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Direct Investment, Experimentation, and Corporate Governance in Transition Economies

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The transition of socialist to market economies has provided an old lesson that social transformation is driven by both economics and politics. That the design of privatization schemes varies by political conditions across countries is not especially surprising in the retrospect of history. The persistence of the state and its administration, of cultural values, and of social and political institutions influences the set of feasible evolutions of states even in transition.

Of course, if there were a known best way to organize an economy, the influence of politics and social values might be best seen as a constraint. But capitalism is not limited to any single type, nor can it be ruled out that a superior form of capitalist organization is yet untried. A desirable feature of any reform package is the allowance for an evolutionary path of trial, error, and adaptation. Given the ambiguity in knowing the best elements to adopt or create, politics and social institutions play an important role in guiding the process of evolution and transformation.

Foreign direct investment represents one of the most important ways by which knowledge of the relationship among organizational components is gathered and disseminated. One of the unique benefits of foreign direct investment is the experimentation of the core set of complementary practices that influence performance, and yet are transferable across borders. This role of experimentation is all the more valuable in environments where the rebuilding of institutions is still early.

It is not surprising that countries in transition from state socialism to capitalism are

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1See Frymand and Rapacyznski (1994) and Murrell (1992) for two alternative applications of evolutionary ideas to economic transition.
periodically ambivalent about direct investment. Foreign control is linked sometimes to the transfer of more productive methods that appear to violate social contracts or to displace other companies. If the perceived or real value is the transfer of wealth or control from a group of national citizens to foreign owners, the legitimacy of foreign direct investment is in question. Since multinational ownership concerns tradeoffs among components in a transnational system, conflict exists potentially between national developmental objectives and the package of foreign control and better methods offered by direct investment.

In this chapter, I highlight the role that foreign direct investment plays in influencing the economic evolution of the east and central European countries. The perspective I employ is evolutionary in the sense that social relationships inside and between firms are viewed as embodying economic knowledge and as governed by rules and institutions. Foreign direct investment contributes to the generation of new knowledge, partly through the provision of capital and technology, and partly through its effect on the transformation of the rules and institutions which govern the organization of work. The entry of foreign firms results, sometimes, in the destruction of the knowledge within and among existing domestic enterprises. This destruction can be positive when relationships among existing enterprises are depoliticized and when competition is increased. It can also be costly, such as when core firms in a supplier network disappear.

The paper is divided into parts. The first section presents an overview of the firm as governed by rules and embedded in a social context. In the next two sections, I review the theory of foreign direct investment, the data on investment in eastern and central Europe, and a statistical examination of the relationship between economic growth and direct investment in
general. In section four, I analyze the influence of direct investment on the governance, organization, and institutions of transition economies. The analysis in this section draws upon field research in Russia, Poland, East Germany, and Latvia. The fifth section suggests a set of policies regarding competition and ownership policies toward foreign entry.

The conclusions of this paper endorse a liberal policy towards encouraging direct investment flows. In part, the positive contribution of direct investment is achieved through the transfer of control to motivated foreign investors. But in the larger perspective of the overall economy, the benefits of direct investment are generated through the participation of foreign firms in the process of entry of new firms, the creation of competitive incentives in the product market, and the role of providing organizational solutions that serve as templates to be imitated by domestic firms.

I. Overview

In the short years following the turning towards capitalism, a number of important policy decisions have been introduced in the economies in transformation. Prices have been radically decontrolled in most countries, currencies have been made convertible, and the monopoly of international trade has been eliminated. The first policy target of getting the prices right by eliminating distortions has been achieved relatively early.

The subsequent stage of transformation involves a more complicated process. The issue

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As part of a research project organized by the Stockholm School of Economics, I participated in round table discussions with multinational corporations held in Stockholm, Latvia, and Poland. In addition, structured interviews were held with managers of five American multinational corporation in Moscow and Warsaw in September 1994, as well as interviews with Russian entrepreneurs. A research associate, Andy Spicer, conducted 34 background interviews with foreign and Russian managers, as well as with official and researchers at Russian government and research institutions.
is no longer creating prices that signal the relative scarcity of factors and goods. The challenge instead is the evolution of economic systems that encourage the acquisition and creation of new knowledge of organizing economic activities. In contrast to the ease by which the quality of information can be improved through decontrolling prices, the knowledge of how to organize and manage cannot be centrally mandated. The microeconomics of transformation are different from the macroeconomics of price determination.

Because knowledge of how to organize cannot be created through liberalization, the policy considerations are variables that can be only indirectly manipulated through reform policies regarding the decentralization of decision making to firms. For a number of reasons, private ownership is a policy objective that has been widely embraced as a way to depoliticize economic decision making, and to match ownership incentives with management.

In most central and east European countries, privatization programs have returned small enterprises to private hands. Varying but still generally large proportions of the large industrial concerns have been sold off or transferred to private hands through vouchers. By the end of 1994, the Czech Republic, Poland, Hungary, and Russia had succeeded in privatizing from 60% to 80% of their economies (CS First Boston, 1994; Economist, 1994).

Given the abundance of a well-educated work force, an obvious question is why are privatized firms not performing better in transformation economies. A candidate answer is that there is an absence of governance mechanisms to provide incentives to managers and workers to change their practices. The data and studies on transition economies point overwhelmingly to
the persistence of the past, as well as to political impasses to change.³

Privatization does not, in any obvious way, generate knowledge about how to organize and manage economic activities. It does create the potential for what Oliver Williamson (1985) calls "high-powered incentives" to operate inside the firm. Oversight of top management by corporate governance is one, and likely important element in the overall creation of incentives.

But the limits to change are not only political; they are also cognitive. The inherent difficulty in designing economic systems is that history has run only a small number of experiments. The past persists because change is, to use David Stark's expression, based on the recombination of what is already known. The strong tendency towards the status quo reflects the salience of social and cultural values, but also the limitations to identifying alternatives and working through their complex permutations. The incremental nature of change in economic development, as Nelson and Winter (1982) have eloquently argued, is a product of the cognitive limitations in identifying and understanding alternatives. Because these limitations are constraining, an economy involves partly through imitation, but also through a process of death and birth of firms.

The difficulty of knowing what and how to adopt new practices is even more complicated at the system level. The casual observation of the impressive wealth and capitalist variety of countries such as the United States, Germany, and Japan suggests that a frontier of best governance practices hardly presents the conventional smooth and marginal tradeoffs that allow for a bit more of one feature at the loss of another. The complexity of the problem of finding the

³See the studies by Coffee, Earle and Estrin, Pistor and Turkewitz, and Stark in this volume.
right elements in a governance system is characterized by trying to discover the existence of true versus fictional complements.

It is this linkage among elements that defeats the serial testing of individual institutional elements, as if they were components on a printed circuit board. Assume that an economic system consists of N possible elements, such equity or debt financing, quality circles, work councils, firm unions, and so on. An attempt to figure out the optimal complements requires then a search among N! permutations. As Romer (1992) notes, a deck of cards presents 52!, or 10^{66}, permutations. Working out a best combination, given the cost of experiments, is likely to drive the search towards incremental and evolutionary improvement.

A governance system should not only provide monitoring and incentives for performance. It should also encourage experimentation, adoption, and diffusion of better practices. Incentives are not only monitoring devices; they are also signals of what is important inside an organization. In part, the problem of experimentation can be reduced to trying to match assets to owners with the appropriate knowledge of how to organize work. The issue is not only the provision of control, but also the establishment of a market for experimentation.

One of the important ways by which the complexity of search and experimentation is reduced is the role played by imitation. In this context, direct investment is more than the extension of ownership and governance across borders. It presents a template of the feasibility of alternative modes of organization adapted to the domestic environment. It has a quasi-public good characteristic insofar that other firms may observe the successful outcome of organizational experiments from proven companies.

Of course, observations are incomplete and prone to error. Because organizational
knowledge is embedded in social relationships, it is difficult to replicate. Moreover, the knowledge of the firm spills over its boundaries to include its relations with suppliers and customers. A firm cannot easily imitate new ways because its existing economic knowledge is not separable from the social context. Direct investment, as a demonstration of an alternative model, is a powerful force for change because it acts an "existence proof" of viable paths of development and as agent in the competitive process by which inefficient firms are eliminated. But the adoption and adaptation of new practices, because of the complexity of re-organizing social relationships, cannot be rapid, no matter the competitive and governance incentives.

II. Foreign Direct Investment

Direct investment is a complex phenomenon that represents the transfer of organizational knowledge, as well as foreign competition across borders. Because balance of payments are the principal source of data on international capital transactions, direct investment is frequently identified as a financial flow. Given the large demand for capital in transition economies, the typing of direct investment as a capital flow is particularly common.

This classification is unfortunate, for direct investment may occur without any financial flows. The value of a license granted to a subsidiary to use a parent's technology is frequently capitalized and treated as an equity stake. No money crosses borders, there is no balance of payments entry (except for future royalties and fees), and yet an equity transaction with a claim to some ownership control has occurred.

Because the distinguishing feature of direct, as opposed to portfolio, investment is control over economic assets across borders, the standard treatment of explaining direct investment is to focus on the interaction between three sets of variables: location, ownership, and internalization
(Dunning, 1979). Location refers to the costs of producing in one country versus another. These costs consist of the payments to factors of input, of transportation and commercial policy (e.g. tariffs), and of the creation (or loss) of economies of scale.

Ownership captures the idea that a firm usually must possess knowledge that generates a competitive advantage. The Hymer condition states that since foreign firms are at a disadvantage relative to domestic firms, the profitability of a foreign investment must be based on the possession of an advantage that earns compensating economic rents (Hymer, 1960). This advantage may represent a one-off discovery of a particular process or product. But more likely, it represents a firm's capability to innovate and adapt, to manufacture or service, or to advertise and distribute.

In any transaction unconstrained by law or national regulation, a firm faces the choice between exploiting its advantage by ownership or by contract. Internalization is the decision of a firm to extend its advantage through an extension of ownership control. When this extension of a firm's boundaries crosses national borders, direct investment is the outcome.

A complementary, but more dynamic, way to categorize direct investment explanations is to consider the interaction among firms and locational advantages by looking at strategic motives. Explanations tend to emphasize one of three motives: push of competition, pull of the foreign market, or the benefits of coordination and combination of international assets. Each of these motives hold particular implications for transition economies.

'Push' Explanations and the Transfer of Advantage:

Direct investment consists frequently of the transfer of intangible knowledge, or assets, to a foreign market. Due to the importance of owning intangible competitive advantages, the
multinational corporation prevails in industries tending toward oligopoly. The advantages that lead to faster domestic growth are those that promote expansion over borders and to an extension of home rivalry to overseas markets. As a result, the push of home-created advantages toward new foreign markets results in the recreation of these oligopolies in overseas markets. At the international level, the expansion of oligopolies overseas can reduce competition, but most studies find that internationalization has also competitive effects in disturbing national oligopolies (Caves, 1982, chapter 4).

The importance of oligopolistic rivalry is clear in the list of major investors in east and central Europe. In table 1, the top investors are listed for Poland, Czech Republic, and Hungary. The striking pattern is the prominent role played by a few industries (e.g. autos, consumer products, telecommunications) and a few firms (e.g. Asea Brown Boveri, Coca-Cola, and Proctor & Gamble). This pattern appears to replicate the distribution of flows in direct investment to western countries; the sectoral distribution is highly correlated across countries (Anand and Kogut, 1995).

'Pull' Explanations and Agglomeration Economies:

Another motive for direct investment concerns the attraction exercised by particular locations. At a simplest level, this attraction exists through the importance of proximity to the market for the selling and marketing of goods, or the attractiveness of a country as an export platform. Market-access is an important motivation, particularly to avoid transportation and commercial barriers, such as tariffs.

Direct investment is also pulled towards certain countries in order to tap into localized pools of knowledge, much like the sourcing of raw materials. The difference is that access to
knowledge in foreign markets requires, usually, the co-location of other knowledge resources, such as research and development or production. In this sense, agglomeration economies extend across borders, attracting foreign investment in local technological poles.

The evidence for this pulling effect is thin. Cantwell (1989) found mixed evidence that production was pulled toward countries leading in the creation of patented knowledge. Analyzing Japanese investments in the U.S., Kogut and Chang (1991) noted that the primary driver of Japanese direct investment was the push effect of technological rivalry in the home market; however, joint ventures tended to be pulled into sectors where U.S. firms outspent relatively their Japanese competitors on research and development. In a recent paper, Almeida and Kogut (1994) found that for certain regions (e.g. Silicon Valley), knowledge spillovers are localized, and that spillovers flow to foreign and domestic firms located in these regions with no discernible differences. Krugman (1992) points out that locational advantages may be created if they investments in one area of an economy generate economies of scale in related industries.

Because of these externalities, the social benefits may well diverge from the private returns. Not surprisingly, most east and central European countries engage in various degrees of incentives to attract investment. However, there appears to be a fundamental difference between fiscal revenue and industrial policy concerns (Török, 1994). The Czech Republic has been most aggressive in eradicating all tax incentives for FDI. Poland has also eliminated tax holidays as of January 1994, while providing tax breaks for both domestic and foreign investors. Hungary and Bulgaria offer moderate tax incentives. Romania is unusual in offering rather attractive tax incentives with little restrictions, though it continues to require government approval and restricts
the types of positions foreigners can hold.⁴ Russia's policy on the registration and requirement of approval of foreign direct investment is unclear. According to the Vice-Prime Minister Alexander Shokhin, tax holidays have been proposed as well as free economic zones (Shokhin, 1994). Free economic zones have been created in the Czech Republic, Hungary, Poland, Romania, and Bulgaria, as well as in other countries in transition.

The low emphasis on incentives of the Czech Republic and, to a lesser extent, Poland may be an outcome of their proximity to Germany, which is the leading trade partner to the region. About 1/3 of Czech exports are destined for Germany. In a calculation of geographic accessibility, Sachs (1993: 99) notes that Poland is closer than Spain to the high density location of west European industry. The Czech Republic is even more favored as a location if similar calculations were made. In Poland and the Czech Republic, Germany is responsible for 30 to 40 percent of the direct investment flow. To compensate for locational disadvantages, Romania, Bulgaria, and Hungary employ incentives, perhaps partly out of competition with countries closer to west European industry. The dominant Greek investent in Bulgaria highlights the fortuitous nature of proximity to strong economies.

The fiscal consequences of the tax incentives is suggested by the large number of ventures registered as foreign. Siotis (1994) reports that these tax shelters in Romania have caused the number of projects with direct investment to soar from 1600 in 1991 to 26000 in 1993, though committed funds fell on a per project basis from $168,000 to $27,000. Meyer (1994) estimates that foreign joint ventures accounted for 41% of new enterprises in 1989 in

Hungary; over 17000 enterprises reported foreign equity participation by 1992. As noted in the literature on tax incentives, policies to attract foreign investment have ambiguous effects due to the distortionary and fiscal effects.\(^5\)

The impetus to competitive bidding for investment arises partly out of the similarity in wages among central European countries. Török (1994) notes that hourly wages vary from $1.14 in the Czech Republic to $1.82 in Hungary, with Poland as an intermediate case, but that social taxes increase labor costs by about 50%. Given the low costs of wages in East Asia and the expectation that labor costs will rise, polled investors cite low labor costs as a minor consideration for investment (Gatling, 1993).

"Hybridization" Explanations and the Multinational Network:

The multinational corporation is a particularly important mechanism of change because it bridges the geographic boundaries to the central tendencies in the knowledge of how to do things that prevail in countries. Direct investment is tied to the organizing principles of work that prevail in the source country at a particular time. The United States was a source of knowledge in the standardization of work and in mass production. Its expansion overseas was the transfer of this knowledge to other countries through the organizational extension across borders. Mass production systems were location-specific in origin, but firm-embodied in knowledge.\(^6\)

An instructive case for understanding the effect of direct investment on transition

\(^5\)For a thorough review, see Guisinger et al. (1985).

economies is the Fawley Refinery in the U.K., where Esso tried with success to implement a productivity incentive plan in its acquired operations (Flanders, 1962). The object of contention was not only the wage bill (which was improved under the new plan), but also the changed job and status classifications. In particular, the reclassification of the foreman from a union representative to a member of the managerial staff conflicted with the prevailing industrial relation norms.

This hybridization of different national organizing principles represents an advantage of a multinational firm over strictly domestic firms. For a company with established foreign subsidiaries, incremental direct investment need not be motivated strictly by the push of home-created advantages, or the pull to innovative locations, but potentially by the advantages of operating a multinational network.\(^7\) Statically, coordination of this network generates an operating value through the shifting of production in response to exchange rates, or the transfer of technology from one site to another. More dynamically, the network creates the possibility of generating innovations in work practices through the hybridization of knowledge gained by operating in multiple sites.

For example, General Motors through its German Opel operations is transferring Japanese quality circles to its Eisenach plant in the former East Germany. The use of teams is curtailed in the institutional environment of West Germany due to the refusal of unions and work councils to agree to the innovation. The more fluid environment of eastern Germany permits greater experimentation with forms of work drawn from multiple national experiences.

\(^7\)See Kogut and Kulatilaka (1994) for an explicit treatment.
Similarly, Volkswagen has experimented more extensively with group work in its Chinese and Hungarian facilities than it has been able to attempt at its West German plants.

Data on Aggregate Trends:

One of the weakest links in former socialist economies was the paucity of institutions to support international trade and investment.\(^8\) Whereas the majority of goods traded in the western world are between affiliated firms located in different countries, the Soviet bloc developed few multinational corporations. Yet, despite the need for foreign capital and technology, the levels of direct investment have not been high in the transition economies. In table 2, the minor role still played by central and east European countries in overall direct investment flows is shown.

An indication of the minor role played by direct investment in most countries can been seen in table 3. The balance of payment data show that Hungary, Poland, and the Czech Republic (Czechoslovakia) are responsible for over \(3/4\)s of the flows into the transition countries. Since FDI is a stock, we can only get a rough measure of its importance by looking as its proportion of GNP. The numbers are instructive, with Hungary standing out as having attracted the most direct investment in the early period of transition. Of course, given the fall in GDP of some of these countries, this percentage has risen slightly in subsequent years.

Russia is reported to have attracted as much investment as Estonia, with an estimated stock of $2.7 billion. (See table 4 for a breakdown.) The machine building and metal working industry has attracted almost a quarter of the investment. Of importance, about 85% of total

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\(^8\)See Kraft (1977) for a conventional discussion of international economic cooperation among the Soviet bloc countries and its silence on the question of multinational enterprise activity.
private capital flows to Russia has been in the form of direct investment.\footnote{Moscow Business Monitor, "Foreign Investment in Russia Described in Report; Machine-Building in Lead," July 5, 1994.}

Despite the importance of large firms for accounting for the vast proportion of reported direct investment flows, the average investment size is not especially large. The distribution of size shows a dramatic dropoff after taking into account the largest investments (Meyer, 1994). For example, Russia reported over $2.9 billion in direct investment for 1993 (though balance of payment data show $1.7 billion). At the same time, over 5400 joint ventures were registered (Aslund, 1994). Smaller size investments are especially prevalent in service industries, where initial capital contributions can be low compared to the manufacturing sector.

To get a sense of the relative magnitude of direct investment in central and east European countries, consider China which is frequently cited as a far greater magnet for direct investment. In 1992, China attracted an estimated $7.1 billion in direct investment; in 1993, actual flows rose to $23.1 billion.\footnote{The information in this paragraph is taken from Zhan (1993). Figures cited are balance of payment numbers from the IMF.} About 74% of these investments were in the industrial sectors. However, unlike other transition economies, the size of state-owned Chinese enterprises still dwarf foreign affiliates. In 1992, it was estimated that 30 of the top 500 manufacturers were foreign affiliated. Foreign direct investment made up about 8% of total investment in 1992, and the percentage surely rose dramatically in 1993. Yet, on a per capita basis, China has not fared better in attracting direct investment than central and eastern Europe.

What is striking is the prominence of Hungary. To a large extent, its attractiveness lies in
its longer history of openness; Hungary accepted a larger share of direct investment prior to 1989 (especially after the 1986 revision of the law governing joint ventures) than any other central European country, but primarily in its consumer goods sector. The lower amounts to the Czech Republic and Poland are also reflections of their privatization process, which has restricted foreign investment more than in Hungary. In 1992, about 80% of the privatization revenues in Hungary came from abroad, although the share fell to 50% in 1993 (UNCTAD, 1994).

III. Direct Investment and Growth

Does foreign direct investment matter for growth? There is considerable evidence that the growth of countries is not strongly related to direct investment flows. A striking aspect is the wide variation in the role that direct investment has played in Asian countries. Overall, direct investment in the region has grown quickly, from 10% of the world total in the early 1980s to 17% in the 1992 (UNCTAD, 1994). Japan, Korea, and Taiwan have engaged in fairly restrictive policies; Singapore, Thailand, and Malaysia have actively pursued direct investment. In the period of 1980 to 1985, direct investment as a percentage of gross domestic capital formation was only .5% for Korea and 1% for Taiwan; the 1985 to 1987 period showed an increase to 1.4% and 3.3%, respectively. In countries such as Indonesia and Malaysia, the percentages for the same periods run at 11.1% and 14.4% for the former, and 8.2% and 8.7% for the latter. Yet, despite variation in policies toward direct investment, all these countries have grown at high rates.

To place these observations on stronger footing, we reestimated the model of Mankiw, Romer, and Weil (1992) in their study of growth rates of countries. They found that the Solow model augmented for human capital formation provides a rather good fit to cross-sectional data
on the per capital income of 98 countries for the time period of 1960 to 1985. Using this estimated model, we then calculated the residuals for these countries. These residuals were then correlated with the average direct investment flow (from the balance of payments) per capita.

The estimated model of Mankiw, Romer, and Weil is a cross-country regression of GDP divided by the working force in 1985 on the investment rate, working force growth (adjusted by income growth and the depreciation rate), and human capital investment proxied by the percentage of the working age population in secondary school.\textsuperscript{11} Our estimates to this equation are given in columns one and two in table 5 for the full sample of 78 countries. (The sample of countries are different from Mankiw et al., since we were unable to collect additional investment data for all countries.) The results, not surprisingly, correspond closely to table 1 in Mankiw, Romer, and Weil (1992).\textsuperscript{12} Investment in human capital has a significant impact on GDP per capita, and its inclusion in the model improves the fit significantly.

The importance of including a measure of human capital in the estimates is particularly evident in the sample of non-OECD countries. The fit improves dramatically, and the coefficient to the work force variable switches signs to the expected direction. (We would expect that an increase in the work force, holding capital constant, should lower per capita income.)

\textsuperscript{11}Working force growth rate is adjusted by the growth in per capita income and a capital depreciation rate; the sum of these two factors is set to .05. See Mankiw, Romber, and Weil (1992) for a discussion.

\textsuperscript{12}Following the procedure and coding of Mankiw et al., we took out oil producing countries. Both Venezuela and Indonesia remain part of their non-oil producing sample. Removing them from the sample changes the magnitudes of the coefficients, but the significance levels are scarcely affected.
Even in the small sample of OECD countries, the coefficient to investment in human capital (column 6) is significant.

As a speculative exercise, we apply the above estimated model to predicting the GDP capita for east European countries based on 1991 data. Of the many caveats in this extrapolation, two are particularly important. The Mankiw et al. specification is derived from a steady-state model; clearly, the macroeconomic conditions in 1991 were in considerable fluctuation. Second, their estimates were calculated for the time period 1960 to 1985. We are essentially applying the estimated coefficients for predicting 1985 income to 1991 data.

With these caveats in mind, the exercise is useful in providing a heuristic comparison. We collected data on schooling from UNESCO's yearbook, using the same procedure used by Mankiw et al. in calculating the measure of human capital as the fraction of the population of working age adults between the ages (approximately) of 14 to 19 in secondary school. Domestic investment shares and labor force growth are taken from the World Bank's handbook on economic data for developing countries for 1993.

In Table 6, we give the reported GDP per capita and the predicted value from the estimated model for the OECD countries. Of course, the monetary values are strongly affected by currency rates; high investment rates are a consequence of the fall in income (Romanian investment of GNP is estimated to have been 33.5 per cent in 1991.) To provide some sensitivity to these estimates, the predicted values were reestimated assuming a higher level of human capital investment; we used the value of 10, compared to a maximum of 12.1 in the overall sample and to the modal range in the actual data of 6 to 7. These results, which are given in column 3, serve the heuristic value of indicating the shortfall of the current performance of
eastern European countries in transition to their predicted potential.

An examination of the residuals from the regression given in column 2 of table 5 provides insight into other countries that underperform the predicted GDP per capita. The country outliers that are shown to be much poorer than predicted include several African countries (e.g. Ghana, Togo, and Zambia) and south and east Asian countries (e.g. India and Phillipines); of all countries, Jamaica is estimated to have most underperformed its prediction. Countries that performed better than the prediction include South Africa and Rwanda, Canada, and Guatemala.

To see if this variation reflects more than measurement error, we correlated the residuals from table 5 with a balance of payments measure of average foreign direct investment per capita for the period of 1965-1985. (The IMF did not collect such data systematically for earlier years.) The correlations between FDI per capita and the residuals corresponding to the columns in table 7 are given in table 2. An important result is that the correlations are quite different for non-OECD and OECD countries, positive for the former group and negative for the latter.

It should be kept in mind that the effect of foreign investment as capital investment is already captured in the estimation through the investment rate. Foreign ownership, arguably, brings something extra to the table in the form of technological and managerial knowledge. These externalities appear as particularly important for less developed countries.

Of course, there are several other possible explanations for these results. The residual can be interpreted as an estimate of total factor productivity. Direct investment is likely to be pulled towards countries where there are location-specific externalities.\(^{13}\) The causality between

\(^{13}\)As in other studies, Kogut and Chang (1991) find that industry growth rate has a significant influence in attracting foreign investment. This result should be robust to an economy overall.
direct investment and growth is, as a result, ambiguous.

To sort out some of the causality, a regression of the residual on both per capita GDP in 1960 and FDI was performed; initial GDP per capita was found to be significantly and positively related to the residual; FDI per capita is insignificant and its coefficient is of minor magnitude. Another specification was estimated by replacing GDP per capita in 1980 in the regressions reported in table 5 by the log difference in GDP between 1985 and 1960 for GDP per capita; the same independent variables were used, along with average FDI per capita. Average FDI per capita, once again, did not appear as significant.\textsuperscript{14}

Since there is such variation in policies towards FDI, the speculative finding that direct investment does not appear to explain further growth when the effect of investment in physical and human capital is partialled out is not surprising. As noted earlier, such countries as Korea and Taiwan have been circumspect regarding direct investment. Convergence to a world production frontier does not seem to require direct investment.

Yet, the convergence of a large group of poorer (largely Asian) nations points to the spilling of knowledge across borders. Pack and Page (1994) analyzed largely the same data as Mankiw et al., but tested the influence of export propensity on growth rates. They found that, in addition to human and physical capital investments, exports and a measure of openness (as captured through the equivalent of law of one price calculations) were significantly related to

\textsuperscript{14}These results conflict with the study by Blomstrom, Lipsey, and Zejan (1994) that indicate a significant and positive effect on growth for a particular sample of countries. Though using similar data and sample, I could not replicate the result using the Mankiw et al. specification with FDI added. We leave open the question of the relationship of growth and direct investment.
growth. Since multinational corporations are important agents in world trade, their findings do
not imply a ranking of exports over direct investment as a preferred instrument to tap into a pool
of world technology. But, rather, their results indicate that integration in the world economic
community provides the opportunity for learning.

Direct investment dominates other alternatives for the absorption of technology when the
acquisition of new knowledge is costly by other mechanisms. Teece (1976) estimated that the
costs of technology transfer varied from 2 to 56% of total project cost. Transfer costs declined
with the age of the technology and the number of users, that is, with the extent to which the
technology was known and codified. Kogut and Zander found that knowledge that was difficult
to codify would tend to be transferred within the firm as opposed as through licensing and would
also show slower times to transfer.\textsuperscript{15}

These findings suggest that the borders are firms are the least permeable when knowledge
is of a tacit or proprietary nature. The public good characterization of technology, as Romer
(1992) and others have noted, confuses the traits of nonrivalry and excludability. The use of a
chemical process by an American firm does not influence the costs of its use by a Korean firm.
But nonrivalry does not mean that use of the formula cannot be excluded through patent
protection or through tacitness.

Direct investment occurs when a firm exploits its knowledge in a foreign country within
its boundaries than through a market. Failure of the market for technology is one reason why
direct investment is preferred. But a more prosaic reason is simply that a firm specializes in the
creation and transfer of particular kinds of knowledge that are better replicated inside the firm

\textsuperscript{15}See Kogut and Zander (1994) and Zander and Kogut (1995).
IV. Governance and Direct Investment in Transition Economies

The transfer of uncodified knowledge by direct investment is likely to be critical for transition economies. Though rich in scientific and technical training, these countries have inherited a stock of organizational knowledge that is poorly suited for competition in world markets. The knowledge of quality production, marketing, and customer response is lacking, since domestic competitive markets did not exist. Experience in exporting was usually isolated in foreign trade organizations that had little influence over the production and management of the production units. Marketing to developed countries was frequently conducted by western firms, sometimes who acted as brokers in barter or compensation deals. Unlike the Asian economies whose firms evolved in competitive markets, the enterprises in the Soviet bloc did not, by and large, develop the expertise to compete in capitalist settings.

There are three ways in which the extension of equity-based control across borders influences the evolution of corporate capabilities in the foreign country:

1. Organizational Capabilities: The investing firm has superior methods in the form of the knowledge of operations and in their control through supervision, authority, and incentives.

2. Organizational Form and Institutional Governance: The foreign firm implements a superior method of organizing and external control, either indirectly through the form of financing (e.g. debt and equity structure) or directly through the re-creation of oversight institutions.

3. Competitive Externalities: By increasing competition in the host country, the foreign firm generates information on the x-inefficiency of competitors in the local country and generates incentives for imitation.

The following analysis is informed by interviews held with managers of foreign multinational companies and with government officials. (See footnote 2.) A structured interview format was
conducted with managers of five American multinationals operating in Poland and Russia, and
background interviews were held with other managers and officials. Questions were oriented
toward identifying the role of work councils and unions, local and foreign representation on
boards, and competitive effects on suppliers, customers, and competitors.

Organizational Capabilities:

The considerable documentation of the difficulties of imposing new methods tends to
obscure that internal governance is easier to transfer than that of external governance for obvious
reasons. Case studies, and the managerial literature, are replete with the conflict between
headquarters and subsidiaries regarding the reporting and control requirements. In certain cases,
due to prohibitions on the transfer of data across borders, control systems conflict with local law.
The legal or contractual right to implement certain bonus plans have not infrequently been
opposed by labor unions and law. Control rights clearly are limited in cases of dismissal and of
liquidation. The Unites States is, in this regard, far more the outlier than comparable European
countries.

By and large, firms are given a relatively wide range of latitude in their control over their
foreign managerial staffs. Whereas certain countries, such as Sweden, have both union and legal
protection of managerial staffs, the restrictions on the task assignments, promotions, and
employment of management are generally far weaker. (Gray and Jarosz (1993) report that only
Romania restricts the types of positions that foreigners can old.) Direct investment carries very
strong implications for managerial control, especially in the case of acquisitions.

An issue of some importance is the representation of workers, and work councils, in
internal governance, and legal restrictions on severance and dismissal. Poland has surprisingly moved towards a regime that has progressively weakened the power of work councils in corporatized companies (Weinstein, 1995). The Russian privatization program has allocated a certain number of shares to workers, but the dispersion of these shares and the incentives for workers and managers to dispose of poorly diversified holdings appears to lead to an increasingly weakened voice of labor in enterprise decisions.

Interviews with foreign firms in Poland and Russia strikingly confirm the weakness of labor unions in their new (or "greenfield") operations. All the managers interviewed by a structured format at the five companies reported a condition of almost passivity on the part of workers. In the case of one company located in Russia, employee relations were not up to par at one joint venture, but their wholly-owned operations were without unions and work councils. For blue-collar workers, pay tends to be set near market conditions. Though 50 million of the 70 million work force in Russia are reputedly union members, the workers were described as poorly organized. Even in Poland, where the heritage of Solidarity has created a more active labor force, workers in the newly-created ventures were viewed as unrepresented by union or by work councils. Published reports of labor conditions in the Czech Republic and Slovakia also suggest labor conditions that are fairly docile.

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16 Both the Czech Republic and Poland have moved to ease these restrictions, especially easing the financial burden of restructuring by layoffs. See Business Eastern Europe, April 4, 1994 and May 2, 1994.

17 An example is the success negotiation by Kmart with its Czech union that resulted in an agreement setting up performance bonuses. The union in the Slovakian stores turned down the offer, insisting on a standardized wage package unrelated to performance. Kmart --which is the largest foreign investor in Slovakia-- refused, and implemented the Czech plan successfully.
However, pay for white-collar workers in foreign firms is substantially above the market. At a large pharmaceutical company, most of the sales force hold a medical degree and earn 3 times above the market norm. The age is young. (In general, firms reported a preference for hiring younger workers.) Sales incentives in kind, such as vacations, were initially resisted, but have eventually been accepted. Due to the high technical qualifications and requirements of the sales force, this company represents a polar extreme but is not unique. An American telecommunications company in Russia also paid a wage plus bonus for operators for their pager service business. Yet, again, qualifications matched the wage, as all operators were university graduates. In fact, within the first weeks of operation, several of the operators were moved onto more advanced positions. The impression given by these trends is a widening gap between blue and white-collar wages.

The transfer of technology and new methods of organizing were also extended to some suppliers. At a minimum, companies such as a large food company seek to establish a set of operating principles among their Polish and Russian bottle suppliers. The pharmaceutical company signed on the Institute of Biotechnology in Warsaw to package their drugs. To bring their supplier up to standard, western technology was imported, along with quality circles. Clearly, the company is able to pursue a policy of skimming the cream, both in terms of hiring qualified doctors as sales agents and of contracting to one of the more sophisticated companies in its sector. However, all interviewed managers stated a clear preference for working with a foreign over a local bank as soon as it was permitted, partly due to the required expertise to without union interference. See Business Eastern Europe, "Management Issues: Wrestling with the Trade Unions," 1994.
handle foreign exchange but also due to the excessive inefficiency of the local banking system.

**Organizational Form and Institutional Governance:**

Direct investment is channelled through two organizational forms: joint ventures or single-firm dominated investments. (In some cases, a firm may have less than a 100% equity position, but the outstanding shares are dispersed among many shareholders who do not exercise control.) A joint venture can be defined to include the creation of a legally independent concern, or as a minority stake in an existing enterprise. An acquisition can be used as a means to establish a joint venture position, or single-control position. Alternatively, an investment may be in new operations. Each of these investment kinds, which are obviously not mutually exclusive, raises particular implications for governance and for the political sensitivity regarding foreign ownership.

Through acquisition, direct investment has played a major role in the privatization programs of many transition economies. In the process of evaluating these companies, foreign suitors have required stronger regulations and laws regarding accounting standards, protection of intellectual property, and the repatriation of profits. In this sense, they have been an active force in institution building (McMillan, 1993).

There is, again, wide variation among countries regarding the treatment of foreign participation in privatization. Of the 52 large privatizations in Poland by 1992, 25 had large shares of foreign ownership, with 12 cases of shares greater than 80% and 10 more greater than 50%; however, foreign participation in the privatization of small firms was restricted. The Czech Republic also excluded foreign firms from participating in the first wave of privatization. Hungary, on the other hand, has sought active foreign involvement in its privatization program.
Russia, which has allowed 100% foreign ownership since 1991 but has restricted heavily until this year participation in privatized companies, has established a liberal policy in allowing foreign companies to purchase shares of privatized companies. Recent estimates indicate that 10% of such shares are held by foreign companies (GKI Press Release, #298-4678, 1994). Again, Romania represents the other side of the spectrum, with only three privatizations involving foreign investors in the years just after transition (Odle, 1993); however, as noted earlier, foreign investments in joint ventures with state-owned and privatized companies has been frequent. All in all, UNCTAD estimates that 67% of direct investment flows were related to privatization activities between 1988 and 1992 (UNCTAD, 1994).

The participation of foreign firms in the privatization process has merits and a few demerits. On the plus side is that the foreign firm brings managerial and technological expertise to the firm. The demerit is that during a period of transition when domestic savings have largely eroded due to inflation, values of enterprises can be depressed due to wealth constraints or market imperfections, especially the difficulty of selling the securities. Frydman and Rapaczynski (1994) argue that an advantage of a mutual fund scheme (which permits foreign capital) is that it prevents a "fire sale" of assets. The role of foreign capital in resolving problems of capital shortage is, of course, not unambiguous, as liquidity is gained at the cost of the transfer
of shares, and potentially ownership, to foreign buyers at depressed prices.

The data regarding depressed prices are startling. Boycko, Shleifer and Vishny (1993) make some rough calculations, indicating that the Russian manufacturing industry has a dollar value between 5 to 10 billion, roughly the size of smaller firm in the Fortune 500. The ZIL company, with 100,000 employees, has a valuation of $16 million. In an unpublished study, CS First Boston generated similar numbers, estimating Russian equity to be valued at $8.5 billion. To provide some comparability, they calculate that a ton of Russian cement productive capacity is worth two-thirds of a percent of a ton of a western company; a megawatt of electricity capacity has a worth of 4%; and even a barrel of proven oil reserve is valued at less than one percent of a western operation (CS First Boston, 1994).

There are, of course, some issues that suggest that direct investment into privatizing companies is not taking advantage of a "fire sale" as suspected. First, given adequate foreign suitors, the price of the assets should be bidded up to reflect their values in a world market unconstrained by illiquidity. The only commodity production valued close to western valuations, according to First Boston, is tobacco-related activities, reflecting the large western equity position in the Russian tobacco industry. Second, the value of the enterprise, because it will benefit from foreign technical assistance that might necessitate that property rights be guaranteed by ownership, will often be worth more to foreign buyers.

It is not surprising that the value of newly-privatized stocks rise dramatically given their lower initial valuations and the influx of western capital. The recent valuations of Russian companies that have floated shares in western markets show remarkable capital gains. The price of acquired companies in the more open markets of central Europe is close to western valuations
(CS First Boston, 1994).

The low asset valuations are clearly fueling speculations in the Russian market. In an interview, the president of one of the mutual fund associations noted that 10 to 20% equity share is frequently sufficient to provide a swing vote for many privatized concerns. Even minority shares held by foreign firms can play a major role. But he also observed that local capital preferred to keep foreign investors out during a period of low asset values. Not surprisingly, an interview with an investment entrepreneur who acted to find foreign buyers for companies in the second wave of privatizations took the opposing position. If the notion of liquidity trading is a distant concept to the highly imperfect Russian capital markets, the importance of information trading between a foreign-investment sector and domestic sellers nevertheless was well understood.

The problem of insufficient information also hampers the foreign buyer to avoid overpaying. One reported solution has been issuing convertible bonds with a low par value and no interest. If certain performance targets are not meant, the debt is converted into equity (Gatling, 1993: 107). Still, this financial structure only provides a floor to the foreign investor if the equity is worth something.

An alternative to acquisition through privatization programs or other means is the prevalent use of joint ventures. Prior to 1989, a few countries, particularly Hungary, allowed and encouraged foreign joint ventures. Since then, joint ventures have become common to all  

\[9^{19}\text{By an appeal to a Shapley-value argument, the foreign firm places a high value on its purchase of share exactly because of its swing role in determining the winning coalition in a given dispute. A more placid observation is that a 25% share provides, as in Germany, the legal position of minority-veto rights.}\]
the transition economies. In table 8, estimates of the frequency of joint ventures are provided for
the largest countries. (The data are to be taken as indicative.) Russia, due largely to its initial
legal restrictions on foreign ownership, has favored joint ventures the most. Poland, on the other
hand, has a large number of greenfield (i.e. new plant) investments, though the value is only 13%
of the total.

A joint venture accomplishes four important tasks. First, it provides a foreign party with
a legal governance structure by which to enforce organizationally its claim to technology and its
use. Second, because a joint venture is an enterprise as opposed to a sale of technology license,
it serves as a vehicle to transfer tacit knowledge for which markets are inadequate. Third, a joint
venture allows a foreign party to isolate the more attractive assets, and to avoid potentially
acquiring a large labor force that would have to be restructured. Lastly, joint ventures invariably
have exit clauses which define rights and priority of acquisition among the parties. Western
experience shows that joint ventures are very often acquired, especially when the market turns
out to be good and the legal right to acquire is exercised by the dominant party (Kogut, 1991). It
is at the time when new capital investments are required that partners to a joint venture are forced
to reconsider their commitments and the relative value of the venture to each side. A common
outcome is that one party sells out to the other and walks away with capital gains; the other party
gains full control.

This option-like feature is often present as well in minority equity stakes. Many direct
investments, partly due to the lock on shares by entrenched management as well as by
employees, in Russian corporations take a minority share. For example, Siemens bought 10% of
the Kaluga Turbine Plant; BAT bought a minority position in the Saratov Tobacco Factory
through a tender offer, with $40 million committed to be invested; Procter and Gamble bought 14% in the Novomoskovskbythim joint stock company, with a promise to invest $50 million in capital equipment; and Zellstoff und Papier purchased 30% of Zhukovsky Cold Storage in 1993, with a realized increase in production of 32% over the following year. In all of these cases, capital and technology were transferred to struggling concerns that serve to establish a foothold for future expansion. It can be expected that some of these ventures, in their role of providing a future option to expand, will be converted to full ownership as capital markets develop.

An area of conflict, however, between foreign owners and a country concerns the use of external control over a subsidiary's operations. There is surprisingly little known about the local governance of foreign subsidiaries, except that they tend to adopt local practice while subject to control of the foreign parent. Generally, national laws have held the parent responsible for the debt and financial claims owed by the subsidiary. As a result, high debt of a subsidiary does not carry the disciplinary incentive as supposed in the general literature on governance.

The companies interviewed all reported that supervisory oversight was carried out by regional headquarters outside the country of location. Only one joint venture with two state-owned enterprises associated with a ministry in Russia reported a local board of significance; yet, the composition of the board was dominated by the foreign company. (Board positions were unpaid.)

The impact of direct investment on wider governance institutions is, in summary, mixed. Joint ventures and acquisition, in particular, have required changes in law and have increased pressure to create more perfect and efficient capital markets. However, since foreign-owned subsidiaries largely act independent of governance oversight in the local economy, they cannot
serve as models for legal reform regarding boards of directors or banks invested with powers of oversight. Where they do influence institutions is through their efforts to influence regulatory and standard-making policy, as well as laws to improve the efficiency of capital markets, especially regarding such issues as the registration and transfer of equity-share ownership.

**Competitive Externalities:**

One of the most important influences of direct investment is on the incentives for competing domestic companies to improve their performance. Blomstrom and Wolff (1994) found that direct investment in Mexico increased the productivity in the sectors in which foreign firms compete. They could not sort out, though, whether these effects were due to the elimination of weak firms, spillovers in the form of learning by domestic companies, or the creaming of a higher quality labor force in the foreign sectors. In a case-oriented study, Dunning (1986) found some evidence to show that the adoption of Japanese methods in England was promoted more by competition than by learning from Japanese assemblers to British suppliers. Blomstrom and Wang (1989) show, moreover, that competition engenders increased incentives by competing firms to learn.

As stated earlier, there is little empirical finding to show that direct investment is required for economic growth. The Asian experience, which has large national differences, shows that reliance on export markets for competitive discipline, along with human and physical capital accumulation, has served as a successful strategy for a number of countries that have restricted inward investment. Yet, an important difference in the Asian and transition economies experiences is that the latter are far more bereft of the accumulation of managerial knowledge in their enterprises. Direct investment brings an immediate transfer of western practice to
companies with adequate technical levels, but poor managerial expertise.

The negative side is that direct investment has been largely oriented, when measured in value, towards the acquisition of large companies. Whereas many of these companies show the fastest growth rates, they also appear in the more oligopolistic sectors of these economies. To a certain extent, the acquisitions of the larger concerns reflects the extension of oligopolistic competition to eastern Europe. The purchase of one auto company in Czechoslovakia leads to a rivalrous purchase, or joint venture, in Poland. Similar patterns, as seen in table 1, can be discerned in the food and telecommunication industries.

These acquisitions are potentially troublesome due to the long-standing policies in the socialist countries to concentrate production in highly specialized groupings of companies. There are, consequently, some indications that these purchases are partly motivated by defensive and monopolistic considerations. General Electric acquired the Hungarian company Tungsram in one of the first acquisitions. Since selling its shares in Osram, General Electric had seen rapid entry through acquisition by European competitors into its home American market. The acquisition of Tungsram achieved an offsetting position in the European market, while at the same time eliminated a potential low-cost entrant in the lucrative light bulb market. GE has invested an additional $400 million in Tungsram.

The acquisition of Lehel by Electrolux is a natural outcome of a long contracting relationship between the two parties. However, Lehel is the only other producer in Europe of a small refrigerator that does not rely upon a compressor. Though the work force fell by 40% following the acquisition, productivity and exports have also increased. Only one product line has been yet added to replace the divested products, and the factory remains highly specialized.
The distribution channels are being used to support the introduction of the Electrolux-branded lines. Currently, the company is very profitable, with about a 90% market share in Hungary.20

One of the most impressive investment strategies has been carried out by the Swedish-Swiss concern, Asea Brown Boverie. By May, 1994, it controlled 58 companies in 16 countries. In Poland, it owns 4 out of the 5 makers of power-generating equipment. In Russia, it controls 8 companies, plus is a partner to 4 joint ventures.21 These operations have been integrated into a world production system, while providing ABB with important and unique access to these markets.

The acquisition of potential monopolistic positions is especially troubling in the service sector of the smaller or regional economies. The telecommunications company in Estonia, for example, reached a joint venture agreement with a Swedish company to help manage the network. An attractive feature of a telecommunication contract is that due to the international pricing and tariff regulations, East European countries earn foreign currency in the transmission of foreign calls. A deal with a local telephone company generates, consequently, foreign earnings, plus a monopolistic control in a highly regulated local market. The incentive for investment by the Swedish partner in local service in Estonia is not very large and has been modest.

Even, however, in the case of the purchase of monopolistic positions, there is an

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20See the case "Electrolux AB Enters Hungary", Kjell Nordstrom and Jan Erik Vahlne, Stockholm School of Economics.

important contribution played by foreign companies in lessening the historic holdups between suppliers and buyers. Frydman and Rapaczynski (1994) note that the transition to capitalism poses the danger of exposing firms, who stood in an administrated relationship to each other before, to potential exploitation by the other due the dependence of one party on the other. Foreign investment, partly by bringing in the knowledge of the sources of supply in a world integrated economy, acts as an effective curb on the hazards of otherwise small numbers haggling. The bridging role of the multinational corporation across borders opens the narrowly specialized relationships among firms to wider competition.

But the cost of world integration is the erosion of dense national networks among firms. Since the capital of any enterprise is partly its position in a network and knowledge of other firms, this process of change can eliminate otherwise viable enterprises in a period of transition.22 It underestimates the value of knowledge of the environment to believe that transporting a firm from one setting to another does not diminish its economic value. In the process of transition, the competitive process destroys valuable knowledge between firms and institutions.

This knowledge is, in many ways, valued and preserved through the acquisitions that are targeted by foreign concerns. Motorola, for example, has entered into multiple contracts with the telecommunications university in Moscow, both as a way to fund research and to develop useful contacts for recruiting and sales. Its joint venture with two groups attached to the ministry of telecommunications has also established important in-roads into the licensing and regulatory process. Because it recognizes the value of existing relationships, direct investment provides the

22See Pistor and Turkewitz in this volume, as well as Grabher (1990) and Kogut et al. (1992).
resources to maintain otherwise bankrupt institutions.

The implications of the competitive role played by direct investment, when duly qualified for the potential of monopolistic abuse, are best appreciated in speculating for the long-term. Direct investment plays two roles through acquiring the more promising enterprises in the traditional sectors of an economy and through new firm startups. The self-reported growth rates of the interviewed firms are impressive. One firm in Russia reported growth at a rate of 200% to 300% per year. Another company in Poland expected market penetration rates to approach west European levels in a few years time.

To give an appreciation of the implications, consider a recent study by Kennedy (1994) who looked at two sectoral clusters on the Polish economy. The first cluster consisted of private firms that grew from 29% to 80% of output between 1989 and 1994 and its share of GNP rose from 49% to 53% between 1989 and 1993; a second cluster showed only a growth of 9% to 23% of the private enterprise share. The more dynamic cluster was characterized by a tripling of the number of firms due to new entry, with privatization playing a small role in new firm formation. In the stagnant sector, the total number of firms fell. An important difference is the pattern of direct investment which roughly in equal proportions to both clusters, but was twice the size in the more stagnant sector. Direct investment is about equal in the dynamic and stagnant sectors. However, given the declining output in the stagnant sector, direct investment plays the major role of acting as a powerful force for restructuring older enterprises.

The implied projections of this process of transformation point to a growing share of new firm entries; the traditional sector will shrink to a faster growing set of enterprises, with substantial foreign involvement. A rather small percentage of the existing industrial base can
generate by the force of its own growth, as well as its spillover effect on the rest of the economy, a substantial transformation of the existing economy.

It would be fanciful to suggest at this juncture that foreign investment in these countries have evidenced new hybridization of work practices. By and large, the investment process is driven by the push of existing advantages into these new markets. The largest investor in Poland is Coca Cola, which is pursuing a standard strategy of securing bottle suppliers while investing in bottling plants, a strategy recently extended to Russia. Given the productivity advantage of western practices, this transfer of the advantage to the local markets is bound to be the principal objective.

There are modest signs that in the process of solving problems unique to the transition economies, organizational innovations are created. For example, the Italian metal company Lucchini has acquired a 51% stake in the steel works Huta Warszawa. The work force has been reduced from 12,000 to 3,000. Yet, many of the workers were severed by spinning off divisions into cooperatives that were then contracted by Huta Warszawa. As a result, Huta Warszawa has built up satellite cooperatives operating under worker-owner incentive structures.23

V. Policy Implications

In considering policy objectives for Eastern Europe in regard to direct investment, this potential for innovation and hybridization—even if dimly recognizable amid the gigantic task of restructuring the economy, should be an important guiding light. Frydman and Rapaczynski's (1994) observation that design should be evolutionary in principle is fundamental. Policy

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creation should not lock into a narrow set of objectives during this period of rapid
transformation, and they should be influenced by the political and social values of a country. An
important consideration remains choosing the policies that move reform forward.

There are four types of recommendations to be made that respect a principle of permitting
the process to organize itself while establishing boundaries of tolerance:

1. Competition policy: A primary objective of transformation is to establish competition.
In Hungary, 48 of the 114 cases examined by the monopoly office involved abuses of dominant
power, though most cases were dismissed (Langenfeld and Yao, 1992). One of the most
important elements in the Polish transformation was the role played by reducing tariffs to allow
for international competition to hold down monopolistic pricing during a period of extreme
industrial concentration (Sachs, 1993).

Direct investment should be subjected to a well articulated competition policy that is
applied to domestic and foreign enterprises. A screening of investment applications traditionally
results in conflict among ministries, much as the Exon-Florio amendment in the U.S. that
establishes the right of the U.S. to reject acquisitions threatening national security tends to pit the
departments of defense and commerce against one another. It is fairly well established that the
assignment of which ministry should regulate direct investment has tangible effects on the degree
to which a government opens its borders to foreign firms (Vernon, 1985).

A priority for foreign companies is establishing an appropriate regulatory framework.
Standards are required in the local markets to conform to international norms and to permit easy
exporting to other countries. Moreover, because of their visibility, foreign companies usually
apply high environmental and quality standards. Regulation forces these costs onto local firms
as well, and thus removes them as factors in competition. The demand for regulation may, contrary to expectation, be greatest in the sectors that multinational corporations are active.

Langenfeld and Yao (1992) argue that regulatory and competition policy-making functions should be assigned to different agencies. There is an inherent conflict in the task to regulate competition and to assure competition. The tendency of ministries to assume a regulatory role over enterprises with state shares, as observed in Russia by Pistor and Turkewitz, is an example of such conflict.

2. Privatization and ownership: An important question is whether a nation should preserve ownership over a few key enterprises. In this regard, the privatization of other countries provide a wide range of models, with the strategy of France to preserve a strategic share for domestic investors (the so-called "noyaux durs") being of particular interest. Outside of restricting particular sectors (e.g. the Russian defense industry), none of the transition economies have articulated a clear vision of the limits to foreign penetration.

There are complex economic arguments for why ownership should matter, but there are also important political considerations, especially in light of public scrutiny that caused the collapse of well-publicized selloffs in the Czech Republic and Hungary. The tolerance of direct investment is also embedded in historical considerations, especially regarding German investment in Polish and Czech real estate.

24In the Czech Republic, prolonged negotiations subsequent to an agreement for the partial acquisition by Air France of the national air carrier led to the collapse of the deal. Recently, a sale of a majority share of the last large state-owned to an American investor collapsed under political pressure to hand the chain over to the state-run social security fund, which is backed by trade unions supporting the governing party. See the Economist, January 28, 1995.
The economic arguments boil down to a few arguments. One is the question whether innovative resources are reinforced or depleted in the host country if foreign firms should take over research-intensive enterprises. (See Tyson, 1992, for one statement.) Another argument concerns the creation of industrial concentration to tip a region or nation towards agglomeration. (See Krugman, 1992, for a cautious evaluation.) Finally, imperfections in capital markets, which surely plague transition economies, raises important issues regarding valuations.

The danger of policy restrictions on foreign direct investment is especially great in countries with highly politicized firms and weak governments. In the initial period of transition, a primary role of direct investment is not only to provide the capital and managerial knowhow, but also to secure the process of reform. A restrictive policy, especially in Russia where foreign capital is providing one of the few spearheads to break up the equity coalition of workers and managers, threatens the reform during a period of vulnerability.

However, as the process matures, a policy on ownership may be politically required to maintain public confidence. The Czech experience provides one implicit model, whereby a liberal policy encourages foreign portfolio investment in mutual funds but a more guarded policy is applied to foreign acquisitions. A more forceful policy is to adopt the French model by finding domestic firms to take strategic positions in newly-privatized enterprises. But this model is likely to be sorely deficient in application if both the capital resources and managerial skills are lacking among these strategic investors. (See Coffee's chapter.)

If there is a choice of how much foreign investment should be allowed, then the implicit issue is what should be the criterion of choice. A rule consistent with the studies on growth and the absorption of technologies is to let foreign capital enter in those industries where domestic
knowledge is most lacking, and the purchase of the relevant technologies on world markets is the
most difficult. Pharmaceuticals is a good case, whereby research is costly, heavily patented, and
the knowledge of discovery often tacit; direct investment provides an important conduit to the
world technological frontier. Steel, while potentially benefitting for direct investment, consists
of technologies that can often be purchased and for which the local country has the expertise to
absorb.

A policy less open to distortionary effects and corruption is for the state to hold shares in
a privatized company. As Pistor and Turkewitz note, after the first wave of privatization in the
Czech Republic, the government still held 28% of equity in average; in Hungary, the government
share in large privatized compares is estimated at 34.2%; and of Russia, the government share
ranges from 10 to 31%. But this pattern is not unusual and corresponds to privatization
experiences elsewhere (Perotti and Guney, 1993). To sell a privatized company, as noted by
Earle and Estrin, gives away the option to sell later at a higher price. But also, by holding a stake
in the firm, the government retains a credible interest in restraining from engaging in policy acts
that damages the economic value of its shares.

3. The rate of transition: A subtle problem in transformation is that restructuring
requires unemployment in the process of change. Poland is vastly ahead of Russia in its
transformation, but it also suffers a 16% rate of unemployment compared to 2% in Russia. A
survey conducted by the Economist of 87 western companies found that overstaffing is estimated
to range from 20 % to 50% (Gatling, 1993: 25). It is a good maxim that long-term unemployed
workers are more likely to challenge reform than employed workers in secure jobs. In this
environment, foreign firms are critical actors in the reform process.
What are the policies for direct investment that maintain the political acceptability of transition at a maximum speed? A simple answer is to encourage direct investment while restricting the layoff of employees. It is obvious that such restrictions, insofar that they incur operating expenses for the investing firm, deters investment, as well as transformation. The critical watershed is to generate expectations that transformation will succeed rapidly and that unemployment is an investment in a better future. The dilemma is that the rate of change is predicated on moving workers out from losing enterprises while expectations are negatively influenced by the amount of unemployment (Aghion and Blanchard, 1994).

An example of using direct investment to preserve the privatization process is the policy of avoiding decisions to shut down firms due imperfect capital markets or perverse incentives. Perotti (forthcoming) has argued that a flaw in transition arises from the funding of unprofitable enterprises that are heavily in debt to banks. The attractiveness of lending to failing firm arises due to the probability-weighted value of providing incremental funding in the hope that a turnaround will result in a repayment of the outstanding loan. Banks, or the state, end up investing in losing firms in preference to profitable ones.

Trying to sell politically-sensitive cases to foreign investors to relieve this problem is, obviously, one of the most important elements in a privatization strategy. The wisdom of requiring restructuring prior to privatization gathered from the U.K. experience has the unwanted result of reserving the worse prospects for last, or of creating a state-owned portfolio of companies which represent especially thorny political problems (Sacks, 1993). However, selling unstructured firms at large discounts transfers potentially large capital gains to private, and sometime foreign, investors.
Stiglitz (1992: 171) has noted that it is senseless to pay the private sector for bearing political risk of restructuring if the state controls the policy variables. Particular policies may be difficult for the state to enact, such as the closure of large mines. But some restructuring policy decisions bear lower political consequences.

A good candidate policy for achieving restructuring prior to privatization is the elimination of bank debt. A program of equity for debt swaps that securitizes the value of these failing firms and sells the instruments to foreign investors succeeds even in the absence of restructuring, but at the same time, opens the door to the formation of investors to acquire strategic positions. Removing the debts of failing firms from banks' balance sheets should be a primary objective.

4. Experimentation: Multinational investment, because it transports practices from foreign sites, represents a quasi-experiment in which the experiences of subsidiaries from different countries serve as templates of successful practices in the local environment. To benefit from this process of adaptive learning, hasty adoption of restrictive laws should be viewed with suspicion. A good example is the potential adoption of labor laws based on the German model which would mandate work councils. While group or team work is increasingly being adopted in Europe, work councils in Germany often object to their loss of control. Agnosticism is not a bad policy when there is superstition regarding what practices belong together.

There is another aspect to experimentation which provides caution to policies that are too proactive in championing new markets. Experimentation demands that results of the experiment be observed. A policy that subsidizes too quickly investment in particular areas has the unwanted outcome of discouraging entrants with better ideas. In Poland, for example, the
growing market for mortgage loans has received international subsidization that has placed new
private (and foreign) entrants at a disadvantage. In a time of efficient capital flows across
borders, public sector subsidies to new growth markets have the negative impact of driving out
variation and entry.

Conclusions

Investment is attracted to growth. There is, consequently, a self-reinforcing process by
which investment and economic development are coupled in a joint causality. Direct investment,
not surprisingly, also flows to those sectors that are growing rapidly.

The issue facing transition economies is how to start this growth process. Direct
investment is believed to be more important than domestic investment, because it brings with it
technology and management. By serving as a successful template in the local economy and
through large-scale training programs, the foreign company acts to change the cognitive
constraints to change.

A volatile issue is the effect of multinational corporations on the political objectives of
interested groups. By establishing efficient productive units in the local economy, multinational
corporations place competitive pressure on competing firms to adopt similar practices.
Economic pressure will alter the political balance between labor and management, as well as
between entrenched managers and strategic investors. Economic change is a difficult process
because it requires shifts in power among political groups.

A way to attenuate these conflicts is to increase the potential gains as a way of detracting
from zero sum conflict between more efficient and failing firms, or between qualified and
redundant labor. A strategy of exports is attractive from a strictly economic view, as one of the
mechanisms that, through growth, attracts investment. But it is through export growth that
benefits to cooperation and change can be realized with the lower redistributional costs.

For this reason, it is useful to consider direct investment in the context of the overall
evolution of the economy and the agglomeration of new industries. The dynamic potential of
new and foreign firm entry provides the greatest long-term hope for transformation. It is as an
agent in social experimentation, as well as a conduit of capital and technology, that multinational
corporations play an important role in the transformation of the formerly socialist countries.
References


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Ares Assoscies, 1994, "Emerging Markets Investment Funds in Russia, intermediatry report to European Commission.


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Zander, Udo and Bruce Kogut, 1995, "Knowledge and the Speed of the Transfer and Imitation of Organizational Capabilities: An Empirical Test," *Organizational Science*.
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<th>Investor</th>
<th>Local Partner</th>
<th>% Share</th>
<th>Investment</th>
<th>Sector</th>
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<tr>
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<td>70</td>
<td>700</td>
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<td>51</td>
<td>117</td>
<td>Industrial gases</td>
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<td>Coca-Cola Amatil (Australia)</td>
<td>Ncalko Kyje</td>
<td>52</td>
<td>82</td>
<td>Beverages</td>
</tr>
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<td>67</td>
<td>a</td>
<td>Food &amp; energy</td>
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<td>95.5</td>
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<td>Tabak Kumna Hora</td>
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<td><strong>Hungary</strong></td>
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<td></td>
<td></td>
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<td>Ameritech (USA), Deutsche</td>
<td>Matav</td>
<td>30</td>
<td>875</td>
<td>Telecommunications</td>
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<td>Westel, Westel 900 (JV-greenfield)</td>
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<td>Magyar Suzuki (JV-greenfield)</td>
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<tr>
<td>Finance Corp. (Japan, International)</td>
<td>Pannon GSM (JV-greenfield)</td>
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<td>250</td>
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<td>PTT Netherlands, Telecom</td>
<td>Hungana Biztosita (JV)</td>
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<td>Allianz (Germany)</td>
<td>20</td>
<td>100</td>
<td>Motorway construction &amp;</td>
</tr>
<tr>
<td>Operations (various)</td>
<td>Transroute International, Banque</td>
<td>60</td>
<td>250</td>
<td>operation</td>
</tr>
<tr>
<td></td>
<td>Nationale de Paris, Caisse des</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Depots, Strabag (France, Austria)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
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<td>51</td>
<td>165</td>
<td>Aluminium</td>
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<td><strong>Poland</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fiat (Italy)</td>
<td>FSM</td>
<td>90</td>
<td>2000</td>
<td>Automotive</td>
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<td>Coca-Cola (USA)</td>
<td>Greenfields; JV with Rignes (Norway)</td>
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<td>230</td>
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<td>Multisector</td>
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<td>International Paper Company (USA)</td>
<td>Zaklady Celulozowo-Papierowe</td>
<td>80</td>
<td>315</td>
<td>Paper</td>
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<tr>
<td>European Bank for Reconstruction</td>
<td>Various</td>
<td>d</td>
<td>138</td>
<td>Multisector</td>
</tr>
<tr>
<td>and Development</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asea Brown Bovken (Sweden/Switzerland)</td>
<td>Zamech, Dolmels, Elta; Polish</td>
<td>76,76,51,30;</td>
<td>120</td>
<td>Power &amp; energy, railways</td>
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<tr>
<td>Curtis International (USA)</td>
<td>Electronics plant; business center</td>
<td>100.20</td>
<td>100</td>
<td>Electronics, construction</td>
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<tr>
<td>Unilever (Netherlands)</td>
<td>Pollena Bydgoszczy, Olmex, Roma</td>
<td>80,70,d</td>
<td>96</td>
<td>Food &amp; consumer goods</td>
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<tr>
<td>Epstein (USA)</td>
<td>Animex (JV); Golub/USA &amp; National</td>
<td>51,49;</td>
<td>200</td>
<td>Construction, food</td>
</tr>
<tr>
<td></td>
<td>Bank (JV)</td>
<td>(with Golub)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proctor &amp; Gamble (USA)</td>
<td>Greenfield</td>
<td>100</td>
<td>190</td>
<td>Consumer goods</td>
</tr>
</tbody>
</table>

a - Not Available
b - includes Slovak investment
c - investments exclude equity and loans granted
d - not applicable

### Table 2

**Stock of Foreign Direct Investment: Country and Region, 1988-93**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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<tbody>
<tr>
<td>France</td>
<td>51</td>
<td>75</td>
<td>110</td>
<td>130</td>
<td>161</td>
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<td>Germany</td>
<td>104</td>
<td>121</td>
<td>152</td>
<td>171</td>
<td>187</td>
<td>201</td>
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<tr>
<td>Japan</td>
<td>112</td>
<td>156</td>
<td>204</td>
<td>235</td>
<td>252</td>
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<tr>
<td>United Kingdom</td>
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<td>204</td>
<td>229</td>
<td>237</td>
<td>252</td>
<td>277</td>
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<tr>
<td>United States</td>
<td>346</td>
<td>390</td>
<td>432</td>
<td>467</td>
<td>489</td>
<td>529</td>
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<tr>
<td>World</td>
<td>1179</td>
<td>1393</td>
<td>1628</td>
<td>1817</td>
<td>1988</td>
<td>2165</td>
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</table>

* 1993 figures are estimates

<table>
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</tr>
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<tr>
<td>Developed Countries</td>
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<td>1,093</td>
<td>1,291</td>
<td>1,432</td>
<td>1,545</td>
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<td>Western Europe</td>
<td>412</td>
<td>509</td>
<td>634</td>
<td>729</td>
<td>821</td>
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<tr>
<td>North America</td>
<td>401</td>
<td>478</td>
<td>538</td>
<td>574</td>
<td>586</td>
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<tr>
<td>Other Developed Countries</td>
<td>96</td>
<td>106</td>
<td>119</td>
<td>128</td>
<td>138</td>
</tr>
<tr>
<td>Developing Countries</td>
<td>245</td>
<td>275</td>
<td>311</td>
<td>357</td>
<td>410</td>
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<tr>
<td>Africa</td>
<td>25</td>
<td>30</td>
<td>33</td>
<td>36</td>
<td>39</td>
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<td>Latin America and the Caribbean</td>
<td>98</td>
<td>105</td>
<td>115</td>
<td>132</td>
<td>149</td>
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<tr>
<td>East, South, and South-East Asia</td>
<td>123</td>
<td>140</td>
<td>163</td>
<td>187</td>
<td>219</td>
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<td>Central and Eastern Europe</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<tr>
<td>World</td>
<td>1154</td>
<td>1368</td>
<td>1603</td>
<td>1792</td>
<td>1963</td>
</tr>
</tbody>
</table>

* 1993 figures are estimates

Source: United Nations Economic and Social Council, Transnational Corporations in the World Economy and Trends in Foreign Direct Investment to Developing Countries, including in Particular the Interrelationship of Investment, Trade, Technology and Development.
Table 3

Foreign Direct Investment Inflows in Selected Countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Inflows Million US Dollars</th>
<th>Four Year Stock Million US Dollars&lt;sup&gt;(1)&lt;/sup&gt;</th>
<th>Four Year Stock Per Capita Million US Dollars&lt;sup&gt;(2)&lt;/sup&gt;</th>
<th>Four Year Stock As % GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulgaria</td>
<td>42</td>
<td>62</td>
<td>164</td>
<td>18</td>
</tr>
<tr>
<td>Czechoslovakia (Czech Republic 1993)</td>
<td>1073</td>
<td>568</td>
<td>2414&lt;sup&gt;(3)&lt;/sup&gt;</td>
<td>23&lt;sup&gt;(3)&lt;/sup&gt;</td>
</tr>
<tr>
<td>Hungary</td>
<td>1479</td>
<td>2339</td>
<td>6009</td>
<td>583</td>
</tr>
<tr>
<td>Poland</td>
<td>678</td>
<td>1697</td>
<td>2749</td>
<td>72</td>
</tr>
<tr>
<td>Romania</td>
<td>77</td>
<td>48</td>
<td>178</td>
<td>8</td>
</tr>
<tr>
<td>Russian Federation</td>
<td>700</td>
<td>1100</td>
<td>1800&lt;sup&gt;(4)&lt;/sup&gt;</td>
<td>12&lt;sup&gt;(4)&lt;/sup&gt;</td>
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<tr>
<td>China</td>
<td>7156</td>
<td>23115</td>
<td>36381</td>
<td>32</td>
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</tbody>
</table>


<sup>(1)</sup> Estimated as cumulative inflows
<sup>(2)</sup> Estimate based on Economist 1993 yearbook statistics
<sup>(3)</sup> Includes Slovakia for 1990 to 1992
<sup>(4)</sup> Missing data for 1990, 1991
### Table 4

**Foreign Investment in Russia by Sector**  
thousands of U.S. Dollars

<table>
<thead>
<tr>
<th>Sector</th>
<th>Accumulated by end of 1993</th>
<th>Number of Enterprises end of 1993</th>
</tr>
</thead>
<tbody>
<tr>
<td>Machine building and metal working</td>
<td>600,172</td>
<td>326</td>
</tr>
<tr>
<td>Fuel</td>
<td>396,980</td>
<td>55</td>
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<tr>
<td>Trade and food services</td>
<td>365,153</td>
<td>742</td>
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<tr>
<td>Construction</td>
<td>153,277</td>
<td>153</td>
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<tr>
<td>Other industrial</td>
<td>134,315</td>
<td>53</td>
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<tr>
<td>Woodworking, wood pulp and paper</td>
<td>132,107</td>
<td>174</td>
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<tr>
<td>Construction materials</td>
<td>111,222</td>
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<tr>
<td>Health care and social security</td>
<td>97,081</td>
<td>64</td>
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<tr>
<td>Finance, credit, insurance and pensions</td>
<td>82,735</td>
<td>35</td>
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<tr>
<td>Food</td>
<td>70,666</td>
<td>81</td>
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<tr>
<td>Science and research</td>
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<td>171</td>
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<tr>
<td>Culture and art</td>
<td>61,906</td>
<td>32</td>
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<tr>
<td>Transport and communications</td>
<td>53,680</td>
<td>81</td>
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<td>Foreign trade</td>
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<td>Dwellings</td>
<td>46,466</td>
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<tr>
<td>Nonferrous metallurgy</td>
<td>45,773</td>
<td>21</td>
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<td>Fish breeding</td>
<td>38,408</td>
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<td>Marketing</td>
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<td>Light industry</td>
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<tr>
<td>Chemical and petrochemical</td>
<td>29,882</td>
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<tr>
<td>Medical</td>
<td>16,978</td>
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<tr>
<td>Information and computing services</td>
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<tr>
<td>Other material production</td>
<td>12,713</td>
<td>87</td>
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<td>Agriculture</td>
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<tr>
<td>Forestry</td>
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<tr>
<td>Ferrous metallurgy</td>
<td>6,846</td>
<td>20</td>
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<td>Logistics and distribution</td>
<td>4,939</td>
<td>67</td>
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<tr>
<td>Management</td>
<td>3,982</td>
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<td>Printing</td>
<td>3,875</td>
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<td>Public education</td>
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<td>25</td>
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<td>Services</td>
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<tr>
<td>Glass and china</td>
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<td>6</td>
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<td>Purchases</td>
<td>133</td>
<td>5</td>
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<tr>
<td>Flour milling and mixed fodder</td>
<td>42</td>
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</table>

**Total**                                      | **2,683,987**               | **2672**                        |

Source: Moscow Business Monitor, July 5, 1994
### Table 5

**Augmented Solow Model**

(Independent Variable: Log GDP per Working Age Person in 1985)

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<th></th>
<th>Full</th>
<th>Non-OECD</th>
<th>OECD</th>
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<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
</tr>
<tr>
<td>Constant</td>
<td>4.78</td>
<td>5.72</td>
<td>4.92</td>
</tr>
<tr>
<td></td>
<td>(0.59)</td>
<td>(0.42)</td>
<td>(0.65)</td>
</tr>
<tr>
<td>Log (Investment over GDP)</td>
<td>1.33</td>
<td>0.60</td>
<td>1.01</td>
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<tr>
<td></td>
<td>(0.19)</td>
<td>(0.157)</td>
<td>(0.23)</td>
</tr>
<tr>
<td>Log (Workforce)</td>
<td>-0.57</td>
<td>-0.47</td>
<td>0.11</td>
</tr>
<tr>
<td></td>
<td>(0.14)</td>
<td>(0.09)</td>
<td>(0.31)</td>
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<tr>
<td>Log (School)</td>
<td>-</td>
<td>0.71</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>(0.08)</td>
<td>(0.09)</td>
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</tr>
<tr>
<td># of Observations</td>
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<td>78</td>
<td>56</td>
</tr>
<tr>
<td>R²</td>
<td>.57</td>
<td>.79</td>
<td>.28</td>
</tr>
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</table>
Table 6

Estimated GDP Per Capita of Eastern Europe in 1991

<table>
<thead>
<tr>
<th></th>
<th>Actual GNP per Capita</th>
<th>Predicted GDP per Capita</th>
<th>Predicted with Fixed Human Capital Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulgaria</td>
<td>1840</td>
<td>4033.34</td>
<td>6783.383</td>
</tr>
<tr>
<td>Ukraine</td>
<td>2340</td>
<td>3188.798</td>
<td>4100.351</td>
</tr>
<tr>
<td>Romania</td>
<td>1390</td>
<td>5413.45</td>
<td>7472.519</td>
</tr>
<tr>
<td>Poland</td>
<td>1790</td>
<td>4653.022</td>
<td>6363.797</td>
</tr>
<tr>
<td>*Czechoslovakia</td>
<td>2460</td>
<td>5857.931</td>
<td>7839.51</td>
</tr>
<tr>
<td>Russian Federation</td>
<td>3220</td>
<td>5263.024</td>
<td>7005.971</td>
</tr>
<tr>
<td>Hungary</td>
<td>2720</td>
<td>5356.921</td>
<td>7173.347</td>
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</tbody>
</table>

*Czech data for work force and human capital are average of Hungarian and Polish measures.
Table 7

Correlation of Average FDI Per Capita and Residual from Table 5

<table>
<thead>
<tr>
<th>Regression Column Number</th>
<th>Full</th>
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<th>OECD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
</tr>
<tr>
<td></td>
<td>.115</td>
<td>.11</td>
<td>.33</td>
</tr>
</tbody>
</table>


Table 8
Number of FDI Projects In Selected Central and Eastern European Countries, by type of transaction, October 1, 1991 to March 31, 1993

<table>
<thead>
<tr>
<th>Country</th>
<th>Number</th>
<th>Percent</th>
<th>Number</th>
<th>Percent</th>
<th>Number</th>
<th>Percent</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
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