TRANSITION ECONOMIES: THE ROLE OF INSTITUTIONS AND INITIAL CONDITIONS

Stanley Fischer
Citigroup

Ratna Sahay
IMF

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Stanley Fischer and Ratna Sahay[1]

I.   INTRODUCTION

The transition process in the economies of the former Soviet bloc is drawing to an end as the 25 transition economies go their own ways and their policy problems become less distinguishable from those confronting other economies. After a little more than a decade, some countries are headed for Europe, with different expected dates of arrival; some in the CIS that, for a while, looked as if they would never progress, most notably Russia, are growing rapidly; and some remain in severe difficulties.

It is unlikely there will ever be another natural economic experiment on a scale as large as that of the transition process, with 25 economies changing policies radically at almost the same moment.[2] What have we learned from the experience?[3] That depends on what was expected. The consensus was that there would be an initial decline in output due to disorganization as the price and institutional structure of the economy changed and macroeconomic stability was established, and that after that period, countries would begin to grow more rapidly than the advanced countries, towards whose levels of income they would eventually converge. The initial decline was probably expected to last one to two years.

Figure 1a shows the evolution of GDP since transition began in four groups of countries: those of Central and Eastern Europe (CEE), the Baltics, the CIS-5,[4] which includes Russia, and the CIS-7,[5] which consists of the poorest countries of the CIS. Transition year, T, is defined as the year in which central planning was abandoned in the former communist countries (Table 1). Transition began in 1992 in the former Soviet Union (Baltics, the CIS-5 and the CIS-7), and somewhat earlier in the CEE countries. The chart shows unweighted averages of output for the countries in each of the groups. Output began to fall towards the end of the 1980s, even before transition began in most countries. As is well known, the output fall was much larger in the former Soviet Union countries, including the Baltics, than in the central and eastern European countries. It is also true that output took longer to recover in the CIS countries than in eastern and central Europe and the Baltics.

As is evident from Table 1 and Figure 1b, once output began to grow, the average growth rate in the CIS-5 and CIS-7 was higher by nearly four and more than two percentage points, respectively, than in the CEE countries, which grew at about 3.5 percent.

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[2] In terms of what can be drawn from the data, radical changes in direction in an economy like China's or India's, where more than 25 economic units (states or provinces) collect data, and differ in aspects of economic policy, geography and other conditions, also provide a great deal of information. But in those cases, there is only one national policy.

[3] See for instance Anders Aslund (2001), EBRD Transition issues, Joseph Stiglitz (2002), and World Bank (2002).

[4] Belarus, Kazakhstan, Russia, Turkmenistan, and Ukraine.

[5] Armenia, Azerbaijan, Georgia, Kyrgyzstan, Moldova, Tajikistan, and Uzbekistan.

However, because of their late start and much larger output decline, measured output in most CIS countries still has not surpassed its pre-transition levels.[6]

In the event, the initial output declines looked more like collapses—which began before the end of the old regime—than the more measured declines that were expected. Growth began to revive at different times in each transition economy. The rate of growth in the initial recovery phase was probably below expectations. However in more recent years, the poorer countries of the CIS-7 as well as the CIS-5 have been growing faster than in CEE and the Baltics, and if the current rates of growth continue, there is hope for convergence—though that could take a very long time.

Although the transition economies are now all growing, and although our reading of the history of the period, and the statistical representation of it, convinces us that the basic strategy recommended by the IFIs was right, that is a controversial view. The accusation that the IFIs lost Russia, and the charge that shock treatment and too rapid privatization produced unnecessary output losses, disorganization, corruption and misery have been familiar parts of the indictment of the approach recommended by western officials and other advisers.[7]

In our earlier work (Fischer, Sahay, and Vegh, 1996a, 1996b, and 1998) we concluded that the transition experience confirmed the view that both macroeconomic stabilization and structural reforms contribute to growth, and that the more structural reform that took place, the more rapidly the economy grew.

In this paper we focus on an additional element in the indictment brought by the critics of the advice offered to the transition economies by the IFIs and other mainstream economists, *namely that this advice ignored the need to build the institutional framework for a market economy. We shall argue that the charge that the IFIs did not take account of the importance of institutional development, especially of the rule of law, is without merit.* We also investigate in more detail the role of initial conditions and institutional development in the growth process in the transition economies.

We start by revisiting our earlier empirical studies.

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[6] Of course, the pre-transition data has to be interpreted with some caution in that they were measured at distorted prices and the quality of products were most likely inferior. GDP is likely to be underestimated during the initial transition years, more so in the countries of the former Soviet Union.

[7] Many different economists and other advisers were active in the transition economies, and their advice was by no means uniform. However the mainstream advice was generally for rapid change where possible (e.g. price and trade reform) and as rapid change as possible in other areas, such as privatization. See Aslund (2001).

II.   REVISITING THE EARLIER EMPIRICAL STUDIES

Regression Table 1 presents results obtained from running the panel data specifications used in our previous work on a data set that has been extended to 2001.[8] Note that the number of observations more than doubled with this extension of the data set. The earlier results had concluded that lower inflation or fixed exchange rate regimes (possibly because they brought inflation down much faster), more foreign assistance, and faster and deeper structural reforms helped raise growth rates. The results on fiscal balance (the tighter the fiscal policy the faster the growth rates) were weak.

The new results (with the extended data set) are consistent with our earlier results, except that the fiscal balance variable is now signficant across all three regressions.[9] Moreover, the coefficient on the fiscal policy variable (the budget balance) increases with the longer period data set. The coefficients on the reform indices, whether the cumulative liberalization index (CLI), or simply the liberalization index (LI), or the subindex, LIP, which captures privatization and enterprise reforms, are signficant throughout the period, irrespective of the time period considered. The notable exception is the result obtained on the foreign assistance variable: with the extended data set, the coefficient on foreign assistance is no longer significant, indicating possibly that aid mattered more during the initial years of transition than later on, or reverse causation, with the slow growers receiving more aid in later years.

In summary, the extension of the data set strengthens our confidence in the empirical results obtained a few years ago by us and other researchers, as well as in the policy implications of those results.[10]

III.   INITIAL CONDITIONS, HISTORY, AND GEOGRAPHY

Our earlier work found a significant effect of initial conditions on growth in the early years of the transition. For example, growth was generally worse, *ceteris* paribus, for those countries that were further to the east (as measured by distance from Dusseldorf), or that had spent a longer period under communism.

Table 2 presents different measures of initial conditions in the transition economies. At the start of the transition, per capita income levels in the CIS countries were generally

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[8] Given data constraints, regressions with the liberalization indices (CLI, LIP, LI) have been run with data updated only until 1999, while those with aid as a share of GDP were updated until 2001.

[9] Aside from the currency boards in the Baltics and Bulgaria, most of the transition economies are now operating with flexible exchange rate regimes (albeit, "managed" in most cases). Early in the transition period, countries that pegged the exchange rate generally were able to stabilize more rapidly, but as the Russian case vividly illustrates, adoption of the peg sometimes led to setbacks later. In other cases (Central and Eastern Europe) there was a gradual transition to exchange rate flexibility as capital accounts were opened.

[10] See, for instance Denizer et. al (1996), Berg et al (1999) and Aslund et al (1996).

lower than those in the Baltics and the CEE countries. Table 2 also includes an index of initial conditions computed by the EBRD. A higher value of the initial conditions index indicates a more favorable starting position. This index is derived by the EBRD from factor analysis on a set of measures for the level of development, trade dependence on the CMEA, macroeconomic disequilibria (repressed inflation, black market premium), distance from the EU, natural resource endowment, market memory and state capacity. As expected, economic distortions as measured by the EBRD index were much higher in the CIS countries than in the CEE.

Table 2 includes some other measures of initial conditions. These show that the CIS-5 are better endowed with natural resources than the other regions. While on average, the CIS countries are much more fragmented ethnically than the CEE countries, there is large diversity on this score among the countries within the groups. We examined whether these additional factors mattered for growth and institution building.

The role of initial conditions was examined by De Melo, Denizer, Gelb, and Tenev (1998), Berg, Borensztein, Sahay, and Zettelmeyer (1999), Havrylyshyn and van Rooden (2001) and others. The general conclusion was that the effect of initial conditions, while strong at the start of transition, wears off over time. The diminishing role of initial conditions is confirmed by the results presented in Regression Table 2. The coefficient on the initial conditions index is almost always insignificant. When the index is interacted with the "time in transition" dummy, the coefficient remains insignificant but turns negative, indicating that the longer the period, the less the significance of the initial conditions. This is not a surprising result.

IV.   WHAT ARE INSTITUTIONS?

In its 1998 volume *Institutions Matter*,[11] the World Bank (p11) defines *institutions* as "formal and informal rules and their enforcement mechanisms that shape the behavior of individuals and organizations in society". They are distinguished from *organizations* which are "entities composed of people who act collectively in pursuit of shared objectives".[12] Examples of *formal institutions* presented by the authors are laws and regulations, and contracts; among *informal institutions* are trust, ethics and political norms. *Organizations* include political (legislatures, political parties, government agencies, the judiciary), economic (private firms, trade unions, business associations), and social (NGOs, schools, PTAs).

A similar definition is used in the new institutional growth literature, which claims that institutions dominate policies. For instance, Acemoglu, Johnson, Robinson and Thaicharoen (2002) define institutions as "*a cluster of social arrangements* that include constitutional and social limits on politicians' and elites' power, the rule of law,

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[11] Shahid Javed Burki and Guillermo Perry, eds, *Beyond the Washington Consensus: Institutions Matter*, Washington, DC: World Bank, 1998.

[12] The distinction is attributed to the new institutional economics.

provisions for mediating social cleavages, strong property rights enforcement, a minimum amount of equal opportunity and relatively broad-based access to education, etc." (italics in original).[13]   This seems to be a description of a well-run country, or a measure of governance. Similarly, but less normatively, Rodrik, Subramanian and Trebbi (2002) specify as institutions "the rules of the game in a society and their conduciveness to desirable economic behavior," in particular "the role of property rights and the rule of law".[14]   The institutional variable in Dollar and Kraay (2002) is a measure of the rule of law.[15]   Hall and Jones (1999) attribute national differences in economic performance to differences in social infrastructure, defined as "the institutions and government policies that make up the economic environment within which individuals and firms make investments, create and transfer ideas, and produce goods and services."

Most of these definitions are consistent with those set out by the World Bank (1998): institutions are rules and modes of behavior, including the rule of law; organizations are "entities composed of people who act collectively in pursuit of shared objectives."

The new institutional literature is sometimes taken as saying that not much matters for the development of a country beyond its institutions, *which are themselves determined by a more or less immutable history, such as those of European settlement*. The italicized component mistakes econometric convenience in choosing instruments for a substantive argument: for instance, no-one observing modern Zimbabwe would take the institutional structure—in the sense of rule of law – as immutable. We also doubt the first statement, having seen too many policy changes that produced changes in real behavior, for example, successful economic stabilizations. But that is not the subject of this paper.

Those who argued that the IFIs and western advisors were missing the point in their efforts to help the transition economies referred mainly to the need to promote the rule of law, property rights, and the investment climate (which are closely linked). They were thus talking about institutions as defined above. However we shall be examining both institutions and organizations, for we find the distinction a difficult one to draw, and in particular believe that institutions in the World Bank sense require organizations to be effective, and that in seeking to develop institutions, it is also necessary to develop organizations. It may well be, though, that it is easier to set up organizations than to develop institutions such as the rule of law, which may require changes in modes of social interaction that take a long time to be implanted in social behavior.

V.   INSTITUTION-BUILDING DURING THE TRANSITION

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[13] Daron Acemoglu, Simon Johnson, James Robinson and Yunyong Thaicharoen (2002), "Institutional Causes, Macroeconomic Symptoms: Volatility, Crises and Growth" (August).

[14] Dani Rodrik, Arvind Subramanian and Francesco Trebbi (2002), "Institutions Rule: The Primacy of Institutions Over Geography and Integration in Economic Development", NBER Working paper 9305 (October).

[15] David Dollar and Aart Kraay (2002), "Institutions, Trade, and Growth", World Bank (July).

The charge that the IFIs were unaware of the importance of institutional development, especially of the rule of law, cannot be sustained. An early awareness of the importance of institutions is evident in Fischer and Gelb (1991). The conditionalities in IFI programs generally included elements of institutional and organizational development, and much technical assistance was focused on the building up of institutions, for instance in the case of the IMF, the development of central banks, treasuries, tax systems, financial systems, and statistical systems (Table 6). Further, there were many bilateral non-IFI efforts at providing technical assistance, including for instance technical assistance by the American Bar Association to develop legal systems.[16]

We start by examining IMF conditionality. Table 6 shows the number of conditions in IMF programs with transition countries during 1993–97.[17] Performance criteria, usually imposed on macroeconomic variables, are more stringent conditions than structural benchmarks. In addition to these two types of conditions, prior actions (not reported here) are also often needed before a country can enter an IMF program.[18]

Many of the structural benchmarks cover a broad definition of institution building, and include conditions that relate to the building of organizations, for instance in financial sector reform. Table 6 shows that countries that were less advanced institutionally had, on average, almost twice as many structural benchmarks as compared to the more advanced ones. These benchmarks were fairly comprehensive, covering several areas in trade and exchange systems, tax policy and systems, expenditure management systems, public enterprise reforms, privatization, and financial sector reforms. There were fewer conditions relating to macroeconomic variables in the CIS countries than those relating to structural changes or institution building; in the CEE countries, the number of macroeconomic conditions was roughly equal to the non-macro conditions. During the early years, there were many benchmarks to prevent the accumulation of arrears by the state budget, enterprises, and the central bank—these benchmarks were imposed to curb the culture of soft budget constraints that was common in the communist regime. Budget constraints generally hardened over time.

In Table 7 we present data on IMF technical assistance to the 25 transition economies over the period 1989–2003. The volume of technical assistance to each of the three groupings of countries in the table peaked in the period 1992–95, but was maintained at a high level through the end of 2003, especially to the twelve CIS countries. This assistance was aimed at building the institutional infrastructure for the macroeconomic management of the economy.

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[16] We believe there should be a full listing somewhere of all the technical assistance provided to any given transition country. One such listing, for the CIS-7, can be found in Table 6 in Hare (2003). Hare estimates that on average about 20 percent of the financial aid provided to the CIS-7 was for purposes of institution-building. We are not aware of such information having been collected for other transition economies.

[17] The numbers are based on data collected by IMF economists Valerie Mercer-Blackman and Anna Unigovskaya.

[18] The number of conditions are counted by the test dates that were set for each of the measures. Hence, if there were four test dates for ceilings on reserve money, the total would include these four numbers even though it was on the same variable.

Table 3 and Figures 2 and 3, primarily based on indices constructed by the EBRD, present several measures of the extent and success of the institution building that took place in the last decade.[19] The reform index is a composite measure of EBRD sub-indices: the financial reform index, market reform index, the liberalization index, and a privatization index. The financial reform index, in turn, has two sub-indices: banking and non-banking reforms. The market reform index comprises the enterprise reform index and competition policy. The liberalization index is made up of price, trade, and exchange regime liberalization indices. Finally, the privatization index measures small- and large-scale privatization. Liberalization indices increased very rapidly, as they could be adopted and implemented quickly. But progress is evident even in the other categories, for instance commercial law and the legal environment, where changes take longer to implement. Table 3 and Figure 2 show—not surprisingly—that while all three regions, the CEE, CIS-5, and CIS-7 have progressed, the CEE is more advanced—and has advanced more—than the others.

Regarding laws, indices on the legal framework have only recently (since 1997) begun to be constructed. Available data indicates that as expected, the CEE countries and the Baltics are more advanced than the others.[20] However, as seen in Table 3 and Figure 3c, the legal environment measures in the CIS-5 advanced rapidly, reaching levels closer to those of the CEE by 2001, even though they were behind both the CIS-7 and the CEE in 1997. Financial regulations (Figure 3b), by contrast, appear to have progressed faster in the CIS-7 than in the CIS-5, even though they were lagging in 1997. In the three categories, commercial law, financial regulations, and legal environment (company law), all three groups of countries are more advanced in the legal environment (company law) than in commercial law and financial regulations. However, while the charts show improvements, the absolute levels for the variables shown in Figure 3 are low in the CIS countries.

Correlation Table 1 shows high—though not perfect—correlations among all measures of reform. In particular, if we take the legal variables (the last three rows in the matrix) as representing institutional reform, their average correlation with the overall reform index is about 0.7. A surprising feature of the table is that the correlation between the commercial law index and measures of price liberalization, competition policy, and privatization is relatively low—but recall that the legal indices are available for only the later part of the period.

Correlation Table 2 presents correlations between the reform index, institutions (such as commercial and financial law, and the state capture index), and initial conditions. The "state capture" index, put together by the World Bank and the EBRD is a measure of corruption or the rule of law which attempts to measure the extent to which businesses

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[19] The top grade for any index is 4.

[20] Weder (1991) in fact, documents that the transition economies individually are a fairly heterogenous group but if the CEE and Baltics are taken together, they can no longer be distinguished from the countries of Western Europe.

have been affected by the sale of government decisions and policies to private interests. Interestingly, this measure does not appear to be correlated with the other measures. This table also shows that the legal variables are negatively correlated with the time a country spent under communism—another way of saying that these reforms are more advanced in central and eastern European countries, including the Baltics.

In sum, there has been progress in all areas of institutional reform, narrowly and broadly interpreted. Nor is it a surprise that countries that have been more successful in implementing policy reforms have also been more successful in implementing structural or institutional reforms. The one interesting finding is the low correlation between the state capture index, a measure of the rule of law, and other measures of reform and instiutions, suggesting that while progress can be made in legislating laws, their implementation may lag behind.

We conclude that if there was a problem in the slow development of institutions, it was not for lack of effort on the part of outside advisers. Rather it was the sheer difficulty of developing some institutions (in the new institutional literature sense) such as the rule of law, which require changes in societal norms and ways of doing business. Those changes inherently take a long time.[21] Other institutions, or organizations, such as a central bank, can be created more easily and rapidly, and a great deal of technical assistance was directed to building central banks and fiscal systems.

It could also be argued that there was no point in trying to move ahead with economic policy changes and organization building until the right institutions had been created. This is not a point we agree with, for we believe that changes in institutions in the sense of modes of behavior are strengthened and sustained by an appropriate organizational framework.

VI.   REGRESSION ANALYSIS: INCLUDING INSTITUTIONAL DEVELOPMENT

In Regression Table 2, we add measures of organizational and institutional development to the basic regressions reported in Regression Table 1. There are some changes in the regressions between Regression Tables 1 and 2. In particular, instead of using the CLI, the cumulative liberalization index, which runs only through 1999, we replace it by the Reform Index (described above), which runs through 2001. In addition, the regressions are two-stage least squares panel regressions, with the reform index in each case being instrumented by the sum of the reform indexes for the other countries in the regression.

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[21] Sometimes lack of absorptive capacity was a constraint. For example, in some CIS countries one of the constraints in the early years was finding sufficient English-speaking interpreters. Occasionally, the country officials complained that the technical advisors did not give due regard to the local institutional constraints when they provided technical assistance.

Regressions (7) and (8) in Regression Table 2 in essence repeat the results of Regression Table 1, and show strong statistical significance of both macroeconomic variables and the reform index. Inflation and the exchange rate regime variable are strongly correlated, and they are not separately significant if both entered into the regression. Initial conditions lose their statistical significance once the exchange rate regime variable is replaced by a measure of inflation.

Regression (9) in Regression Table 2 adds the state capture index to the regression. The state capture index comes close, as we said earlier, to representing the extent of the rule of law. The coefficient on that variable is statistically significant, indicating that even after accounting for the extent of the structural reforms reflected in the reform index, this measure indicates an independent negative impact on state capture on growth. A cross plot of the reform index and the state capture index is presented in Figure 4.

The reform index varies within the panel of data from close to zero to 4. This means that the quantitative impact of the reform index on growth implied by the regression equations is very high, possibly too high to be plausible. The state capture index has a range within the sample of about 25, suggesting an impact on growth between the most and the least state captured countries of about 3 percentage points—a number which we find plausible.

VII.   CONCLUSIONS

We have demonstrated that the IFIs were well aware of the need for institutional and organizational development in the transition process, and that a great deal of effort was devoted to helping build institutions in the transition economies. The reform index included in Regression Table 2 is both a measure of the extent of reform and a measure of institutional change—and growth is powerfully associated with that index. We regard the state capture index as an indicator of the rule of law, and that index too is powerfully associated with growth.

We should note also the strong correlations among the many reform measures in Correlation Tables 1 and 2: once a country is reforming, it typically advances on many fronts. However, there is an exception to this general finding. The state capture index is only weakly associated with the extent of reform, indicating that some institutions develop independently of other measures of institutional or organizational reform.

One final word: We noted earlier that it is sometimes assumed that a country's institutions are determined by a more or less immutable history, and thus must be slow to change. Institutions can change, particularly at a time of crisis. And our ability to predict which institutions are immutable is low. So, at the same time as we emphasize the role of institutions in growth and development, we should also recognize that institutions can change. And they have changed during the transition process in the former Soviet bloc.

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Table 1. Transition Economies: Output Performance, 1989-2003

	Transition Year (T)	GNP(PPP) Per Capita in 1989	Year in Which Output was Lowest	Maximum Output Decline Since T-1	Cumulative Output Growth, Lowest to 2003	Average Output Growth Since Lowest Level until 2003[a]
	(1)	(2)	(3)	(4)	(5)	(6)
Baltics	**1992**	**7973**	**1993/94**	**38.1**	**52.3**	**4.87**
Estonia	1992	8900	1994	29.4	54.1	4.80
Latvia	1992	8590	1993	44.2	53.0	5.32
Lithuania	1992	6430	1994	40.6	49.8	4.49
CEE	**1990/91**	**5760**	**1991/97**	**24.7**	**44.5**	**3.54**
Albania	1991	1400	1992	33.2	95.5	6.09
Bulgaria	1991	5000	1997	39.3	27.5	4.05
Croatia	1990	6171	1993	37.6	54.8	4.37
Czech Republic	1991	9000	1992	12.1	24.4	1.98
Hungary	1990	6810	1993	18.1	40.4	3.39
Macedonia	1990	3394	1995	27.2	15.1	1.76
Poland	1990	5150	1991	13.7	62.9	4.07
Romania	1991	3470	1992	20.6	22.3	1.83
Slovak Republic	1991	8000	1993	24.4	51.0	4.12
Slovenia	1990	9200	1992	20.4	51.3	3.76
CIS-7	**1992**	**4191**	**1993/99**	**46.0**	**58.2**	**5.72**
Armenia	1992	5530	1993	14.1	100.7	6.97
Azerbaijan	1992	4620	1995	57.9	88.5	7.93
Georgia	1992	5590	1994	65.4	62.1	5.37
Kyrgyz Republic	1992	3180	1995	44.8	45.4	4.68
Moldova	1992	4670	1999	62.2	24.1	5.40
Tajikistan	1992	3010	1996	58.8	59.3	6.66
Uzbekistan	1992	2740	1995	17.5	27.2	3.01
CIS-5	**1992**	**5954**	**1995/99**	**42.0**	**54.4**	**7.00**
Belarus	1992	7010	1995	31.5	58.4	5.75
Kazakhstan	1992	5130	1995	31.1	53.3	5.34
Russia	1992	7720	1998	45.6	35.5	6.08
Turkmenistan	1992	4230	1997	45.9	93.5	11.00
Ukraine	1992	5680	1999	55.2	31.3	6.81

Sources: GNP per capita in 1989 (DDGT 1997, World Bank), real GDP (World Economic Outlook 2004).

Note: Transition year is defined as the year in which central planning was dismantled. T-1 refers to the year before transition began. Through columns 4 to 6, real GDP index (T-1=100) is used. The calculations for Armenia based on time T, as there are no data for T-1 and 1989. The transition year and the year in which output is lowest for each group corresponds to the modal average.

a. The averages are geometric averages since lowest level of output until 2003.

Table 2. Transition Economies: History and Geography

	Transition Year (T)	Per Capita Income (PPP) in 1989	Per Capita GDP (PPP) in T	First Year of Communism	Initial Condition Index[a]	Distance from Düsseldorf	Ethnic Fraction-alization[b]	Natural Resources
Baltics	**1992**	**7973**	**6119**	**1940**	**-0.2**	**1347**	**0.50**	**Poor**
Estonia	1992	8900	6320	1940	-0.4	1449	0.53	Poor
Latvia	1992	8590	5335	1940	-0.2	1293	0.61	Poor
Lithuania	1992	6430	6703	1940	0	1299	0.35	Poor
CEE	**1990/91**	**5760**	**7242**	**1947**	**2.6**	**1134**	**0.26**	
Albania	1991	1400	2186	1945	2.1	1494	0.46	Poor
Bulgaria	1991	5000	5632	1947	2.1	1574	0.26	Poor
Croatia	1990	6171	7133	1945	2.5	913	0.37	Poor
Czech Republic	1991	9000	10801	1948	3.5	559	0.11	Poor
Hungary	1990	6810	9447	1948	3.3	1002	0.17	Poor
Macedonia	1990	3394	5011	1945	2.5	1522	0.57	Poor
Poland	1990	5150	5684	1948	1.9	995	0.04	Moderate
Romania	1991	3470	...	1948	1.7	1637	0.2	Moderate
Slovak Republic	1991	8000	7938	1948	2.9	824	0.25	Poor
Slovenia	1990	9200	11345	1945	3.2	815	0.17	Poor
CIS-7	**1992**	**4191**	**2887**	**1924**	**-0.6**	**3704**	**0.46**	**Poor**
Armenia	1992	5530	2160	1920	-1.1	3143	0.12	Poor
Azerbaijan	1992	4620	3046	1921	-3.2	3270	0.31	Rich
Georgia	1992	5590	4650	1921	-2.2	3069	0.55	Moderate
Kyrgyz Republic	1992	3180	2978	1921	-2.3	5047	0.66	Poor
Moldova	1992	4670	3311	1940	-1.1	1673	0.55	Poor
Tajikistan	1992	3010	1866	1921	-2.9	4938	0.58	Poor
Uzbekistan	1992	2740	2195	1921	-2.8	4788	0.48	Moderate
CIS-5	**1992**	**5954**	**6501**	**1920**	**-1.9**	**2924**	**0.45**	**Rich**
Belarus	1992	7010	6660	1918	-1.1	1435	0.37	Poor
Kazakhstan	1992	5130	5615	1921	-2.5	5180	0.68	Rich
Russia	1992	7720	9077	1917	-1.1	2088	0.31	Rich
Turkmenistan	1992	4230	5154	1921	-3.4	4254	0.46	Rich
Ukraine	1992	5680	5998	1918	-1.4	1664	0.42	Moderate

Source: Per capita income, state dummy and natural resource dummy (DDGT 1997, World Bank), per capita GDP (WEO, 2002), ethnic fractionalization Kok Kheng (2001)

Note: GDP data in transition year were not available for Uzbekistan, Slovenia and Czech Republic. Therefore, for these countries GDP data in the first year after

[a] Higher value of the index indicates a more favorable starting condition.

[b] Range 0-1, 0=no ethnic fractionalization.

Table 3. Transition Economies: Economic Institutional Development

	Reform Index		Banking Reform		Non-Banking Reform		Enterprise Reform		Commercial Law		Financial Regulations		Legal Environment	
	1991	2001	1991	2001	1991	2001	1991	2001	1997	2001	1998	2000	1997	2000
Baltics	**1.17**	**3.27**	**1.00**	**3.33**	**1.00**	**2.67**	**1.00**	**3.00**	**3.33**	**4.00**	**3.00**	**3.33**	**3.67**	**4.00**
Estonia	1.3	3.5	1	4	1	3	1	3	4	4	3	3	4	4
Latvia	1.1	3	1	3	1	2	1	3	3	4	3	3	3	4
Lithuania	1.1	3.3	1	3	1	3	1	3	3	4	3	4	4	4
CEE	**1.80**	**3.11**	**1.40**	**3.10**	**1.30**	**2.60**	**1.40**	**2.60**	**3.20**	**3.50**	**3.00**	**3.00**	**3.30**	**3.60**
Albania	1.1	2.6	1	2	1	2	1	2	2	2	2	2	2	3
Bulgaria	1.6	3	1	3	1	2	1	2	3	4	3	3	3	4
Croatia	1.8	3	1	3	1	2	1	3	4	4	3	3	4	4
Czech Rep	2.1	3.5	2	4	1	3	2	3	4	3	3	3	4	3
Hungary	2.3	3.6	2	4	2	4	2	3	4	4	4	4	4	4
Macedonia	1.8	2.9	1	3	1	2	1	2	2	4	2	2	2	3
Poland	2.1	3	2	3	2	4	2	3	4	3	4	..	4	4
Romania	1.2	2.9	1	3	1	2	1	2	3	4	3	4	3	4
Slovak Rep	2.1	3.3	2	3	1	2	2	3	3	3	3	3	3	3
Slovenia	1.9	3.3	1	3	2	3	1	3	3	4	3	3	4	4
CIS-7	**1.00**	**2.50**	**1.00**	**1.86**	**1.00**	**1.86**	**1.00**	**2.00**	**2.00**	**2.67**	**1.67**	**2.71**	**2.67**	**2.86**
Armenia	1	2.8	1	2	1	2	1	2	3	2	2	2	3	3
Azerbaijan	1	2.4	1	2	1	2	1	2	1	2	2	2	2	3
Georgia	1	2.8	1	2	1	2	1	2	2	3	1	3	3	3
Kyrgyz Re	1	2.8	1	2	1	2	1	2	2		2	3	3	3
Moldova	1	2.6	1	2	1	2	1	2	2	4	2	2	3	3
Tajikistan	1	2.3	1	1	1	1	1	2	..	2	1	4	..	2
Uzbekistan	1	2.3	1	2	1	2	1	2	2	3	..	3	2	3
CIS-5	**1.00**	**2.10**	**1.00**	**1.80**	**1.00**	**1.80**	**1.00**	**1.75**	**2.25**	**3.00**	**1.80**	**2.50**	**2.25**	**3.25**
Belarus	1	1.3	1	1	1	2	1	..	2	3	1	2	2	2
Kazakhstan	1	2.8	1	3	1	2	1	2	2	4	2	3	2	4
Russia	1.1	2.6	1	2	1	2	1	2	3	3	3	3	3	4
Turkmenis	1	1.3	1	1	1	1	1	1	..	2	1	2	..	..
Ukraine	1	2.5	1	2	1	2	1	2	2	3	2	..	2	3

Source: Transition Report (various issues).

The indices are ranked from 1 to 4, where 4 indicates the highest level of reform

Table 4. Transition Economies: Policy Performance

	Transition Year (T)	Average Inflation Rate, First Three Years Since Price Liberalization	Inflation Rate in 2003	Average Budget Balance (%GDP), First Three Years Since T	Budget Balance (%GDP) in 2003
Baltics	**1992**	**298**	**1.0**	**-1.5**	**-0.8**
Estonia	1992	150	1.3	0.1	0.6
Latvia	1992	395	2.9	-1.5	-1.8
Lithuania	1992	350	-1.2	-3.2	-1.4
CEE	**1990/91**	**181**	**4.4**	**-5.2**	**-4.0**
Albania	1991	116	2.3	-20.1	-5.1
Bulgaria	1991	163	2.3	-10.3	0.0
Croatia	1990	455	1.5	-3.0	-4.5
Czech Republic	1991	30	0.2	1.8	-7.0
Hungary	1990	27	4.7	-3.5	-5.9
Macedonia	1990	113	2.5	-3.9	-2.0
Poland	1990	302	0.8	-3.6	-6.6
Romania	1991	209	15.3	-0.6	-2.5
Slovak Republic	1991	31	8.5	-9.0	-4.7
Slovenia	1990	363	5.6	0.5	-1.4
CIS-7	**1992**	**434**	**8.2**	**-19.7**	**-1.3**
Armenia	1992	462	4.8	-36.7	-2.0
Azerbaijan	1992	509	2.2	-8.2	-1.5
Georgia	1992	483	4.8	-34.0	-2.3
Kyrgyz Republic	1992	570	2.7	-14.2	-4.7
Moldova	1992	475	11.7	-13.9	1.6
Tajikistan	1992	112	16.4	-19.8	-1.8
Uzbekistan	1992	430	14.8	-11.3	1.6
CIS-5	**1992**	**298**	**12.9**	**-5.6**	**0.5**
Belarus	1992	526	28.4	-2.4	-1.2
Kazakhstan	1992	91	6.4	-5.3	3.2
Russia	1992	485	13.7	-12.1	1.0
Turkmenistan	1992	298	11.0	6.7	0.0
Ukraine	1992	91	5.2	-14.9	-0.7

Source: Inflation and general government budget balance (World Economic Outlook 2004).

Table 5. Transition Economies: Average Policy Indices

	Foreign Direct Investment Restrictions Index[a]	Portfolio Investment Restrictions Index[b]	IFI Index[c]
	1993-99	1996-99	1993-97
Baltics	**1.4**	**0.0**	**95.2**
Estonia	0	0.0	100
Latvia	1.4	0.0	93.1
Lithuania	2.8	0.0	92.6
CEE	**1.3**	**0.6**	**84.0**
Albania	1.8	1	90.9
Bulgaria	1.3	0.4	50
Croatia	0.9	0.6	80
Czech Republic	0.3	0.1	96
Hungary	1.1	0.4	98.1
Macedonia	0.8	0.9	83.5
Poland	1.6	0.5	96.4
Romania	2.8	1	76.7
Slovak Republic	0.8	0.6	...
Slovenia	1.8	0.7	...
CIS-7	**1.6**	**0.7**	**86.8**
Armenia	0.4	0	94.4
Azerbaijan	0.8	0.6	93.4
Georgia	0.8	0.5	94.6
Kyrgyz Republic	1.4	1	78
Moldova	3.1	0.6	89.5
Tajikistan	1.8	1	...
Uzbekistan	2.8	1	70.6
CIS-5	**2.6**	**0.9**	**73.8**
Belarus	3.4	1	62.2
Kazakhstan	2.6	1	75.4
Russia	2.6	0.6	88.5
Turkmenistan	2.8	1	...
Ukraine	1.8	1	69.1

Source: Foreign direct investment restriction index and portfolio investment restriction index (Garibaldi, Mora, Sahay and Zettelmeyer 2001), CPIA index (World Bank), IFI index (MONA database), policy index (author's calculations).

a. Calculated by GMSZ 2001 based on Annual Report on Exchange Arrangements and Restrictions. The index ranges from -0.2 to 6 where 6 reflects most restrictions.

b. Calculated by GMSZ 2001 based on Annual Report on Exchange Arrangements and Restrictions. Ranges from 0 to 2 where 2 indicates outright prohibition of portfolio flows.

c. Measures percentage of performance criteria met (100 equals all performance criteria met). IFIs have been discounting 10 points in the case of countries with programs adjusted by that went consistently off track.

Table 6. Transition Economies: IMF Conditionality on Macroeconomic Policies, Reforms and Institution Building, 1993-1997

	Performance Criteria (PC)				Structural Benchmark (SB)							
	Arrangement Type	Macro Economic	Laws, Others	Arrangement Type	Trade/ Exchange Systems	Pricing Marketing	Public Enterprise	Tax/ Expenditure	Financial Sector	Privatization Reform	Other	Total SB
Baltics		**26**	--		**2**	**1**	**0**	**2**	**3**	**1**	**1**	**11**
Estonia	SBA	16	--	SBA	2	3	1	6	2	3	1	18
Latvia	SBA	42	42	SBA	1	0	0	1	0	0	1	3
Lithuania	EFF, SBA	21	8	EFF	2	1	0	0	6	1	1	11
CEE		**23**	--		**2**	**1**	**2**	**7**	**7**	**5**	**2**	**25**
Bulgaria	SBA	18	--	SBA	3	3	2	3	7	6	4	28
Croatia	EFF, SBA	35	--	SBA, EFF	1	0	0	4	8	6	1	20
Czech Republic	SBA	4	--	--	--	--	--	--	--	--	--	--
Hungary	SBA	33	--	SBA	1	0	0	12	0	2	0	15
Macedonia	SBA, ESAF	5	--	SBA,ESAF	0	1	0	13	10	4	8	36
Poland	SBA	11	--	SBA	3	0	1	5	4	3	1	17
Romania	SBA	52	--	SBA	1	1	8	7	11	6	0	34
CIS-7		**21**	--		**5**	**4**	**4**	**12**	**8**	**7**	**7**	**46**
Armenia	SBA,ESAF	48	--	SBA,ESAF	3	4	4	19	13	2	8	53
Azerbaijan	SBA,EFF,ESAF	11	--	EFF,ESAF,SBA	8	9	4	24	13	21	19	98
Georgia	SBA,ESAF	9	--	SBA,ESAF	1	2	4	13	7	7	5	39
Kyrgyz Rep.	SBA,ESAF	20	4	ESAF,SBA	1	4	7	10	8	5	6	41
Moldova	EFF,SBA	19	--	SBA, EFF	12	2	2	5	3	9	1	34
Uzbekistan	SBA		4	SBA	4	3	2	2	1	0	0	12
CIS-5		**34**	--		**3**	**2**	**3**	**9**	**6**	**8**	**4**	**34**
Belarus	SBA	11	--	SBA	1	1	5	5	2	3	4	21
Kazakhstan	EFF,SBA	18	--	SBA, EFF	2	4	3	9	11	15	3	47
Russia	EFF,SBA	80	--	EFF, SBA	5	1	1	19	7	6	4	43
Ukraine	SBA	27	13	SBA	3	2	2	2	3	6	5	23

Table 7. Transition Economies: IMF Assistance in Institution Building, 1989-2003
(Person-years)

	Fiscal area	Financial sector	Statistics
Central Europe (10) 1/			
1989-91	7.1	11.6	1.2
1992-95	20.7	25.2	4.9
1996-99	13.1	20.1	4.5
2000-03	19.2	19.7	8.4
Baltics (3) 1/			
1989-91	-	0.3	-
1992-95	7.6	9.6	5.7
1996-99	2.8	7.6	-
2000-03	1.4	1.7	0.0
CIS Countries (12) 1/			
1989-91	2.9	0.6	0.8
1992-95	57.0	66.3	22.1
1996-99	53.9	51.5	21.6
2000-03	42.3	31.7	10.5

Source: International Monetary Fund
1/ Number of countries in parenthesis

Regression Table 1. Transition Economies: Growth Regressions—Fischer-Sahay-Vegh Specifications with Expanded Data Set
(t-statistics in parenthesis)

Fixed Effects Regressions: Dependent Variable: GDP Growth

	(1)	(2)	(3)	(4)	(5)	(6)
	FSV 96a	Extended data	FSV 96b	Extended data	FSV 98	Extended data
Fixed Exchange Rate Regime	**11.35**	**5.500**	--		**7.08**	**4.534**
	(2.00)	(2.95)**			(2.15)	(2.27)*
Fiscal Balance	0.30	**0.491**	**0.24**	**0.423**	0.29	**0.407**
	(1.42)	(7.03)**	(1.90)	(5.32)**	(2.60)	(5.28)**
CLI	**7.42**	**2.781**	--		--	--
	(3.54)	(9.68)**				
Inflation	--	--	**-2.73**	**-0.025**	--	--
			(-5.27)	(10.03)**		
Aid Share in Gross National Income	--	--	**0.26**	-0.015	--	--
			(2.32)	(0.14)	--	--
LIP	--	--	**12.97**	**16.261**	--	--
			(2.86)	(4.17)**		
LI	--	--	--	--	**30.72**	**38.439**
					(2.70)	(7.69)**
R-Squared	0.72	0.48	--	0.57	0.66	0.40
Total Observations	75	216	--	208	100	216
		25		24		25

Source: Cumulative liberalization index (CLI), liberalization index of privatization (LIP), and liberalization index (LI) from DDGT (1997)/World Bank, inflation and fiscal balance from WEO 2002, aid share of gross national income from WDI 2002.
Note: Fixed exchange rate regime is a dummy, it takes 0 for floating exchange rate regime and 1 for fixed exchange rate regime. Fiscal balance is general government balance as share of GDP.

Regression Table 2. Transition Economies: Output Performance, Initial Conditions, Policies and Institutional Development, 1991-2001

(t-statistics in parenthesis)

	2SLS Panel Regressions[1] Dependent Variable: GDP Growth		
	(7)	(8)	(9)
Initial Conditions Index[a]	1.439 (2.08)*	-0.013 (0.03)	-0.441 (0.94)
Initial Conditions Index *Year	-0.213 (3.45)**	-0.039 (0.99)	0.027 (0.67)
Exchange Rate Regime[b]	-4.293 (3.05)**		
First Lag of Inflation		-0.017 (7.30)**	-0.017 (7.33)**
Change in Fiscal Balance	0.387 (4.55)**	0.583 (7.59)**	0.685 (8.70)**
Reform Index[c]	15.382 (10.58)**	4.770 (7.19)**	3.608 (5.91)**
State Capture Index[d]			-0.126 (2.85)**
Intercept	-36.963 (11.13)**	-9.319 (6.11)**	-4.797 (2.79)**
R-Squared	0.41	0.40	0.47
Probability Value	0.000	0.000	0.000
Total Observations	265	296	252

[1.] The reform index is instrumented with sum of reform indices in other 24 transition countries excluding the country for which it is instrumented.

Source: Initial conditions index, reform index, state capture index (Transition Report), exchange rate regime (EAER), fiscal balance, inflation (WEO 2002), cumulative liberalization index (CLI)(DDGT 97, World Bank), average democracy score (Nations in Transit 2001), Euromoney political risk.

a. initial conditions index is derived from factor analysis and represents a weighted average of measures for the level of development, trade dependence on CMEA, macroeconomic disequilibria, distance to the EU, natural resource endowments, market memory and state capacity. The higher values of the index relate to more favorable starting positions

b. Exchange rate regime dummy. Takes 0 for floating exchange rate system and 1 for fixed exchange rate system.

c. Reform index is average of liberalization index, market reform index, financial reform index and privatization.

d. State capture index measures the extent to which businesses have been affected by the sale ofgovernment decisions and policies to private interests. A higher value indicates more 'capture'. It is based on the business environment and enterprise performance survey implemented in 1999 by the EBRD in collaboration with the world bank.

Correlation Table 1: Institutions and Reforms

	Reform index (1)	Finan-cial reform (2)	Market reform (3)	Lib. index (4)	Priv. (5)	Banking reform (6)	Non-banking reform (7)	Enterpr. reform (8)	Compe-tition policy (9)	Price Liberal-ization (10)	Trade Liberal-ization (11)	Small priv. (12)	Large priv. (13)	Comm. law (14)	Finan. law (15)	Legal envi. (16)
Reform index	1.00															
Financial reform	0.95*	1.00														
Market reform	0.92*	0.89*	1.00													
Liberalization index	0.94*	0.88*	0.76*	1.00												
Privatization	0.95*	0.83*	0.82*	0.84*	1.00											
Banking reform	0.92*	0.95*	0.85*	0.84*	0.84*	1.00										
Non-banking reform	0.80*	0.92*	0.82*	0.66*	0.70*	0.74*	1.00									
Enterprise reform	0.92*	0.90*	0.94*	0.80*	0.84*	0.90*	0.77*	1.00								
Competition policy	0.77*	0.77*	0.93*	0.59*	0.68*	0.67*	0.77*	0.75*	1.00							
Price liberalization	0.74*	0.56*	0.56*	0.77*	0.68*	0.61*	0.42*	0.58*	0.45*	1.00						
Trade liberalization	0.90*	0.76*	0.72*	0.89*	0.83*	0.81*	0.59*	0.77*	0.55*	0.74*	1.00					
Small privatization	0.91*	0.78*	0.75*	0.85*	0.96*	0.80*	0.64*	0.79*	0.61*	0.70*	0.83	1.00				
Large privatization	0.90*	0.81*	0.81*	0.73*	0.94*	0.81*	0.70*	0.82*	0.68*	0.59*	0.74*	0.81*	1.00			
Commerical law	0.63*	0.67*	0.54*	0.58*	0.54*	0.66*	0.56*	0.60*	0.39*	0.32*	0.43*	0.43*	0.56*	1.00		
Financial law	0.78*	0.81*	0.77*	0.76*	0.68*	0.73*	0.79*	0.74*	0.67*	0.54*	0.51*	0.62*	0.65*	0.65*	1.00	
Legal environment	0.68*	0.70*	0.58*	0.65*	0.59*	0.69*	0.59*	0.64*	0.41*	0.36*	0.49*	0.48*	0.60*	0.93*	0.69*	1.00

Note:
Column (1) = Column (2) + Column (3) + Column (4) + Column (5); Column (2) = Column (6) + Column (7); Column (3) = Column (8) + Column (9);
Column (4) = Column (10) + Column (11); Column (5) = Column (12) + Column (13)

Correlation Table 2: Initial Condition, Institutions, and Endowments

	Reform index	Commercial law	Financial law	Legal environment	Initial condition index	Distance	State Capture Index	Time under communism	Ethnic fractionalization
Reform Index	1.00								
Commercial Law	0.63*	1.00							
Financial Law	0.78*	0.65*	1.00						
Legal environment	0.68*	0.92*	0.69*	1.00					
Initial condition index	0.38*	0.30*	0.23	0.33*	1.00				
Distance	-0.46*	-0.35*	-0.45*	-0.40*	-0.61*	1.00			
State Capture Index	-0.06	-0.10	-0.19	-0.05	-0.01	-0.10	1.00		
Time under communism	-0.46*	-0.53*	-0.56*	-0.57*	-0.67*	0.72*	0.09	1.00	
Ethnic fractionalization	-0.20*	-0.29*	-0.45*	-0.34*	-0.38*	0.49*	0.38*	0.44*	1.00

Figure 1a. Transition Economies: Real GDP Index
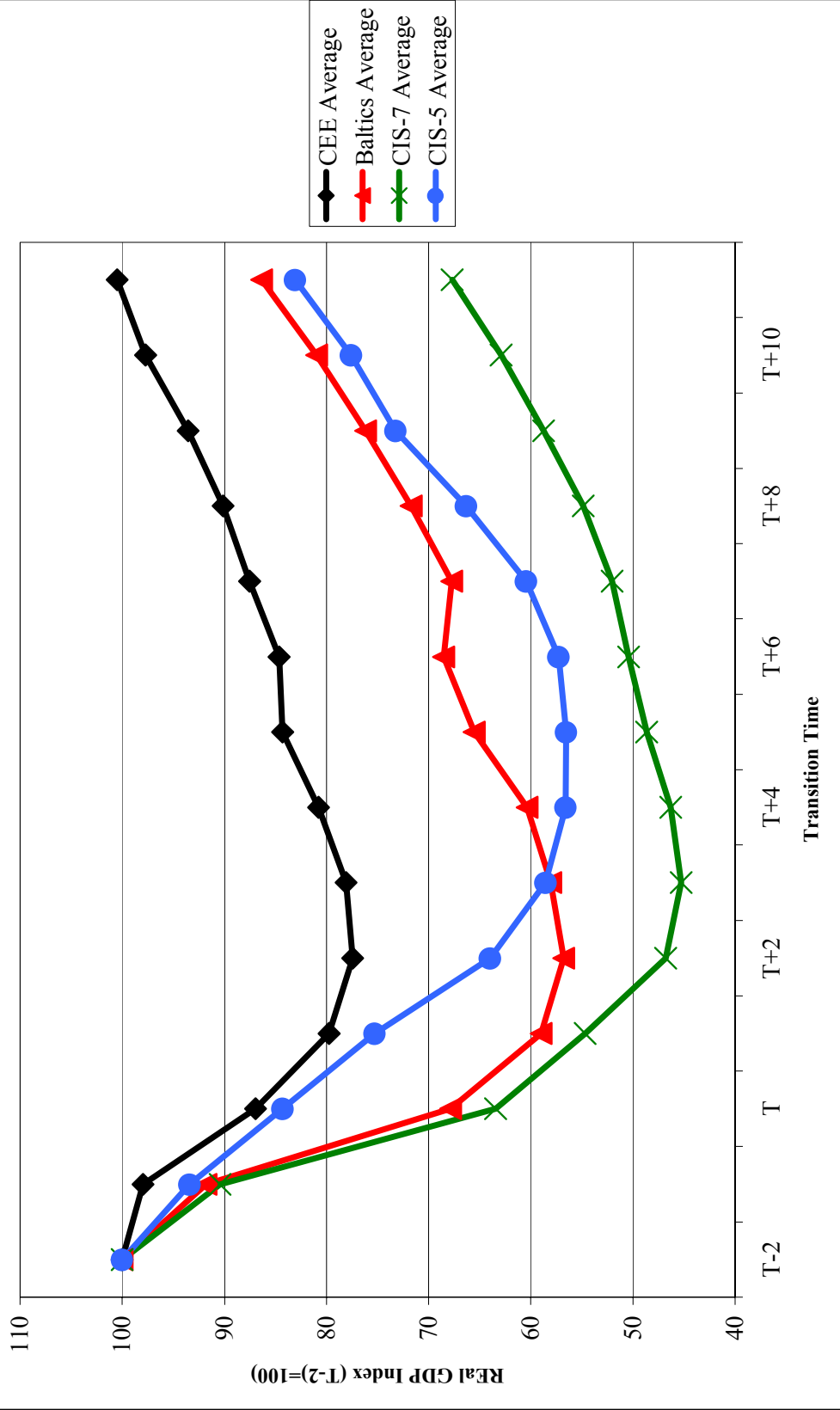
Figure 1b. Transition Economies: Real GDP Index Since Lowest Level

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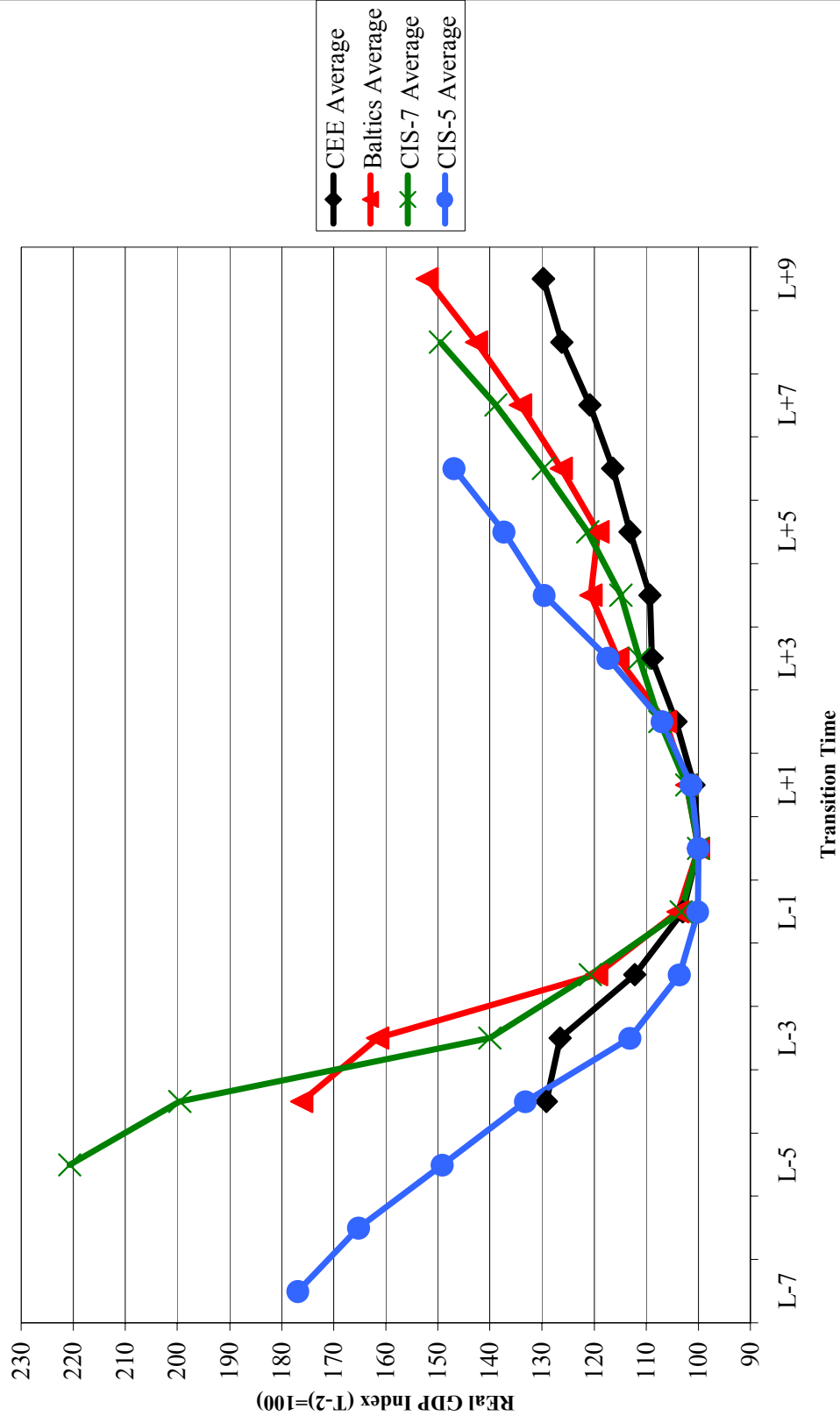
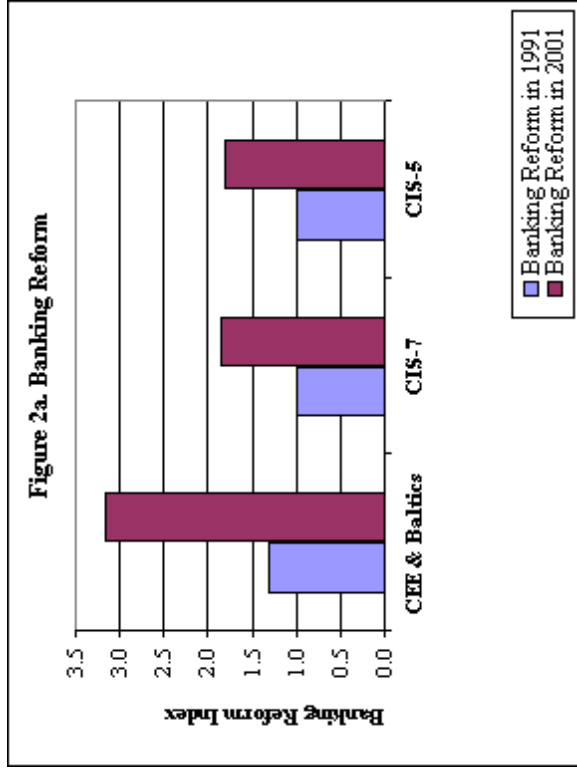**Figure 2. Transition Economies: Economic Institutional Development**

Figure 2a. Banking Reform

Figure 2b. Non-Banking Reform

Figure 2c. Enterprise Reform
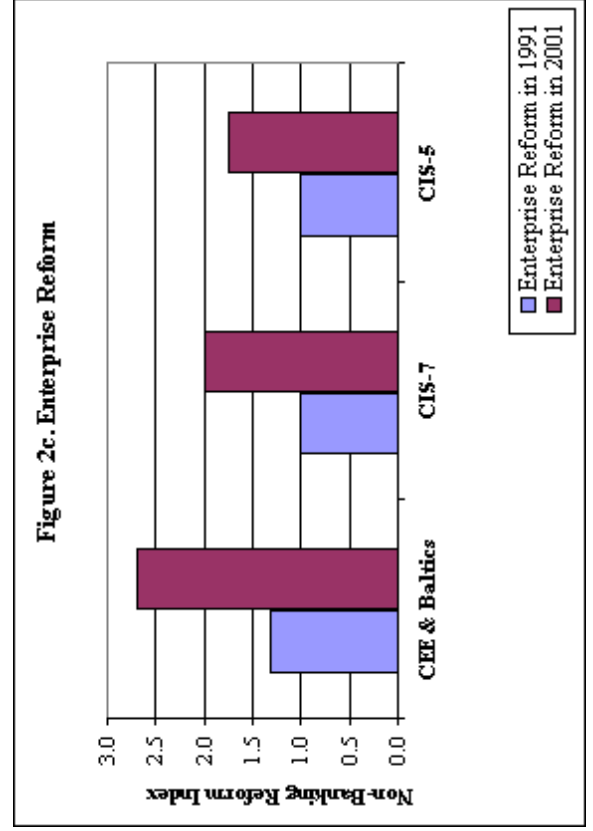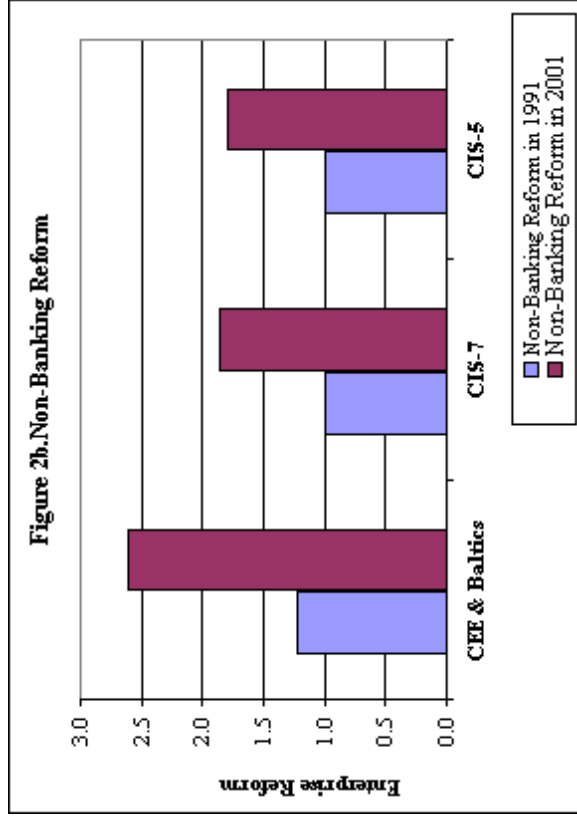
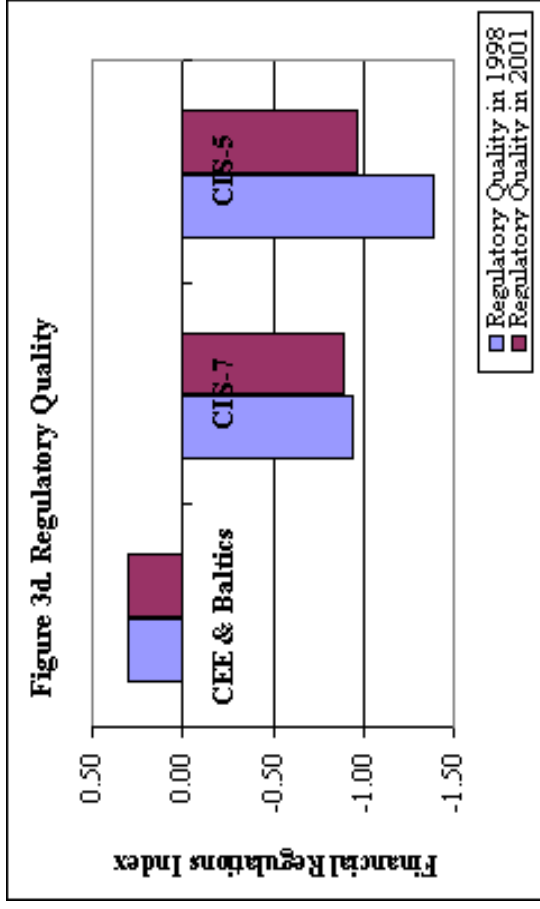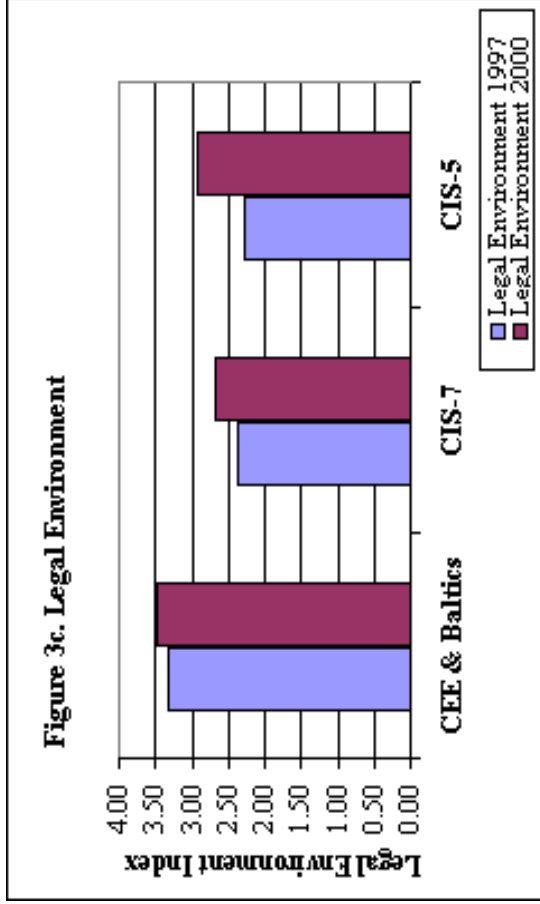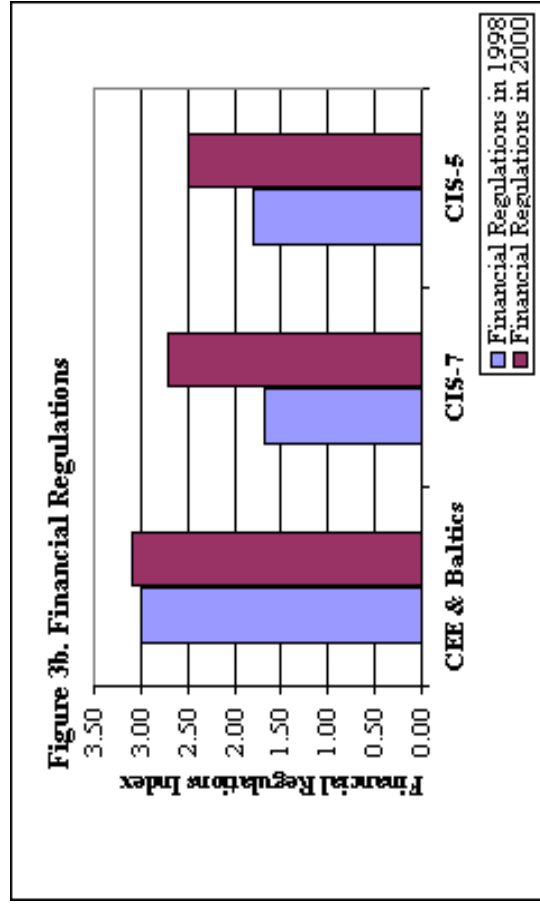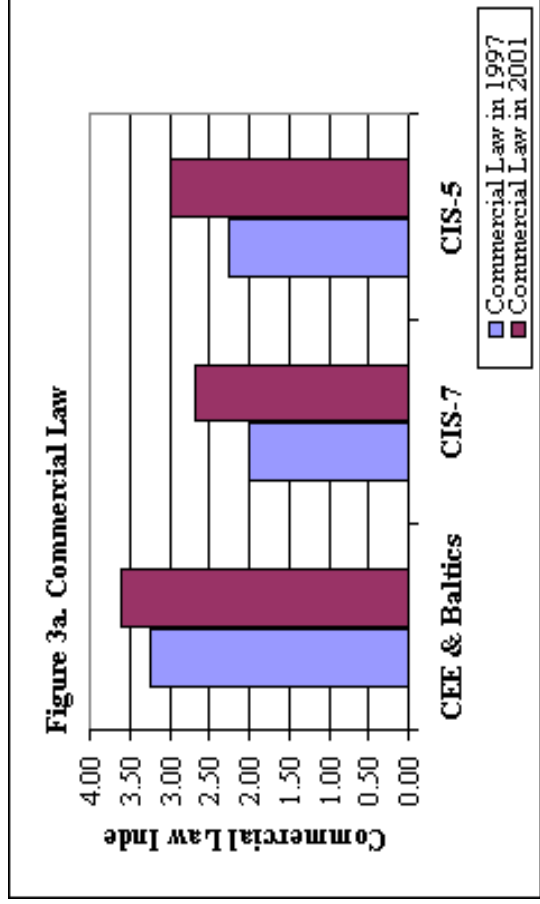# Figure 3. Transition Economies: Institutional Development (Political/Economic)

Figure 3a. Commercial Law

Figure 3b. Financial Regulations

Figure 3c. Legal Environment

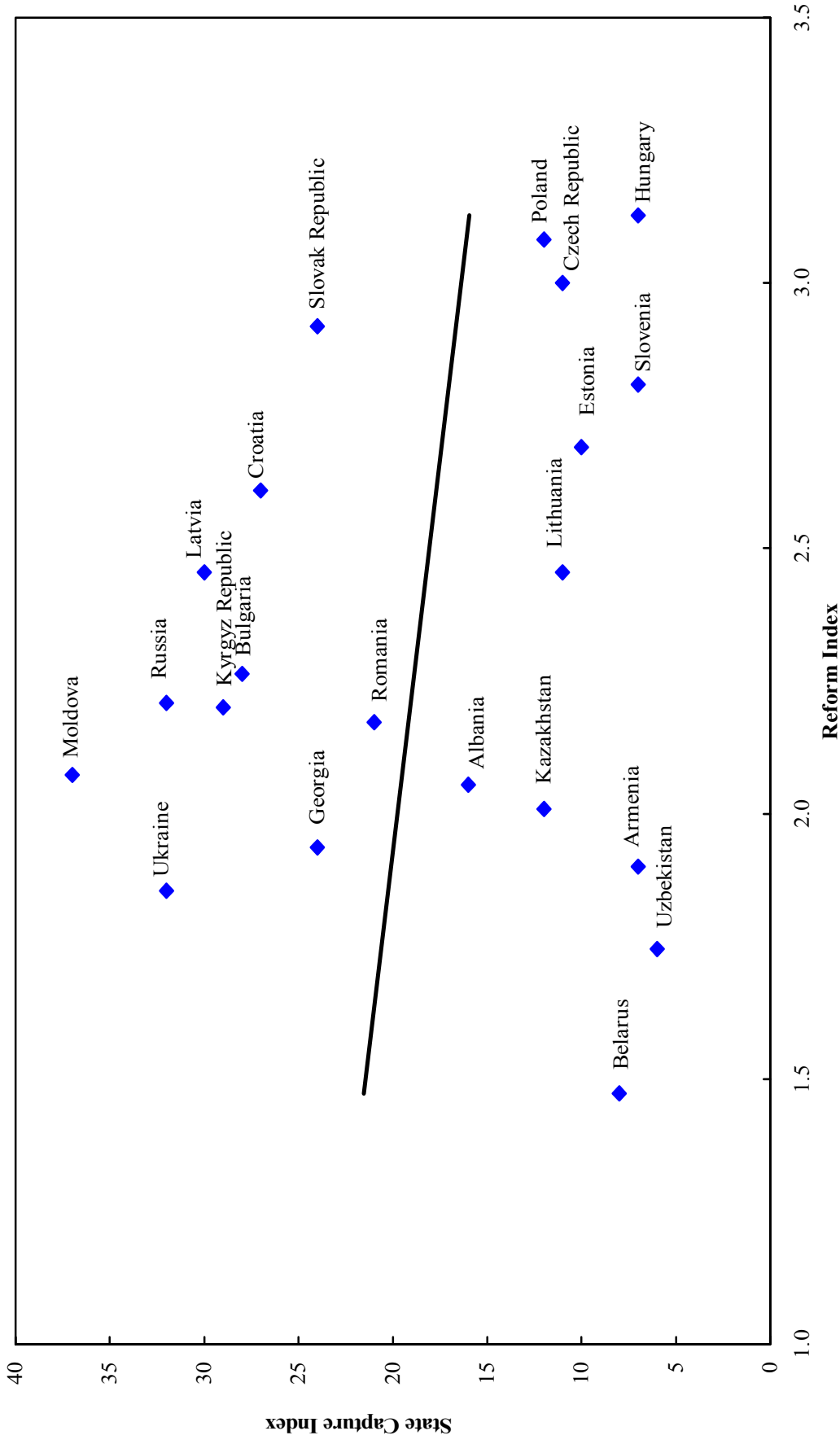Figure 3d. Regulatory Quality

Figure 4. Transition Economies: Cross-plot of State Capture Index and Reform Index

Source: EBRD and the World Bank

Appendix Table 1. Definitions of the Variables in Final Regressions

Variable	Description	Source
avdemscext	average democracy index (extended data)	Freedom House
aidshgni	Share of Aid in pre-transition year (year -1)	DDGT–WB
cli	cumulative liberalization index	DDGT–WB
err2	Dummy for exchange rate regime, takes on 0 for floating and 1 for fixed – fixed is conventional pegged, currency board, crawling pegs. Jeronimo constructed this dummy until 1999. Note: When updating this data for 2000 the Annual Report on Exchange Arrangements and Exchange Restrictions is used. The same values as in 2000 is repeated for 2001, as there was no change in the exchange rate regimes of those countries in 2001.	Calculated by Garibaldi, Nada, Sahay and Zettelmeyer ()
gdpgr	growth rate of rgdpnc (To double check the calculation of lndifgdp, gdpgrowth is also calculated using the formula: ((rgdpnc(t)-rgdpnc(t-1))/rgdpnc(t-1))*100	WEO
inflation	growth rate of pcpi—calculated using the formula: (cpi(t)-cpi(t-1)/cpi(t-1))*100	WEO
legalenv	legal environment index	EBRD
li	liberalization index	Sum of external, internal and private sector liberalization
lip	Private sector conditions index	DDGT–WB
reformindex	average of the EBRD indices of liberalization,financial reform, market reform and privatization,	EBRD
transtime	transition year	
ivreformindex	sum of the reform index in other transition economies excluding the country itself	Author's calculation using reform index from EBRD
l1inflation	First lag of inflation	WEO
incondindex	initial conditions index: it's derived from factor analysis and represents a weighted average of measures for the level of development, trade dependence on CMEA, macroeconomic disequilibria, distance to the EU, natural resource endowments, market memory and state capacity. The higher values of the index relate to more favorable starting positions	Transition report 1999
statecapind	State capture index: is taken from Hellman et al(2000). It measure the extent to which businesses have been affected by the sale of government decisions and policies to private interests. A higher value indicates more 'capture'. It is based on the business environment and enterprise performance survey implemented in 1999 by the EBRD in collaboration with the world bank.	Transition report 2000
incondtime	initial conditions index multiplied by time	
efi	ethnic fractionalization , range 0-1, 0 no ethnica fractionalization	Yeoh Kok Kheng, EFA working papeer NO. 2001-3 .
tcomm	time under communism	
chfiscal	change in fiscal policy-- (differenced series without log or percentage)--Calculated using budget balance as share of gdp obtained from weo	WEO
t	transition yaer	