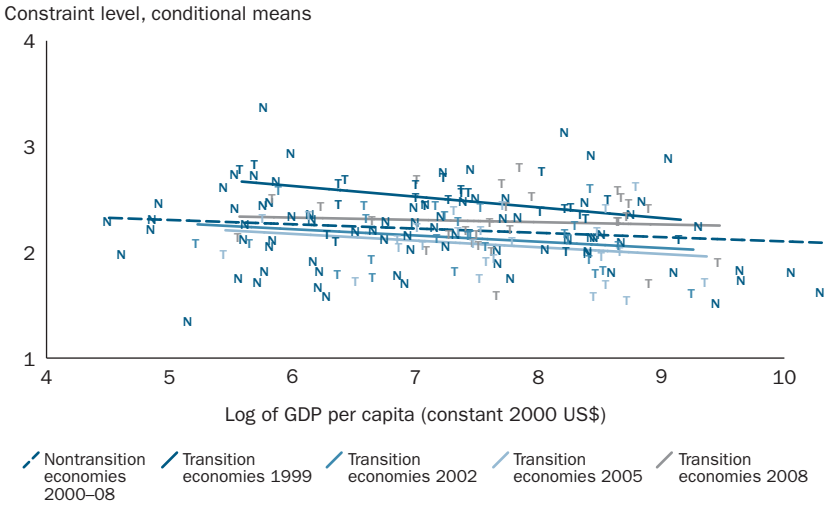
While the surveys provide a rich description of how managers perceive the costs of their business environment, their interpretation requires a conceptual framework. To illustrate the approach most simply, figure 5.1 measures GDP per capita on the horizontal axis. The vertical axis measures how costly firms in a country report the impact of inadequacies in elements of the business environment on their ability to operate and expand their business. Those elements include regulation, physical infrastructure, availability of skilled labor, macroeconomic conditions, and the rule of law, all of which resemble public goods. The level of the constraint is rated on a scale of 1 (not important) to 4 (severe). Since the supply of public goods is common to all firms in the economy, the firm's response on its severity is a measure of the cost imposed by the constraint on the operation and growth of its business.

The reading on the vertical axis is the average of firm responses for the country. It can generally be assumed that countries provide more public goods as they get richer. But firms in richer countries are also more demanding of those public goods. If the provision of public goods as countries get richer outruns the greater demands made upon them, which is usually the case, the

1. For a full presentation of the analysis summarized here, see Carlin and Schaffer (2009) and Carlin, Schaffer, and Seabright (2009).

FIGURE 5.1

Average business environment constraint: transition economies in 1999, 2002, 2005, 2008, and nontransition economies



cost of the business environment in a country as reported by firms will decline with per capita income, the situation in figure 5.1. But if the supply of public goods as countries get richer cannot keep pace with demand, the cost of the business environment will increase with per capita income

Table 5.1 presents the average rating of constraints for the transition countries covered in BEEPS 4 and comparable figures for earlier waves of the BEEPS surveys in 1999, 2002, and 2005 and for surveys of firms in nontransition economies.[2] The table reports two types of business indicators.

- The first is the response to the question asking managers to evaluate the importance of each business environment constraint for the operation and growth of the firm. Answers are scored from 1 (minor) to 4 (very severe). This is referred to below as a measure of the "level" of the constraint.

2. When comparisons are made between transition and nontransition economies, the data for nontransition economies refer to the pooled surveys (Investment Climate Surveys and a few BEEPS surveys of nontransition economies) conducted over 1999 to 2008. Whereas the same transition countries have been surveyed four times (1999, 2002, 2005, and 2008) and the evolution of constraints over time can be investigated, this is not possible for nontransition countries, which were typically only surveyed once. Although there were concerns that the data from BEEPS 4 might be contaminated by the early effects of the financial crisis, there is no evidence of this. While the average complaint level across all dimensions of the business environment rises in 2008 compared with 2005, it is close to the 1999–2005 average (table 5.1). However, the 2008 complaint level for problems relating to finance remains broadly similar to 2002 and 2005. This evidence from the finance question suggests that the responses from BEEPS 4 should be interpreted as "the eve of the financial crisis" rather than "early in the financial crisis." In two of the ECA surveys (Albania and Croatia), some firms were surveyed in 2007.

TABLE 5.1

Levels and priorities of constraints on business in BEEPS 4 and other surveys

	Level of constraint (conditional means)					Priority of constraint (conditional means)				
	Nontransition economies 2000–08	BEEPS 1 1999	BEEPS 2 2002	BEEPS 3 2005	BEEPS 4 2008	Nontransition economies 2000–08	BEEPS 1 1999	BEEPS 2 2002	BEEPS 3 2005	BEEPS 4 20008
Average (6)	2.24	2.51	2.16	2.13	2.35					
Infrastructure	1.68	1.99	1.51	1.43	2.18	0.22	0.25	0.12	0.12	0.38
Telecoms	1.60		1.48	1.38	2.10	0.19		0.12	0.11	0.35
Electricity	2.38		1.67	1.58	2.51	0.45		0.20	0.18	0.49
Transport	1.94		1.45	1.44	2.01	0.30		0.13	0.12	0.31
Land access	1.80		1.51	1.57	2.05	0.24		0.15	0.17	0.32
Skills	2.22		1.91	1.97	2.54	0.39		0.30	0.32	0.50
Tax rates	2.70	3.55	2.80	2.78	2.96	0.59	0.91	0.71	0.70	0.69
Tax admin.	2.37	2.97	2.53	2.47	2.38	0.45	0.71	0.59	0.57	0.44
Finance	2.46	3.02	2.49	2.41	2.51	0.49	0.68	0.55	0.52	0.50
Labor regulation	2.01	1.84	1.73	1.87	1.91	0.29	0.19	0.19	0.25	0.24
Customs	1.83	2.00	1.99	1.85	1.82	0.25	0.28	0.33	0.28	0.24
Licenses	1.92	1.95	1.97	1.93	2.04	0.25	0.24	0.31	0.29	0.28
Legal	1.88	2.06	2.03	2.03	2.15	0.25	0.27	0.33	0.33	0.34
Corruption	2.48	2.42	2.20	2.10	2.53	0.47	0.41	0.39	0.36	0.51
Crime	2.18	2.31	1.85	1.72	2.27	0.36	0.35	0.23	0.19	0.38

- The second is a relative measure of the "priority" of a constraint, where the priority for a responding firm is defined as a value above the average of the firm's answers for the six constraints common to BEEPS 4 and most of the decade's surveys.

To compare countries, it is necessary to control for the fact that the samples of firms for different countries will vary by characteristics such as firm size, their sector, and the nature of ownership, whether domestic or foreign. For instance, if a country has a dominance of energy-intensive firms in the survey, the answers to electricity as an obstacle to doing business might be quite important—and more so than those from a country that lacks such economic sectors. To make the responses comparable, these differences are corrected for, and the results presented for a benchmark firm.

The ratings in table 5.1 are those of the benchmark firm, which is a firm in manufacturing employing 30 persons,[3] privately owned with no state-owned

3. In the full set of all surveyed firms, median employment was 28 persons and mean log employment was 33 persons.

predecessor, with less than 10 percent foreign ownership, exporting less than 10 percent of its sales, and with no reported change in employment in the previous three years. These ratings for the benchmark firm are referred to as conditional means because they are corrected for sample composition. Table 5.1 reports conditional means for constraint levels and priorities for individual elements of the business environment as well as the average business environment.[4] Figure 5.1 presents conditional means for the level measure of the business environment. Annex 5.2 discusses how the evaluations of the business environment change for firms that vary in different dimensions from the benchmark firm, and annex 5.3 present estimates of those variations (called "marginal effects").

Overview of results

The survey evidence from 2008 reveals three important changes in the growth process as it impinged on the constraints facing existing businesses. First, the results show a dramatic turnaround from 2005, the year of the previous survey (BEEPS 3), in infrastructure and skilled labor constraints. The legacy of communism of high endowments of these inputs that characterized the first decade and a half of transition had disappeared by 2008. Second, strong economic growth appears to have increased the cost of weak market economy institutions, especially the legal environment and corruption. But other institutions of the market economy—such as tax administration and customs regulation, which have traditionally ranked high among the concerns in transition economies—are seen as less constraining for business. Third, in the context of appreciating real exchange rates and growth oriented toward nontradables during 2005–2008, the complaints of exporting firms, measured by the average across all aspects of the business environment, increase. The average constraint reported by exporters rises from below average in 1999 to well above the average for nonexporting firms—and in 2008 is well above the level reported by firms in nontransition economies.

The survey results thus provide a micro-based picture of important dimensions of the physical and institutional infrastructure during the phase of rapid growth. There are also some important variations according to a country's level of development. Taking the business environment as a whole, the upper middle-income transition economies appear to experience a tightening of constraints in 2008. The evidence highlights emerging shortfalls of

4. To permit comparability with the earlier BEEPS surveys, the average constraint is defined using a relatively narrow set of six indicators: tax rates, tax administration, labor regulation, licenses, corruption, and crime.

investment in physical infrastructure, especially in the upper middle-income transition economies, and education, especially in the low-income and lower middle-income countries.[5]

In addition, despite improvements in some aspects of the institutional environment—as measured, for example, in the EBRD Transition Indicators[6]—firms report that the costs of weak institutions had risen since 2005. This may also have resulted from the period of fast growth, as firms and economies outgrew the capacity of institutions to provide the necessary public goods. This is especially evident in the lower middle-income group of transition economies for labor regulation and the legal system—and for both the low-income and lower middle-income groups for corruption. A pattern of growth fueled by large capital inflows, with increasing emphasis on nontradables, is also suggested by the growing complaints from exporters in the higher income transition economies.

The evidence is consistent with the hypothesis that strong private sector growth in transition economies before 2008 led firms to encounter capacity constraints in physical infrastructure and skilled labor for the first time since the transition began. It points to underinvestment in infrastructure and education over the transition. It is also consistent with the macroeconomic evidence presented in chapter 1 on rapidly increasing current account deficits, in some transition economies to extraordinarily high levels, and appreciating real exchange rates.[7]

The pattern of economic growth, especially in some upper middle-income countries in the years preceding the crisis, favored nontradable sectors. Exporting firms in the upper and lower middle-income groups of transition economies report higher costs of their business environment in 2008 than in earlier years and than in countries outside the transition. For the average business constraint measure, there is no tendency of exporting firms outside the transition to complain more than nonexporters.[8] The biggest concern for exporters in the upper middle-income group of transition economies in 2008

5. The standard World Bank classification toward the beginning of the period under consideration—July 2005—is used. Slovenia is a high-income country. The upper middle-income countries are Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, the Russian Federation, and the Slovak Republic. The lower middle-income countries are Albania, Armenia, Azerbaijan, Belarus, Bosnia-Herzegovina, FYR Macedonia, Georgia, Kazakhstan, Kosovo, Montenegro, Serbia, and Ukraine. The low-income countries are the Kyrgyz Republic, Moldova, Tajikistan, and Uzbekistan.

6. EBRD 2008.

7. See, for example, IMF 2009a, chapter 2.

8. It is natural (and reassuring) to see that exporting firms in and outside transition countries complain more than nonexporters about customs regulations.

is infrastructure, especially electricity and access to land, where the effects are large on both the levels and the priority measures, though they also complain more than nonexporters about tax administration and labor regulation (levels measure only). In the lower middle-income group, exporters' heightened concerns are concentrated on corruption and in the low-income group on tax administration.

The 2008 surveys also provide evidence of the convergence of financing patterns for fixed investment in transition economies toward those characteristic of nontransition economies. In particular, reliance on bank finance, which was below that in nontransition economies in 1999, increases, and the gap is almost closed by 2008.

In summary, on the eve of the financial crisis, transition economies experienced a pattern of development in which some benefits inherited from the planning era had finally disappeared, while other unfavorable aspects of the legacy persist, in part those that required new market institutions. The evolution of institutional constraints is quite complex. In 2008, there is a sharp rise in the priority accorded to problems associated with corruption and crime. On the positive side, concerns about customs regulations and tax administration converge with those of the nontransition economies in 2008.

Growth bottlenecks

Physical infrastructure and skills

A striking finding in the 2008 survey is the increase in complaints about infrastructure and skilled labor. All the evidence is consistent with, or does not contradict, the hypothesis that higher reported constraints result from growth causing capacity constraints to be encountered or relative price effects, or both. The likely importance of domestic infrastructure rather than external price shocks, such as the increase in oil price in the years preceding the global crisis, is highlighted by the stronger correlation between power outages and electricity as a constraint in 2008 than in previous years in the transition economies. And unlike the transition economies, there is no increase in infrastructure complaints in 2008 in Turkey (which was also surveyed in 2008 as part of BEEPS 4), supporting the conclusion that this is a transition-specific phenomenon and not a reflection of world energy prices. Additional support comes from the fact that expanding firms complain more about electricity.[9]

9. The fact that higher complaints by expanding firms appear more strongly in the absolute than in the relative measures is probably explained by increased numbers of complaints at the lower end of the scale.

Whether measured by the level of complaints or by its priority among the set of business environment constraints, there is a clear upward shift in reported concerns—and thus the cost on the operation and growth of businesses—about infrastructure and skills in transition economies in 2008.[10] This shift is from levels that were below those reported by nontransition economies from 1999–2008. The jump in 2008 puts most infrastructure complaints in the richer transition economies above their comparators, whereas in the poorer transition economies, the jump reduces the gap but still leaves them less constrained than the comparable nontransition economies. And while complaints about infrastructure generally decline as GDP per capita rises in nontransition countries (as seen by the downward sloping dotted lines in figures 5.2–5.4), this is less clearly the case in the transition economies.

In electricity and transport, the complaint levels rise from well below to close to or just above those in nontransition economies (figures 5.3 and 5.4). When the surveys are split into three country groups by income, complaints about electricity and transport in the upper middle-income transition economies in 2008 rise significantly above those in nontransition economies. And in the low and lower middle-income country groups, complaints rise to the level of comparable nontransition economies in electricity but remain lower in transport.

Infrastructure bottlenecks affect firms adjusting their level of employment more than firms not adjusting. The results in table 5.1 and figure 5.1 refer to the benchmark firm that has seen no change in employment in the previous three years and is therefore a "nonadjusting" firm. Moving away from the benchmark and looking instead at firms that are identical, except that they have adjusted employment over the previous three years, reveals that complaints about electricity rise more in expanding firms in the poorest transition countries on both the levels and the priority measures. In transport, there are sharp increases in the reported costs of constraints on both measures from both expanding and contracting firms relative to nonadjusting firms in the second lowest income group, and there is evidence of a similar effect for expanding firms in the lowest income group.[11] There is some indication

10. Complaints about infrastructure in 1999 were higher in nontransition economies than in transition economies because the legacy effects of the infrastructure endowments were not apparent until the phase of transition known as "disorganization", the disruption of the organizational arrangements governing production and trade under central planning, was over. For a discussion of disorganization, see Blanchard (1997).

11. The second and third columns of annex table 5.3.4 indicate the change in the severity of a business constraint for expanding and contracting firms relative to the benchmark (nonadjusting) firm in transition economies.

FIGURE 5.2

Infrastructure composite bottlenecks, 1999–2008

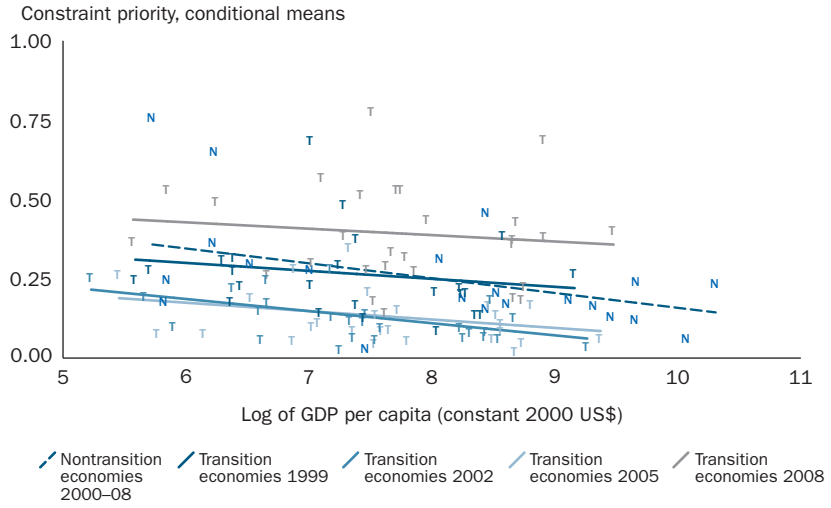
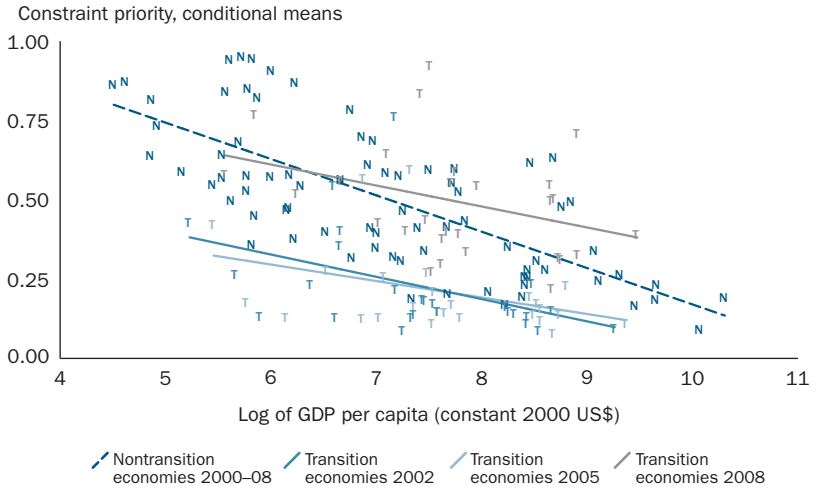


FIGURE 5.3

Infrastructure bottlenecks—electricity, 1999–2008



that the weight of the increased complaints about electricity is concentrated in manufacturing. Problems with transport affect service firms for the first time, taking their levels and priority scores above those for manufacturing firms.

A similar pattern to electricity and transport appears for access to land (figure 5.5). Service firms go from reporting land access as less problematic than manufacturing firms to reporting as more problematic in all country

FIGURE 5.4

Infrastructure bottlenecks—transport, 1999–2008

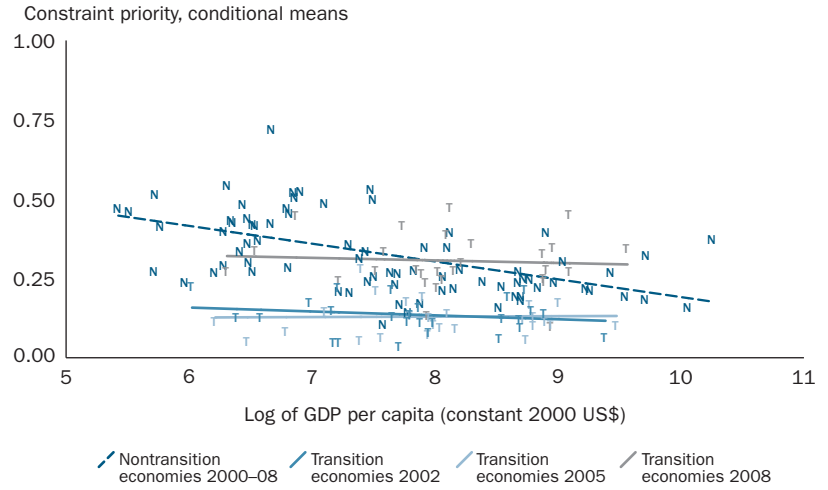
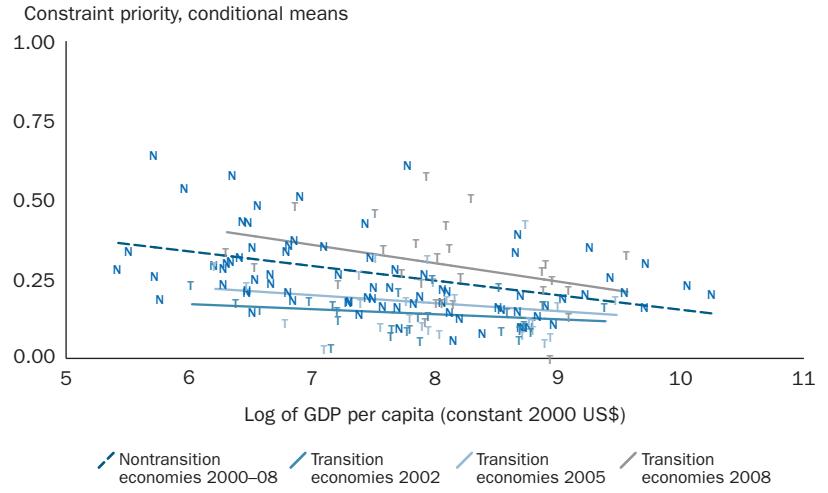


FIGURE 5.5

Access to land, 1999–2008



groups. Exporters in the richer transition economies report a big increase in problems with access to land.

Some country variations in infrastructure in 2008 are worth noting. Against the background of higher reported infrastructure constraints across transition economies as a whole, and controlling for income and firm characteristics, Czech firms report a bigger increase for electricity and transport

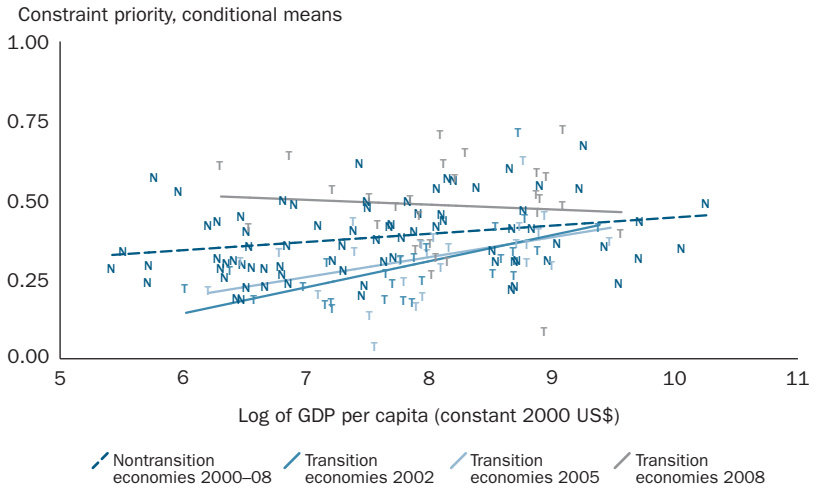
in 2008. Among the upper middle-income country groups, Hungary is at the opposite end of the spectrum for transport and access to land, with low levels of complaints. In the Western Balkans, infrastructure problems appear greater in Albania and Kosovo. In the CIS, problems with electricity increased relatively more in the Kyrgyz Republic; Azerbaijan was at the opposite end of the spectrum, with lower reported problems with electricity and transport in 2008. Access to land was more problematic across the region in 2008, especially in Azerbaijan, Belarus, Moldova, the Russian Federation, and Ukraine.

Complaints in both the levels and priority measures about skilled labor rise in 2008, continuing the increases across successive BEEPS surveys and taking the levels in 2008 above those recorded in nontransition economies (figure 5.6). Both expanding and contracting firms' complaints about skill shortages rise in 2008—especially in the richer transition economies. Unlike infrastructure, however, labor skills provide an example where complaints increase much more sharply with per capita income before 2008 in the transition economies than the nontransition economies. This implies that the demands for labor skills outrun their provision in the richer transition countries.

Across all surveys and all elements of the business environment, firms in Estonia typically record lower constraints than firms elsewhere, controlling for income and firm characteristics. But in 2008, Estonian firms record increases in skills constraints above the increases reported by firms in other transition economies. Hungary is at the other end of the scale, reporting that access to skilled labor was less problematic than in 2005. In the CIS, Belarus

FIGURE 5.6

Skills bottlenecks, 1999–2008



and to somewhat less extent Kazakhstan and the Russian Federation, as well as Moldova and Tajikistan, encountered more severe problems with skilled labor than did other countries.

The correlation between firm characteristics and the pattern of complaints supports the idea that capacity constraints in infrastructure and labor skills were increasing the costs of the external environment to firms. Higher complaint levels are reported by expanding firms for electricity and by expanding and contracting firms for land access and skills, and skill shortages increase with the size of firm. Differences between rural and urban areas are consistent with this picture: in the poorer transition economies, higher growth revealed physical infrastructure and skills constraints as more concentrated in the faster growing urban areas. In the richer transition economies, by contrast, the physical infrastructure problems appear to have hit fairly uniformly across rural and urban areas, but skill shortages switched from being more problematic in rural areas to being more problematic in urban areas in 2008.

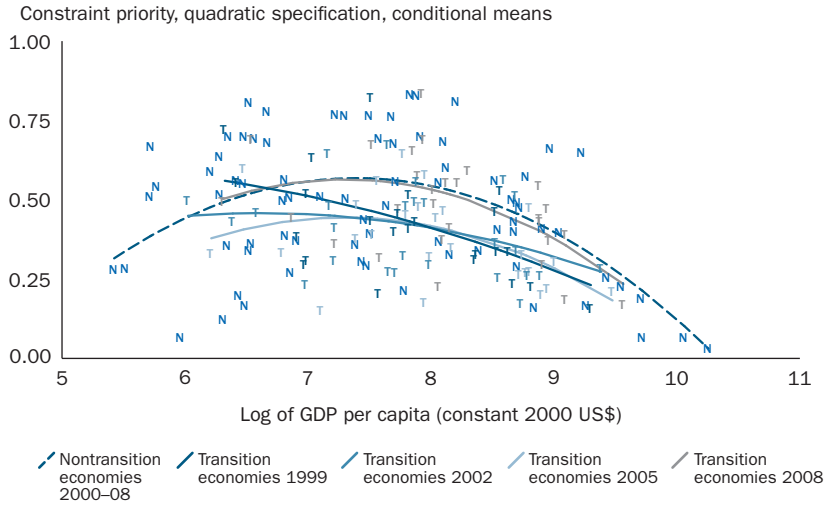
Market institutions

A characteristic of the transition economies in earlier surveys is the higher level of concern about the legal system than in nontransition economies (table 5.1). The concern rises with income in the transition economies, indicating that the demands on the legal system by the richer transition economies outruns its provision, whereas the relationship is flat outside transition**.** Concern about this important dimension of market institutions continues to rise in the 2008 survey. The dynamic in the aggregate picture is driven by the lower middle-income transition countries, where the priority accorded to the legal system as a concern was much lower in 1999 than outside transition: it increases and is above the level in nontransition countries in each subsequent survey. This is consistent with the idea that progress in transition raises the sensitivity of firms to the costs of a poorly functioning legal system. Such costs continued to rise during the rapid growth up to 2008.

The falling concern from 1999 to 2005 for corruption and crime are reversed in 2008 (table 5.1). The cost of corruption is evaluated at its highest in the middle of the income distribution outside transition (figure 5.7). While such an inverse U-shaped relationship was less marked in the transition countries before 2008, it is clearly visible in 2008, and the rise in levels makes it virtually indistinguishable from the relationship for the nontransition countries. Moving away from the benchmark, a look at variation by firm characteristics reveals that the increased concern about corruption is concentrated in new private firms. Concern about corruption among foreign-owned firms falls in 2008

FIGURE 5.7

Corruption, priority measure, 1999–2008



in the richer transition economies. The survey also shows an increase in the prevalence of bribes in 2008. The tendency for complaints about corruption to rise is more marked in the Russian Federation and Ukraine than elsewhere.

Concern about crime shows a pattern similar to that for corruption (figure 5.8). The level of concern was lower than in nontransition economies and falling until 2005. There is a sharp reversal in 2008, however, with the concern rising back above that in 1999 and higher than that reported for nontransition economies.

Tax administration and customs regulations emerged as transition economy problems in all the surveys until 2008, where on both the levels and the priority measures their importance falls into line with nontransition economies at similar incomes (figures 5.9 and 5.10). The 2008 survey also records a fall in concern with customs regulations. Whereas convergence on this measure to the nontransition norm had already taken place for the richer transition economies by 2005, it is recorded only in 2008 for the two lower income groups. The most marked change is in the lower middle-income group, where the gap with nontransition economies disappears in both the levels and priority measures.

Although overall concerns with labor regulation remain broadly unchanged in transition economies from 2005 to 2008, interesting developments for different types of firms suggest convergence toward market economy norms. In the richer transition countries, contracting firms record higher complaints

FIGURE 5.8

Crime/theft/disorder: priority measure, 1999–2008

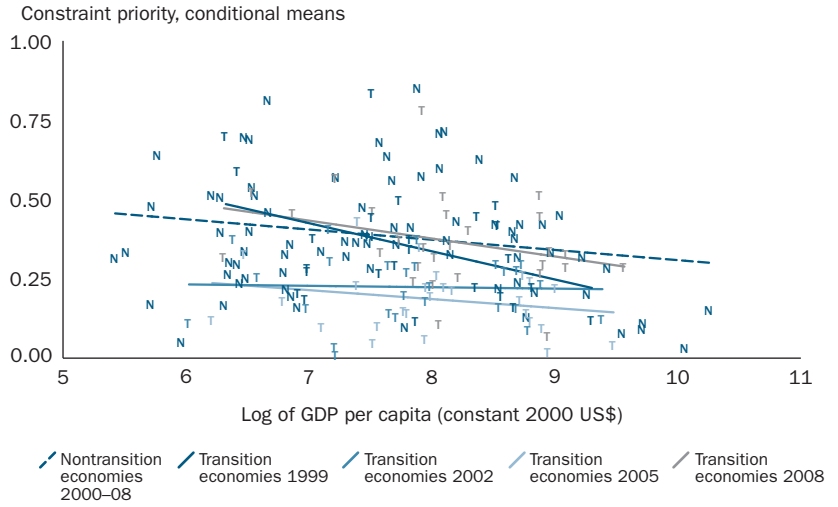
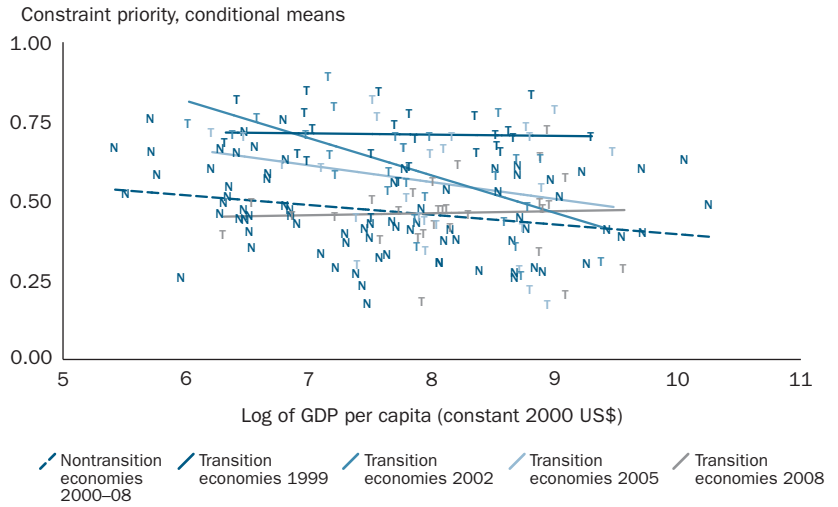


FIGURE 5.9

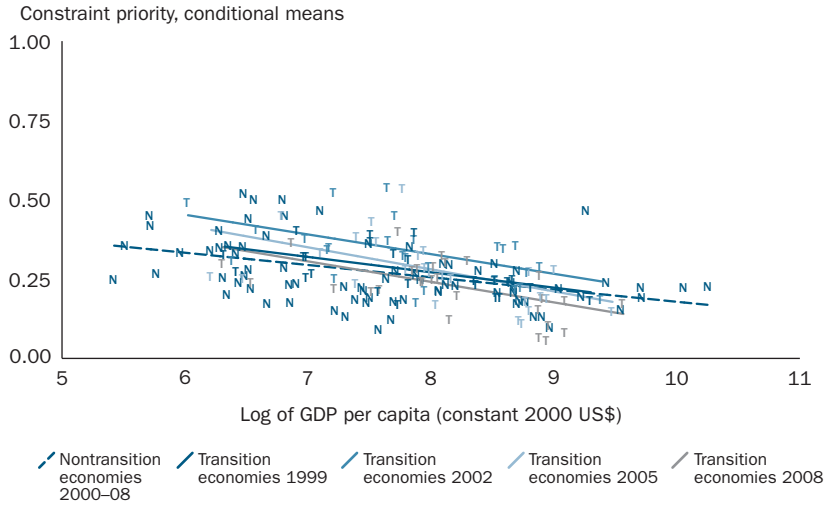
Tax administration: priority measure, 1999–2008



about labor regulation than nonadjusting firms on the levels measure in each survey but, for the first time in 2008 in these countries, concern with labor regulation increases for contracting firms on the relative measure, bringing them into line with nontransition economies. Labor regulation emerges as a concern for firms adjusting employment in 2008 for the first time in the lower middle income group, consistent with countries in this income group outside

FIGURE 5.10

Customs regulations: priority measure, 1999–2008



transition and there is some evidence of this effect for contracting firms in the poorest transition countries.

Financing

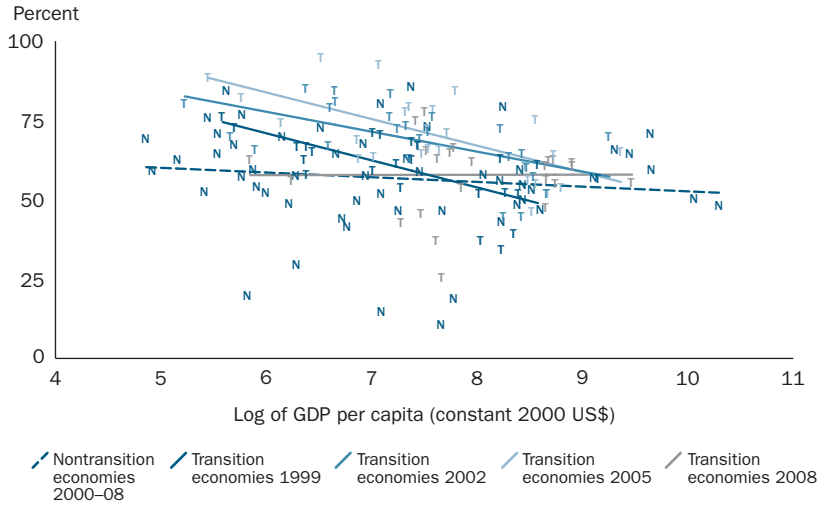
Many richer transition economies benefited from financial deepening in the years before the financial crisis, as foreign-owned banks took over a majority of the domestic banking system. This is reflected in interesting ways in the survey data from 2008. There is a clear convergence to the nontransition benchmark in the way fixed investment is financed in transition countries. For example, firms in transition economies rely more on internal funds for financing fixed investments than do firms outside transition, but the gap has been falling over time.

Parallel with the fall in dependence on internal finance is that in the use of informal finance. In 1999, transition firms relied as much or more on informal finance as firms outside, but by 2008, reflecting the shift to the formal economy, firms in transition were less reliant on informal financing than the nontransition benchmark. Replacing internal sources and informal finance is an increase in bank financing of investment. Whereas firms in transition relied considerably less on bank finance in 1999 than firms outside, the difference had almost disappeared in 2008.

Outside the transition, there is in effect no relationship between the reliance on internal funds and income per capita—the line is flat (figure 5.11). For

FIGURE 5.11

Financing expansion—internal finance



Note: The figure represents the percentage of financing for investment in fixed assets by the average firm that comes from internal funds.

transition economies in 1999, 2002, and 2005, there is a clear negative relationship: firms in the poorer transition economies are more reliant on internally generated funds for financing investment. This negative relationship disappears in the latest BEEPS round. Apparently low-income and middle-income transition economies have recently become less reliant on internal financing.

Finance is different from the public good elements of the business environment. Access to finance and its terms are firm-specific, making the interpretation of the results more difficult. For example, moving away from the benchmark reveals strong firm-size effects associated with the finance constraints: as firm size rises, the relative priority of finance (as compared with the other business environment elements) declines. But this does not necessarily mean that poor access to finance hampers the growth of small firms. Firms may be small because they are poor prospects, and prudent banks choose not to lend to them.

Unlike the earlier surveys, the 2008 survey asks only one question about finance as a constraint on business, covering both cost and access. As noted, concern with finance in levels terms remains unchanged in 2008 at the level of nontransition economies and falls on the relative measure, leaving it similar to the nontransition score (figures 5.12 and 5.13).

In the upper and lower middle-income groups of transition countries, the priority accorded to finance falls to about the level outside the transition. But

FIGURE 5.12

Financing expansion—external financing, constraint level

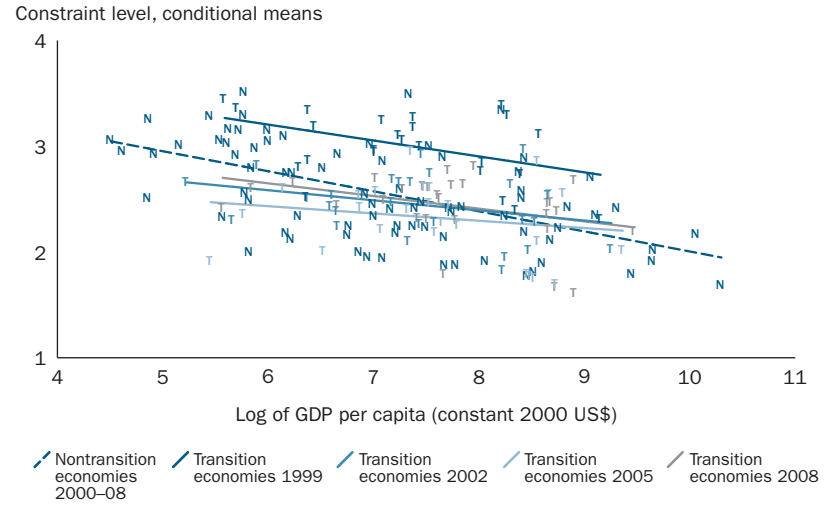
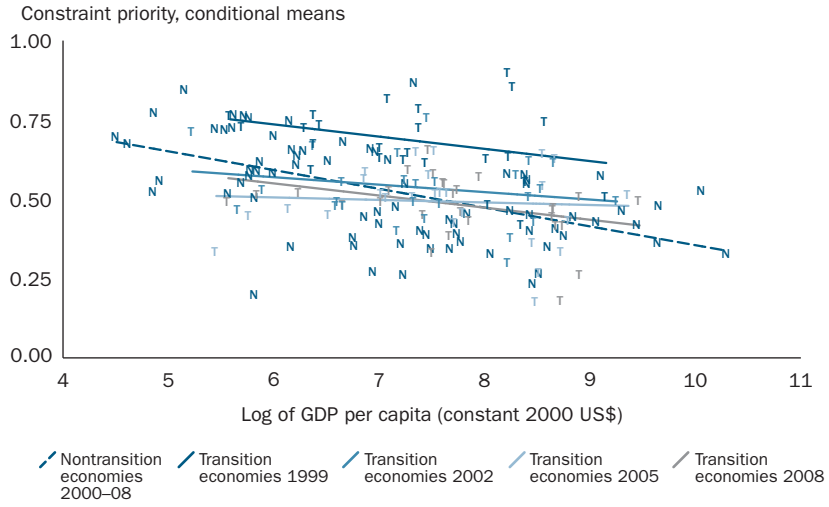


FIGURE 5.13

Financing expansion—external financing, constraint priority



in the poorest transition group, financial constraints in 2008 are markedly lower than in the comparable nontransition economy group. There are three other interesting findings away from the benchmark:

- Size of firm effects almost completely disappears. Unlike the nontransition economies and in earlier surveys, larger firms in transition economies in 2008 do not report significantly lower financial constraints than smaller firms.

- For the first time, state-owned firms complain more than new private firms (on both the absolute and the relative measures).
- Hungary's relatively low reported constraint in 2008 on both the absolute and relative measures indicates that finance was not a major problem in that country.

The evidence from the financing patterns and from the evaluation of the finance constraint is consistent. Credit was more freely available and on more favorable terms in 2008 than in earlier years, even for smaller firms and especially for those in the private sector. This increased reliance on bank finance for investment is closer to the levels in nontransition economies. While the convergence of financing patterns in transition toward nontransition economy norms may have reflected the specificities of the credit boom, the long-run maturation of the financial system away from informal finance and the reduced reliance of low-income and lower middle-income countries on internal financing are part of a continuing trend seen in earlier surveys.[12] But firms in transition newly dependent on bank credit may have become more vulnerable to financing constraints, at least until the global financial system returns to normal.

The persistence of legacy in shaping the business environment

What do differences in the business environment in transition and nontransition economies owe to the legacy of central planning? The broad changes in economic structure as economies develop are well documented.[13] As an economy grows and aggregate income rises, low-productivity labor moves from agriculture into industry, with the share of employment in services changing relatively little. Later, the share of employment in industry stabilizes, and in the richest economies, it starts to fall as the share of employment in services rises. The explanation is simple: productivity growth in manufacturing outstrips the demand for manufactured goods and workers move into labor-intensive services.

The way central planning changed the structure of economies can be summarized as follows.

- Central planners accelerated the process of moving labor out of agriculture and into industry as part of forced industrialization.

12. Mitra, Muravyev, and Schaffer 2009.

13. The pioneering work here was by Simon Kuznets and then by Hollis Chenery and his colleagues at the World Bank (Chenery et. al 1986). See Rowthorn and Ramaswamy 1998 for a theoretical analysis and Raiser et al. (2003) for an application to transition economies.

- Planners emphasized industry over services, so employment in market-oriented services (trade, finance) was relatively low.[14]
- The many inefficiencies of central planning introduced a wedge between the degree of industrialization and aggregate productivity: the level of income in planned economies was lower than in market economies at a similar level of industrialization.

The institutions of a market economy were either suppressed (in economies that had them when planning was introduced) or never developed (in economies that industrialized under central planning).

The sectoral structure of transition economies has converged to that of market economies at similar per capita incomes (box 5.1). How has the business environment evolved in the poorer transition countries that underwent forced industrialization under central planning and in the richer transition countries that had a stronger collective memory of market institutions?

Industrialization in poorer transition countries

The superior endowment of infrastructure and labor skills, as reflected in the business environment of transition economies before the 2008 survey, was the product of the legacy of forced industrialization. Figure 5.14 plots the reported cost of the infrastructure constraint against GDP per capita (proxying the level of development) on the horizontal axis in the left-hand panel and the share of nonagricultural employment in industry and services (proxying the level of industrialization) on the horizontal axis in the right hand panel. The results for the transition economies pool the BEEPS 1–3 surveys, for 1999, 2002, and 2005. This is because, compared with BEEPS 4, the first three rounds have a wider range of questions and allow more nuanced analysis. The results show that transition economies had better infrastructure (lower reported costs of constraints) at a given level of industrialization than did nontransition economies. This is consistent with the idea that overindustrialization involved levels of development of physical infrastructure that were "excessive" when measured against a market economy benchmark.

Similarly, figure 5.15 plots the reported cost of access to skilled labor constraint against GDP per capita and the level of industrialization in transition and nontransition economies. It shows skills shortages to be less problematic in transition: this is consistent with the persistence of the effects of forced industrialization in easing this constraint. Both panels of Figure 5.15 show that the upward-sloping income profile for the skills constraint in transition

14. See, for example, Raiser et al. 2003.

BOX 5.1

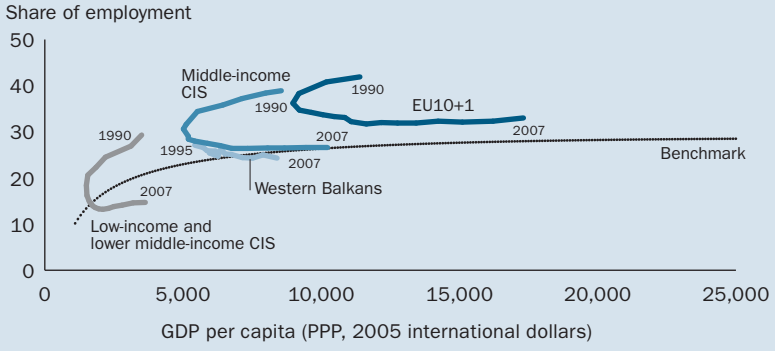
Transition economies converge in structure to market economies

Overindustrialization has been substantially corrected everywhere in the region, but the share of employment in industry is short of the market economy benchmark in the low-income and lower middle-income CIS countries yet continues to exceed the benchmark in the EU10+1 (box figure 1). The share of employment in industry fell during the period of income contraction and rose when income began to increase. Overall, it fell by between 5 percentage points in the Western Balkans and 15 percentage points in the low-income and lower middle-income CIS during 1990–2007. In 2007, the share of industrial employment in the EU10+1 exceeded the market economy benchmark by 5 percentage points, whereas the massive deindustrialization in the low-income and lower middle-income CIS countries left them with a share of employment that fell short of the market economy benchmark by some 5 percentage points. The middle-income CIS and the Western Balkans were virtually at the market economy benchmark.

The share of employment in agriculture behaved quite differently across the subregions but had mostly reached the market economy benchmark by 2007 (box figure 2). It shrank in the EU10+1 and more modestly so in the middle-income CIS. But it rose sharply by nearly 15 percentage points in the low-income and lower middle-income CIS, much of the rise occurring during the severe transition recession, when subsistence agriculture was a safety net. It began to fall toward the market economy benchmark in the recovery. Agriculture in the Western Balkans followed a pattern similar to the low-income and lower middle-income CIS, tracing the benchmark as income first went down and the share of employment in agriculture went up and then subsequently as income rose and the employment share went down.

BOX FIGURE 1

Benchmarking industrial employment in Central and Eastern Europe and the former Soviet Union against market economies: evolution over the transition



Note: For data reasons, Western Balkans comprises Albania, FYR Macedonia, and undivided Serbia and Montenegro.
Source: Based on background work by Mark Schaffer.

(continued)

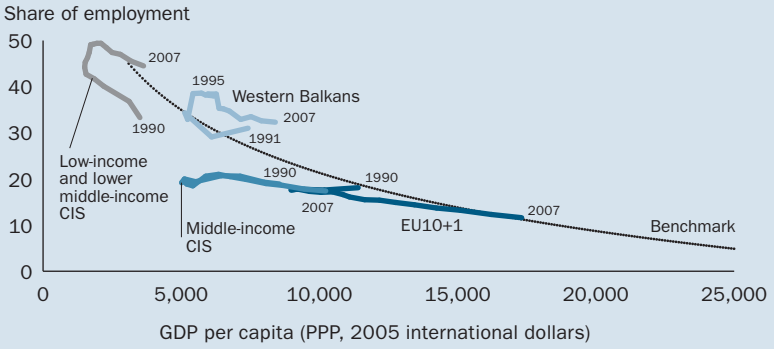
BOX 5.1 (CONTINUED)

Transition economies converge in structure to market economies

With the exception of a slight fall in the early years of transition in the low-income and lower middle-income CIS, the share of employment in services increased toward its market economy benchmark everywhere (box figure 3). It increased by nearly 15 percentage points between 1990 and 2007 in the EU10+1, the middle-income CIS, and the Western Balkans, with the increase driven by market services.

BOX FIGURE 2

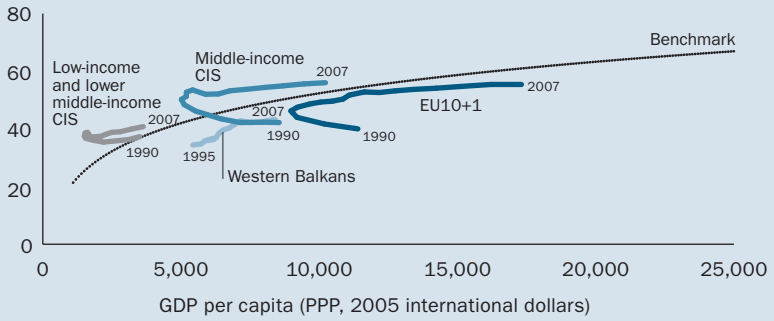
Benchmarking agricultural employment in Central and Eastern Europe and the former Soviet Union against market economies: evolution over the transition



Note: For data reasons, Western Balkans comprises Albania, FYR Macedonia, and undivided Serbia and Montenegro.

BOX FIGURE 3

Benchmarking service sector employment in Central and Eastern Europe and the former Soviet Union against market economies: evolution over the transition



Note: For data reasons, Western Balkans comprises Albania, FYR Macedonia, and undivided Serbia and Montenegro.

economies implies that the priority measure comes together for high-income transition and nontransition economies. Together, figures 5.14 and 5.15 make it clear that the poorer transition economies benefited from the infrastructure and education investments that accompanied forced industrialization. As has been noted, this advantage had eroded in relation to nontransition economies by 2008.

FIGURE 5.14

Physical infrastructure: (composite) priority measure, 1999–2005

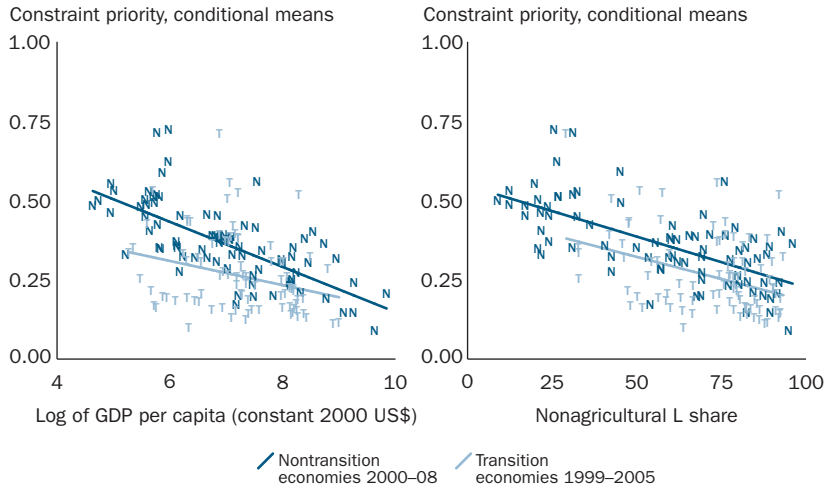
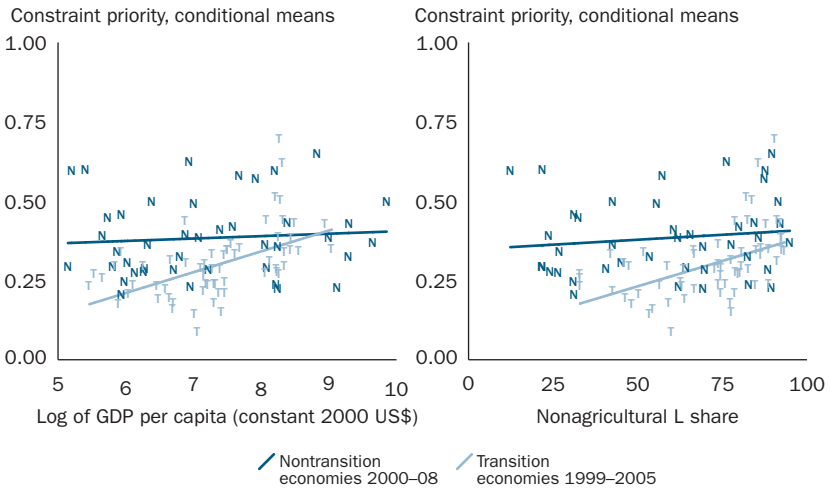


FIGURE 5.15

Skills: priority measure, 1999–2005



Collective memory of market institutions in richer transition countries

Did transition economies with a stronger collective memory of market institutions show more sensitivity to weaknesses in market-related institutions? For the legal environment, there is no relationship with GDP per capita in the nontransition benchmark in the levels measure and a negative relationship in the priority measure. But in transition countries, for the priority measure, concern about the legal dimension rises with GDP per capita and concern is higher in transition than outside at high levels of income (figure 5.16). This supports the idea that the costs of inadequacies in the legal system are felt more by firms in the more advanced transition countries. And the sensitivity to those costs rose further in 2008 but, as noted earlier, this has been driven by the lower middle income transition countries as they have progressed in transition.

In both transition and nontransition economies, the reported costs of labor regulation rise with the level of income and with industrialization. Firms in transition report lower constraints, especially at low levels of income (figure 5.17). Complaints about labor regulation remained broadly unchanged between 2005 and 2008. Concerns about tax administration and customs regulations do not show a rising profile with income per capita or level of industrialization in the transition economies, but corruption displays a nonlinear relationship, as in figure 5.7.

Summary statistics for the comparison between the transition economies averaged over 1999–2005 and the nontransition economies are in box 5.2. The

FIGURE 5.16

Legal environment: priority measure, 1999–2005

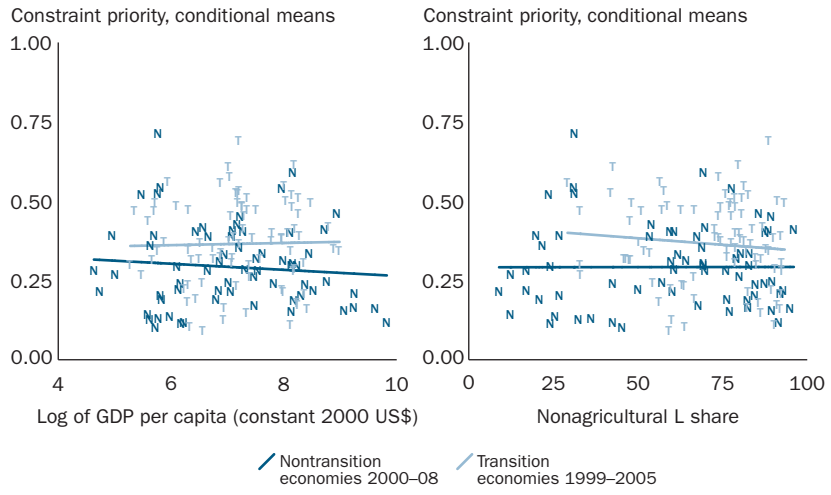
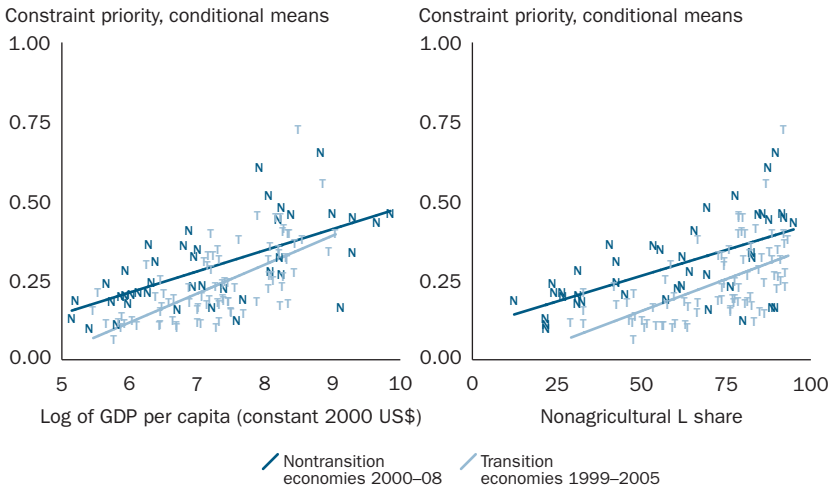


FIGURE 5.17

Labor regulation: priority measure, 1999–2005



legacy of central planning is also to be found in the characteristics of firms: the size distribution was skewed toward very large firms, the service sector was underdeveloped and there was little private or foreign ownership. How this affects the comparison of the business environment between transition and nontransition economies is presented in annex 5.2.

BOX 5.2

Comparing constraints in transition (BEEPS 1999–2005) and nontransition (ICA) countries

Box table 1 shows both mean and conditional mean measures, the latter correcting for differences in the composition of the samples as explained in main body of the text. The differences between unconditional and conditional means are small for the transition economies but somewhat larger for the nontransition economies; as a result, the conditional mean average measure of the business environment in the first row of the table is about 5 percent lower. As the table also shows, the mean level for the average of the business environment constraints is similar in transition and nontransition countries. And the top five ranked constraints (on both BEEPS and ICAs) are also similar in each group of countries: they are tax rates, macroeconomic environment, cost of finance, and policy uncertainty. Elements of physical infrastructure and access to land are low-ranked constraints throughout, with telecoms viewed as least problematic. The box table presents the means for the levels and priority measures of business environment constraints separately for nontransition and transition economies.

BOX TABLE 1

Constraints on business—transition and nontransition economies

	Constraint level				Constraint priority			
	Mean		Conditional mean		Mean		Conditional mean	
	Non-transition economies 2000–08	Transition economies 1999–2005	Non-transition economies 2000–08	Transition economies 1999–2005	Non-transition economies 2000–08	Transition economies 1999–2005	Non-transition economies 2000–08	Transition economies 1999–2005
Average (9)[a]	2.36	2.32	2.25	2.31				
Infrastructure (composite)	2.03	1.64	1.96	1.69	0.28	0.16	0.26	0.18
Telecoms	1.74	1.48	1.64	1.46	0.21	0.13	0.18	0.13
Electricity	2.43	1.62	2.38	1.71	0.40	0.18	0.38	0.22
Transport	2.01	1.56	1.94	1.56	0.28	0.16	0.26	0.16
Land access	1.84	1.62	1.80	1.63	0.23	0.18	0.24	0.18
Skills	2.31	1.96	2.21	1.95	0.41	0.30	0.38	0.30
Tax rates	2.74	2.91	2.69	2.94	0.57	0.71	0.56	0.72
Tax administration	2.46	2.58	2.37	2.59	0.49	0.58	0.46	0.59
Finance (composite)	2.53	2.54	2.46	2.59	0.51	0.54	0.49	0.56
Access to finance	2.44	2.36	2.39	2.43	0.45	0.44	0.44	0.48
Cost of finance	2.61	2.69	2.52	2.73	0.53	0.58	0.50	0.60

(continued)

BOX 5.2 (CONTINUED)

Comparing constraints in transition (BEEPS 1999–2005) and nontransition (ICA) countries

	Constraint level				Constraint priority			
	Mean		Conditional mean		Mean		Conditional mean	
	Non-transition economies 2000–08	Transition economies 1999–2005	Non-transition economies 2000–08	Transition economies 1999–2005	Non-transition economies 2000–08	Transition economies 1999–2005	Non-transition economies 2000–08	Transition economies 1999–2005
Labor regulation	2.08	1.85	2.00	1.86	0.35	0.23	0.32	0.24
Customs	2.03	2.01	1.83	1.96	0.33	0.33	0.26	0.32
Licenses	2.02	1.99	1.91	1.95	0.25	0.30	0.22	0.28
Legal	1.95	2.11	1.88	2.07	0.28	0.33	0.26	0.33
Corruption	2.57	2.27	2.47	2.25	0.47	0.41	0.43	0.39
Crime	2.25	2.04	2.17	1.97	0.36	0.29	0.35	0.26
Policy uncertainty	2.60	2.76	2.46	2.74	0.52	0.64	0.47	0.63
Macro-economic instability	2.75	2.69	2.65	2.68	0.57	0.59	0.53	0.59
Power outages (y/n)	0.66	0.47	0.64	0.46				
Water supply outages (y/n)	0.22	0.18	0.20	0.17				
Bribes (y/n)	0.34	0.45	0.29	0.43				
Unreported sales (y/n)	0.21	0.16	0.23	0.16				
Don't report all sales (y/n)	0.50	0.46	0.53	0.46				
Tax gifts (y/n)	0.23	0.41	0.22	0.44				
Contract gifts (y/n)	0.31	0.28	0.28	0.26				
Security costs (y/n)	0.68	0.62	0.61	0.55				
Crime losses (y/n)	0.22	0.24	0.18	0.20				

a. The average of the business environment is taken over tax rates, tax administration, labor regulation, licenses, financial access, policy uncertainty, corruption, crime, and anti-competitive practices.
Note: Annex tables 5.3.1 and 5.3.2 summarize the statistical tests of a linear relationship between income per capita and constraint levels and constraint priorities (box table 1). The tests reported are of the significance of the slope of the income/constraint relationship, and of difference between the averages constraints for transition and nontransition economies at low and high levels of GDP per capita. There is a statistically significant (at the 5 percent level) linear relationship for the nontransition benchmark in either constraint level of constraint priority for the following dimensions of the business environment: physical infrastructure, land access, tax rates and administration, customs regulation, labor regulation, finance access and cost, crime and policy uncertainty. There are significant relationships with income in the transition but not outside for labor skills, licensing, and macro-economic instability. There is also a significant nonlinear relationship for corruption.
Source: BEEPS surveys for 1999, 2002, and 2005.

(continued)

BOX 5.2 (CONTINUED)

Comparing constraints in transition (BEEPS 1999–2005) and nontransition (ICA) countries

There are interesting differences between nontransition and transition countries. For example, electricity is viewed as much more problematic in nontransition countries. More generally, the scores across the infrastructure constraints and skills are much lower in transition economies: these elements of the business environment clearly are considerably less problematic for the transition countries.

Corruption is in the top five constraints on the levels measures in nontransition countries but below this in transition countries. By contrast, transition countries complain more about the legal environment and attach a higher priority to it than do nontransition countries. For example, controlling for firm characteristics, the priority measure indicates that about one-third of firms in transition view the legal system as a constraint more severe than the average, as compared with one-quarter of firms in nontransition countries.

Quantitative measures of the experience of firms regarding their environment tend to confirm the information in the evaluative questions (the lower panel of the box table). For example, consistent with the lower level of complaints about physical infrastructure in transition economies, power and water outages are much less prevalent. The prevalence of bribes is higher in transition economies. Underreporting to the tax authorities is somewhat more common outside than in the transition, and the opposite is so for gifts to tax officials.

Annex 5.1
Conceptual framework

Comparable firm-level surveys in a large number of countries around the world can provide a rich description of how managers perceive the costs of their business environment. Interpreting the survey results requires a conceptual framework. The responses of firms to questions about the quality of the business environment could be interpreted as estimations by managers of the cost imposed on the firm by inadequacies of an aspect of the business environment such as regulation, physical infrastructure, availability of skilled labor, macroeconomic conditions and the rule of law—all of which resemble public goods.[15] The response of managers to questions about the impact of such elements on their ability to operate and to expand their business can, in these cases, be interpreted as referring to the cost of the constraint to the firm, where the supply of the public good is common to all firms in the economy. Firms may take actions to mitigate the costs imposed by their environment, such as installing their own generator if the electricity grid is unreliable. But the faulty grid imposes a cost, and this should be reflected in the evaluation of the burden—in this instance—of "electricity" as compared with other dimensions of the business environment.

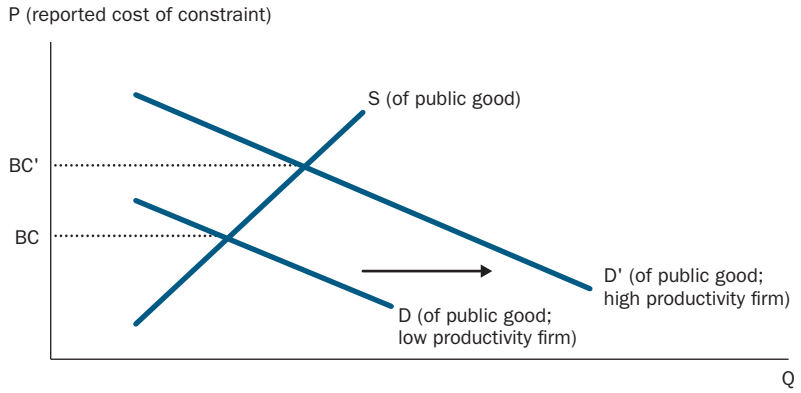
Although different firms may face effectively the same supply of the public good, how they report the importance of this part of their environment will depend on the characteristics of the firm. For example, rapidly growing, highly productive firms would likely suffer higher costs from a poor quality electricity supply infrastructure than stagnating or downsizing firms that are operating with significant spare capacity. Annex figure 5.1.1 illustrates this: firm output or productivity Q is on the horizontal axis, and the reported cost of the constraint P is on the vertical axis. D' represents the demand of a high productivity firm for one of these public goods, and D the demand of a low productivity firm. The upward sloping S curve is the same for all firms in the country. It captures the notion that as firms become more productive, the supply of the public good becomes less adequate and the shortfalls more costly to the firm.

Analysis of the responses by firms to a survey from an individual country can shed light on these constraints. In effect, they identify the factors that move the demand curve from D to D' along the common S curve. Measures of firm growth and productivity are naturally of particular interest. Thus if

15. The analysis uses the approach described in Carlin, Schaffer, and Seabright (2007), who refer to these costs as shadow prices.

ANNEX FIGURE 5.1.1

Demand and supply of public goods—one country, two firms



expanding firms provide higher rankings for a particular public good-type element, this would be consistent with the idea that the weakness of the business environment along that dimension may be a constraint on firm growth. Firm size is also of particular interest, because policy attention is often focused on the special needs of small firms. If firms of different size perceive different relative costs of elements of the business environment, the relevant aspect of the business environment would seem a likely candidate for special policy measures directed at small firms.

The business environment: mostly a public good?

This analysis works because all the firms in the country share the same business environment, even though they have different needs and thus experience differences in the costs imposed on them by that common environment. In other words, they all face the same S curve (annex figure 5.1.1). The within-country variation identifies the impact of business constraints on firm growth by moving the D curve. Within-country variation from surveys conducted in different countries can be combined to obtain more efficient estimates of these impacts.[16] And by splitting the surveys between transition economies and nontransition economies, it is possible to compare how growing firms (or small and medium enterprises, or whatever the focus of interest) in transition economies and nontransition economies differ in their evaluations of the impacts of business environment constraints.

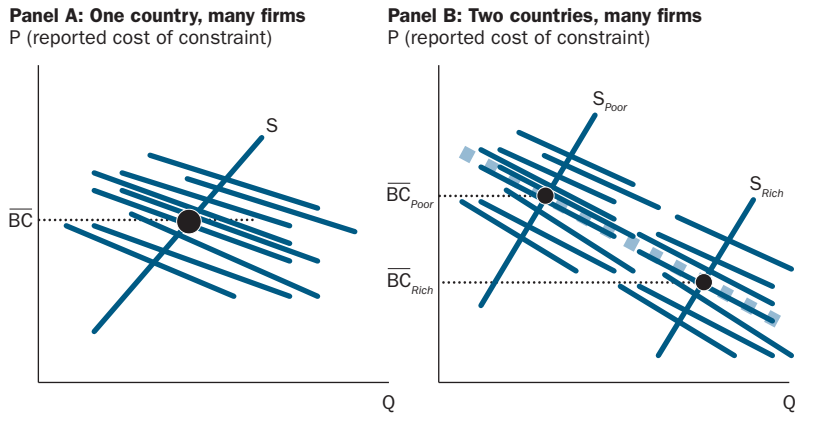
16. This can be done using fixed-effects estimation techniques. Details are in Carlin and Schaffer (2009).

The quality of the business environment also varies systematically across countries. Richer countries typically have better developed economic institutions, physical infrastructure, and human capital. Indeed, they are richer in large part because of the higher quality of their business environments. By allowing the construction of aggregate indicators of the business environment, these surveys can also help understand the relationship between economic development and the provision of public goods that comprise the business environment, and how the transition and the inheritance of decades of central planning change this relationship (annex figure 5.1.2).

Annex figure 5.1.2 represents the results of a business environment survey in one country and in two. The individual downward sloping lines represent the demand curves of individual firms for one element of the business environment. The average constraint reported by firms in the country is denoted by $\overline{BC}$. Panel B of the same figure shows how the data from many surveys can be combined to derive a relationship between the cost of a business environment constraint and the level of income or productivity in two different countries. The S_{Poor} line in Panel B represents an element of the business environment in a low income country. The demand curves in a high-income country will be shifted to the right, but typically so will the provision of the public

ANNEX FIGURE 5.1.2

Demand and supply of public goods



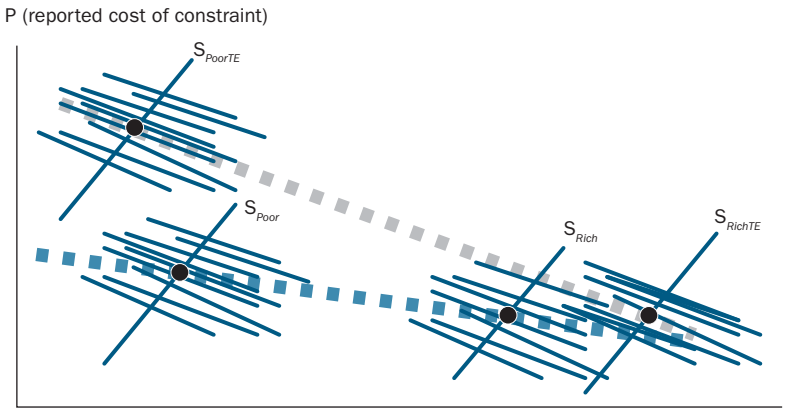
good as represented by S_{Rich}. Indeed, firms in high-income countries make more demands of the electricity grid, but the quality of the electricity supply is also higher in these countries.

Panel B also presents the constraint-income locus, sloped downwards; in the electricity example, this implies that the provision of this aspect of the economic infrastructure in high-income countries more than compensates for the greater demands firms in these countries place on it. It is the relationship shown as a dotted blue line that appears in figure 5.1 in the chapter. But in other cases the locus could be flat or upward sloping; an example of the latter discussed in the chapter is labor market regulation.

This framework is readily extended to comparisons of transition and nontransition economies. Annex figure 5.1.3 illustrates a case where there is, on average, poorer provision of an aspect of the business environment in transition economies (gray) than in nontransition economies (blue), but the gap is declining as income rises and disappears entirely at high incomes. How the constraint-income locus in transition countries varies systematically from what is observed in market economies can reveal much about both the lasting inheritance of central planning and the progress of transition economies in building market economies.

ANNEX FIGURE 5.1.3

Two transition economies, two nontransition economies (and many firms)



Annex 5.2
Moving away from the benchmark: firm characteristics and constraints

Transition entailed the large-scale reallocation of resources from old to new enterprises, the creation of new patterns of ownership, and a major sectoral redistribution of activities. The survey data can identify how firm characteristics are related to the reported constraints on growth, how these compare with nontransition economies, and how they have changed over time in transition. The focus here is on firm size, the comparison between firms adjusting employment levels and those that do not, sector, ownership, and exporter status. The marginal effects as a result of deviating from the benchmark appear in annex tables 5.3.3 and 5.3.4. The results here and in the tables refer to the transition economies over the first three rounds of the BEEPS, for 1999–2005.

Firm size

A number of firm-size effects are common to transition and nontransition economies: the increasing importance of labor regulation, skills, customs, and the legal system and, until 2005, the declining importance of the finance constraints as firm size rises (annex tables 5.3.3 and 5.3.4).

Firms expanding and contracting employment

The survey asks managers whether their current employment level is too low, about right or too high. Other things equal, firms content with their existing employment level are likely to report lower costs of constraints than firms that need to adjust to achieve their desired size. This is consistent with the finding that where expanding or contracting firms place different weights on the constraints than nonadjusting firms, it is almost always a higher ranking. In interpreting the results for adjusting firms, note that a much smaller proportion of firms in transition report being satisfied with their current employment level (45 percent) than do those outside transition (60 percent). Moreover, a substantially higher proportion of expanding firms in transition than those outside report that their employment level is still too low. This reflects the immaturity of the firm size distribution in transition.

Adjusting firms report a higher priority to problems with accessing skilled labor in both transition and non transition economies. Along other dimensions of the business environment the patterns are different inside and outside transition (annex tables 5.3.3 and 5.3.4).

In both transition and nontransition economies, firms adjusting their levels of employment complain more about finance than do nonadjusting firms.

This is an example of the need to interpret the data carefully: access to finance and its cost are likely to reflect the quality of the firm (as well as the quality and resources of the banking system). Since firms with stable employment in transition are more likely to report that their size is suboptimal than those outside transition, the fact that stable and expanding firms report less concern about access to finance than contracting firms suggests that finance is being allocated more efficiently rather than less. The complaints of contracting firms may well reflect that they do not have good projects to finance. In the case of finance, as mentioned in the chapter, the level of complaints cannot be interpreted as a signal of policy priority.

Sectoral effects

Sectoral effects are in line with expectations.[17] In both transition and nontransition economies, service sector firms place less importance on infrastructure, finance, labor regulation, and customs constraints. In addition, in transition, they are less concerned with access to skilled labor than are manufacturing firms. A pattern that also holds in both sets of countries is the greater relative priority to licensing by firms in construction than those in manufacturing. This accords with the higher reported relevance of bribes in construction.

Ownership

In transition economies, privatized and state firms generally evaluate the business environment as less constraining than do new private firms. Both privatized and state firms in transition economies rank tax administration, customs, and corruption as less problematic than do new private sector firms, and separately rate a range of constraints as significantly less constraining than the new private sector benchmark. The only exception is infrastructure, which state-owned firms find more constraining than either new private or privatized firms.[18]

Foreign-owned and exporting firms

Foreign-owned firms in transition report much lower concerns with access to and cost of finance than domestically owned firms and greater relative concern

17. The standard errors associated with estimated coefficients for the sectoral effects in the nontransition economies are much larger than in the transition economies, reflecting a stronger representation of nonmanufacturing firms in the transition economy sample.

18. There are not enough state-owned and privatized firms in the nontransition economy sample to be able to estimate ownership effects with any precision.

about customs regulation (annex table 5.3.4). In transition economies, unlike in nontransition economies, foreign firms do not complain more about physical infrastructure (which was less problematic in transition until recently) but attach greater importance to macroeconomic constraints. Exporting firms in transition share the higher priority of foreign-owned firms in relation to customs, licensing, and macro constraints. Exporting firms outside transition attach a higher priority to labor regulation and the legal environment than nonexporters.

Annex 5.3
Tables

ANNEX TABLE 5.3.1

Country conditional means of constraint levels and quantitative indicators vs. income per capita

	Slope of income/ constraint locus			Conditional means evaluated at:					
				Low income			High income		
	Non-transition economy slope	Transition economy slope	Diff sig?	Non-transition economy	Transition economy	Difference	Non-transition economy	Transition economy	Difference
Average (9)	–0.120*	–0.074		2.46	2.46	–0.002	2.02	2.19	0.171
Infrastructure (composite)	–0.201*	–0.105*	Yes	2.37	1.94	–0.431*	1.63	1.55	–0.078
Telecoms	–0.092*	–0.052		1.88	1.57	–0.312*	1.54	1.37	–0.165
Electricity	–0.336*	–0.159*	Yes	3.01	2.05	–0.956*	1.76	1.46	–0.303*
Transport	–0.149*	–0.038	Yes	2.23	1.63	–0.602*	1.68	1.49	–0.191*
Land access	–0.113*	–0.066*		2.03	1.75	–0.281*	1.61	1.51	–0.107
Skills	0.029	0.100*		2.13	1.74	–0.389*	2.24	2.11	–0.129
Tax rates	–0.079*	–0.067		2.79	3.09	0.304	2.49	2.84	0.349
Tax administration	–0.079*	–0.156*		2.45	2.89	0.432*	2.16	2.31	0.148
Finance (composite)	–0.189*	–0.113		2.84	2.81	–0.029	2.14	2.39	0.253
Access to finance	–0.169*	–0.124*		2.73	2.65	–0.072	2.10	2.20	0.096
Cost of finance	–0.202*	–0.095		2.98	2.95	–0.030	2.23	2.59	0.363*
Labor regulation	0.113*	0.177*		1.74	1.50	–0.234*	2.15	2.16	0.004
Customs	–0.104*	–0.163*		2.03	2.28	0.253*	1.65	1.68	0.034
Licenses	0.000	–0.120*	Yes	1.89	2.15	0.258*	1.89	1.71	–0.185
Legal	–0.027	0.010		1.89	2.06	0.167	1.79	2.10	0.305
Corruption	–0.092	–0.180*		2.59	2.62	0.029	2.25	1.95	–0.299
Crime	–0.084	–0.105		2.35	2.21	–0.138	2.04	1.82	–0.216
Policy uncertainty	–0.123*	–0.097		2.68	2.92	0.244	2.22	2.56	0.340
Macro-economic instability	–0.071	–0.190*		2.77	3.02	0.253	2.51	2.32	–0.185
Power outages (y/n)	–0.099*	–0.080*		0.86	0.63	–0.228*	0.49	0.33	–0.159*
Water supply outages (y/n)	–0.061*	–0.062*		0.40	0.30	–0.108*	0.18	0.06	–0.114*

(continued)

ANNEX TABLE 5.3.1 (CONTINUED)

Country conditional means of constraint levels and quantitative indicators vs. income per capita

	Slope of income/ constraint locus			Conditional means evaluated at:					
				Low income			High income		
	Non-transition economy slope	Transition economy slope	Diff sig?	Non-transition economy	Transition economy	Difference	Non-transition economy	Transition economy	Difference
Bribes (y/n)	–0.082*	–0.073*		0.44	0.68	0.239*	0.14	0.41	0.272*
Don't report all sales (y/n)	–0.046*	–0.043*		0.63	0.59	–0.040	0.46	0.43	–0.031
Tax gifts (y/n)	–0.039*	–0.133*	Yes	0.25	0.69	0.440*	0.11	0.20	0.092
Contract gifts (y/n)	–0.057*	0.008	Yes	0.41	0.37	–0.042	0.20	0.40	0.198*
Security costs (y/n)	–0.015	–0.027*		0.70	0.71	0.008	0.64	0.61	–0.037
Crime losses (y/n)	–0.075*	0.052*	Yes	0.51	0.12	–0.391*	0.23	0.31	0.081

* indicates statistical significance at the 5% level; tests adjusted for clustering on country.
Note: Column 3 reports the statistical significance of the nontransition economy and transition economy slope coefficients at the 5 percent level. Low income is defined as log GDP per capita = 5.6, about $270; high income is defined as log GDP per capita = 9.3, about $11,000.

ANNEX TABLE 5.3.2

Country conditional means of constraint priorities versus income per capita

	Slope of income/ constraint locus			Conditional means evaluated at:					
				Low income			High income		
	Non-transition economy slope	Transition economy slope	Diff sig?	Non-transition economy	Transition economy	Difference	Non-transition economy	Transition economy	Difference
Average (9)	–0.120*	–0.074		2.46	2.46	–0.002	2.02	2.19	0.171
Infrastructure (composite)	–0.201*	–0.105*	Yes	2.37	1.94	–0.431*	1.63	1.55	–0.078
Telecoms	–0.092*	–0.052		1.88	1.57	–0.312*	1.54	1.37	–0.165
Electricity	–0.336*	–0.159*	Yes	3.01	2.05	–0.956*	1.76	1.46	–0.303*
Transport	–0.149*	–0.038	Yes	2.23	1.63	–0.602*	1.68	1.49	–0.191*
Land access	–0.113*	–0.066*		2.03	1.75	–0.281*	1.61	1.51	–0.107
Skills	0.029	0.100*		2.13	1.74	–0.389*	2.24	2.11	–0.129
Tax rates	–0.079*	–0.067		2.79	3.09	0.304	2.49	2.84	0.349
Tax administration	–0.079*	–0.156*		2.45	2.89	0.432*	2.16	2.31	0.148
Finance (composite)	–0.189*	–0.113		2.84	2.81	–0.029	2.14	2.39	0.253

ANNEX TABLE 5.3.2 (CONTINUED)

Country conditional means of constraint priorities versus income per capita

	Slope of income/ constraint locus			Conditional means evaluated at:					
				Low income			High income		
	Non-transition economy slope	Transition economy slope	Diff sig?	Non-transition economy	Transition economy	Difference	Non-transition economy	Transition economy	Difference
Infrastructure (composite)	–0.060*	–0.034*		0.40	0.26	–0.135*	0.18	0.14	–0.038
Telecoms	–0.044*	–0.018		0.28	0.17	–0.112*	0.12	0.10	–0.019
Electricity	–0.105*	–0.055*	Yes	0.60	0.34	–0.264*	0.21	0.13	–0.075*
Transport	–0.034*	–0.011		0.34	0.18	–0.155*	0.21	0.14	–0.069*
Land access	–0.034*	–0.017		0.32	0.21	–0.111*	0.20	0.15	–0.049
Skills	0.007	0.059*	Yes	0.37	0.18	–0.185*	0.39	0.40	0.009
Tax rates	–0.021	–0.019		0.60	0.77	0.172*	0.52	0.70	0.182*
Tax administration	–0.027	–0.056*		0.49	0.69	0.197*	0.40	0.49	0.090
Finance (composite)	–0.046*	–0.033*		0.61	0.63	0.021	0.44	0.51	0.069
Access to finance	–0.041*	–0.036*		0.53	0.55	0.012	0.38	0.41	0.032
Cost of finance	–0.053*	–0.024		0.64	0.67	0.023	0.45	0.58	0.129*
Labor regulation	0.060*	0.082*		0.18	0.08	–0.104*	0.41	0.38	–0.022
Customs	–0.033*	–0.053*		0.34	0.42	0.076*	0.22	0.22	0.002
Licenses	0.020	–0.031	Yes	0.18	0.33	0.153*	0.25	0.22	–0.034
Legal	–0.031*	0.032	Yes	0.33	0.26	–0.066	0.22	0.38	0.167*
Corruption	–0.092*	–0.055*		0.60	0.51	–0.090	0.26	0.31	0.044
Crime	–0.057*	–0.025		0.48	0.32	–0.154	0.27	0.23	–0.033
Policy uncertainty	–0.027	–0.015		0.52	0.65	0.138*	0.42	0.60	0.182*
Macro-economic Instability	–0.023	–0.061*		0.59	0.71	0.118	0.50	0.48	–0.022

* indicates statistical significance at the 5% level; tests adjusted for clustering on country.
Note: Column reports the statistical significance of the nontransition economy and transition economy slope coefficients at the 5 percent level. Low income is defined as log GDP per capita = 5.6, about $270; high income is defined as log GDP per capita = 9.3, about $11,000.

ANNEX TABLE 5.3.3

Priority and quantitative measures of business environment constraints for nontransition economies

	Size (log L)	Expand-ing	Con-tracting	Services	Con-struction	Privatized	State-owned	Foreign	Exporter
Infrastructure (composite)	0.010*	0.005	–0.010	–0.016	–0.003	0.010	0.017	0.039*	0.028*
Telecoms	0.006*	0.017*	–0.010	0.049	0.030	0.017	0.007	0.032*	0.023
Electricity	0.005	0.006	–0.008	–0.038*	–0.020	–0.003	–0.005	0.014	0.018
Transport	0.015*	0.019*	0.003	–0.056*	–0.026*	–0.009	0.001	0.030*	0.030*
Land access	–0.002	0.024*	0.003	–0.065*	0.001	–0.058*	–0.068	–0.023	–0.027*
Skills	0.021*	0.054*	0.045*	–0.020	0.008	0.032	0.028	–0.031*	0.000
Tax rates	–0.001	0.025*	0.034*	–0.009	–0.008	–0.021	–0.098*	–0.021	–0.007
Tax administration	0.001	0.012	0.027*	0.009	0.035*	–0.042*	–0.077*	0.023	0.030*
Finance (composite)	–0.021*	0.054*	0.076*	–0.050	0.017	0.040	0.020	–0.118*	0.011
Access to finance	–0.025*	0.060*	0.072*	–0.067*	–0.002	0.025	–0.006	–0.114*	0.007
Cost of finance	–0.009*	0.047*	0.071*	–0.030	0.007	0.014	0.008	–0.099*	0.007
Labor regulation	0.030*	0.006	0.040*	–0.029*	0.009	0.040	0.028	0.009	0.024*
Customs	0.028*	0.034*	0.019*	–0.033*	–0.079*	–0.047	–0.041	0.098*	0.115*
Licenses	0.010*	0.038*	0.014	0.049	0.014	–0.030	–0.046*	0.012	0.001
Legal	0.015*	0.020	0.038*	0.002	0.008	0.015	–0.041	–0.006	0.029*
Corruption	0.001	0.035*	0.024*	0.029	0.049*	–0.005	–0.046	0.007	0.008
Crime	0.002	0.003	–0.013	0.060*	0.023	–0.006	–0.036	0.000	–0.014
Policy uncertainty	0.014*	0.042*	0.065*	0.002	0.000	0.048	–0.053	0.011	0.010
Macro-economic instability	0.011*	0.039*	0.063*	0.004	–0.027	0.044	–0.053	–0.011	0.038*
Power outages (y/n)	0.007	0.034*	0.022*	–0.048*	–0.097*	–0.047*	–0.020	–0.001	0.002
Water supply outages (y/n)	–0.007*	0.014*	0.002	–0.008	–0.010	–0.026	–0.013	–0.004	–0.006
Bribes (y/n)	0.005	0.047*	0.066*	0.013	0.084*	–0.026	–0.103	–0.014	0.011
Don't report all sales (y/n)	–0.034*	0.023*	0.006	–0.040	0.006	–0.046	–0.127*	–0.106*	–0.028
Tax gifts (y/n)	0.004	0.027*	0.031*	–0.015	0.036	–0.028	–0.047	–0.031*	–0.002
Contract gifts (y/n)	–0.006	0.033*	0.044*	0.024	0.038	0.003	0.014	–0.022	–0.023*
Security costs (y/n)	0.055*	0.025*	0.032*	0.057*	0.021	0.012	–0.022	0.015	0.024*
Crime losses (y/n)	0.028*	0.022*	0.024*	0.048*	0.076*	–0.009	–0.030	–0.005	–0.019

* indicates statistical significance at the 5% level; tests adjusted for clustering on country.
Note: Coefficients are marginal effects relative to the omitted category, except for size (log employment), which is an elasticity.

ANNEX TABLE 5.3.4

Priority and quantitative measures of business environment constraints for transition economies

	Size (log L)	Expand-ing	Con-tracting	Services	Con-struction	Privatized	State-owned	Foreign	Exporter
Infrastructure (composite)	–0.005*	0.002	–0.014	–0.029*	–0.042*	0.000	0.036*	0.006	–0.011
Telecoms	–0.010*	0.004	–0.012	–0.007	–0.019	0.006	0.029*	0.016	0.005
Electricity	–0.005*	0.002	–0.012	–0.049*	–0.072*	–0.008	0.027*	–0.002	–0.017
Transport	0.002	0.011	–0.017	–0.017	–0.017*	–0.017	–0.006	0.014	0.021*
Land Access	0.006*	0.026*	–0.007	–0.016	0.040*	–0.046*	–0.028	0.011	–0.007
Skills	0.024*	0.049*	0.034*	–0.046*	–0.018	–0.018	0.015	0.017	0.004
Tax rates	–0.001	0.008	0.028*	–0.020	0.013	–0.001	–0.095*	–0.017	–0.008
Tax administration	–0.002	0.015	0.008	–0.015	0.021	–0.031*	–0.075*	0.009	0.028*
Finance (composite)	–0.019*	0.023*	0.053*	–0.076*	–0.024	0.002	0.015	–0.113*	0.018
Access to finance	–0.020*	0.008	0.027	–0.069*	–0.010	–0.017	0.018	–0.105*	0.028*
Cost of finance	–0.007*	0.023*	0.053*	–0.060*	–0.019	0.016	–0.035*	–0.086*	0.009
Labor regulation	0.023*	0.016	0.006	–0.031*	–0.016	–0.028*	–0.012	0.015	0.013
Customs	0.018*	0.030*	0.006	–0.028*	–0.088*	–0.062*	–0.134*	0.111*	0.144*
Licenses	0.006*	0.023*	0.015	0.005	0.029	–0.024	–0.103*	0.034*	0.028*
Legal	0.018*	0.000	0.022*	–0.003	0.016	–0.022	–0.014	0.015	0.016
Corruption	0.000	0.026*	0.032*	0.002	0.048*	–0.038*	–0.081*	0.010	0.014
Crime	–0.003	0.007	0.006	0.055*	0.024*	0.003	0.004	–0.038*	–0.033*
Policy uncertainty	0.007	0.007	0.040*	–0.009	–0.015	–0.003	–0.022	0.011	0.030*
Macro-economic instability	0.003	0.005	0.024*	–0.021	–0.029	–0.012	–0.043*	0.032*	0.059*
Power outages (y/n)	–0.005	0.058*	0.054*	–0.015	–0.097*	–0.043*	–0.060*	–0.024	–0.009
Water supply outages (y/n)	–0.003	0.032*	0.034*	0.017	–0.018	–0.028*	–0.029*	–0.014	–0.012
Bribes (y/n)	0.002	0.046*	0.032*	0.020	0.105*	–0.052*	–0.201*	–0.021*	0.031*
Don't report all sales (y/n)	–0.032*	0.068*	0.031*	–0.004	0.030	–0.065*	–0.158*	–0.080*	0.002
Tax gifts (y/n)	–0.004	0.031*	0.011	–0.002	0.018	–0.069*	–0.181*	–0.029	0.008
Contract gifts (y/n)	0.003	0.038*	0.034*	0.000	0.163*	–0.062*	–0.149*	–0.013	0.017
Security costs (y/n)	0.065*	0.044*	0.058*	0.043*	0.016	0.035*	–0.006	0.036*	0.028*
Crime losses (y/n)	0.044*	0.023*	0.055*	0.057*	0.105*	–0.026*	–0.023	–0.044*	–0.039*

* indicates statistical significance at the 5% level; tests adjusted for clustering on country.
Note: Coefficients are marginal effects relative to the omitted category, except for size (log employment), which is an elasticity.