SHOCK THERAPY VERSUS GRADUALISM: THE END OF THE DEBATE

(EXPLAINING THE MAGNITUDE OF TRANSFORMATIONAL RECESSION)*

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SHORT LEAD: **MAGNITUDE OF TRANSFORMATIONAL RECESSION**

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ABSTRACT

The conventional explanation for the dynamics of output during transition is associated with "good" and "bad" economic policies, in particular with the progress achieved in the liberalization, as measured by the liberalization index, and with the success or failure in macroeconomic stabilization, as measured by the rates of inflation. This paper seeks to provide alternative explanation to the differing performance during transition: the supply-side recession, which in turn is caused by reallocation of resources needed to overcome disproportions inherited from the era of central planning. It is shown that over 60% of the differences in the economic performance can in fact be explained by uneven initial conditions, such as the level of development and pre-transition disproportions in industrial structure and trade patterns.

After controlling for these non-policy factors, the impact of liberalization becomes insignificant. However, variations in inflation rates and institutional capacities of the state (as measured by the change in the share of government revenues in GDP and/or by the ratio of the rule of law to the democracy index) remain important determinants of performance - together with non-policy factors they explain over 85% of differences in GDP change in 28 transition economies. It is therefore argued that the debate between shock-therapists and gradualists that dominated professional discussions for the whole decade of the 1990s was interesting, but to a large extent misfocused and misguided. The crux of the debate – the speed of transition - turned out to be a secondary issue for performance, whereas the primary issue – the strength of institutions – was overlooked by both schools of thought.

1. Introduction

10 years ago, on the eve of transition, economic discussion in the profession was dominated by the debate between shock therapists, who advocated radical reforms and rapid transformation, and gradualists, justifying a more cautious and piecemeal approach to reforms. Shock therapists pointed out to the example of East European countries and Baltic states – fast liberalizers and successful stabilizers, that experienced a recovery after 2 to 3 years fall in output, while their CIS counterparts were doing much worse. Gradualists cited the example of China, arguing that the lack of recession and high growth rates is the direct result of the step by step approach to economic transformation. Shock therapists were arguing that "one cannot cross the abyss in two jumps", that rapid liberalization allows to avoid painful and costly period, when the old centrally planned economy (CPE) is not working already, while the new market one is not working yet

As time passed, there appeared statistics that allowed to test the predictions of theories. Quite a number of studies were undertaken with the intention to prove that fast liberalization and macro-stabilization pays off and finally leads to better performance (Sachs, 1996; De Melo, Denizer, and Gelb, 1996; Fisher, Sahay, Vegh, 1996; Aslund, Boone, Johnson, 1996; Breton, Gros, and Vandille, 1997). To prove the point, the authors tried to regress output changes during transition on liberalization indices developed by De Melo et al. (1996) and by EBRD (published in its Transition Reports), on inflation and different measures of initial conditions.

The conventional wisdom was probably summarized in the 1996 World Development Report *From Plan to Market,* which basically stated that differences in economic performance were associated mostly with "good and bad" policies, in particular with the progress in liberalization and macroeconomic stabilization: countries that are more successful than others in introducing market reforms and bringing down inflation were believed to have better chances to limit the reduction of output and to quickly recover from the transformational recession. "Consistent policies, combining liberalization of markets, trade, and new business entry with reasonable price stability, can achieve a great deal even in countries lacking clear property rights and strong market institutions" – was one of the major conclusions of the WDR 1996 (p. 142). The conclusion did not withstand the test of time, since by now most economists would probably agree that because liberalization was carried out without strong market institutions it led to the extraordinary output collapse in CIS states. Liberalization may be important, but the devil is in details, which often do not fit into the generalizations and make straightforward explanations look

trivial.

Take the example of Vietnam and China - two countries that shared a lot of similarities in initial conditions and achieved basically the same results (immediate growth of output without transformational recession) despite different reform strategies. While Chinese reforms are normally treated as a classical example of gradualism, Vietnamese reformers introduced Polish style shock therapy treatment (instant deregulation of most prices and introduction of convertibility of dong) even before Poland did, in 1989, and still managed to avoid the reduction of output.[1]

Or, take the example of the differing performance of the former Soviet Union (FSU) states. The champions of liberalization and stabilization in the region are definitely Baltic states (cumulative liberalization index by 1995 - 2.4-2.9), whereas Uzbekistan (with the same index of 1.1) is commonly perceived to be one of the worst procrastinators. However in Uzbekistan the reduction of output in 1990-95 totaled only 18% and the economy started to grow again in 1996, while in the Baltics output fell in the early 1990s by 36-60% and even in 1996, two years after the bottom of the recession was reached, was still 31% to 58% below the pre-recession maximum.

At a first glance, there seems to be a positive relationship between liberalization and performance (fig.1, 2), but a more careful consideration reveals that the link is just the result of sharp difference in the magnitude of the recession in EE countries, as a group, and FSU states, also as a group (fig.1). Within these groups there is no correlation whatsoever.

Overall, attempts to link differences in output changes during transition to the cumulative liberalization index and to macro stabilization (rates of inflation) have not yielded any impressive results: it turned out that dummies, such as membership in the ruble zone (i.e. FSU) and war destruction, are much more important explanatory variables than either the liberalization index or inflation (Åslund, Boone, Johnson, 1996). Other studies that tried to take into account a number of initial conditions (repressed inflation -monetary overhang before deregulation of prices, trade dependence, black market exchange rate premium, number of years under central planning, urbanization, overindustrialization, and per capita income) found that initial conditions do matter and that in some cases liberalization becomes insignificant as well (De Melo, Denizer, Gelb and Tenev, 1997, p. 25; Heybey, Murrel, 1999; Stuart and Panayotopoulos, 1999).

Two basic explanations were suggested to account for the puzzling absence of the link between liberalization and GDP change. First, non-linear character of the relationship, implying there is a certain threshold level of liberalization, which needs to be achieved to reap the benefits of the market reforms, and the lagged effects of liberalization (Hernandez-Cata, 1997). It was

suggested by Selowsky and Martin (1997) that performance depends positively on the accumulated stock of reform, but negatively on the contemporaneous liberalization. De Melo, Denizer, Gelb and Tenev, (1997) obtained the statistical evidence for this kind of relationship, finding that "a liberalization step that more than doubles the previous period's level of liberalization is required for overall effect on growth to be negative"(p.27). Heybey and Murrell (1999) found that both – accumulated liberalization and liberalization speed - have a positive impact on performance, but liberalization coefficients turned out to be insignificant, especially for liberalization speed.

Fig. 1. Liberalization and output change

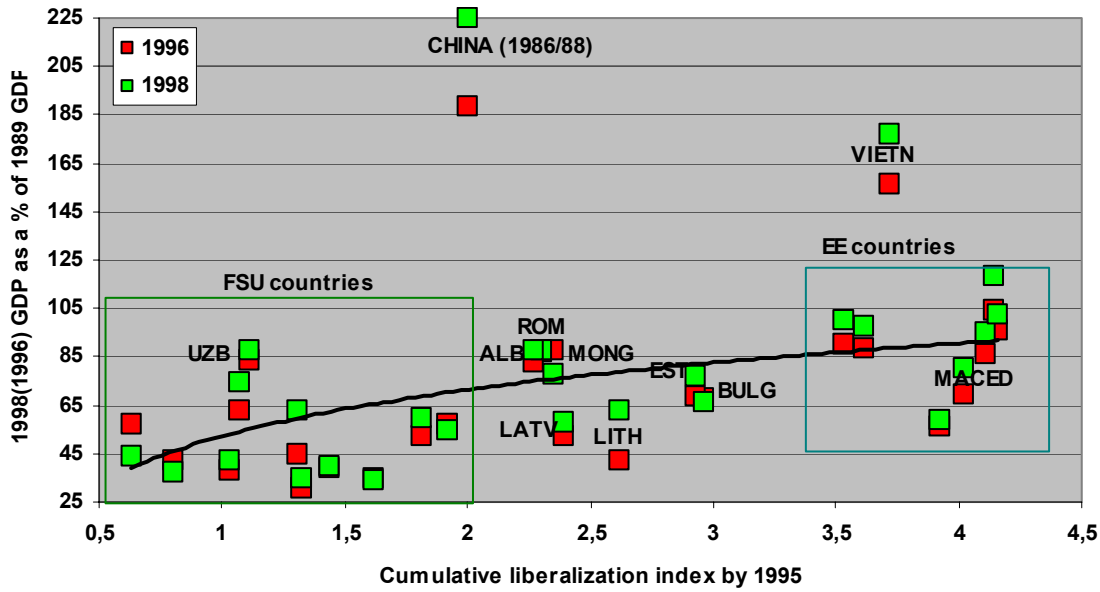
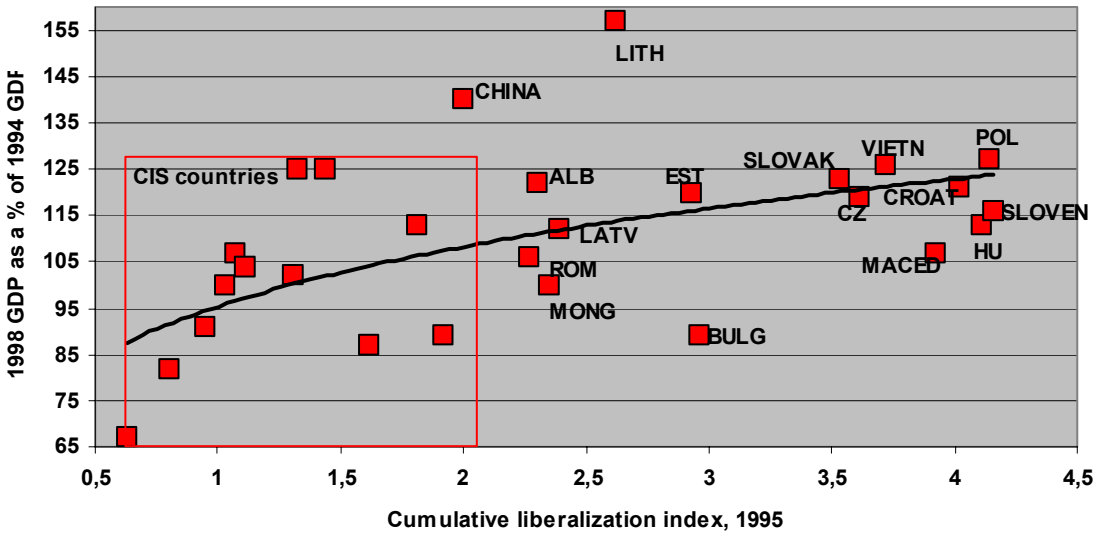


Fig. 2. Liberalization index by 1995 and performance in 1994-98



However, even accounting for these factors, it is difficult to demonstrate a strong clear-cut relationship between the variables in question. The example of Chinese reforms that were transformed into higher growth rates of output right away casts doubt on the "lag theory", while the correlation between the degree of liberalization by the end of 1994 and the performance in 1994-98 (fig.2) is actually weaker than the correlation without the lags, for 1989-96/98 period (fig.1, 2 and tables 4, 6).

Second, it was suggested that the speed and extent of liberalization, which is included as an explanatory variable on the right hand side, may itself be endogenous to the model, i.e. liberalization policy may depend on the initial conditions and the magnitude of the decline in output as a result of liberalization (Ickes, 1996; De Melo, Denizer, Gelb and Tenev, 1997; Kruger and Ciolko, 1998; Heybey and Murrell, 1999). It was shown that liberalization itself depends on the initial conditions and on political change De Melo, Denizer, Gelb and Tenev, 1997). Krueger and Ciolko (1998) demonstrated through constructing the instrumental variable (by linking liberalization to initial conditions specified only as the pre-transition share of exports in GDP) that the hypothesis of the endogeneity of the liberalization variable cannot be rejected. The worse initial conditions for transformation, the greater the probability of the deep transformational recession, and hence the more likely delays in liberalization.

The correlation between liberalization and distortions is obvious (fig.3), but it is less clear, whether there is a causation relationship between these variables. The speed of liberalization may be equally successfully explained by other factors. It is known that economic liberalization and democratization go hand in hand, supporting one another (fig. 4). Hernades-Cata (1999) shows that 85% of variations in liberalization indices may be explained by to geographical proximity to market economies, index of political reform, size of the shadow economy and different regional dummies. The political scientists seem to follow a different approach, trying to explain cross-country differences in reform efforts by political-social-cultural factors, such as the degree of democratization (political freedom), the outcome of the first elections, the dominant religion, the ethnic composition of the population, the type of government (presidential versus parliamentary democracy). So far, available evidence suggests that the key variable that overshadows all the other social-political factors is the outcome of the first post-communist elections: if reform parties do well at these elections, the future steep trajectory of economic liberalization is pre-determined (Fish, 1998a). What is more, the outcome of these first elections appears to be a good predictor of

future political liberalization with the result that both – economic reform path (economic liberalization) and the path of democratization are shaped by and large by this singe crucial event on the eve of transition (Fish, 1998b)[2].

This implies that there is still no good explanation even for the basic stylized facts, such as the ability of China and Vietnam to avoid the recession completely, or such as the markedly greater magnitude of the recession in FSU as compared to East European (EE) countries, not to speak about differing performance of countries belonging to the same geographical region.

Fig. 3. Liberalization indices and distortions in industrial structure and trade patterns

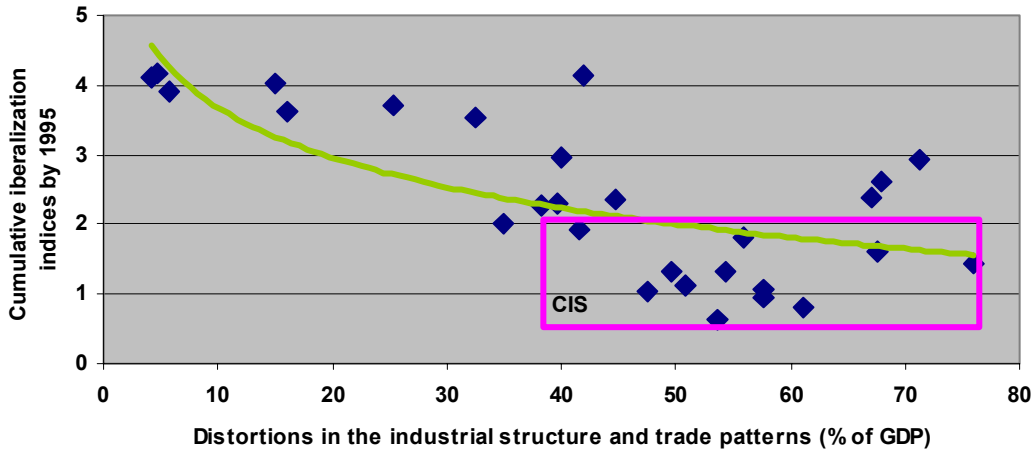
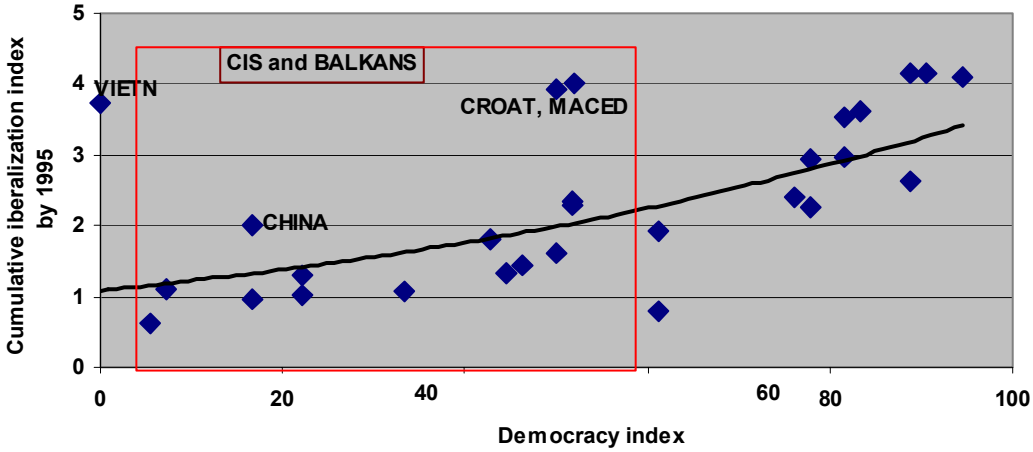


Fig. 4. Democracy index (1990-98, average) and economic liberalization index by 1995



The paper starts by separating the transformational recession from the process of economic growth (recovery from the transformational recession). It is argued that the former (the collapse of output during transition) can be best explained mostly by distortions in industrial structure and trade patterns accumulated during the period of central planning, and by inflation and the strength of the state institutions during transition period, while the speed of liberalization does not seem to play a major role. The latter process (recovery) should be treated as a normal growth process: it could be modeled by using conventional production functions and in the long run may demonstrate the ability to capitalize on liberalization by increasing factor efficiency.

2. Why recession occurs during transformation

With the exception of China and Vietnam, all economies in transition have experienced a recession associated with market-type reforms. In EE countries the reduction in output lasted for three or four years and ranged from 20% to 30%, while in some CIS countries output has continued to fall for seven years in a row and is now less than 50% of the pre-downturn level.

Theoretical explanations provided for the phenomenon of the transformational recession include attempts to model the impact of gradual, piecemeal reforms and the impact of radical, shock therapy type measures.[3] Murphy, Shleifer and Vishny (1992) claimed that, if the weakening state is not able to enforce production quotas under the system of dual pricing, transfer of resources to the private sector with market prices creates bottlenecks and shortages in the state sector, resulting in the fall of total output.

Gradualists, in response, objected to the elimination of old regulations and institutions before the new ones are created, warning that the institutional vacuum may have a devastating impact on output. In particular, they believed that the Chinese strategy of “growing out of socialism” (relying on the rapid growth of newly created private businesses) is superior to the large scale privatization, since property rights in this case can be better preserved and enforced. There were developed a number of models showing that under particular assumptions slow liberalization may be preferable to the “big bang” approach. For instance, Friedman and Johnson (1995) argued that in the presence of complementarities between government policies and enterprise attributes and convex adjustment costs for enterprises (i.e. costs increasing with the speed of reforms) radical "big bang" reforms might not necessarily be optimal.[4] It was argued (Li, 1996) that in the absence of competitive product markets (monopolization) on the outset of the reforms shock therapy can only lead to the reduction of output, while incremental reforms, such as

Chinese type dual track pricing system forcing enterprises to meet production quotas, but allowing them to sell above-the-plan output at market prices, may contribute to the expansion of output. It was also argued that if state firms are allowed to choose between market and centrally planned prices (for both - inputs and outputs), then not only the Pareto optimality is guaranteed at the end of the process, but also – with the appropriate state allocation of cheap resources and production quotas - it could be ensured that at every stage of the transition process no one is going to be worse off and at least someone is constantly made better off (Lau, Qian, and Roland, 1997). Roland and Verdier (1999) showed that investment and output may fall as a result of immediate price deregulation due to the need to find new partners and that under gradual dual track price liberalization it is possible avoid this effect.

At a first glance there is some empirical evidence to support this latter argument. China, pursuing incremental reforms managed to avoid the recession, and so did Hungary in the 1980s following a step by step strategy in deregulating prices and the exchange rate. Also, Uzbekistan pursuing rather gradual reforms under authoritarian regime showed the best economic performance among FSU states in the 1990s.

However, the strong argument against this kind of explanation is the comparison of Vietnam and China - two countries that shared a lot of similarities in initial conditions and achieved basically the same results (immediate growth of output without transformational recession) despite different reform strategies. While Chinese reforms are normally treated as a classical example of gradualism, Vietnamese reformers introduced Polish style shock therapy treatment (instant deregulation of most prices and introduction of convertibility of dong) in 1989 and still managed to avoid the reduction of output.[5]

The other dimension of theoretical discussions - debates whether reduction of output during transition should be viewed as a result of supply side or demand factors. One view, usually referred to as Keynesian, is that transformational recession was caused by the reduction of demand that occurred during the liberalization of prices, the introduction of convertibility and the subsequent stabilization. This approach considers recession as a demand-pull phenomenon and the result of overshooting. It is said to be caused by the demand shock which was generated by the transition to the market and by the restrictions imposed by fiscal and monetary authorities (Amsden, Kochanowicz and Taylor, 1994; McKinnon, 1994; Sapir, 1994). It has been argued, for instance, that the impact of demand-side factors on output decline in Poland has been much more pronounced than the impact of supply-side factors (Rosati, 1994).

The demand-side explanation, however, is not completely consistent with some basic stylized facts. While in some EE countries, like Poland, demand-pull factors have played an important role (Kolodko and Nuti, 1997), in most transition economies inflation immediately following price deregulation was by no means insignificant (several hundred percent or more). It was largely of monetary origin and was caused mostly by demand-pull factors rather than cost-push factors. On the one hand, it is doubtful whether inflation at a level above several dozen percent per year can be caused by cost-push factors alone. On the other hand, there is evidence that the rate of the increase in prices (with a lag of several months) in transition economies which experienced high inflation was strongly correlated with the rate of change in the money supply, whereas the rate of change in output was not.[6]

3. Non-policy factors: distortions in industrial structure and trade patterns

The explanation accepted in this paper as a working hypothesis is based on the most conventional approach to the transformational recession: it is viewed as a supply-side phenomenon, as a structural adjustment process resulting from the need to overcome disproportions inherited from the centrally planned economy (CPE) - high militarization, overindustrialization and underdevelopment of the service sector, "under-openness" of the economy, the perverse structure of trade among former Soviet republics and among socialist countries. The greater the magnitude of these distortions inherited from the centrally planned economies, the more pronounced the reduction of GDP during the transformational recession. The supply-side approach is sometimes regarded as a neo-classical one,[7] though it may be more accurately described as a lower common denominator among all transition economists.[8]

The supply-side explanation implies that the reallocation of resources (restructuring) due to market imperfections is associated with the temporary loss of output. Thus, the decline in the production of non-competitive enterprises and industries is not offset immediately by an increase in the production of competitive industries and enterprises due to barriers to capital and labor flows such as poorly developed banking system and securities markets, uncertain property rights, the lack of easily enforceable and commonly accepted bankruptcy and liquidation procedures, the underdevelopment of land market, housing market and labor market infrastructure, and so on. Below we discuss briefly the impact of pre-transition distortions on performance.

High defense expenditure and the need for conversion. This is perhaps one of the most obvious cases of inevitable restructuring leading to the temporary decline of output, though it is

not associated with the transition to the market per se, but with a variety of political reasons ranging from overcoming the effects of the cold war to democratization in the post-communist countries. In most socialist countries (with the probable exception of the former Yugoslav republics), defense expenditure was abnormally high – higher than it was in similar market economies (fig. 5). The reduction of this expenditure and the resulting conversion of defense enterprises proved to be a harder task than expected: declines in defense output were not offset by increases in non-defense output.

It is reasonable to assume that part of the observed differences in the performance of the former socialist countries during the transition (the magnitude of the decline/increase in output) is explained by the uneven degree of militarization of these economies on the eve of transition. There are obvious problems with the data (defense expenditure was not reported, and sometimes even not estimated for the republics of the former Yugoslavia, the USSR and Czechoslovakia), and there appears to be a very weak, if any, correlation between the loss/gain of output immediately after reforms and the level of defense expenditure (fig. 5). Besides, some inconsistencies are striking. Thus, China and Vietnam experienced similar increases in output in the first five years of reforms, though their defense expenditure as a percentage of GDP differed by a factor of three (fig. 5).

Distortions in industrial structure. It is well known that all CPEs were over-industrialized at the expense of the underdevelopment of the service sector, especially the trade and finance sectors. The reallocation of resources from industry to services was one of the major reasons for the transformational recession, and it is logical to assume that differences in the decline of output may be partly attributed to variances in the degree of distortions in industrial structure. As fig. 6 suggests, there is a certain correlation between the magnitude of the recession and these distortions, measured as deviations in the shares of industry, agriculture and services in GDP, as compared to "normal" structure, defined as an average industrial structure for market economies with similar levels of per capita GDP (see Appendix for more details).

The actual distortions were certainly much greater than the calculated deviations suggest because they also existed at a less aggregated level (within the industrial, agricultural and service sectors themselves). In the resource rich countries, for instance, there was a huge productivity gap between relatively efficient mining and primary manufacturing, but extremely inefficient and overdeveloped machine building (Popov, 1996). While capital productivity in Russian resource sector was about the same as is machine building and agriculture, labor productivity was over 5

times higher (table 1).

As data in table 2 show, in Russia the share of engineering (machine building) in total industrial output even in 1993, after unfavorable price and output shifts, was still 20%. In 1990, however, engineering accounted for 46% of employment and 31% of output in the industrial sector, even more than in the most industrialized country of the Eastern bloc, Czechoslovakia (40% and 30%, respectively), and much more than in Poland (32 and 28%, respectively).[9] In contrast, in other republics the share of the machinery and equipment industries in total industrial employment in 1990 was only 38% (less than 30% if Ukraine and Belarus are excluded).

However, because of the difficulties of obtaining comparable data on national industrial structures, we limit ourselves for the time being to the analysis of disproportions at a very aggregated level only.

External trade distortions. The degree of openness of socialist economies (the share of external trade in GDP) was quite different from the "norm", i.e. from the degree of openness of market economies of comparable size and GDP per capita. Despite the popular belief, not all socialist economies were that closed. In many of them external trade was relatively larger than it was in similar market economies, if the trade with republics which later became independent states is taken into account. However, even allowing for this portion of domestic trade that became international trade after the transition, in most countries, including the majority of the former Soviet republics, trade was relatively underdeveloped. Only in the former republics of Yugoslavia and Czechoslovakia, in Azerbaijan, Belarus, Hungary and Vietnam were the external trade/GDP ratios before transition significantly (6 to 20% of GDP) higher than they were in comparable market economies.

Other conditions being equal, countries with better-developed foreign trade should be expected to experience smaller reductions in output during transition (and foreign trade liberalization) since large sectors of these economies were already somewhat exposed to international competition. However, other conditions were by no means equal, and a high degree of trade openness by itself was not always a positive phenomenon because trade flows were often distorted.

Table 1. Capital and labor productivity in major Russian industrial sectors, 1995

Industries	Employment, annual average, million	Fixed capital stock, trillion rubles[a]	Gross output, trillion rubles	Labor productivity	Capital productivity
				% of national average	
Resources (fuel, energy, metals)	3.0	2319	418	326	72
Machinery & Equipment + Light Industry	6.7	1265	175	61	56
Agriculture	9.9	1805	276	65	60
Total economy	67.1	11504	2870[b]	100	100

[a]After revaluation of January 1, 1996. Breakdown by branches of industry (energy, fuel, etc.) is estimated from 1994 data.

[b] Estimate derived from the ratio of gross output to GDP in 1994 (1.73) and GDP for 1995 (1659 trillion rubles).

Source: Goskomstat - Russia.

Table 2. Share of the industrial sector in GDP and share of resource industries and engineering in total industrial output, %

Country	Share of industry in GDP, 1991	Share of particular industries in total industrial output, 1993	
		Resource industries[a]	Engineering
Bulgaria	36	23	16
Croatia		18[b]	12[b]
Czech Republic	47	30	18
Hungary	29	25	16
Poland	36	29	21
Romania	40	24	19
Slovakia	53	36	16
Slovenia	40		
Estonia	35 (22)	20	9 (8)
Latvia	38	25	16
Lithuania	45	21	12
Belarus	(40)	(25)	(22)
Russia	39 (38)	46 (41)	20 (17)
Kazakhstan	(29)	(54)	(10)
Ukraine	(31)	48 (36)	16 (20)
Uzbekistan	(26)	(33)	(10)

[a] Fuels, energy, steel, non-ferrous metals.

[b] 1995.

Source: Economic Commission for Europe (1996); the data in brackets are taken from Statistical Handbook (1995).

Fig. 5. Defence expenditure before transition and GDP change during transition

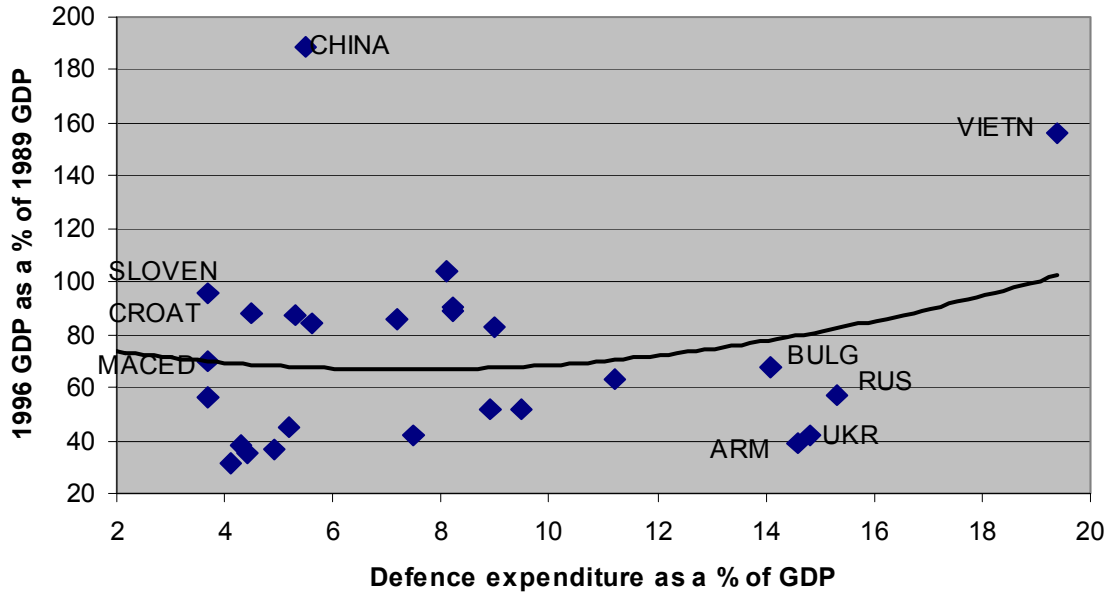
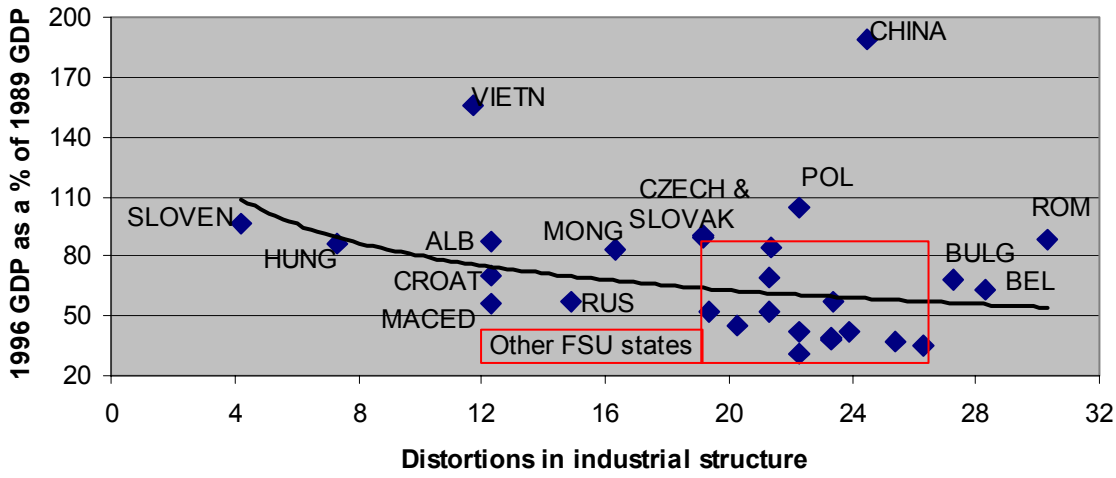


Fig. 6. Pre-transition distortions in the structure of the economy (industry/agriculture/services - % of 1989 GDP) and GDP change during transition



The greatest distortions existed in the trade among the former Soviet republics. The prices used in this trade were completely different from those on international markets (resource commodities were under priced, while finished goods were overpriced). When trade flows among former Soviet

republics are recalculated in world prices, Russia had a surplus of about 6% of GNP, whereas 10 out of the remaining 14 former Soviet republics ran absolutely non-sustainable trade deficits in the range of 9 to 30% of GDP (table 3).

The shift to world market prices in interrepublican trade (immediate for the Baltic States in 1992 and gradual in the CIS in 1992-95) led to the virtual collapse of these trade flows. For Russia, for example, trade with the "near abroad" decreased from about 13% of GDP in the late 1980s to only 4% in 1995-96 because the republics were not able to finance the trade deficits which emerged after prices approached the world market level.

The distortions in trade flows among socialist countries were much less severe because the prices used were not that different from world market prices. In Comecon, for instance, prices were calculated as a five-year moving average of world market prices. Nevertheless, some degree of distortion was definitely present, especially for non-resource products (so called "soft goods") since the quality of these goods was usually inferior to that found on the world market. The same applies to part of the domestic trade in non-FSU socialist countries that later became international (trade within former Yugoslavia and Czechoslovakia).

The actual performance during transition appears to depend on the aggregate measure of distortions in industrial structure and in trade patterns that combines all indicators mentioned above (excess defense expenditure, perverted industrial structure, underdevelopment of external trade, plus the volume of distorted trade as a % of GDP) – fig. 7. There is a rather high correlation between these two variables, especially if the economies affected by wars are excluded.

Other distortions. These are mostly disproportions created by central planning at the microlevel, for instance, the disproportions associated with the size and specialization of enterprises. Most enterprises in the CPEs were abnormally large and poorly specialized, they produced a wide variety of goods and services, which were often only distantly related to their mainstream production activities. These distortions resulted from the very nature of central planning: the physical inability of the planners to develop a balanced input/output model for many millions of products and thousands of production units and, hence, their conscious or unconscious attempts to promote grandeur and self-sufficiency at all production levels (Shmelev and Popov, 1989).

Table 3. Trade flows and trade balances of Soviet republics, 1988, as a % of GNP

Republics □	Trade flows*		Trade balance			
	Domestic □	Foreign □	Domestic** □	Foreign □	Total, in domestic prices	Total, in world prices□
USSR	21.11	8.27	-0.01(-0.14)	-5.76	-5.78	0.21
Russia	12.92	9.37	0.05 (0.02)	-6.28	-6.23	5.76
Ukraine	26.90	7.14	2.55 (-0.3)	-4.61	-2.05	-2.04
Byelorussia	44.56	7.39	11.14 (-1.6)	-5.42	-5.72	-5.78
Lithuania	47.26	7.21	-6.56 (4.0)	-5.83	-12.39	-29.97
Latvia	46.85	7.21	-1.03 (5.2)	-6.18	-7.21	-13.39
Estonia	50.11	8.79	-5.27 (5.3)	-7.03	-12.31	-22.86
Moldova	45.88	6.37	-1.87 (5.6)	-7.86	-9.74	-24.34
Armenia	47.85	5.84	-4.23 (-2.5)	-9.70	-13.92	-17.40
Georgia	37.88	5.90	1.98 (-4.9)	-6.15	-4.17	-13.43
Azerbaijan	35.38	5.95	13.89 (-2.6)	-6.61	-7.28	-3.31
Kazakhstan	29.48	4.69	-14.47(-1.3)	-5.09	-19.56	-17.69
Uzbekistan	34.10	5.62	-5.78 (-1.4)	-0.59	-6.37	-8.71
Turkmenistan	37.58	4.60	-1.53 (-3.0)	-3.07	-4.60	0.00
Kirghizia	39.65	5.98	-7.21 (0.4)	-10.24	-17.45	-15.86
Tajikistan	37.70	6.01	-15.32 (3.0)	-2.10	-17.42	-16.52

*(Exports+Imports):(2xGNP) at domestic prices, assuming the same GNP/NMP ratios for the republics as for the USSR as a whole. Domestic trade is trade with the rest of the Union. Foreign trade is trade with the rest of the world.

**Estimates of the balance of tourist trade are shown in brackets.

Source: Stabilization, Liberalization and Devolution: Assessment of the Economic Situation and Reform Process in the Soviet Union. A Report prepared by Commission of the European Communities. December 1990, p. 173. (Data are derived from official Soviet statistics); Narodnoye Khozyaistvo SSSR v 1989 godu (National Economy of the USSR in 1989). Moscow, Goskomstat, 1990, p. 638.

The examples of these disproportions are huge collective farms (500 employees on average in the USSR) with the centralized storage and repair facilities, transportation and

communication systems, housing and cattle barns; or huge machine building plants (over 1000 employees on average in FSU) with the constellations of low mechanized and inefficient auxiliary units, that provided castings, instruments, packing materials, transportation, construction, and other services, not to speak about housing, recreations and health care facilities. The average industrial enterprise in the Soviet Union had 846 employees as compared to 163 employees on average in 6 major EU countries (Commission of the European Communities, 1990, p. 36). This misfortunate heritage of central planning embodied in the fixed capital stock made large enterprises hardly reformable.

Distortions at the micro level, however, are not easily quantifiable. One possible measure is the size of enterprises (fig. 8). It may be assumed that large enterprises face greater adjustment problems and have to undergo greater restructuring, which in turn leads to a greater reduction of output. Hence, other conditions being equal, it should have been easier to proceed with restructuring for countries like China, Vietnam, Mongolia, Cuba, Hungary, Bulgaria, Poland, some former Yugoslav republics, where enterprises with less than 500 employees accounted for 25% or more of total industrial employment. On the contrary, in Czech and Slovak republics, Romania, and former Soviet republics, where over half of all employees worked at large enterprises with personnel of over 1000, restructuring should have been accompanied by the greater reduction of output (Comecon, 1990 and 1991).

It seems at first glance that there may be evidence to support this hypothesis (fig. 8). Excluding extreme cases (Romania and the former Czechoslovakia where large size of plants could have been associated with differences in industrial structure and differences in the definition of the "enterprise"), the magnitude of the reduction in output is positively related to the size of production units. However, part of the observed correlation is due to the "advantages of backwardness effect" discussed below, because the size of the enterprises tends to increase with a higher level of development (GDP per capita).

The advantages of backwardness. *Ceteris paribus,* the low level of economic development (in particular, the lower capital/output ratio) is an asset rather than a liability, i.e. there are some "advantages of backwardness". The conventional understanding of this term introduced by Gerschenkron[10] implies that countries with lower levels of economic development (lower GDP per capita) can benefit from the technological achievements and the experience of richer countries through international exchanges and hence may enjoy higher rates of growth that allow them to "catch up" (converge) with the richer countries. With respect to transition

economies, this general argument has an additional dimension. Because of distortions in infrastructure and other fixed capital stock created by decades of central planning, the magnitude of the needed restructuring was greater in the socialist economies with higher capital/output ratios, i.e. a higher level of economic development (fig. 9).

Distortions in industrial structure (militarization, overindustrialization, etc.) and distortions at the micro level (the size and specialization of enterprises) are more difficult to overcome, if they are embodied in fixed assets, and if these fixed assets are sizeable compared to GDP. It may be argued that in poor agricultural economies distortions were not "cast in stone", since the relatively primitive fixed capital stock was less susceptible to distortions and, even if distorted, was not so large in comparison to GDP as it was in more advanced industrialized transition economies. Hence, restructuring in more backward countries did not require as much investment (as a % of GDP) as in more advanced transition economies.

This interpretation suggests, for instance, that Chinese reformers, in most cases, were not overburdened by the legacy of the CPE in a sense that they were not constrained by distorted infrastructure in industry and especially in agriculture. Chinese agricultural communes with very little fixed capital stock (except land) proved to be much more amenable to reform than were Soviet and East European collective and state farms with a huge super-centralized infrastructure poorly suited to family farming, whereas the township and village enterprises, which became the major growth sector of the Chinese economy, emerged mostly from scratch.

This argument is supported by the example of Vietnam, which followed a different reform path (the overnight deregulation of most prices and the unification of multiple and black-market exchange rates in March 1989), but which also managed to avoid transformational recession. It is also partially supported by the example of two former Soviet Central Asian republics of Uzbekistan and Turkmenistan, which did not enjoy the advantages of backwardness and, thus, failed to avoid transformational recession under the more gradual reforms carried out by authoritarian regimes.

Fig. 7. Aggregate distortions in industrial structure and external trade before transition and GDP change during transition

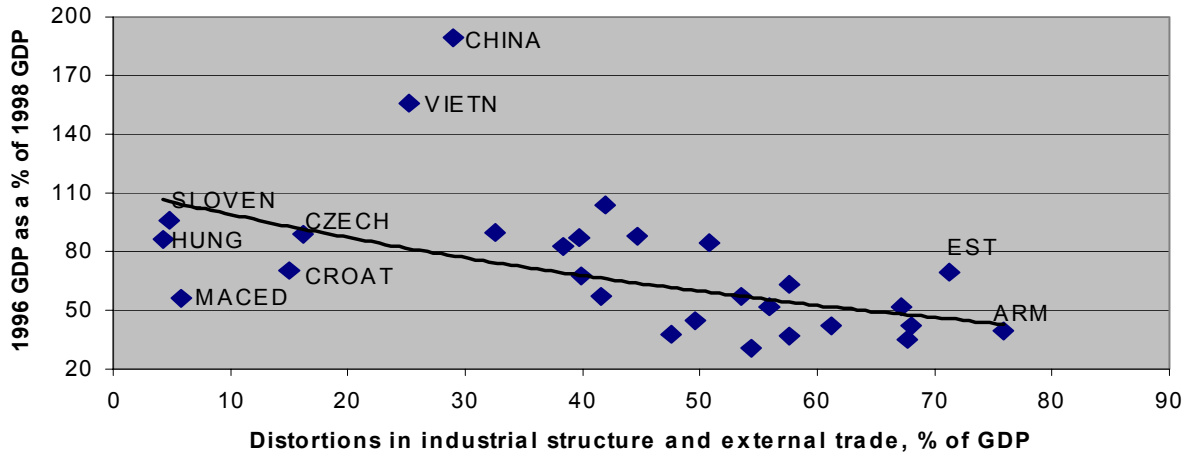


Fig. 8. Average size of industrial enterprises before transition and GDP change during transition

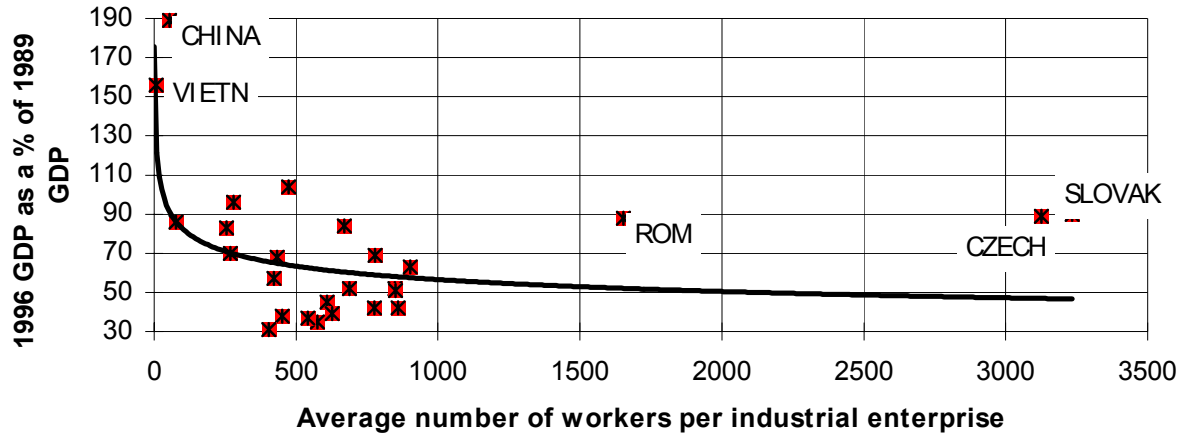
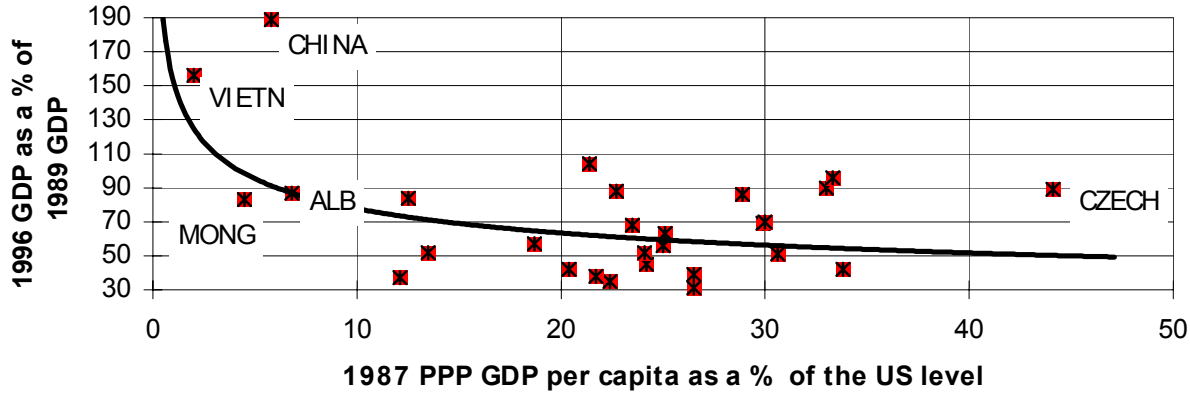


Fig. 9. PPP GDP per capita before transition and GDP change during transition



In contrast to China and Vietnam (and to Albania and Mongolia to some extent), the East European countries, the Baltic States and, even more so - CIS states, where CPEs existed for a longer time than elsewhere, entered the transition period with huge distortions in fixed capital stock and thus were doomed to experience transformational recession. Even in China large state enterprises in heavy industry proved to be the bottleneck in the whole reform process. There is a correlation between the share of state enterprises in total output and the rates of economic growth by province: the larger the share of state enterprises in total provincial output, the lower the rates of growth (China Statistical Yearbook).

The general picture, however, is somewhat less clear, since there appears to be only weak correlation between output change during transition and the level of GDP per capita (fig. 9).

Evaluating the impact of non-policy and policy factors. Preliminary attempts to separate non-policy from policy factors by running multiple regressions produce some statistically satisfactory and economically meaningful results (table 4).[11] Though there is a positive relationship between the magnitude of output decline on the one hand and the liberalization index and inflation on the other (R^2 = 65%), this weakens greatly or even disappears completely once variables that characterize objective conditions are factored in. It is noteworthy that nearly 70% of the variations in the magnitude of the decline of output may be explained by only two dummy variables (both significant at the 1% level) that account for membership in the FSU and for wars. It is even more remarkable that the addition of liberalization variable to the equation does not seem to make any difference: the correlation coefficient does not increase when liberalization is taken into consideration; to make matters worse, the coefficient of the liberalization index is not statistically significant and has the unexpected sign: the greater the liberalization, the larger the decline of output.[12] Inflation variable is always significant and has the predicted (negative) sign, but this cannot be considered as an important finding: the link between macroeconomic stabilization and economic growth was demonstrated more than once for a much greater group of countries (see, for instance: Bruno, 1995; Bruno and Easterly, 1995).

These results suggest that the usual argument linking the better performance of EE, especially the Central European countries (as compared to the FSU, especially the CIS countries), to better economic policies (greater liberalization) does not necessarily hold. Indeed, the identification and decomposition of the "FSU effect" may be carried out more effectively by bringing into the equation not policy variables, but non-policy factors, such as the relative magnitude of the distortions in trade and industrial structure.

Table 4. Regression of GDP change during transformational recession on non-policy and policy-related factors (all coefficients are significant at 5% level except those in brackets)

Dependent variable = log (1996 GDP as a % of 1989 GDP)

For China - all indicators are for the period of 1979-86 or similar

Equations/ Variables	1, N=28	2, N=28	3, N=28	4, N=28	5, N=28	6, N=28	7, N=28	8, N=28
Constant	3.66	5.37	4.58	5.29	5.17	5.44	5.38	5.93
Distortions, % of GDP[a]					-0.01	-0.01	(-0.00)	-0.01
1987 PPP GDP per capita, % of the US level					-0.01	-0.01	-0.01	-0.01
War dummy[b]			-0.40	-0.24	-0.48	-0.24	-0.25	-0.24
FSU dummy[c]			-0.62	-0.46			(-0.17)	
Liberalization index	0.21	(0.00)		(-0.07)		(0.03)	(0.01)	
Log (inflation, % a year, 1990-95, geometric average)		-0.23		-0.13		-0.14	-0.12	-0.15
Adjusted R^2, %	28	65	69	74	63	78	77	78

Dependent variable = log (1998 GDP as a % of 1989 GDP)

Equations/ Variables	1, N=28	2, N=28	3, N=28	4, N=28	5, N=28	6, N=28	7, N=28	8, N=28	9, N=28
Constant	3.69	5.42	4.58	4.51	5.33	5.21	5.43	5.46	5.71
Distortions, % of GDP[a]						-.01	-.003d	(-.005)	-0.01
1987 PPP GDP per capita, % of the US level						-.01	-0.01	-0.01	-0.01
War dummy[b]			-.39	-.39	(-.17)	-.49	-.20 e	-.19 e	-.19 e
FSU dummy[c]			-.60	-.53	(-.23)			(.08)	
Liberalization index	.24	(.02)		(.04)	(-.01)		(.06)	(.07)	
Log (inflation, % a year, 1990-95, geometric average)		-.24			-.17		-.16	-.17	-.18

Adjusted R^2, %	32	68	59	58	68	52	73	72	74

a Cumulative measure of distortions as a % of GDP equal to the sum of defense expenditure (minus 3% regarded as the "normal" level), deviations in industrial structure and trade openness from the "normal" level, heavily distorted trade (among the FSU republics) and lightly distorted trade (with socialist countries) taken with a 33% weight (see Appendix for details).

b Equals 1 for Armenia, Azerbaijan, Croatia, Georgia, Macedonia, and Tajikistan and 0 for all other countries.

c Equals 1 for all former Soviet republics and 0 for all other countries.

d Significant at 22% level.

e Significant at 14-16% level.

To avoid the multicolinearity problem, we have constructed an aggregate indicator of distortions (summing up all the distortions mentioned above, since they are expressed as a % of GDP). There is a fairly strong correlation between aggregate distortions in industrial and trade structure before transition and the subsequent performance during transition, as measured by the GDP change (fig. 7). Among countries with minor aggregate distortions (less than 30% of GDP) are three former Yugoslav republics (Slovenia, Croatia, Macedonia), the Czech and Slovak republics, Hungary, China and Vietnam. All these countries, with the exception of war-affected Macedonia, are doing better than most other transition economies. On the other hand, among countries with most distorted economies (aggregate distortions of over 50% of GDP) we find all the former Soviet republics, except Russia (where aggregate distortions amounted to only 39% of GDP). In fact, aggregate distortions alone may explain 32% of output variations during transition and about 50% of variations if the economies affected by war are excluded. Taking into account the other two non-policy factors characterizing the initial conditions, we obtain statistically sound and robust results: over 60% of the variations in performance may be explained by (1) the advantages of backwardness, (2) aggregate distortions, and (3) the war dummy variable (table 4).

The addition of the FSU dummy to the equation leads to the absorption of the aggregate distortions variable (the FSU dummy thus plays the role of a proxy for distortions), while the impact of the level of economic development and war remains statistically significant. Adding inflation as an explanatory variable allows to improve the results, but the inclusion of liberalization index only deteriorates T-statistics and does not increase the explanatory power of the regression

at all. To put it differently, the observed differences in performance may be explained *mostly* by the unequal initial conditions, while the role of traditional "good policy" factors appears to be quite limited.

The results for the 1989-98 period, i.e. with 1998 GDP (as a % of 1989) as a dependent variable, are quite similar: the inclusion of the liberalization variable in most cases worsens the explanatory power of the regression, the liberalization coefficient becomes a bit more statistically significant, while the T-statistics for the distortions variable deteriorates somewhat, but these changes are **too** small to make strong conclusions.[13] There is neither the evidence that liberalization works with a lag, i.e. starts to affect performance only after a certain period of time, nor there are reasons to believe that there is a certain threshold level of liberalization, which needs to be reached to reap the "marketization dividend".

The exact measurement of the impact of initial conditions and policy variables is complicated by multicolinearity, since distortions, liberalization index and inflation are strongly correlated with each other. Hence, it would be wrong to conclude that liberalization does not matter a bit. However, allowing for the uneven initial conditions is only but natural while evaluating the impact of policy factors: if the regression results, after factoring in distortions, can not be improved substantially by adding liberalization and inflation variables, it means that the impact of these policy factors on performance has yet to be proven.

Such an interpretation suggests, among other things, that recent research aimed at providing some empirical evidence for the conventional wisdom (greater liberalization and stabilization lead to better performance) may not reach this goal by demonstrating that countries, which are more advanced in liberalization and in fighting inflation are doing better than others. Once the pre-transition initial conditions are taken into account, it turns out that conventionally monitored policy factors, such as the degree of liberalization and the rates of inflation, do not really explain much. Differences in economic performance in post-communist countries during transition appear to be associated predominantly not with chosen reform paths, but with the magnitude of initial distortions in industrial structure and trade patterns, and with the initial level of economic development.

Recession caused by supply-side factors may occur in the CPE without the transition to the market and even without market type reforms. The notable recent examples of the latter are of course Cuba and North Korea, which experienced the reduction of output in the early 1990s due

to external shocks resulting from the decline of direct and indirect (through barter trade arrangements) subsidies from the Soviet Union. The CPE, provided that the planners follow appropriate policies, is known for its ability to adjust to external shocks (to quickly reallocate resources during wars, for instance) and it seems like Cuban case provides another evidence of this ability. Faced with the reduction of Soviet assistance of the magnitude of 20% of GDP Cuban planners managed to limit the decline of output to about 40% of GDP and to 4 years (Pastor, 1997) - since 1994 Cuban economy is growing again, which is a better record than in most FSU economies[14].

Similarly, the supply-side recession may occur in the market economy, the recent major examples of adverse supply shocks being energy price hikes of 1973 and 1979. The prolonged decline of Finnish GDP in the early 1990s (from 1989 to 1993 it went down by 12.5%, while unemployment rate increased from 4% to 18%) may be an even better example, though the break down of bilateral clearing arrangements with the Soviet Union, while contributing to recession, was not the main cause of it (Kiander and Vartia, 1996).

To put it differently, there is a strong evidence that the recession experienced by most of the post-communist economies was in essence a supply-side phenomenon that could have been dealt with either under the central planning (no market reforms), or under the mixed plan-market system (gradual transition of Chinese type), or under the predominantly market environment (shock therapy - immediate transition to the market). Differences in economic performance in post-communist countries during transition appear to be associated predominantly not with chosen reform paths, but with the magnitude of initial distortions in industrial structure and trade patterns, and with the initial level of economic development. The impact of the speed of liberalization appears to be limited, if any.

This is not to say that government policy in general does not affect performance, but to admit that conventional understanding of the policy factors (progress in liberalization and macroeconomic stabilization) is not enough to account for all of them. It may well be that most important policy factors that affect performance are not associated, despite popular beliefs, with the speed of liberalization and macro-stabilization. Rather, these are the policy measures that preserve or create strong and efficient institutions facilitating the functioning of the market economy.

4. Policy factors: institutions, rule of law and democracy

The decline of the institutional capabilities contributed a great deal to Russia's and CIS poor economic performance. If regression equations that account for initial conditions only are used to predict economic performance (GDP change), it turns out that China and Vietnam did much better than expected, EE and Baltic states on average did not so good, but still a bit better than expected, whereas most CIS states did much worse than expected. Exceptions within CIS prove the rule: Uzbekistan and Belarus, i.e. exactly those countries that are not only known for proceeding with slow reforms, but are also believed to have the strongest state institutions among all CIS states.[15] Ukrainian example, on the other hand, proves that it is not the speed of reforms *per se* that really matters: being a procrastinator, it did nevertheless worse than expected due arguably to the poor institutional capabilities (trust in political institutions in Ukraine is markedly lower than in Belarus).

The efficiency of state and non-state institutions is not easily measurable. In most FSU and Balkan countries the collapse of the institutions is observable in the dramatic increase of the share of the shadow economy; in the decline of government revenues as a proportion of GDP; in the inability of the state to deliver basic public goods and appropriate regulatory framework; in the accumulation of tax, trade, wage and bank arrears; in the demonetization, "dollarization" and "barterization" of the economy, as measured by high and growing money velocity, and in the decline of bank financing as a proportion of GDP; in poor enforcement of property rights, bankruptcies, contracts and law and order in general; in increased crime rates; etc. Most of the mentioned phenomena may be defined quantitatively with a remarkable result that China and Vietnam are closer in this respect to EE countries than to CIS. However, the construction of the aggregate index of the efficiency of institutions is problematic because the rationale for choosing weights is not clear.

One possible general measure is the trust of businesses and individuals in various institutions - here FSU states rank much lower than East European countries in all available surveys. In the global survey of firms in 69 countries on the credibility of the state institutions, CIS had the lowest credibility, below that of Sub-Saharan Africa (World Bank, 1997a, pp. 5, 35). Especially striking was the gap between EE and CIS countries: differences in credibility index between South and Southeast Asia and EE were less pronounced than differences between Sub-Sahara Africa and CIS.

Another good proxy for measuring institutional capacity of the state is the financial strength of the government - the share of state revenues in GDP. Though much have been said

about "big government" and too high taxes in former socialist countries, by now it is rather obvious that the downsizing of the government that occurred in most CIS states during transition went too far. This argument has nothing to do with the long-term considerations of the optimal size of the government in transition economies – it is true that in most of them government revenues and expenditure as a share of GDP are still higher than in countries with comparable GDP per capita. But whatever the long term optimal level of government spending should be, the drastic reduction of such spending (by 50% and more in real terms in the course of just several years) cannot lead to anything else but institutional collapse.

Before transition in former socialist states not only government regulations were pervasive, but also the financial power of the state was roughly the same as in European countries (government revenues and expenditure amounted to about 50% of GDP). This allowed the state to provide the bulk of public goods and extensive social transfers. During transition tax revenues as a proportion of GDP decreased markedly in most countries. However, Central European countries and Estonia managed to arrest the decline, while Russia (together with Lithuania, Latvia, and several Southeast Europe and Central Asian states) experienced the greatest reduction. In Vietnam the share of government revenues in GDP grew by 1.5 times in 1989-93. Chinese government revenues as a percentage of GDP fell by over 2 times since the late 1970s, but it looks more like a conscious policy choice rather than a spontaneous process (authoritarian regimes have always better powers to collect tax revenues, if they choose to do so, as did all governments in the CPE's before the transition).

In most CIS states the reduction of the government expenditure occurred in the worst possible way - it proceeded without any coherent plan and did not involve the reassessment of government commitments. Instead of shutting down completely some government programs and concentrating limited resources on the other with an aim to raise their efficiency, the government kept all programs half-alive, half-financed, and barely working.

This led to the slow decay of public education, health care, infrastructure, law and order institutions, fundamental R&D, etc. Virtually all services provided by the government - from collecting custom duties to regulating street traffic - are currently the symbol of notorious economic inefficiency. There were numerous cases of government failure which further undermined the credibility of the state since many government activities in providing public goods were slowly dyeing and were only partly replaced by private and semi-private businesses.

Three major patterns of change in the share of government expenditure in GDP[16], which

generally coincide with the three major archetypes of institutional developments, and even broader - with three most typical distinct "models" of transition, are shown in fig. 10. Under **strong authoritarian regimes** (China) cuts in government expenditure occurred at the expense of defense, subsidies and budgetary financed investment, while expenditure for "ordinary government" as a percentage of GDP remained largely unchanged (Naughton, 1997); **under strong democratic regimes** (Poland) budgetary expenditure, including those for "ordinary government", declined only in the pre-transition period, but increased during transition itself; finally, **under week democratic regimes** (Russia) the reduction of the general level of government expenditure led not only to the decline in the financing of defense, investment and subsidies, but to the downsizing of "ordinary government", which undermined and in many instances even led to the collapse of the institutional capacities of the state.

While in China total budgetary expenditure and that for "ordinary government" are much lower than in Russia and Poland, they were sufficient to preserve the functioning institutions since the financing of social security from the government budget was traditionally low. In Russia, however, though expenditure for ordinary government seem to be not that much lower than in Poland, the pace of their reduction during transition exceeded that of GDP: to put it differently, given the various patterns of GDP dynamics, while in Poland "ordinary government" financing grew by about one third in real terms in 1989-95/6 (and while in China it nearly doubled), in Russia it fell by about 3 times! The Russian pattern of institutional decay proved to be extremely detrimental for investment, and for general economic performance.

Normally in market economies there is a positive correlation between the level of taxation, the share of government revenues in GDP and the size of the shadow economy: if taxes are excessive, economic agents tend to avoid taxation through underground activity, including non-reported barter operations (Gardner, 1988, p.24). In transition economies, the opposite is true: the lower are state revenues the larger is the shadow economy (fig. 11)[17]. In fact, there was a nearly one-to-one crowding out effect: for every 1 p.p. of the reduction of the share of state revenues in GDP the share of the shadow economy increased by 1 p.p. To put it differently, the dynamics of the share of government revenues in GDP in transition economies is a rather accurate measure of the ability of the state to enforce rules and regulations. The decline in government revenues is obviously correlated with performance (fig. 12), but it is not correlated with other explanatory variables, allowing to avoid multicollinearity.

Fig. 10. Government expenditure, % of GDP

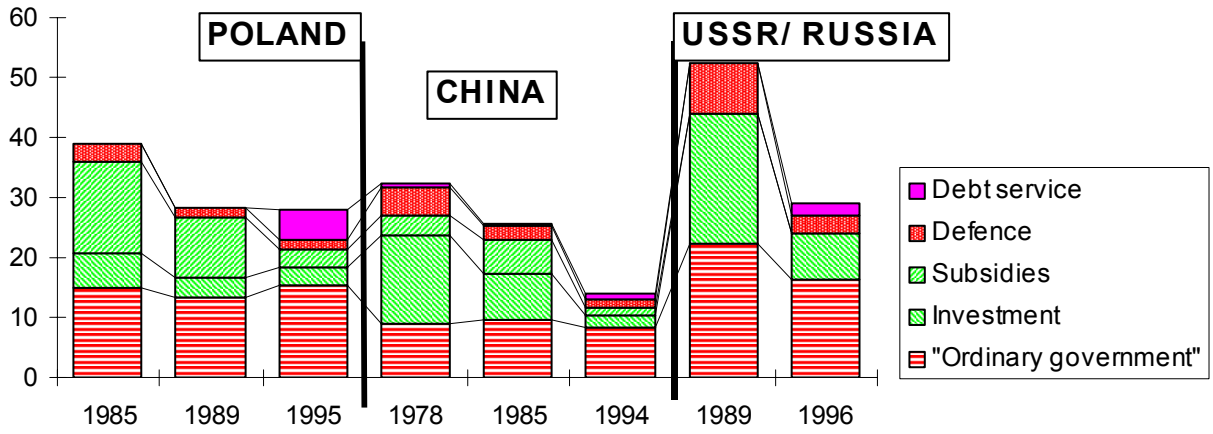
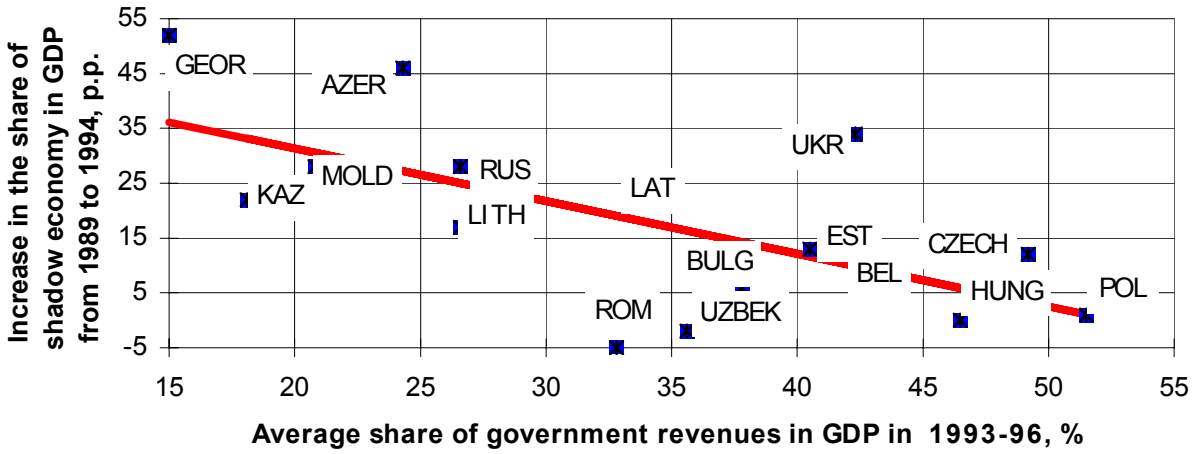
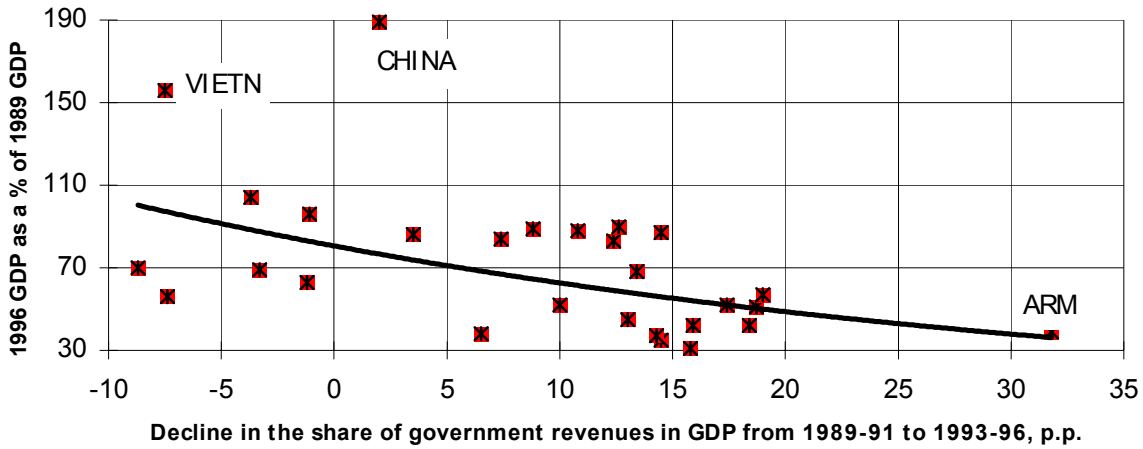


Fig. 11. Government revenues and shadow economy, % of GDP, 1989-96



After adding the decline in government revenues variable to the ones that characterize initial conditions (level of development and distortions) and external environment (war dummy variable), the explanatory power of the regression increases to 75% with the excellent T-statistics (28 observations). And it is quite remarkable that the inclusion of liberalization variables at this point does not improve regression statistics. Factoring in inflation allows to improve the explanatory power to 85%. The correlation coefficient rises further up to 92%, if other indicators of the institutional capacities, such as the share of shadow economy, are added, though the number of observations in this case is only 17 because of the lack of data (table 5).

Fig. 12. Change in GDP and in the share of government revenues in GDP



Running regressions with the data for 1998 GDP (as a % of 1989) produces similar, though a bit weaker results. Again, liberalization coefficient, after factoring in distortions and the decline in government revenues, becomes insignificant, although the explanatory power of the equation does not rise higher than 80% (table 5). Thus, the arguments about the "threshold" levels of liberalization (it starts to affect performance only, when it reaches a certain threshold) or about the lagged impact of the liberalization do not seem to be supported by the evidence.

Table 5. Regression of change in GDP on non-policy and policy-related factors (all coefficients are significant at 5% level except those in brackets)

Dependent variable = log (1996 GDP as a % of 1989 GDP)

For China - all indicators are for the period of 1979-86 or similar

Equations, Number of Observations / Variables	1, N=28	2, N=28	3, N=28	4, N=28	5, N=17	6, N=17
Constant	5.23	4.96	5.55	5.71	5.91	6.07
Distortions, % of GDP[a]	-.01	-.01	-.01	-.01	-.00	-.00
1987 PPP GDP per capita, % of the US level	-.01	-.02	-.01	-.01	-.02	-.01
War dummy[b]	-.63	-.58	-.40	-.40	0.26[c]	0.27[c]
Decline in government revenues as a % of GDP from 1989-91 to 1993-96	-.01	-.01	-.01	-.01		

Liberalization index		(.07)		(-0.4)		(-.05)
Log (Inflation, % a year, 1990-95, geometric average)			-.12	-.14	-.12	-.14
Shadow economy as a % of GDP in 1994					-.02	-.02
Adjusted R^2, %	75	75	85	84	92	91

Dependent variable = log (1998 GDP as a % of 1989 GDP)

For China - all indicators are for the period of 1979-88 or similar

Equations, Number of observations / Variables	1, N=28	2, N=28	3, N=28	4, N=28	5, N=17	6, N=17	7, N=17	8, N=17
Constant	5.30	4.88	5.68	5.73	5.74	5.43	5.86	6.08
Distortions, % of GDP[a]	-.01	-.01	-.01	-.01	-.01	-.01 [c]	(-.00)	(-.00)
1987 PPP GDP per capita, % of the US level	-.01	-.02	-.01	-.01	-.01	-.02	-.01[c]	(-.01)
War dummy[b]	-.67	-.58	-.38	-.37				
Decline in government revenues as a % of GDP from 1989-91 to 1993-96	-.02	-.01	-.01	-.01				
Liberalization index		(.11)		(-.01)		(.11)		(-.06)
Log (Inflation, % a year, 1990-95, geometric average)			-.15	-.15			-.13	-.16
Shadow economy as a % of GDP in 1994					-.02	-.02	-.01	-.02
Adjusted R^2, %	67	69	80	80	72	73	82	81

[a]Cumulative measure of distortions as a % of GDP equal to the sum of defense expenditure (minus 3% regarded as the 'normal' level), deviations in industrial structure and trade openness from the 'normal' level, the share of heavily distorted trade (among the FSU republics) and lightly distorted trade (with socialist countries) taken with a 33% weight (see Appendix for details).

[b]Equals 1 for Armenia, Azerbaijan, Croatia, Georgia, Macedonia, and Tajikistan and 0 for all other countries.

[c]Significant at 8% level.

The importance of the institutional factor was pointed out more than once for various countries and regions, including transitional economies (Polterovich, 1998). Rodrik (1996) found that nearly all variations in the rates of growth in labor productivity in Southeast Asian countries in 1960-94 can be explained by per capita income in 1960, average length of education and the index of the quality of institutions derived from surveys conducted in the 1980s. Similarly, it was found that 70% of the variations in investment in 69 countries can be explained by only two factors – GDP per capita and institutional capacity index (World Bank, 1997). Stiglitz (1997) talks about emerging post-Washington consensus with the greater emphasis on the role of institutions, whereas Holmes (1997) believes that the major lesson to be learned by Western democracies from recent Russian developments is exactly the one about the crucial importance of the state institutions: whereas the Soviet Union proved that the non-market economic system with the strongest state cannot be efficient, Russia today is proving that the market without strong state degrades to the "exchange of unaccountable power for the untaxable wealth" leading to economic decline. Similarly, Campos (1999a) found evidence that government expenditures are positively, not negatively, associated with economic growth in transition economies.

There was only one group of transition economies, where the share of state revenues in GDP remained relatively stable during transition – Central European countries (fig. 13). Outside Central Europe there were only 4 countries where the share of government revenues in GDP did not fall markedly – Belarus, Estonia, Uzbekistan, Vietnam. The first 3 are also the top 3 performers in the FSU region, whereas Vietnam's performance is second to only that of China. It is noteworthy that Belarus and Uzbekistan, commonly perceived as procrastinators, nevertheless show better results than most more advanced reformers. On the other hand, this is the alternative explanation of the Estonian success in economic transformation as compared to most CIS states and even to neighboring Baltic states: the usual interpretation focusing on the progress in liberalization may overlook the impact of strong institutions.

It is precisely this strong institutional framework that should be held responsible for both - for the success of gradual reforms in China and shock therapy in Vietnam, where strong authoritarian regimes were preserved and CPE institutions were not dismantled before new market institutions were created; and for the relative success of radical reforms in East European, especially in Central European countries, where strong democratic regimes and new market institutions emerged quickly. And it is precisely the collapse of strong state and institutions that

started in the USSR in the late 1980s and continued in the successor states in the 1990s that explains the extreme length, if not the extreme depth of the FSU transformational recession.

To put it differently, Gorbachev reforms of 1985-91 failed not because they were gradual, but due to the weakening of the state institutional capacity leading to the inability of the government to control the flow of events. Similarly, Yeltsin reforms in Russia, as well as economic reforms in most other FSU states, were so costly not because of the shock therapy, but due to the collapse of the institutions needed to enforce law and order and carry out manageable transition.

To sum up, there is enough evidence that differing performance during transition, after factoring in initial conditions and external environment, depends mostly on the strength of institutions and not so much on the progress in liberalization *per se*.

The fact that results for 1989-98 are weaker than for1989-96 (table 5 and 6**)** is consistent with other studies (Havrylyshyn and Wolf, 1999) and also seem to fit logically into the suggested explanation. By the end of the 1990s many countries were already recovering from the transformational recession, so the model of the supply side recession (the greater the distortions in the industrial structure and trade patterns, the larger the reduction of output) is no longer applicable. Regressing output change in 1994-98 on the same variables that proved to be important for explaining the magnitude of the recession produces some strong, though negative, results. In short, the same regression equation that worked for the periods of 1989-96 and 1989-98 does not work at all for the period of 1994-98 (table 6). The distortions coefficient has the "wrong" sign, T-statistics deteriorates sharply, and about 2/3 of the variations in growth rates remain unexplained anyway.

In a sense, this is exactly the kind of the negative result that supports the conclusions drawn for the 1989-96 period. By mid 1990 supply side recession was over or coming to an end in most countries and the theory that could explain reasonably well the performance during the collapse of output is no longer relevant. The process of economic growth that has already started in most transition economies has nothing to do with the adverse supply shocks resulting from price, exchange rate and trade liberalization. Accumulated distortions in industrial structure and in trade patterns – the remnants of the planning past that were so important for explaining performance during the transition period – are no longer relevant, since almost by definition they can affect only the process of the reduction of output, not the process of economic growth. In fact, although data for 4 years are obviously not enough to draw conclusions, poor regression

results for 1994-98 period may mean exactly that (table 6). Like standard growth accounting exercise yields strange results, if carried out for transition economies in the first half of the 1990s (Campos, 1999a), the transformational recession model fails to explain data pertaining to post decline period.

The new economic dynamics of the transition economies – the growth process unfolding in most of them in the second half of the 1990s - could probably be best described in the framework of the conventional growth theory (production functions), where both – institutional capacities and the level of liberalization - will play a non-negligible role.

Table 6. Regression of change in GDP in 1994-98 on non-policy and policy-related factors (all coefficients are significant at 15% level except those in brackets)

Dependent variable = log (1998 GDP as a % of 1994 GDP)

For China - all indicators are for the period of 1984-88 or similar

Equations, Number of Observations / Variables	1, N=28	2, N=28	3, N=28	4, N=28	5, N=28
Constant	4.51	4.25	4.56	4.32	4.60
Distortions, % of GDP[a]		.004	.005	.003	.003
1987 PPP GDP per capita, % of the US level					
War dummy[b]			.15		
Decline in government revenues as a % of GDP from 1989-91 to 1993-96				-.003 [c]	-.004
Liberalization index	.07	.12	.09	.10	.07
Log (Inflation, % a year, 1990-95, Geometric average)			-.06		.04
Adjusted R^2, %	21	27	37	29	33

[a]Cumulative measure of distortions as a % of GDP equal to the sum of defense expenditure (minus 3% regarded as the 'normal' level), deviations in industrial structure and trade openness from the 'normal' level, the share of heavily distorted trade (among the FSU republics) and lightly distorted trade (with socialist countries) taken with a 33% weight (see Appendix for details).

^{b}Equals 1 for Armenia, Azerbaijan, Croatia, Georgia, Macedonia, and Tajikistan and 0 for all other countries.

^{c} Significant at 21% level.

There are signs that economic liberalization starts to pay off in some countries, such as China and Vietnam and Central European states. Losses in allocative efficiency in the CPE, as compared to market economies, existed mostly in the form of low capital productivity: in particular, higher capital accumulation ratios in these countries were needed to achieve growth rates similar to that of market economies (Shmelev and Popov, 1989). Things, however, are starting to change and recently observed improvements in capital efficiency in some post-communist countries should be attributed to the impact of marketization (Popov, 1998a**,** 1999b**).** China and Vietnam managed to accelerate the rates of growth during reform period without increasing investment/GDP ratios, whereas Poland maintains reasonable growth rates with the lower share of investment in GDP than before transition. These countries, however, are exactly the ones that managed to preserve strong institutions during transition. The previous conclusion, thus, is only reinforced: benefits of liberalization can be noticeable only in economies with strong institutional capacities.

Finally, there is a difficult question what leads to the institutional collapse and can it be prevented. Using the terminology of political science, it is appropriate to distinguish between strong authoritarian regimes (China, Vietnam, Uzbekistan), strong democratic regimes (Central European countries) and weak democratic regimes (most FSU and Balkan states – fig. 14). The former two are politically liberal or liberalizing, i. e. protect individual rights, including those of property and contracts, and create a framework of law and administration, while the latter regimes, though democratic, are politically not so liberal since they lack strong institutions and the ability to enforce law and order (Zakaria, 1997).). This gives rise to the phenomenon of "illiberal democracies" - countries, where competitive elections are introduced before the rule of law is established. While European countries in the XIX century and East Asian countries recently moved from first establishing the rule of law to gradually introducing democratic elections (Hong Kong is the most obvious example of the rule of law without democracy), in Latin America, Africa, and now in CIS countries democratic political systems were introduced in societies without the firm rule of law.

Authoritarian regimes (including communist), while gradually building property rights

and institutions, were filling the vacuum in the rule of law via authoritarian means. After democratization occurred and illiberal democracies emerged, they found themselves deprived of old authoritarian instruments to ensure law and order, but without the newly developed democratic mechanisms needed to guarantee property rights, contracts and law and order in general (upper left quadrant in fig. 14). No surprise, this had a devastating impact on investment climate and output.

Fig. 13. Consolidated government revenues as a % of GDP

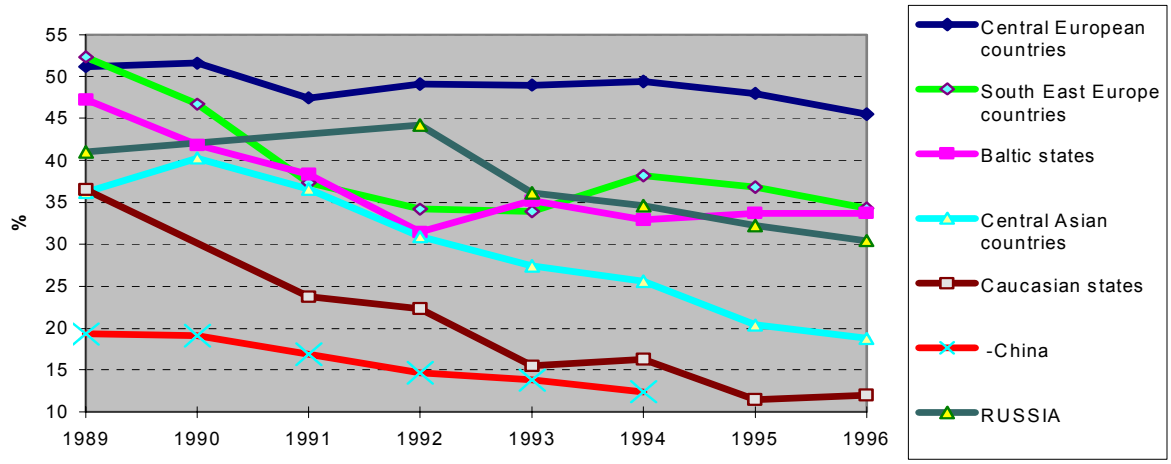


Fig. 14. Indices of the rule of law and political rights (democracy), 0-10 scale, higher value represent stronger rule of law and democracy

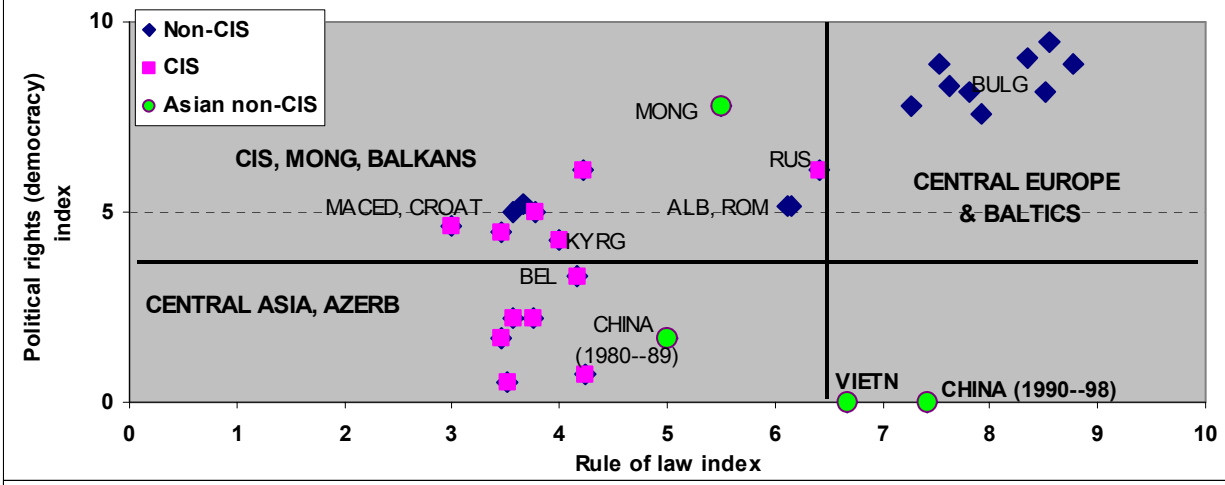
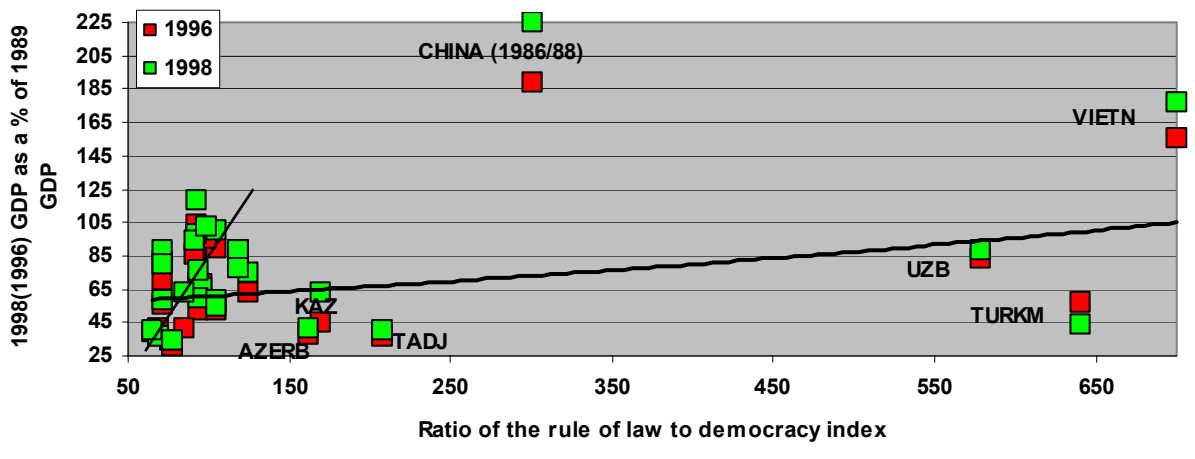


Fig. 15. Ratio of the rule of law to democracy index and output change



As fig. 15 suggests, there is a clear relationship between the ratio of rule of law index on the eve of transition to democratization index, on the one hand, and economic performance during transition, on the other, although the positive correlation for authoritarian countries is apparently different from that for democracies. To put it differently, democratization without strong rule of law, whether one likes it or not, usually leads to the collapse of output. There is a price to pay for early democratization, i.e. introduction of competitive elections of government under the conditions when the major liberal rights (personal freedom and safety, property, contracts, fair trial in court, etc.) are not well established.

If the rule of law and democracy indices are included into the basic regression equation, they have predicted signs (positive impact of the rule of law and negative impact of democracy) and statistically significant (table 7, equation 1), which is consistent with the results obtained for larger sample of countries. It has been noted that cases of successful simultaneous economic and political reforms are relatively rare (Intriligator, 1998) and that introducing voting in post-communist countries may be detrimental economically (Cheung, 1998). A. Sen (1999) argues that comparative studies that are now available suggest that there is no relation between economic growth and democracy in either direction. However, the experience of transition economies seems to indicate that under the poor rule of law democratization has a marked negative impact on economic performance. These conditions are captured by the ratio of the rule of law index to democracy index: the lower is the rule of law and the higher is democratization, the lower is this ratio.

Including this ratio into the regression for output change yields impressive results: nearly 80% of all variations in output can be explained by only three factors – pre-transition distortions, inflation, and rule-of-law-to-democracy index (table 7, equation 2). If liberalization variable is added, it turns out to be not statistically significant and does not improves the goodness of fit (equation 3). At the same time, the ratio of the rule of law to democracy index and the decline in government revenues are not substitutes, but rather complement each other in characterizing the process of the institutional decay. These two variables are not correlated (table 4A) and improve the goodness of fit, when included together in the same regression, to 88% (equation 5) - better result than in regressions with either one of these variables. The liberalization index, when added to the same equation, only deteriorates the goodness of fit, is not statistically significant, and has the "wrong" sign.

5. Concluding remarks

With data for only 28 countries pertaining to the period of less than 10 years and with the structural model explaining not the annual variations of the GDP growth rates, but the reduction of output from peak to trough[18], econometric techniques are obviously of limited value. The arguments developed in this article are mostly logical, the simplest regressions are used only for better description of data. High correlation between variables and good T-statistics are regarded not as a proof of the theoretical argument, but only as an evidence of the absence of the apparent contradictions between the suggested explanation and the data. We claim, however, that the explanation of the transformational recession suggested in this article is more consistent with the available data than other explanations putting the emphasis on the impact of liberalization

Table 7. Regression of change in GDP in 1989-96 on initial conditions, policy factors, and rule of law and democracy indices (all coefficients are significant at 9% level except those in brackets)

Dependent variable = log (1996 GDP as a % of 1989 GDP)

For China - all indicators are for the period of 1989-96 or similar

Equations, Number of Observations / Variables	1, N=28	2, N=28	3, N=28	4, N=28	5, N=28	6, N=28
Constant	5.33	5.26	5.26	5.40	5.41	5.50
Distortions, % of GDP[a]	-.004	-.004	(-.003)	-.006	-.007	-.007
1987 PPP GDP per capita, % of the US level				-.007	-.009	-.008
War dummy[b]				-.19	-.36	-.37
Decline in government revenues as a % of GDP from 1989-91 to 1993-96					-.011	-.011
Liberalization index			(.015)			(-.018)
Log (Inflation, % a year, 1990-95, Geometric average)	-.19	-.20	-.20	-.17	-.13	-.14
Rule of law index, average for 1989-97, %	.(007)[c]					
Democracy index, average for 1990-98, %	-.007					
Ratio of the rule of law to democracy index		.088	.090	.060	.048	.046

Adjusted R^2, %	76	79	79	82	88	87

[a]Cumulative measure of distortions as a % of GDP equal to the sum of defense expenditure (minus 3% regarded as the 'normal' level), deviations in industrial structure and trade openness from the 'normal' level, the share of heavily distorted trade (among the FSU republics) and lightly distorted trade (with socialist countries) taken with a 33% weight (see Appendix for details).

[b]Equals 1 for Armenia, Azerbaijan, Croatia, Georgia, Macedonia, and Tajikistan and 0 for all other countries.

[c] Significant at 14% level.

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Differences in performance during transition depend strongly on the initial conditions, in particular, on the pre-transition levels of GDP per capita and distortions in industrial structure and external trade patterns. The higher the distortions (militarization, overindustrialization, "under-openness" of the economy and the share of perverted trade flows), the worse is the performance as measured by the GDP change. And the higher was GDP per capita before transition, the greater were distortions embodied in fixed capital stock, the more difficult it was to overcome these distortions to achieve growth.

By focusing on liberalization and macroeconomic stabilization as key policy variables in transition economies the conventional wisdom overlooked the impact of strong institutions. Accounting for uneven initial conditions sheds new light on the relative importance of various policy factors. Macroeconomic stability continues to matter a great deal - the inclusion of the inflation variable improves the coefficient of correlation from 63 to 78%, but liberalization index does not appear to be important - the coefficient is not statistically significant and in most cases has unexpected sign. On the contrary, changes in the institutional capabilities of the state have dramatic impact on performance. After controlling for initial conditions, it turns out that the change in the share of government revenues in GDP is of crucial significance for the dynamics of output: by adding this variable to the ones that characterize initial conditions it is possible to explain 75% of variations in performance without taking into account inflation and even 85%, if inflation is factored in. The regression equations suggest, for instance, that predicted 48% decline in GDP in 1989-96 in Russia (in reality – 43%) could have been limited to only 33% if the share of government revenues in GDP remained unchanged (in reality it fell by 19 p.p.). And if in addition

inflation would have been kept in 1990-95 at a level of, say, Hungary (about 20% a year) instead of actual rate of over 500%, 1996 GDP would be no more than 10% lower than in 1989.

In a sense, the importance of preserving strong institutional capacity of the state for ensuring good performance may be considered as the main finding of this paper with strong policy implication. After allowing for differing initial conditions, it turns out that the fall in output in transition economies was associated mostly with poor business environment, resulting from institutional collapse. Liberalization alone, when it is not complemented with strong institutions, can not ensure good performance.

Moreover, the process of the collapse of output in transition economies is best described by the supply side recession model, where the key determinants are initial conditions and the strength of institutions, while the impact of liberalization is hardly noticeable. It follows that the debate about the speed of the liberalization (shock therapy versus gradualism) was to a large extent misfocused, whereas the crucial importance of strong institutions for good performance was overlooked. Institutional capacities in turn, depend to a large extent on the combination of the rule of law and democracy: the data seem to suggest that both - authoritarian and democratic regimes with the strong rule of law can deliver efficient institutions, whereas under the weak rule of law authoritarian regimes do a better job in maintaining efficient institutions than democracies. To put it in a shorter form, the record of illiberal democracies in ensuring institutional capacities is the worst, which predictably has a devastating impact on output.

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INITIAL CONDITIONS (DISTORTIONS) AND INSTITUTIONS – CLASSIFICATION OF COUNTRIES

DISTORTIONS / INSTITUTIONAL CAPACITY	LOW	HIGH
HIGH	CHINA, VIETNAM	EASTERN EUROPE
LOW	ALBANIA, MONGOLIA	FSU

STATISTICAL APPENDIX

Table 1A. GDP during transition, GDP per capita before transition, liberalization index, inflation, democracy and rule of law indices

COUNTRY	1987-88 PPP GDP per capita, % of the US level	1996 GDP as a % of 1989 GDP	1998 GDP as a % of 1989 GDP***	1998 GDP as a % of 1994 GDP	Cumulative WB libera-lization index by 1995	Inflation, in 1990-95, geo-metric average, % a year	Democracy (political rights) index, average for 1990-98, %*	Rule of law index, average for 1989-97 or similar period*
Albania	6.8	87	88	122	2.3	76.4	52	61
Belarus	25.1	63	75	107	1.07	878.8	33	42
Bulgaria	23.5	68	66	89	2.96	81.2	82	78
China**	5.8	189	225	140	2	4	17	50
Czech Republic	44.1	89	98	119	3.61	18.3	83	76
Estonia	29.9	69	77	120	2.93	151.4	78	73
Hungary	28.9	86	95	113	4.11	22.3	95	86
Kazakhstan	24.2	45	63	102	1.31	805.5	22	38
Kyrghyzstan	13.5	52	60	113	1.81	337.3	43	40
Latvia	24.1	52	58	112	2.39	149.1	76	79
Lithuania	33.8	42	63	157	2.62	241.4	89	75
Moldova	22.4	35	34	87	1.62	355	50	38
Mongolia	5	83	88	106	2.27	126.7	78	55
Poland	21.4	104	118	127	4.14	34.9	91	84
Romania	22.7	88	78	100	2.35	158.4	52	62
Russia	30.6	57	55	89	1.92	517	61	64
Slovakia	33.0***	90	100	123	3.53	16	82	85
Slovenia	33.3	96	103	116	4.16	62.1	89	88
Turkmenistan	18.7	57	44	67	0.63	1167	6	35
Ukraine	20.4	42	37	82	0.8	1040.5	61	42
Uzbekistan	12.5	84	88	104	1.11	628.4	7	42
Vietnam	2.0***	156	177	126	3.72	26.3	0	67

Armenia	26.5	39	40	125	1.44	896.6	46	30
Azerbaijan	21.7	38	42	100	1.03	747.6	22	36
Croatia	30.0***	70	80	121	4.02	328	52	37
Georgia	26.5***	31	35	125	1.32	2280.2	45	35
Macedonia FYR	25.0***	56	59	107	3.92	397.9	50	36
Tajikistan	12.1	37	41	91	0.95	399.1	17	35

* The democracy index is inverted and calibrated, so that complete democracy coincides with 100%, whereas complete authoritarianism with 0%. The rule of law index is taken from (Campos, 1999b) and for China, Vietnam and Mongolia – from International Country Risk Guide, 1984 to 1998, and calibrated, so that 100% corresponds to the highest possible rule of law.

** For China - all indicators are for the period 10 years earlier.

***Estimate.

Table 2A. Distortions in industrial structure and trade patterns* as a % of GDP in the late 1980s (for China - late 1970s)

COUNTRY	Distortions (as a % of GDP) in:					ALL TRADE DISTORTIONS	ALL DISTORTIONS IN INDUSTRIAL STRUCTURE AND TRADE PATTERNS
	Defense expenditure	Industrial structure (share of industry, agriculture, services)	Trade openness (share of external trade)	Trade within FSU	Trade between socialist countries		
	[1]	[2]	[3]	[4]	[5]	[6]=[3]+[4]+[5]x0.33	[7]= =[1]+[2]+[6]
Albania	1.6	12.3	25	0	2.3	25.8	39.7
Belarus	7.5	28.3	-20.3	41	3.5	21.9	57.7
Bulgaria	10.4	27.3	-3.1	0	16.1	2.2	39.9
China**	1.8	24.5	8.5	0	0.6	8.7	35
Czech Republic	4.5	19.2	-15.5	0	24	-7.6	16.1
Estonia	-1.8	21.3	21.1	30.2	1.5	51.8	71.3
Hungary	3.5	7.3	-11.1	0	13.7	-6.6	4.2
Kazakhstan	1.5	20.3	6.5	20.8	1.5	27.8	49.6
Kyrghyzstan	5.2	19.4	2.7	27.7	2.6	31.3	55.9
Latvia	5.8	21.3	2.6	36.7	2.1	40.0	67.1
Lithuania	3.8	23.9	-1.5	40.9	2.6	40.3	68.0
Moldova	0.7	26.3	11	28.9	2.3	40.7	67.7
Mongolia	5.3	16.3	11	0	17.3	16.7	38.3
Poland	4.4	22.3	12.4	0	8.4	15.2	41.9
Romania	0.8	30.3	12.4	0	3.7	13.6	44.7
Russia	11.6	14.9	2.7	11.1	4.0	15.1	41.6
Slovakia	4.5	19.2	-4.7	0	41	8.8	32.5
Slovenia	0	4.2	-7.7	0	25	0.6	4.8
Turkmenistan	-2.7	23.4	-0.6	33	1.5	32.9	53.6
Ukraine	11.1	22.3	3	23.8	2.9	27.8	61.2
Uzbekistan	1.9	21.4	1.5	25.5	1.7	27.6	50.9

Vietnam	15.7	11.7	-5.5	0	10.2	-2.1	25.3
Armenia	10.9	23.3	15.6	25.6	1.6	41.7	75.9
Azerbaijan	0.6	23.3	-6.9	29.8	2.3	23.7	47.6
Croatia	0	12.3	-5.5	0	25	2.8	15.0
Georgia	0.4	22.3	6.1	24.8	2.3	31.7	54.4
Macedonia FYR	0	12.3	-13.5	0	21	-6.6	5.7
Tajikistan	1.2	25.4	-0.9	31	2.7	31.0	57.6

*Distortions in the **share of defense expenditure** are equal to the actual share of defense expenditure in GDP minus 3.7% (considered as the "normal" level). For the republics of the FSU the share of defense expenditure in GDP is estimated from the breakdown of the employment in Soviet defense industries by republics (Gaddy, 1997, p. 18) and the share of republics in Soviet net material product (Commission of the European Communities, 1990). Distortions in **industrial structure** are computed as the sum of deviations of the share of each of three sectors (agriculture, industry, services) in GDP from the "normal" level - all deviations were taken with the positive sign and divided by two; "normal" level was defined as the average for the group of market economies with comparable PPP GDP per capita. Distortions in **trade openness** are equal to the "normal" share of external trade in GDP (defined in a similar way - as an average share for the group of market economies with comparable population and GDP per capita) minus the actual share divided by two. Distortions in **trade within FSU** are equal to exports plus imports from former Soviet republics as a share of GDP divided by two (for non-FSU countries these distortions are assumed to be equal to zero). Finally, distortions in **trade with socialist countries** are equal to the sum of export to and import from socialist countries (trade between Czech and Slovak Republics and among former Yugoslav republics is also included) as a share of GDP divided by two. These latter distortions are included into the computation of total trade and industrial structure distortions with a weight of 33%.

** For China - all indicators are for the period 10 years earlier.

Table 3A. Total revenues of consolidated government budgets (including off-budget funds) as a % of GDP in economies in transition

Year/Country	1989	1990	1991	1992	1993	1994	1995	1996*
Central European countries**	**51.2**	**51.6**	**47.4**	**49.1**	**49.0**	**49.4**	**48.0**	**45.5**
-Czech Republic	61.7	60.2	52.2	49.5	51.4	51.2	49.6	44.5
-Slovak Republic					43.6	46.4	46.8	44.6
-Hungary	59.1	53.9	52.1	56.1	55.4	53.9	49.6	47.0
-Poland	41.4	42.9	41.5	44.1	47.6	48.3	47.8-	46.8-
-Slovenia	42.4	49.3	43.7	46.5	47.1	47.1	46.2	44.4
Baltic states**	**47.2**	**41.8**	**38.3**	**31.4**	**35.2**	**32.9**	**33.7**	**33.7-**
-Estonia	39.5	35.7	36.4	34.6	39.6	39.6	39.6	38.9-
-Latvia	52.0	46.0	37	27.4	35.8	34.1	37.0	38.8-
-Lithuania	50.0	43.7	41.4	32.1	30.2	25.1	24.6	23.3
European CIS countries (excluding Russia)**				**32.4**	**31.6**	**37.3**	**35.0**	**34.0**
-Belarus		38.2	47.5	44.0	43.6	48.4	43.2	41.9
-Moldova	35.3	-	24.7	20.2	13.0	23.1	23.9	23
-Ukraine	26.4	-	-	33.0	38.3	40.3	37.8	37.2
RUSSIA	**41.0**	**-**	**-**	**44.2**	**36.1**	**34.6**	**32.2**	**30.4**
South East Europe countries**	**52.3**	**46.7**	**37.3**	**34.2**	**33.9**	**38.2**	**36.8**	**34.3**
-Albania	47.8	47.1	30.9	21.9	25.2	24.3	24.3	17
-Bulgaria	58.0	53.3	42.3	40.2	37.2	39.9	36.6	34.2-
-Croatia	-	-	34	33	32.2	43.7	46.1	46.5-
-FYR Macedonia	-	-	-	38.6	40.9	51.0	45.2	43.9
-Romania	51.1	39.7	42.0	37.4	33.8	32.0	31.9	29.8-
Caucasian states**	**36.5**	**-**	**23.7**	**22.3**	**15.5**	**16.3**	**11.5**	**12.0**
-Armenia	52.2	-	5.5	4.2	3.4	7.7	11.4	10.1
-Azerbaijan	25.8	-	35.7	49.1	33.4	24.6	15.3	16.4
-Georgia	31.5	-	30.0	13.6	9.8	16.6	7.8	9.5
Central Asian countries**	**36.2**	**40.3**	**36.6**	**30.9**	**27.4**	**25.6**	**20.4**	**18.8**

-Kazakhstan	35.4	32.8	25.0	24.5	23.9	18.7	18.7	16.0
-Kyrghyzstan	38.0	38.6	34.9	16.5	24.9	20.9	16.7	17.0
-Tajikistan	40.3	-	33.2	26.6	27.1	45.5	19.3	12.3
-Turkmenistan	32.4	44.8	40.7	55.4	18.7	10.5	12.4	15.5-
-Uzbekistan	35.0	44.9	49.1	31.4	42.6	32.3	35.1	32.3
Asian non-CIS countries**	**27.2**				**24.1**			
-China***	19.3	19.1	16.9	14.7	13.8	12.4	-	-
-Mongolia	48.6	-	-	-	36.2	-	-	-
-Vietnam	14.8	-	-	-	22.3	-	-	-

* Estimate.

** Unweighted average.

*** Data do not include revenues of neither fiscal off-budget funds (which increased from 2.6% of GDP in 1978 to 4.2% of GDP in 1994), nor enterprise extrabudgetary funds, which amounted to over 10% of GDP in 1992 and which since 1993 are not included into extra-budgetary revenues by the Chinese official statistics. From 1979 to 1985 government revenues, including fiscal off-budget funds, decreased from 35% to 30% of GDP (see World Bank, 1995c, p.31-32).

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Table 4A. Correlation matrix for examined variables

Variables	LogGDP96	LogGDP98	DIST	WAR	pppGDP87	FSU	LIBER	LogINFL	GOVREV	RL/DEM
LogGDP96	1.00									
LogGDP98	0.96	1.00								
DIST	-0.56	-0.54	1.00							
WAR	-0.47	-0.44	0.00	1.00						
PppGDP87	-0.28	-0.23	- 0.12	0.07	1.00					
FSU	-0.76	-0.71	**0.83**	0.14	0.06	1.00				
LIBER	0.56	0.59	**-0.74**	-0.11	0.32	**-0.78**	1.00			
LogINFL	-0.82	-0.84	**0.55**	0.43	0.06	**0.76**	**-0.67**	1.00		
GOVREV	-0.24	-0.26	0.21	-0.39	-0.07	0.23	-0.35	0.12	1.00	
RL/DEM	0.37	0.30	-0.02	-0.18	**-0.51**	0.06	-0.20	-0.04	-0.01	1.00

VARIABLES:

LogGDP96 - Log (1996 GDP as compared to 1989GDP);

LogGDP98 - Log (1998 GDP as compared to 1989GDP);

DIST - Distortions in industrial structure and trade patterns (see notes to table 1);

WAR - dummy variable (see notes to table 1);

pppGDP87 - PPP GDP per capita in 1987 as a % of the US level;

FSU - dummy variable (see notes to table 1);

LIBER - EBRD liberalization index;

LogINFL - Log (average annual inflation in 1990-95);

GOVREV - decline in the share of government revenues in GDP from 1989-91 to 1993-96, p.p.;

RL/DEM - ratio of the rule of law index to democracy index.

[1] While Vietnamese industry, excluding constantly and rapidly growing oil production, experienced some downturn in 1989-90 (-6% in 1989 and 0% in 1990) agricultural growth remained strong, so that GDP growth rates virtually did not fall (5-6% a year).

[2] Our data suggest that 84% of the variations in the liberalization can be explained by distortions in the industrial structure and trade patterns, decline in government revenues and rule of law and democracy indices (all coefficients significant at 5% level). The GDP change variable, if added to the above mentioned, is insignificant.

[3] Shock therapy package in this paper is defined in a traditional way (see Brada (1993) and Murrel (1993) for more discussion): immediate deregulation of prices, liberalization of external trade, and introduction of convertibility; quick macroeconomic stabilization through fiscal and monetary restraint and, possibly, - through pegging the exchange rate of the national currency; drastic cuts in subsidies. The speed of privatization and other structural and institutional reforms that cannot be immediate by definition is an important, but still secondary criteria.

[4] They conclude that gradual reforms may be the best choice under some initial conditions (China - stable pre-reform economy, the absence of market institutions, strong government), whereas radical reforms - under other initial conditions (Poland - poor pre-reform economic situation, weaker potential for creating new firms, and low credibility of reformers). Other authors have also pointed out that Chinese initial conditions were fundamentally different from those in the USSR, that China was still reformable, but the USSR had long since passed that point (Åslund, 1995), and that what is good for Poland should not necessarily be good for China (Sachs and Woo, 1994).

[5] While Vietnamese industry, excluding constantly and rapidly growing oil production, experienced some downturn in 1989-90 (-6% in 1989 and 0% in 1990) agricultural growth remained strong, so that GDP growth rates virtually did not fall (5-6% a year) - see (Montes, 1997).

[6] See (Koen and Marrese, 1995) and (Popov, 1996) for a discussion of whether the Russian inflation was cost-push or demand pull.

[7] Ellman (1993) argues that from the neo-classical perspective transformational recession originates from market imperfections, such as the perverse behavior of state-owned enterprises and may be aggravated by irresponsible macroeconomic policies (high inflation) and slow structural reforms (such as privatization).

[8] Kornai (1994) puts forward at least five general reasons for the transformational recession: (1) the need for enterprises to adjust to the replacement of a sellers market by a buyers market causes the reduction of output even when relative prices do not change; (2) the transformation of the real structure of the economy resulting from the change in relative prices; (3) the disruption of co-ordination resulting from the transition from bureaucratic to market institutions; (4) the hardening of the budget constraints of firms, leading to bankruptcies and cuts in output; (5) the backwardness of the financial sector, posing difficulties for the proper operation of market stimuli. While some of these factors overlap and others deserve a closer scrutiny and should be broken down into sub-factors, none of them depends on the transitional path chosen and can be eliminated by government policy in the short and medium term.

[9] The comparison is based on national statistics. The share of the machinery and equipment industries in total value added in manufacturing in 1992 was higher than one third only in Malaysia, Thailand, Singapore, and Japan (World Bank 1995a, pp.172-3).

[10] See Blaug (1985).

[11] More detailed description of the data and regressions is in Popov (1997).

[12] Somewhat similar results were reported in (Kekic, 1996) - initial conditions (proximity to Western Europe, size of countries, dependence on CMEA trade, wealth in minerals) were important determinants of performance, whereas the pace of reforms had a negative impact.

[13] These changes are discussed in greater detail in the next section.

[14] Adjustment to similar external shock in North Korea was much less successful: though the supply shock was less pronounced than in Cuba (about 10% of GDP), the GDP decline continued for 7 years (1990-96), exceeding 20% and leading to hunger.

[15] The decline in government revenues as a % of GDP in these countries was less pronounced than elsewhere in CIS.

[16] Data for China (World Bank, 1996b), Russia (Goskomstat) and Poland (Rocznik Statystyczny 1990, Warszawa; and data from Institut Finansow provided by G. Kolodko) do not include off-budget funds, which are very substantial in all three countries and are used mostly for social security purposes. Defense expenditure are from official statistics, i.e. lower than Western estimates, which is likely to lead to overstatement of spending for investment and subsidies at the expense of defense outlays. For USSR/Russia investment and subsidies are shown together.

[17] To put it differently, Laffer curve apparently is not applicable for macroeconomic comparison of Western countries, since higher tax rates result in higher tax revenues despite the increase in shadow economy (tax avoidance). In transition economies, at least in those where institutions are weak, shadow economy growth (whether caused by higher tax rates or not) is so substantial that it more than counterweighs possible increases in revenue collection. Similar results were reported by Friedman, Johnson, Kaufmann, Zoido-Lobaton (1999) for a larger group of 69 countries – higher tax rates were associated with less unofficial activity.

[18] In some studies (De Melo, Denizer, Gelb, Tenev, 1997; Berg, Borensztein, Sahay, Zettelmeyer, 1999; Heybey , Murrel, 1999) the annual data are being pooled, and the number of observations thus increases several times. In this article, the reduction of output during transformational recession is treated as an indivisible process that can be explained only in its totality, rather than part by part.