THE EFFECT OF PRIVATIZATION AND GOVERNMENT POLICY ON COMPETITON IN TRANSITION ECONOMIES*

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Abstract

Recent studies have emphasize how important role competition is for enterprise productivity in Eastern Europe and Central Asia. This paper looks at the effectiveness of government policy in promoting competition in these countries. Improving enforcement of competition law and reducing barriers to trade increase competition. Firms are considerably less likely to say that they could increase prices without losing many customers when competition policy is better enforced and when tariffs are lower. In contrast, there is little evidence that privatization increases competition in of itself. State-owned enterprises face no less competition than other enterprises and the overall level of competition is no lower in countries with more state-owned enterprises. Although privatization might have other benefits, there is little evidence that it will increase competition unless governments take complementary actions such as reducing trade barriers or enforcing competition laws.

Keywords: Privatization, Competition Law, Competition, Trade Policy

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Introduction

Many studies of the transition economies of Eastern Europe and Central Asia have found that competition plays a vital role with respect to enterprise productivity. A recent meta-analysis of firm-level studies in transition economies concluded that increased competition results in improved productivity (Djankov and Murrell, 2002). Furthermore, the effect of competition is large. Using firm-level data from four transition economies, Bastos and Nasir (2004) find that competition affects firm performance more than the quality of infrastructure, corruption or the burden of regulation.

Although this suggests that governments should promote competition, competition is an outcome of policy not a direct policy in itself. That is, although government policies affect competition, governments do not directly control it. So what can governments do to promote competition? Reducing trade barriers is probably the least controversial policy prescription: there is a strong consensus that trade liberalization increases domestic competition (see Tybout, 2003). The effectiveness of direct government policies to promote competition, such as competition law, is more controversial. When competition laws are poorly enforced or competition policy is heavily politicized, they might have a minor, or even negative, impact on competition.

Other less direct policies might also be important. It is often asserted that privatization can encourage competition—due to soft budget constraints and other government protection, state-owned enterprises can avoid competitive pressure. In addition to affecting productivity directly, privatization might therefore also increase productivity by increasing competition.

Government policies that discourage firm entry and exit also affect competition. If new enterprises are unable to get financing or the bureaucratic procedures to start a business are particularly burdensome, new businesses might be discouraged from entering the market, resulting in less competition. Similarly, if bankruptcy procedures are burdensome or governments prop up failing firms through subsidies or by allowing companies to run arrears, failing firms will fail to exit the market. As a result, resources will not be reallocated to their most productive uses and competition might suffer.

Using enterprise-level data from 27 low and middle-income countries in Europe and Central Asia, this paper assesses how much government ownership, competition policy, trade policy and other aspects of government policy—including barriers to entry and financial sector development—affect competition. As

expected, the empirical results show that competition is greater in countries with more effective competition policy and lower barriers to trade. However, other aspects of policy are also important. In particular, access to finance appears to play an important role in promoting competition. In contrast, there is little evidence that competition is greater in countries where it is less burdensome to create a new business or in countries that have made more progress with privatization.

The Impact of the Ownership and Policy on Competition

Many aspects of government policy affect domestic competition. In the transition economies, privatization is often thought to be one of the most important policies for promoting competition. If governments use state-owned enterprises to provide jobs or subsidies to their supporters (Shapiro and Willig, 1990; Vickers and Yarrow, 1991), state-owned enterprises will be unable to compete in competitive markets. To keep operating, they will therefore need subsidies, government guaranteed debt to cover their losses, or direct protection from competition. This can be provided by making entry more difficult or restricting international trade (Boycko and others, 1996; Shleifer and Vishny, 1994). Policies that promote private ownership might therefore be an important element of competition policy in the transition economies. Another area of government policy that affects competition is competition law. Although the goals, approach and scope of competition law vary between countries, the primary goal is to maintain and encourage competition and to prevent firms from controlling markets. But even in industrialized economies, there is debate over whether these laws are successful. Based upon a survey of existing work and some new empirical work on the effect of mergers on price markups, Crandall and Winston (2003, p. 4) conclude that there is 'little empirical evidence that past [anti-trust policy] interventions have provided much direct benefit to consumers or significantly deterred anti-competitive behavior' in the United States.

The effectiveness of competition law is even more controversial in the transition economies, where it is perceived to be less effective than in high-income economies. A recent survey (World Economic Forum, 2002) asked enterprise managers about the effectiveness of anti-monopoly policy in their country, giving a score on a 7-point scale where 1 meant 'lax and not effective at promoting competition' and 7 meant 'effective and promotes competition'. The average score in the transition economies of Europe and Central Asia was 3.4, the average score in high-income OECD countries was 5.1

Empirical studies that have looked at the effectiveness of competition law in low and middle income countries have reached mixed conclusions. A cross-country study of competition law in 42

developed and developing countries found little evidence that competition law directly affected price markups, which were no lower in countries with competition laws in place than they were in other countries (Kee and Hoekman, 2003). However, a second study that looked at the impact of competition policy in Eastern Europe and Central Asia concluded that enterprises were more likely to have no competitors when competition law was weak or poorly enforced (Vagliasindi, 2001). One difference between these two papers, other than the choice of dependent variable, is that whereas the first simply uses a dummy variable indicating whether the country had a law or not, the second uses a broader measure that takes implementation into account.

Privatization and competition law are not the only ways that government policy might affect competition. Whereas competition law is generally intended to prevent firms from gaining control of markets, other government policies reduce competition. One notable way that governments do this is by preventing or making it more expensive for foreign goods to be sold on the domestic market. Tariff and non-tariff barriers to international trade make it more costly for foreign firms to enter domestic markets and consequently reduce competitive pressure on domestic firms. Many studies have found results that are consistent with the idea that trade restrictions reduce competition. Hoekman *et al*. (2001) conclude, based upon a cross-country analysis of 41 developed and developing countries, that average price markups are lower in countries with greater import penetration. Kee and Hoekman (2003) reach a similar conclusion.

Government policies that restrict entry can also reduce competition. In some cases, governments restrict entry by awarding legal monopolies. In other cases, government policies increase entry costs, reducing the number of new entrants. In most countries, firms have to fulfill government requirements such as registering with tax and statistical agencies, obtaining operating licenses, or publishing the company's articles of association in an official journal before they can start operating. When the cost of meeting these regulatory requirements is high—as it can be in many transition economies—the requirements might reduce competition. Business registrations costs are high in many transition economies. Whereas it takes only about 31 days and costs only about 10 percent of per capita GNI on average to register a business in high-income OECD countries, it takes 48 days and cost 22 percent of GDP in Eastern Europe and Central Asia (World Bank, 2003). Formal entry restrictions, however, are not the only government policies that might deter entry. When access to finance is difficult, new enterprises might find it difficult to get the financing they need to start operations and existing firms might find it difficult to expand their operations. In this way, weak financial sector performance can undermine competition in the real sector of the economy. Similarly, if firms are unable to get utility

connections, this might prevent new firms from entering and existing firms from opening new plants or expanding their operations. Finally, when poorly performing firms are propped up by government subsidies, inefficient firms will fail to close down. As a result, capital will not be allocated to its most efficient uses and competition might be reduced.

In summary, many aspects of the government policy affect domestic competition. In addition to the obvious areas such as privatization, competition law and trade policy, government policies that promote financial sector development, that reduce entry and exit restrictions and that allow firms to gain access to utility services might also be important.

Empirical Methods and Results
Data

The data used in this study is enterprise-level data from 27 countries in Eastern Europe and Central Asia. The European Bank for Reconstruction and Development and the World Bank collected the data in 2002 for the Business Environment and Enterprise Performance Survey II (BEEPS II). Enumerators interviewed firm managers in face-to-face meetings that were administered in a uniform way across countries. Firms were randomly selected, with quotas to ensure that they were broadly representative of the country's economy. To ensure comparability between firms, and since we are interested in the effect of trade policy, we restrict the sample to manufacturing firms. This data is supplemented with additional data from the World Bank and the European Bank for Reconstruction and Development. Tariff data is obtained from the UNCTAD TRAINS database. Means of the dependent and independent variables are presented in Table 1.

Econometric Approach

To look at the effect of the policy on competition, we estimate the following equation:

$$Competition\ Index_{ijk} = \delta_1\ tariff_{jk} + \delta_2\ competition$$
$$policy_j + \delta_3 Policy_{jk} + \beta x_{ijk} + \gamma z_j + \lambda_j + \eta_k + \varepsilon_{ijk} \quad (1)$$

The competition index used in the analysis is an index representing the amount of competition that firm *i* in country *j* and sector *k* faces. Higher values on the indices represent higher levels of competition. The index represents that amount of *domestic* sales that the enterprise manager believes the firm would lose if it raised prices by 10 percent in real terms, while its competitors did not. A "1" on this 4-point scale means that the manager believes that the firm would not lose any sales, while a "4" means that the manager believes that many of its customers would buy from its competitors instead.

This variable is a limited dependent variables that take four distinct values. Since the numbers are rankings, but are not count data, the equation is estimated as an ordered Probit model (i.e., it is

assumed that the error term, ε_{ijk}, has a normal distribution). One concern is that error terms might be correlated for enterprises within the same country. Since this can result in the standard errors appearing to be artificially small, it can inflate the t-statistics, especially on country level variables (Moulton, 1986). To control for this, results are presented using Huber-White standard errors, allowing error terms to be correlated within countries (i.e., with 'clustered' standard errors).[1]

The main variables of interest are the variables describing government policy. To control for trade policy, the regressions include the tariff rate, $tariff_{jk}$, which is the average tariff rate for industry j defined at the 4-figure ISIC level in country k. Higher tariffs mean that the company is better protected from competition from imports in the domestic economy. In addition to this, the regressions also include a variable representing competition policy, the *EBRD competition policy index* (European Bank for Reconstruction and Development, 2003). Higher values on this index represent fewer barriers to entry and better enforcement of stronger laws. Because the variable is defined at the country level, the index has to be omitted when country dummies are included in the analysis.

The analysis also includes a country-level variable representing the number of days to register a new business and a country level variable representing progress with privatization. To the extent that excessive registration procedures discourage firm entry, we might expect competition to be less in countries with restrictive business registration procedures. This variable comes from the World Bank's Doing Business database (World Bank, 2003). It is calculated by compiling a list of all procedures that an entrepreneur has to complete (e.g., obtaining permits and filing with all requisite government agencies) and calculating the money and time costs of complying with these procedures. They are calculated for a standard business that performs general industrial or commercial activities (e.g., no foreign trade, no special environmental procedures, and no products subject to special tax regions). It is only available at the country-level and, therefore, is omitted when country dummies are included. The progress with privatization index is similar to the index of competition policy (European Bank for Reconstruction and Development, 2003). High values indicate greater progress. The variables also include a series of additional variables representing different aspects of policy in these countries. Since many policies might affect competition and because many are missing for some firms and tend to be highly correlated, we use principal component analysis to combine multiple variables into several indices. The indices are:

Finance Index. This variable represents the enterprises' access to financing. In general, we would

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[1] See Huber (1967) and Rogers (1993).

expect competition to be greater when access to financing is easier. If efficient firms are unable to get loans to expand their production, and new firms are unable to get access to start-up funds, then existing firms will generally face more modest levels of competition.

This variable is constructed using principal components analysis to combine three variables: the percent of investment financed through retained earnings, a dummy variable representing whether the firm has a bank loan, and the percent of working capital financed through trade credit. Access to financing is worse when firms have to finance investment through retained earning and are unable to get bank loans. Higher values on the index represent greater access to credit.

Soft Budget Constraint Index.[2] This variable represents the softness of the budget constraint. In general, government subsidies that allow inefficient enterprises to keep operating will have a negative impact on competition. Efficient firms will be unwilling to expand their operations and new firms will be discouraged from entering. The index is constructed using principal components analysis, combining two variables: enterprise arrears as a percent of sales and government subsidies as a percent of sales. Higher values on the index represent softer budget constraints.

Infrastructure Index. This variable represents the time it takes to get connected to water, telephones, and electricity. If it takes a long time to get utility service, new entrants might find it difficult to start operating and existing firms might find it difficult to expand their operations. This variable is constructed using principal components analysis to combine three variables: days to get a telephone connection, days to get a power connection, and days to get a water connection.

Higher values mean longer delays. Because firms only answer these questions if they have tried to get a connection within the past two years, this variable is only available for a small number of firms. To avoid losing firms, this variable is calculated as an average over all firms in the same region, country, and sector.

Burden of Regulation. This variable represents the burden of regulation on the enterprise. It is less clear that this will have a significant impact on competition than the other variables. Although burdensome regulation might make all firms less efficient, it is unclear that it would result in less competition. However, it seems plausible that regulation might impact some firms, especially small firms and new entrants, more than others potentially resulting in less competition. This variable is constructed using principal components analysis to combine three variables: the percent of senior management time spent dealing with government officials, inspections and regulations; unofficial or irregular payments to

government officials; and an index representing how easy it is to get information on laws and regulations. Higher values on the index mean more burdensome regulation. A serious concern about these variables is that they might be endogenous. For example, enterprises that are particularly efficient may be less worried about competition and, if they are more profitable on average, might have better access to finance. To control for the potential for reverse causation, we use the standard approach of replacing the variables with averages for all enterprises in the same sector and region of the country. This variable will be less likely to be endogenous than the enterprises' own values of the indices and is highly correlated with the enterprises' own values.

In addition to the main variables of interest, the analysis includes a series of country (λ_j) and sector dummies (γ_k). The country dummies are included to control for unobserved differences between countries that affect the level of competition that firms in that country face. For example, competition from imports might be less in poor countries or in countries with higher natural barriers to trade (e.g., countries that are more remote). If these characteristics were correlated with the policy variables, the coefficients on the policy variables might be biased.

In some regressions, these country dummies are replaced with a small set of country controls (z_j). Because we have data from only 27 countries, only a relatively modest number of country controls can be included at a time. The country level controls are per capita GDP, size and population (to proxy for natural barriers to trade).

Because the country dummies control for country differences more completely than the country controls, these results are generally preferable to the results including country controls for variables such as tariff levels that are not defined at the country level. The sector dummies are included to control for sector characteristics that might affect the level of competition in the sector. For example, sectors characterized by greater economies of scale might be less competitive than other sectors. To the extent that policy makers take this into account when setting tariff rates (e.g., if they tend to protect large firms that can better lobby for protection), the results might be biased if these variables were omitted.

In addition to these variables, the regressions also include a series of enterprise-level controls (x_{ijk}). The enterprise level controls include dummies indicating that the firm is partly foreign-owned, partly government owned, a de novo private enterprise (as opposed to a privatized enterprise), number of workers (as a proxy for size) and a dummy indicating that the enterprise exports.

The variable of most interest is the variable representing government ownership—if governments protect state-owned enterprises from competition, state-owned enterprises should face less competition than similar private enterprises.

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[2] Vagliasindi (2001) finds that hardening budget constraints increases competition.

Econometric Results

Average Tariff Rate. Enterprises were more likely to report that they would lose domestic sales to their competitors if they raised domestic prices by 10 percent and their competitors did not in countries where tariffs are lower. The coefficient on tariff rates – at the 4-figure ISIC industry level – is statistically significant and negative in all models (see Table 2). The dummies and controls are included to capture country-level differences that might affect the level of competition in the country as a whole. The regressions also include a set of sector dummies, also at the 4-figure ISIC industry level, to control for sector differences (e.g., related to economies of scale in the sector that might affect the level of competition in the sector). The parameter estimates suggest that the impact of tariff reductions is modest. If tariffs were set at the median level for the sample for all goods (10.5 percent), the parameter estimate suggest that the average probability that an enterprise in the sample would report that they would expect that many of their customers to switch to their competitors if they raised prices by 10 percent and their competitors did not was 27.7 percent.[3] If tariffs were uniformly set at level of the 80th percentile (18.3 percent), the average probability would be 25.1 percent. If tariffs were uniformly set at the level of the 20th percentile (5 percent), the average probability would be 29.4 percent. Increasing a uniform tariff from 5 percent to 18.3 percent would therefore reduce the probability that the enterprise would lose many of its customers by 4.3 percentage points – about a 15 percent reduction.

EBRB competition policy index. Enterprises were also more likely to report that they would lose customers to competitors if they raised domestic prices by 10 percent and their competitors did not in countries where competition law is established, policy is better enforced, and entry by new firms is easier. The coefficient on the competition policy index is positive and statistically significant at conventional significant levels (see column 2 of Table 2). This indicates that competition is greater where competition law is better enforced and entry restrictions have been eased. Since the index of competition policy is defined at the country-level, it has to be omitted when country dummies are included in the regression (i.e., it is collinear with the country dummies).

The parameter estimates also suggest that improving competition policy has a reasonably large impact on competition. If the competition policy index was set at the median level in all countries (2.3 on the

4.0 index), the parameter estimate suggest that the average probability that an enterprise in the sample would report that it would expect that many of its customers to buy from its competitors if it raised prices by 10 percent and their competitors did not was 27.2 percent. If the index were set at the level of the 20th percentile (2.0), the average probability would be 25.3 percent. If it were set at the level of the 80th percentile (2.7), the average probability would be 29.9 percent. Increasing the quality of competition policy from the level observed in Georgia or Russia (2.0) to the level observed in Estonia or Slovenia (2.7) would increase the average probability that an enterprise would expect to lose many customers to its competitors if it raised prices by 10 percent by 4.6 percentage points – about an 18 percent increase.

One concern about the competition policy index is that although it is based partly upon objective criteria (i.e., whether competition legislation is in place), it is partially subjective (e.g., the difference between a '3' and a '4' is based on the difference between 'some enforcement' and 'significant enforcement').[4] This might be problematic if the actual level of competition in the economy affects perceptions about competition policy. To see if the results are robust to the inclusion of a more objective measure of competition policy, we replace the index with an objective measure of anti-merger law based upon the measure of merger notification requirements described in Nicholson (2003), with higher values representing stricter laws.[5] When this variables is included in place of the competition policy index, the coefficients on the competition law index is positive—indicating that domestic price competition is greater in countries with stricter anti-merger laws. However, the coefficient is only statistically significant at conventional levels in one of the two regressions (when the enterprise's individual measure of access to finance is included instead of the sectoral/country average). One possible interpretation of this weaker result might be that the enforcement of policy matters as much as the formal content of the law.

Privatization and State-ownership. There is little evidence at either the macroeconomic level or at the enterprise level that state-ownership reduces competition. The coefficients on the dummy variable indicating state-ownership and the index of privatization are both statistically insignificant. This suggests that competition is no less for individual state-owned enterprises and that the overall level of privatization does not impact the overall level of competition in the economy.

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[3] The average probabilities are calculated using the coefficients from Table 2, column 2. For each enterprise in the sample, the probability that the enterprise would report that many customers would buy from their competitors instead if they increased prices by 10 percent is calculated replacing the actual tariff rate for that sector and country by the sample median, the 80th percentile tariff rate, or the 20th percentile tariff rate.

[4] The 2003 Transition report states '[t]he classification system is a stylized reflection of the judgment of the EBRD's Office of the Chief Economist.' See European Bank for Reconstruction and Development (2003).

[5] The index is coded as "0" if the country has no merger notification law, coded as "1" if merger notification is voluntary, coded as "2" if post-merger notification is mandatory, and "3" if pre-merger notification is mandatory. Information on notification laws was obtained from White and Case (2004)

Access to Finance. Improving access to finance increases domestic competition. The coefficient on the variable representing access to finance is positive and statistically significant whether country dummies or country controls are included and when other policy related variables are included. One serious concern about this variable, discussed earlier, is the potential for reverse causation. If competition reduces rents in the domestic economy, and hence reduces enterprise profits, competition might affect the enterprises' access to finance. That is, we would expect enterprises in less competitive sectors to be more profitable and, hence, to have better access to finance. Further, the most efficient and technologically advanced firms might be less concerned about competition and have better access to finance than other firms. Hence, if this were the case, we would expect the coefficient on access to finance to be negative. Because of these concerns, we replace the enterprises' own value for this index with the average value for enterprises in the same country, sector, and region. This approach has been used is several studies that have looked at the effect of the policy on enterprise behavior.[6] When we do this, the coefficient on access to finance increases in magnitude and remains statistically significant. The fact that the coefficient becomes more positive after controlling for reverse causation is consistent with the idea that more efficient firms face lesser competition and have better access to finance.

The parameter estimates suggest that improving access to finance would have a relatively modest impact on competition. If the access to finance index was set at the median level in all countries, the parameter estimate suggest that the average probability that an enterprise in the sample would report that it would expect that many of its customers to buy from its competitors if it raised prices by 10 percent and their competitors did not was 26 percent. If the index were set at the level of the 20th percentile, the average probability would be 25 percent. If it were set at the level of the 80th percentile, the average probability would be 26.7 percent. Increasing access to finance from the about the average level observed in Albania to the level observed in Poland would increase the average probability that an enterprise would expect to lose many customers to its competitors if it raised prices by 10 percent by 1.7 percentage points – about a 7 percent increase.

Other Policy Variables. In contrast to the measure of access to finance, the coefficients on the other policy variables are statistically insignificant at conventional significance levels. This is true whether the enterprise's own levels of these variables or sector averages are included. These results suggest that the burden of regulation, delays in getting infrastructure connections and soft budget constraints do not deter entry enough to have a significant impact on competition.

In addition to these measures, the regressions with country controls also include a direct measure of the cost of registering a business (World Bank, 2003). Since this variable is only available at the country-level, it can only be included when country controls are included instead of country dummies. The coefficient on this variable is statistically insignificant in both regressions with country controls.

Other enterprise-level controls. For the most part, the enterprise-level controls are statistically insignificant at conventional significance levels. The coefficients on enterprise size and the dummy variables for foreign-owned and de novo private (i.e., newly established private rather than privatized) enterprises were statistically insignificant in all regressions.

Firms that export tend to feel less competitive pressure than other firms—at least in domestic markets. They were less likely to report that they would lose many customers in domestic markets if they raised prices than non-exporters were. It is important to note that most exporters sell a significant portion of their output on domestic markets. The median exporter exported only about 35 percent of output and only 9 percent of exporters (5 percent of firms) exported all their output. Because exporters tend to be more efficient and technologically advanced than domestic firms that do not export, it might not be surprising they generally feel less pressure from other domestic enterprises than non-exporters do.[7]

Other macroeconomic controls. To include the country-level variables representing competition policy and the cost of business registration, the country dummies are replaced with country controls. The coefficients on the country level controls (per capita GDP, population, and area) were generally statistically insignificant. These variables were chosen as proxies for natural barriers that might affect trade. For example, large countries (in terms of area and population) might trade less than smaller countries because they have greater natural resources or because they produce a greater range of goods within their border (i.e., economies of scale).

Conclusion

Recent studies have emphasized the important role that competition plays with respect to enterprise productivity. One recent study found that competition had a greater effect on enterprise productivity that any other area of the investment climate (Bastos and Nasir, 2004). The most obvious ways of increasing competition are to reduce trade barriers and improve competition law. The results from this paper emphasize the importance of these policies. Reducing tariffs would modestly increase competition in the transition economies of Europe and Central Asia.

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[7] There is a large literature showing that exporters are more efficient than non-exporters. See Tybout (2003) and World Bank (2002) for recent surveys of the literature.

[6] See, for example, Svensson (2003).

Cutting the average tariff rate from 18.3 percent to 5 percent (80th to 20th percentile) would increase the probability that the average enterprise would say that they would lose many customers if they raised prices and their competitors did not by 4 percentage points. Improving enforcement of competition law would also increase competition. Firms were considerably less likely to say that they could increase prices without losing many customers when competition policy was better enforced. In addition to these policies, the results also suggested that improving access to financing would increase competition. If new firms cannot finance their start-up costs and existing firms cannot finance expansion, competitive pressure on other firms will be reduced. Other factors appear less important. There was no evidence that competition was greater when budget constraints were harder, when it was easier to get infrastructure connections or when the burden of regulation was lesser. There was also no evidence that registration procedures are a significant enough barrier to entry that they affect competition in the domestic economy. In contrast, there is little evidence that privatization will improve competition in of itself. State-owned enterprises do not appear to face less competition than other enterprises and the overall level of competition is no lower in countries with more state-owned enterprises. Although privatization might have other benefits, there is little evidence that it will increase competition unless governments take complementary actions such as reducing trade barriers or enforcing competition laws.

References

1. Bastos, Fabiano, and John Nasir. 2004. "Productivity and the Investment Climate: What Matters Most?" Policy Research Working Paper 3335. World Bank, Washington DC.
2. Boycko, Maxim, Andrei Shleifer, and Robert W. Vishny. 1996. "A Theory of Privatization." *Economic Journal* 106(435):309–319.
3. Crandall, Robert W., and Clifford Winston. 2003. "Does Antitrust Policy Improve Consumer Welfare? Assessing the Evidence." *Journal of Economic Perspectives* 17(4):3–26.
4. Djankov, Simeon, and Peter Murrell. 2002. "Enterprise Restructuring in Transition: A Quantitative Survey." *Journal of Economic Literature* 40(3):739–792.
5. European Bank for Reconstruction and Development. 2003. *Transition Report 2003: Integration and Regional Cooperation*. London, UK: European Bank for Reconstruction and Development.
6. Hoekman, Bernard, Hiau Looi Kee, and Marcelo Olarreaga. 2001. "Markups, Entry Regulations, and Trade: Does Country Size Matter?" Policy Research Working Paper 2662. World Bank, Washington, D.C.
7. Huber, Peter J. 1967. "The Behavior of Maximum-Likelihood Estimates under Non-Standard Conditions." In L. M. LeCam and J. Neyman, eds., *Proceedings of the Fifth Berkeley Symposium in Mathematical Statistics and Probability.* Berkeley, CA: University of California Press, pp. 221--233.
8. Kee, Hiau Looi, and Bernard Hoekman. 2003. "Imports, Entry, and Competition Law as Market Disciplines." Policy Research Working Paper 3031. World Bank , Washington, D.C.
9. Moulton, Brent R. 1986. "Random Group Effects and the Precision of Regression Estimates." *Journal of Econometrics* 32(3):386–397.
10. Nicholson, Michael W. 2003. "Quantifying Antitrust Regimes." Federal Trade Commission: Washington, D.C. Processed.
11. Rogers, W. H. 1993. "Regression Standard Errors in Clustered Samples." *Stata Technical Bulletin Reprints* 3(1):88–94.
12. Shapiro, Carl, and Robert D. Willig. 1990. "Economic Rationales for Privatization in Industrial and Developing Countries." In Ezra Suleiman and John Waterbury, eds., *The Political Economy of Public Sector Reform.* Boulder, CO: Westview Press, pp. 22--54.
13. Shleifer, Andrei, and Robert W. Vishny. 1994. "Politicians and Firms." *Quarterly Journal of Economics* 109(4):995–1025.
14. Svensson, Jakob. 2003. "Who Must Pay Bribes and How Much? Evidence from a Cross Section of Firms." *Quarterly Journal of Economics* 118(1):207–230.
15. Tybout, James R. 2003. "Plant- and Firm-Level Evidence on "New" Trade Theories." In E. Kwan Choi and James Harrigan, eds., *Handbook of International Trade.* Malden, MA: Blackwell Publishers.
16. Vagliasindi, Maria. 2001. "Competition across Transition Economies: an Enterprise-level Analysis of the Main Policy and Structural Determinants." Working Paper 68. European Bank for Reconstruction and Development, London UK.
17. Vickers, John, and George Yarrow. 1991. "Economic Perspectives on Privatization." *Journal of Economic Perspectives* 5(2):111–132.
18. White and Case LLP. 2004. *Worldwide Antitrust Merger Notification Requirements: The Guide to 134 Jurisdictions 2003-2004 Edition.* Washington DC: White and Case.
19. World Bank. 2002. *Globalization, Growth and Poverty*. Washington DC: World Bank.
20. --------. 2003. *Doing Business in 2004*. Washington DC: World Bank.
21. World Economic Forum. 2002. *Global Competitiveness Report 2001/02.* Geneva, Switzerland: World Economic Forum.

Appendices

Table 1. Sample means and standard deviations

	Variable	Obs.	Mean	Std. Dev.
Competition Index				
Index of price competition	Index (0-4)	1621	2.56	1.08
Competition Policy				
Average Tariff Rate (4-figure ISIC)	---	1518	13.49	14.47
EBRD Competition Policy Index	Index (0-4)	1487	2.21	0.55
Entry Barriers				
Days to Register a New Business	Natural Log	1584	3.70	0.46
Country Controls				
Population	Natural Log	1633	16.37	1.30
Area in Squared Kilometers	Natural Log	1542	12.27	1.77
Per Capita GDP	Natural Log	1633	7.53	0.85
Enterprise Controls				
Workers	Natural Log	1565	4.08	1.66
Any Government Ownership	Dummy	1633	0.19	0.39
Any Foreign Ownership	Dummy	1633	0.21	0.41
De novo private enterprise	Dummy	1633	0.53	0.50
Exporter	Dummy	1626	0.51	0.50

Table 2. Impact of trade and competition policy on competition

	Domestic price competition (High values mean more competition)					
Observations	1184	1315	1403	1429	1128	1153
Country Dummies	Yes	Yes	Yes	Yes	No	No
Sector Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Competition and Trade Policy						
						-
Average Tariff Rate	-0.011***	-0.011***	-0.011***	-0.011***	-0.010***	0.010***
(at 4-fig ISIC industry level)	(5.37)	(5.10)	(6.22)	(6.24)	(3.21)	(3.05)
EBRD Competition Policy Index						
(index - higher values mean better policy)						
Policy Variables						
Access to Finance	0.056**		0.042*		0.048**	
(index - higher values mean greater access)	(2.15)		(1.96)		(2.27)	
Regulatory burden	0.016					
(index - higher values mean greater burden)	(0.44)					
Soft budget constraints	0.046					
(index - higher values mean greater burden)	(1.19)					
Access to Finance -- Sector Averages		0.082**		0.102***		0.139***
(index - higher values mean greater access)		(2.21)		(3.30)		(4.55)
Regulatory burden -- Sector Averages		0.061				
(index - higher values mean greater burden)		(1.32)				
Soft budget constraints -- Sector Averages		0.022				
(index - higher values mean greater subsidies)		(0.44)				
Infrastructure Delays -- Sector Averages		-0.006				
(index - higher values mean greater delays)		(0.40)				
Days to register a business					-0.024	-0.004
(Days)					(0.16)	(0.03)
Enterprise Controls						
Workers	-0.001	-0.012	-0.004	-0.019	0.002	-0.021
(natural log)	(0.04)	(0.34)	(0.10)	(0.51)	(0.04)	(0.53)
Any Government Ownership	-0.079	-0.105	-0.021	-0.036	0.001	-0.004
(dummy)	(0.71)	(1.32)	(0.22)	(0.42)	(0.01)	(0.04)
Any Foreign Ownership	0.135	0.095	0.106	0.079	0.033	0.002
(dummy)	(1.44)	(1.13)	(1.20)	(0.86)	(0.35)	(0.02)
De novo private enterprise	-0.076	-0.134	-0.081	-0.118	-0.098	-0.135
(dummy)	(0.95)	(1.60)	(0.94)	(1.39)	(1.07)	(1.56)
						-
Exporter	-0.252***	-0.268***	-0.273***	-0.244***	-0.236***	0.200***
(dummy)	(4.14)	(4.59)	(4.13)	(3.72)	(3.07)	(2.68)
Country Controls						
Population					0.026	0.050
(natural log)					(0.21)	(0.37)
Area					-0.061	-0.083
(natural log of squared km)					(0.68)	(0.88)
Per Capita GDP					0.000	0.000
(natural log -- US$)					(0.07)	(0.05)
EBRD Privatization Index					-0.168	-0.160
(index - higher values mean better policy)					(1.53)	(1.31)
Log-Likelihood	-1516.11	-1680.07	-1800.67	-1832.06	-1461.13	-1493.02

*** Sig. at 1% level   ** Sig. at 5% level   * Sig. at 10% level.   Note: Regressions are estimated using ordered probit estimation. T-statistics are in parentheses. Standard errors are Huber-White robust standard errors allowing error terms to be correlated within countries. Regressions include dummy variables indicating country and sector of operations (at 4-figure ISIC level).