# Growth in Transition:
# What We Know, What We Don't,
# and What We Should

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## 1. *Introduction*

WHEN THE FIRST SIGNS appeared about ten years ago that the socialist experiment was finally over, surprise and optimism immediately followed. Surprise was caused by the rapid successive collapse of communist regimes which culminated in the dissolution of the Soviet Union in 1991. Optimism was justifiable.[2] The removal of the overwhelming apparatus of political control over economic activity could only mean prosperity in the medium term. The Central and Eastern European and former Soviet Union countries seemed well-prepared for rapid take-off: they were industrialized, they had reasonably educated and healthy labor forces, and their population growth was minimal. Technology was lagging, but with the free flow of information and Western assistance, that could be overcome. Moreover, optimism was reinforced by substantial technical progress in the defense sector which could spill over to the rest of the economy. Some countries (notably Poland) had to tackle macroeconomic imbalances first, but for that economists felt well-equipped. Prosperity seemed, finally, to be around the corner.

Ten years have passed and the results are mixed, at best. The defining stylized fact of the first ten years of the transition from central planning to market economies is the massive output fall (see figure 1). Although myriad data problems still prevent a full assessment of its magnitude, very few doubt its occurrence; reported output fell in every country of the former Eastern bloc. Indeed, real GDP in 1999 surpassed 1989 levels in just two of those 25 countries, and in the most severe cases, the observed cumulative output fall was more than 50 percent of 1989 GDP (EBRD 2000).

The objective of this paper is to take stock of the first ten years of the transition from

[2] "The fact that transition came with an often large initial decrease in output should be seen as a puzzle. After all, the previous economic system was characterized by a myriad of distortions. One might have expected that removing most of them would lead to a large increase, not a decrease, in output" (Olivier Blanchard 1997, p. v). Or, "my prognosis was wrong. I did not predict the deep recession that followed; I was too optimistic in my expectations of future growth" (János Kornai 2000, p. 21).
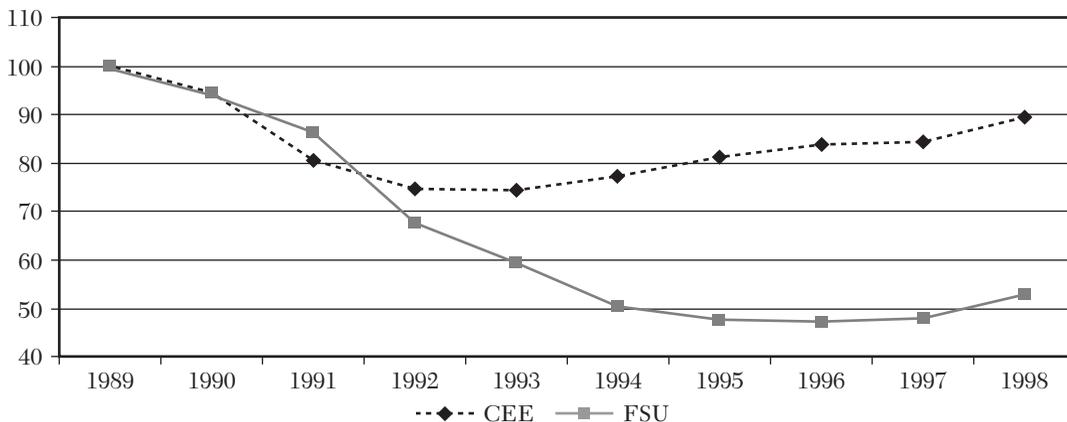
*Figure* 1. Real GDP Index for Central and Eastern Europe and Former Soviet Union, 1989–98

centrally planned to market economies in the Central and Eastern European and former Soviet Union countries, and of the various theories and explanations that have been proposed. This is an ambitious but important task: arguably, this transition will join the Great Depression as one of the most important economic events of the last century. Like the Great Depression, it will be intensely studied for years to come because it marks a fundamental break in the ways of organizing and going about economic life. The time is ripe to take stock of what we have learned in order to identify more precisely directions for future research.

We chose to frame the discussion that follows in terms of economic growth after 1989. The post-1989 period marks the radical structural break from communism that is underway in these economies. "Transition" itself can be thought of as a change in underlying long-run trends.[3] For present purposes,

this break is seen best in the drastic changes in the way savings are mobilized and investment is carried out, how labor is organized and prices are set, and in the access to Western civilian technology and management practices. Note that when economists talk about "economic growth," they have in mind growth of per-capita income or of productivity over long periods of time; in the literature on transition economies, we use "growth" in a more literal sense, that is, as referring to the short-run dynamics of GDP per capita or labor productivity.

The paper is organized as follows. Section 2 offers a descriptive analysis of growth performance in transition countries relative to other regions, and includes a discussion of available growth accounting results. Furthermore, it examines the importance of different factors identified in the cross-country literature as being associated with growth. We summarize these ten years by means of a list of stylized facts of the transition so far, namely: (1) output fell, (2) capital shrank, (3) labor moved, (4) trade reoriented, (5) the structure changed, (6) institutions collapsed, and (7) transition costs. In section 3, we provide a critical survey of the theoretical macrodynamic literature on transition. We discuss the various explanations for the initial output fall as well as the medium-term issues such as the optimal speed of transition,

[3] Stanley Fischer, Ratna Sahay, and Carlos Végh point out that "a useful way to think about the current growth prospects of the transition economies is to consider them subject to two sets of forces: those arising from the transition and transformation process, and the basic neoclassical determinants of growth. The further along a country is in the transition process, the less weight on the factors that determine the transitional growth rate, and the greater the weight on the standard determinants of growth" (1996a, p. 231).

disorganization, institutions, and sectoral re-allocation as a source of output dynamics. Section 4 reviews the empirical literature to assess how well it translates the theoretical models and explains the stylized facts. Section 5 concludes with a number of issues that we believe deserve further attention

## 2. *The Growth Performance of Transition Economies*

The objective of this section is to provide a set of stylized facts summarizing the developments in the last ten years or so in a manner that is informative for theoretical work. The underlying question is: what are the basic facts that a theory of transition should try to explain? After examining the key characteristics of growth before 1989, we highlight the difficulties in establishing the relevant groups of "comparator countries" and, assisted by the theory of economic growth,[4] set out in search of the stylized facts of the transition so far.

Before proceeding, a caveat about data quality and comparability is needed. These problems are many and well-documented (Kasper Bartholdy 1997). Socialist statistical offices had a comparative advantage in measuring quantities, and were ill-equipped to deal with issues such as price changes (let alone inflation) and unemployment. Moreover, the systemic transformation meant a radical change in incentives from fulfilling plan targets to evading taxes, from overreporting to underreporting output. Last, but not least, the initial years of the transition witnessed an extraordinary explosion in the size of the informal sector or "hidden" economy (Simon Johnson, Daniel Kaufmann, and Andrei Shleifer 1996; Friedrich Schneider and Dominik Enste 2000). All these factors should be kept in mind during the following discussion.

### 2.1 *Before and After: The 1990s As a Turning Point*

In this section, after briefly examining the main features of Soviet economic growth, we discuss the empirical evidence addressing the poor performance of the "Eastern bloc" as a whole, and present a growth-accounting analysis of the main reasons for this poor performance.

The main economic characteristics of the Soviet-type socialist system were: (1) hierarchical structure of authority, (2) centralized economic planning, (3) commitment to maximal resource utilization, (4) formal producers' goods and services, (5) rigid price control, (6) lack of true money, (7) lack of legal alternatives to assigned economic relationships, (8) arbitrary control by superiors of the norms and indices of plan assignments, performance evaluation, and rewards, and (9) incentives geared toward meeting plan targets (Richard Ericsson 1991).[5]

Economic growth was an imperative of the socialist system by which its success was to be judged.[6] The pre-1989 pattern favored accumulation instead of technological and organizational changes (Ofer 1987). There seems to be consensus that the extensive growth strategy of rapid industrialization worked rather well until the 1960s.[7] As the first signs of growth slowdown appeared, it became clear that the technological gap with the West was growing. Two options were available: to create high-technology sectors or to foment the diffusion of technology indiscriminately across industries. The leadership, in order to keep tight control, chose the former and channelled resources to the development of military technology. The

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[4] Robert Barro and Xavier Sala-i-Martin (1995), Phillippe Aghion and Peter Howitt (1998), Steven Durlauf and Danny Quah (1999), and Jonathan Temple (1999) survey the literature on economic growth, and Gur Ofer (1987) surveys the literature on Soviet growth performance.

[5] Kornai (1992), Mark Harrison (1998), and Serguei Guriev and Barry Ickes (2000) discuss the socialist system in detail.

[6] According to Lenin: "Socialism calls for greater productivity of labor, compared with capitalism and on the basis achieved by capitalism" (cited in Kornai 1992).

[7] Worked "well" disregarding costs. In addition to rapid natural resource depletion, the gap between the Soviet Union and the United States in GDP per capita was much smaller than in consumption per capita (Abram Bergson 1991).

first oil shock in 1973 gave the Eastern bloc some room to breathe, as the Soviet Union was a major producer. However, western economies responded to the two oil shocks with a boom in energy-saving computer-based technological innovations (Martin Baily and Alok Chakrabarti 1988). The emergence and rapid diffusion of these technologies is often taken as a major contributor to the end of socialism (Joseph Stiglitz 1994).

Saul Estrin and Giovanni Urga (1997) document the growth slowdown that defined the last two decades of socialism. They investigate whether or not convergence took place among the socialist economies during the period 1970–90 (see also Bart van Ark 2001). Using time-series methods and annual data, they assess convergence of GDP among countries of the Eastern bloc, as well as between these and Western market economies. Although the finding of "no convergence" with the West should not come as a surprise, the finding of a marked within-bloc divergence is somewhat intriguing given that a declared objective of the Council for Mutual Economic Assistance (hereafter, CMEA) was the equalization of living standards among its members. To state the obvious, within-bloc divergence meant that, despite the common slowdown, there were marked differences in growth paths. Over 1970–90, one observes slow growth in Czechoslovakia, rapid growth in Romania and Bulgaria (especially in the 1970s), and cyclical movements in Poland. Turning to the Soviet republics, one also finds divergence: compare, for example, the performances of Lithuania, Russia, and Uzbekhistan to those of Turkmenistan and Tajikistan (table 1).

Explaining the growth slowdown is harder than documenting it. Growth accounting helps in depicting the slowdown, providing for a decomposition of GDP growth and identifying the individual contributions of various factors to overall economic growth. The question that this methodology addresses is: how important is factor accumulation relative to improvements in the effi-

ciency with which capital, labor, and other factors of production are used? The growth rate of total factor productivity (TFP) is conventionally computed as a residual, as that share of overall growth that cannot be accounted for by increases in quantities of inputs alone.[8]

Tables 1 and 2 present the results of two separate growth accounting exercises. Table 1 presents results from Mark De Broeck and Vincent Koen (2000b) for the former Soviet Union countries. Table 2 present results using the data series from Estrin and Urga (1997) for the Central and Eastern European countries. Both cover the period 1970–97 and use data for labor and capital that were not corrected for hours worked or capacity utilization (thus the reported TFP results after 1990 reflect the impact of the transition). Moreover, in the two sets of results, the shares of labor and capital are assumed to be 0.7 and 0.3, respectively.

One important result from tables 1 and 2 is the evidence characterizing the extensive growth regime and the exhaustion of its capacities from 1970 onwards. Not surprisingly, the pattern of extensive growth is more manifest for the former Soviet Union than for the Central and Eastern European countries, as the average rates of factor growth for the former are substantially higher in all time periods. Although the general pattern of growth slowdown is easy to see, the structural break mentioned earlier is not. The trend reversal can be seen to date in very few countries (namely Poland, Hungary, and Slovenia).[9] It should also be noted that declines in TFP are rather large vis-à-vis the decline in factor

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[8] There are two simplifying assumptions that are commonly made in growth accounting exercises. One is on the form of the production function (a Cobb-Douglas with unitary elasticity of substitution being the norm). The other is on proxying the elasticities of output with respect to labor and capital by the shares of wages and profits in national income, involving the additional assumptions of perfect competition and constant returns to scale (Barro 1999).

[9] After 1989, the slowdown accelerates, but it reverts three or four years later. These annual results are reported in De Broeck and Koen (2000a, appendix table A1).

accumulation rates, indicating rapid deterioration of growth potential. Recall that this happens despite the increases in nonparticipation and in open unemployment (Blanchard 1997), and despite investment falling below replacement levels (particularly in the early transition years).

A second important result De Broeck and Koen establish is that the output fall at the outset of transition is accounted for by declines in TFP rates. Yet the year-to-year results referred to above show a "V-shaped" pattern in TFP growth during transition (large initial falls followed by rapid recovery). In order to investigate this issue further, they apply the cross-sectoral decomposition of TFP proposed by Andrew Bernard and Charles Jones (1996). This involves separating the contribution of productivity changes within sectors from that of changes in the sectoral composition to aggregate TFP growth. This second component is of interest as it will be positive if factors are reallocated from lower to higher productivity sectors. De Broeck and Koen report that this component was negative until the late 1980s and turns positive after that.[10]

The reasons the growth strategy of the socialist system failed are (and will remain for some time) subject to debate, as are the answers to the question "why did socialism fail?" Two answers are the low productivity rates and various rigidities in the economic structure, particularly the low elasticity of substitution between factors of production (William Easterly and Stanley Fischer 1995). The reasons for failure can be identified also in every single "growth determinant." The absence of capital markets in a regime of "investment hunger" reinforced the hiatus between the choice of investment projects and the rates of return on capital. In addition, the plan generated severe restrictions to capital mobility. The industrial structure was tilted toward heavy industry

and against light industry. Services were considered, in Marxist terminology, "unproductive." The defense industry was championed, creating an overwhelming economic burden and responsible for the "hypermilitarization" of the Soviet-type economy. Not only was there no unemployment under socialism, there was constant excess demand for labor and widespread labor hoarding to cope with uncertainties in the delivery of inputs (to fulfill plan targets) and to maximize subsidies for the enterprise. Although the labor force was highly educated, low morale was pervasive, and incentives for the allocation of talent were distorted, all resulting in low efficiency. Last, but not least, with no entry of new firms and no competition, organizational innovation was absent and technological progress lacking (Ofer 1987).

The growth slowdown of the Eastern bloc economies also sheds light on the overall economic conditions at the brink of the collapse, circa 1989. This is paramount for our objectives because a major question addressed in the literature on the growth performance of transition economies in the 1990s is the relative importance of initial conditions vis-à-vis that of reforms.

Several countries introduced piecemeal reforms prior to the 1990s, allowing some independence in enterprise decision making and encouraging some forms of market behavior within the planned economy. Although there is a consensus on the negative impact of such halfhearted reforms prior to the full-fledged market reforms of the 1990s, it is becoming increasingly apparent that countries that experienced such partial reforms are better positioned now along the path to a market economy. This observation appears rather natural if one views a basic structure of market institutions and some experience with market-oriented decisions as preconditions for the success of market reforms. The liberalization policies implemented in the 1990s were likely affected by initial conditions. Countries with less-favorable conditions were more

[10] "The change in the share effect was small, however, indicating that sectoral input reallocation did not have a major impact on productivity" (De Broeck and Koen 2000a, p. 20).

TABLE 1
GROWTH ACCOUNTING RESULTS FOR FORMER SOVIET UNION COUNTRIES
1970–97 AVERAGES

|  |  | Output Growth | TFP Growth | Factor Growth |
|---|---|---|---|---|
| Armenia | 1971–97 | 0.9 | −0.8 | 1.7 |
|  | 1971–80 | 6.4 | 2.3 | 4.0 |
|  | 1981–90 | 1.6 | −0.6 | 2.2 |
|  | 1991–97 | −7.9 | −5.6 | −2.2 |
| Azerbaijan | 1971–97 | −0.6 | −2.9 | 2.3 |
|  | 1971–80 | 6.1 | 2.6 | 3.5 |
|  | 1981–90 | 0.1 | −2.3 | 2.4 |
|  | 1991–97 | −11.5 | −11.8 | 0.4 |
| Belarus | 1971–97 | 2.0 | 0.5 | 1.5 |
|  | 1971–80 | 5.5 | 2.2 | 3.3 |
|  | 1981–90 | 3.1 | 1.5 | 1.6 |
|  | 1991–97 | −4.5 | −3.3 | −1.2 |
| Estonia | 1971–97 | 1.1 | 0.2 | 0.9 |
|  | 1971–80 | 3.8 | 1.4 | 2.4 |
|  | 1981–90 | 1.6 | 0.5 | 1.0 |
|  | 1991–97 | −3.4 | −2.2 | −1.2 |
| Georgia | 1971–97 | −2.0 | −2.8 | 0.8 |
|  | 1971–80 | 5.3 | 2.7 | 2.6 |
|  | 1981–90 | 0.0 | −1.6 | 1.6 |
|  | 1991–97 | −15.0 | −12.2 | −2.9 |
| Kazakhstan | 1971–97 | −0.5 | −2.0 | 1.5 |
|  | 1971–80 | 3.1 | −0.4 | 3.5 |
|  | 1981–90 | 0.4 | −1.6 | 2.0 |
|  | 1991–97 | −6.8 | −4.7 | −2.1 |
| Kyrgyz Rep. | 1971–97 | 0.5 | −1.7 | 2.3 |
|  | 1971–80 | 3.3 | −0.5 | 3.8 |
|  | 1981–90 | 3.3 | 0.8 | 2.5 |
|  | 1991–97 | −7.3 | −7.2 | −0.1 |
| Latvia | 1971–97 | −0.1 | −0.4 | 0.3 |
|  | 1971–80 | 3.6 | 1.4 | 2.2 |
|  | 1981–90 | 2.3 | 1.3 | 1.0 |
|  | 1991–97 | −8.6 | −5.3 | −3.4 |

*Source:* De Broeck and Koen (2000b).

constrained in the reform process and thus followed a less-radical reform path. At the same time, less-favorable initial conditions might have adversely affected output performance. As a result, one would observe a positive correlation between reforms and output performance even though the ultimate cause of both reforms and output performance was the set of initial conditions.

One way of comprehensively gauging the role of initial conditions is to use the principal components technique. Within the set of initial conditions we considered (i) measures of initial distortions, both in the structure of the

TABLE 1 *(Cont.)*

|  |  | Output Growth | TFP Growth | Factor Growth |
|---|---|---|---|---|
| Lithuania | 1971–97 | 0.8 | −0.3 | 1.1 |
|  | 1971–80 | 2.8 | 0.0 | 2.8 |
|  | 1981–90 | 3.7 | 2.3 | 1.4 |
|  | 1991–97 | −6.3 | −4.5 | −1.8 |
| Moldova | 1971–97 | −1.6 | −2.5 | 0.9 |
|  | 1971–80 | 3.7 | 0.6 | 3.0 |
|  | 1981–90 | 2.1 | 0.9 | 1.2 |
|  | 1991–97 | −14.4 | −11.9 | −2.5 |
| Russia | 1971–97 | 0.1 | −1.0 | 1.1 |
|  | 1971–80 | 3.9 | 1.1 | 2.8 |
|  | 1981–90 | 1.3 | −0.3 | 1.6 |
|  | 1991–97 | −7.0 | −5.4 | −1.6 |
| Tajikistan | 1971–97 | −1.9 | −4.4 | 2.5 |
|  | 1971–80 | 4.2 | 0.0 | 4.2 |
|  | 1981–90 | 1.3 | −1.9 | 3.2 |
|  | 1991–97 | −15.2 | −14.3 | −0.9 |
| Turkmenistan | 1971–97 | −1.0 | −4.6 | 3.6 |
|  | 1971–80 | 2.4 | −2.2 | 4.6 |
|  | 1981–90 | 1.5 | −2.0 | 3.5 |
|  | 1991–97 | −9.5 | −11.9 | 2.4 |
| Ukraine | 1971–97 | −1.6 | −2.4 | 0.8 |
|  | 1971–80 | 2.9 | 0.6 | 2.2 |
|  | 1981–90 | 1.6 | 0.7 | 0.9 |
|  | 1971–97 | −12.5 | −11.2 | −1.3 |
| Uzbekistan | 1971–97 | 2.2 | −1.3 | 3.4 |
|  | 1971–80 | 5.0 | 0.4 | 4.6 |
|  | 1981–90 | 2.3 | −1.3 | 3.5 |
|  | 1991–97 | −2.1 | −3.6 | 1.6 |
| Average | 1971–97 | 0.0 | −1.3 | 1.3 |
|  | 1971–80 | 3.8 | 1.0 | 2.9 |
|  | 1981–90 | 1.5 | 0.0 | 1.5 |
|  | 1991–97 | −7.7 | −6.4 | −1.3 |

economy (namely the degree of over-industrialization) and in policy-induced distortions, such as the premium of the black market exchange rate over the official exchange rate; (ii) "natural" characteristics, such as the physical distance from Western European markets, and the endowment of natural resources; (iii) weight of the legacy of the previous regime, measured by the time span spent under central planning; and (iv) the degree of development of market mechanisms. The latter is measured by the degree of price liberalization prior to reforms. We consider this indicator as one of the critical initial conditions.

TABLE 2
GROWTH ACCOUNTING RESULTS FOR CENTRAL AND EASTERN EUROPEAN COUNTRIES
1970–97 AVERAGES

| | | Output Growth | TFP Growth | Factor Growth |
|---|---|---|---|---|
| Bulgaria | 1971–97 | 1.1 | 0.8 | 0.3 |
| | 1971–80 | 6.9 | 4.6 | 2.3 |
| | 1981–90 | 1.9 | 2.1 | −0.2 |
| | 1991–97 | −8.8 | −6.2 | −2.6 |
| Croatia | 1971–95 | 1.1 | 1.1 | 0.0 |
| | 1971–80 | 5.7 | 3.3 | 2.4 |
| | 1981–90 | −0.8 | 0.9 | −1.7 |
| | 1991–95 | −4.2 | −3.2 | −1.0 |
| Czech Republic | 1971–97 | −0.5 | −0.6 | 1.1 |
| | 1971–80 | 3.4 | 1.7 | 1.7 |
| | 1981–90 | 0.8 | 0.2 | 0.6 |
| | 1991–97 | −4.2 | −5.1 | 0.9 |
| Hungary | 1971–96 | −2.8 | 2.4 | 0.4 |
| | 1971–80 | 4.9 | 3.2 | 1.7 |
| | 1981–90 | 1.1 | 2.1 | −1.0 |
| | 1991–96 | 1.9 | 1.6 | 0.3 |
| Poland | 1971–97 | 2.7 | 0.9 | 1.8 |
| | 1971–80 | 5.9 | 2.7 | 3.2 |
| | 1981–90 | 0.0 | −0.3 | 0.3 |
| | 1991–97 | 1.8 | 0.1 | 1.7 |
| Romania | 1971–97 | 3.1 | 1.9 | 1.2 |
| | 1971–80 | 9.4 | 5.6 | 3.8 |
| | 1981–90 | 0.4 | 1.3 | −0.9 |
| | 1991–97 | −2.4 | −2.4 | 0.0 |
| Slovak Republic | 1971–97 | 2.1 | 0.8 | 1.3 |
| | 1971–80 | 5.1 | 2.9 | 2.2 |
| | 1981–90 | 1.5 | 0.8 | 0.7 |
| | 1991–97 | −1.6 | −2.3 | 0.7 |
| Slovenia | 1971–95 | 3.7 | 2.6 | 1.1 |
| | 1971–80 | 5.7 | 2.7 | 3.0 |
| | 1981–90 | −0.9 | −0.3 | −0.6 |
| | 1991–95 | 8.9 | 7.9 | 1.0 |
| Average | 1971–95 | 2.1 | 1.2 | 0.9 |
| | 1971–80 | 5.9 | 3.3 | 2.5 |
| | 1981–90 | 0.5 | 0.8 | −0.3 |
| | 1991–95 | −1.1 | −1.2 | 0.1 |

*Note:* The authors thank Saul Estrin and Giovanni Urga for generating these results using their data.

TABLE 3
INITIAL CONDITIONS USING PRINCIPAL COMPONENTS

| | First Principal Component | Second Principal Component |
|---|---|---|
| LIIni | −0.598 | 0.043 |
| CMEA | 0.751 | 0.315 |
| RepInf | 0.823 | 0.109 |
| BMkt | 0.940 | 0.137 |
| OverInd | −0.352 | 0.383 |
| State | −0.796 | −0.397 |
| StateI | −0.558 | −0.562 |
| StateF | −0.478 | 0.330 |
| TCOMM | 0.902 | 0.019 |
| DIST | 0.771 | −0.423 |
| YpC89 | −0.264 | 0.859 |
| Urban | −0.300 | 0.803 |
| GrIni | −0.190 | −0.428 |
| NatRes | 0.474 | −0.147 |

LIIni = internal liberalization index in 1989;
CMEA = share of CMEA trade in 1990 over GDP;
RepInf = repressed inflation during 1987–90 (DDGT 1997);
Bmkt = exchange rate black market premium;
OverInd = industrial distortion measure (used in Berg et al. 1999);
State = 0 for no own state prior to transition, 1 own state within larger state, 2 own independent state;
StateI = dummy = 1 if independent state before transition;
StateF = dummy 1 if main state in federation state before transition;
TCOMM = time under communism;
DIST = distance from Dusseldorf (in km);
YpC89 = real GDP per capita in 1989;
Urban = percent of population in urban areas in 1990;
GrIni = growth of GDP per capita during 1985–89;
NatRes = natural resource endowment according to DDGT (1997), 0 = "poor," 1 = "moderate," 2 = "rich."

*Source:* Authors' calculations.

Indeed, our prior is that full-fledged market reforms can have a positive impact on growth when the system has a basic structure that can help the economy to weather the "institutional" shock from the implementation of liberalization. Lacking such minimal structure there is the risk that reforms can lead to output decline because of "disorganization" effects (Olivier Blanchard and Michael Kremer 1997), or the development of dysfunctional institutions (Guillermo Calvo and Fabrizio Coricelli 1996; Coricelli 1998) such as corruption, barter, and payment arrears.

More specifically, the initial conditions considered are (see table 3): dependence on CMEA trade; a measure of repressed infla-tion; overindustrialization; the premium of black market over official exchange rates; number of years spent under communism; distance from Düsseldorf[11]; the share of population living in urban areas; initial income per capita; rate of growth of real output in the five-year period preceding reforms; and the presence of a national state versus a federation of states or breakaway states. All these variables are meant to reflect initial distortions and imbalances inherited from the previous regime. We also include the value of the price liberalization indicator in the pre-

[11] Distance from Düsseldorf is measured in kilometers, and is the proxy used in the literature for "distance from Western European markets."

reform period (from Martha De Melo et al. 1997). Although simplistic, this variable may signal the condition of each country in terms of the degree of market mechanisms present at the start of full-fledged reforms. It largely reflects the partial attempts under central planning to introduce some independence in decision making by firms and some market mechanisms (such as partial liberalization of prices). Coricelli (1998) and Peter Murrell (1995) argued that these rudimentary forms of market mechanisms may have played a crucial role in determining performance in the post-reform period.

We use the method of principal components to isolate a limited number of vectors of significant initial conditions (see EBRD 1999, for a similar approach). The first two principal components explain about 80 percent of the variance. The first component attributes a large negative weight to initial liberalization, and large positive weight to initial distortions, such as repressed inflation, dependence on CMEA trade, black market premium, distance from Düsseldorf, and years spent under a communist regime. Thus, a positive coefficient on this variable in growth regressions would imply the predominance of the effects of initial distortions, while a negative coefficient implies the predominant role of initial market liberalization. The second component attributes large weights to initial income per capita and the degree of urbanization. This result is important because it serves as a note of caution to the existing literature in its pervasive use of initial income as a general proxy for initial conditions.

In summary, growth rates in the Eastern bloc have declined uninterruptedly from the 1960s onwards. This slowdown contributed significantly to the collapse of the socialist system. In the 1990s we see the deepening of this general trend in most countries and the reversal of it (a structural break) in a few others. In our analysis of initial conditions, we find that initial income is an inadequate proxy, and studies that use only this variable are likely to underestimate the role of initial

condition vis-à-vis other factors such as reform intensity. We now turn to the stylized facts of the transition years, of which the output fall is the first and foremost.

## 2.2 *Output Fell*

As noted, the defining stylized fact of the first ten years of the transition from a centrally planned to a market economy is the massive output fall. Output fell in every single country, with no exceptions, and it took longer than initially expected to recover. Indeed, real GDP in 1999 surpassed its 1989 level in just two of the 25 economies in Central and Eastern Europe and the former Soviet Union (EBRD 2000). Figure 1 clearly shows the massive fall in output. It also shows that the countries of Eastern Europe experienced output declines that turned out to be much smaller than the ones observed, at a later date, among the Commonwealth of Independent States (hereafter CIS) economies. We discuss each of these issues in turn.[12]

The output fall complicates comparative analysis. We are usually interested in learning how events in transition economies stack up against countries at similar levels of development or per-capita income. One difficulty in identifying which countries are "at similar levels of development" is that while the transition economies in 1989 were clustered in the upper-middle-income group[13], ten years later they are widely spread in the ranking of countries (by their level of development) and very few remain in that category. In other words, the comparator countries changed drastically over the first ten years. This can be fully grasped if we name the "new neighbors" of

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[12] In the next section we examine the various explanations that have been offered so far for the output fall.

[13] The World Bank ranks countries by their level of economic development, using as criterion (1998) GNP per capita (exchange rates conversion). "The groups are: low-income, $760 or less; lower-middle-income, $761–$3,030; upper-middle-income, $3,031–$9,630; and high-income: $9,361 or more" (World Bank *1999/2000 World Development Report*, p. 291).

the transition economies.[14] Among transition countries, Tajikistan and the Kyrgyz Republic have the lowest GNP per capita in 1998 (followed by Moldova), while Slovenia has the highest (followed by the Czech Republic and Croatia, respectively). The median transition economy is Kazakhstan. Bangladesh is the developing country with the same GNP per capita in 1998 as Tajikistan and the Kyrgyz Republic. Haiti and Mauritania have approximately the same GNP per capita in 1998 as Moldova. At the other extreme of this distribution, the country immediately above Slovenia is Portugal,[15] and the one immediately below is Argentina. The Czech Republic ranks between Uruguay and Chile, while Croatia ranks between Brazil and Hungary.

The dispersion in the transition group has increased substantially since 1989, and this list of countries in close positions helps to underline the difficulties in establishing the relevant comparison group of countries at similar levels of development.[16] Most of the former Soviet Union countries end this period as low income or lower-middle income, while the majority of the Central and Eastern European (and Baltic) countries in the late 1990s are classified as upper-middle-income economies.

A major caveat in assessing the depth of the output fall is that it refers to official estimates and thus ignores the shadow economy or infor-mal sector. The latter has grown very rapidly in the early transition years, and some researchers have measured it by using electricity consumption as a measure of economic activity. It is reassuring to note that the output fall also obtains using an electricity consumption index (Johnson, Kaufmann, and Shleifer 1997). For example, at its lowest point the GDP index of Visegrad countries was 85 percent of its 1990 GDP level, while the corresponding value of the electricity consumption index was 90 percent. At the other extreme, the trough values of GDP and electricity consumption indexes for the Central Asian countries were only 46 and 62 percent, respectively. In most countries, total activity seems to have declined less than what the official figures suggest. Yet the output fall obtains irrespective of the measure chosen. It is important, however, to keep in mind that consumption fell less than output.

## 2.3 *Capital Shrank*

Compared to advanced market economies, investment under central planning was high and inefficient. Voluntary saving by households and private enterprises in a market economy would tend to be lower than mandatory saving under central planning. Thus, the expectation was that introducing market forces would improve investment efficiency but lower investment levels. On the other hand, the process of economic transformation would require additional investment to account for restructuring and for upgrading outdated products and production processes. A lot was expected from foreign direct investment (FDI). Foreign capital could bridge the possible medium-term gap between domestic savings and investment needs and also help in restructuring and modernizing transition economies. In order to trace investment behavior during transition, we analyze data on gross domestic fixed investment as a share of GDP as well as some aggregate FDI indicators.[17]

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[14] The source is the *1999/2000 World Development Report*. Data scarcity prevents basing this analysis upon PPP per-capita GNP figures.

[15] According to the *1999/2000 World Development Report*, Slovenia is the only "high-income" country in this sample of 25 transition economies.

[16] As for levels of development, one can argue that income per capita alone does not do justice to the years of effort to improve social conditions (e.g., education and health) that characterized the socialist regimes. UNDP (1998) ranks 174 countries according to their "human development index" (which reflects, in addition to income, life expectancy and education attainment.) Our sample of 25 transition economies stretches from the 37th (Slovenia, immediately preceded by Argentina and followed by Uruguay) to the 118th place (Tajikistan, immediately preceded by Cape Verde and followed by Honduras). The median country is Macedonia (in 80th place), immediately preceded by Lithuania and followed by Syria. In sum, the dispersion seems to have increased also along these lines.

[17] Data availability still prevents a full assessment of the role of natural capital (Thorvaldur Gylfason 2000). We discuss human capital in the next subsection.

TABLE 4
AGGREGATE INVESTMENT AS PERCENTAGE OF GDP
REGIONAL AVERAGES: 1990–98

|  | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 |
|---|---|---|---|---|---|---|---|---|---|
| Baltic | 24.78 | 16.52 | 18.40 | 20.43 | 21.66 | 21.38 | 22.62 | 23.67 | 24.51 |
| Balkan | 18.49 | 13.23 | 14.94 | 14.88 | 15.68 | 16.99 | 19.17 | 18.30 | 18.63 |
| Visegrad | 24.01 | 22.48 | 22.99 | 22.74 | 23.20 | 23.92 | 26.72 | 27.77 | 28.36 |
| Asia | 28.74 | 20.44 | 18.38 | 15.50 | 17.21 | 17.34 | 20.37 | 18.66 | 19.05 |
| BUR | 24.64 | 21.85 | 25.51 | 26.18 | 26.19 | 23.07 | 21.22 | 21.20 | 20.95 |
| CEEB | 22.43 | 17.41 | 18.78 | 19.35 | 20.18 | 20.76 | 22.84 | 23.25 | 23.83 |
| CIS | 25.92 | 21.58 | 21.68 | 22.37 | 22.05 | 21.84 | 22.30 | 19.87 | 19.41 |

*Note:* Authors' calculations using (2000) *World Development Indicators* data. See footnote 18 for definition of regional groups.

Table 4 shows investment rates between 1990 and 1998.[18] With respect to aggregate investment activity, two main observations should be made: first, investment has fallen more than GDP, and thus investment rates declined and, second, the latter decline was smaller than is usually the case in demand-driven recessions in advanced market economies (Jacek Rostowski 1997; Stanislaw Gomulka 1998). Table 4 shows that investment ratios declined sharply at the beginning of the transition. In the case of CEEB (see footnote 18), this decline was 32 percent between 1989 and 1991, the trough year. Investment rates recovered, reaching more than 80 percent of their 1989 level by 1998. The decline was more severe in the CIS countries, which started with higher investment rates, yet by 1998 showed no clear signs of recovery.

Although a broadly similar pattern in the development of investment to GDP ratio can be observed in all five subgroups in the region, three additional comments are noteworthy. First, the poor performance of the CIS average seems to be driven by the Asia group, while the latter's average is dominated by war-affected countries of the Caucasus region. Indeed, it seems that for Belarus, Ukraine, and Russia (BUR) the decline in the rate of fixed investment was very much in line with that of CEEB countries. The investment rate decreased during 1989–91 and then had a very weak and tentative recovery. In contrast, the pattern of investment behavior in Asia was quite different, as the ratio dropped drastically from 1990 to 1994 and only then tentatively started to stabilize. A second remark is that the Visegrad group stands out for the relative mildness of its initial decline in the rate of investment. And third, the BUR countries experienced a reversal in the series from an upward to a downward trend in 1994. This reversal took place after three years of stability in the BUR investment rate during 1992–94 and sharply contrasted with the behavior of investment to GDP ratios in other subgroups.

How do gross domestic investment rates of transition economies compare to the average investment rates in countries at similar income levels? Investment rates in transition economies range from 14 to 28 percent of

[18] We divided the sample in five groups for exposition purposes. The transition countries in Asia are Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan. The Balkan countries are Albania, Bulgaria, Croatia, Macedonia, Moldova, and Romania. The Baltic countries are Estonia, Latvia, and Lithuania. The group called BUR comprises Belarus, Ukraine, and Russia. The Visegrad countries are the Czech Republic, Hungary, Poland, Slovakia, and Slovenia. CEEB stands for Central and Eastern European and Baltic countries and represents the sum of the Baltic, Balkan, and Visegrad subgroups.

TABLE 5
FOREIGN DIRECT INVESTMENT

| | Cumulative FDI Inflows, 1988–99 (billion $) | Cumulative FDI Inflows as % of GDP, 1988–99 | Cumulative FDI Inflows Per Capita, 1988–99 ($) | Average FDI Inflow as % of Gross Domestic Investment, 1997–99 |
|---|---|---|---|---|
| Baltic | 2.10 | 30.27 | 923.67 | 27.00 |
| Balkan | 2.07 | 16.85 | 277.50 | 21.40 |
| Visegrad | 14.41 | 22.30 | 1122.80 | 13.40 |
| Asia | 1.73 | 32.35 | 183.00 | 39.28 |
| BUR | 8.17 | 9.37 | 91.00 | 7.33 |
| | | | | |
| CEEB | 6.19 | 23.14 | 774.66 | 20.60 |
| CIS | 4.95 | 20.85 | 137.00 | 23.31 |

*Note:* Authors' calculations using data from the United Nations Economic Commission for Europe's *Economic Survey of Europe* (2001, no.1). See footnote 18 for definition of regional groups.

GDP, and for 1998 only three out of our five groups have averages above 20 percent. The often heard concern about these figures being too low must be echoed here (and particularly so regarding the countries in the Balkan and Asia groups.) In 1995, investment rates averaged 30 percent for low-income economies, 23 percent for both lower-middle economies and upper-middle economies, and 19 percent for high-income economies.[19] Given the current level of development of most transition economies, their investment rates are indeed low.

Since the start of transition, FDI inflows have been rising constantly but their magnitude and importance remain highly unequal among country subgroups.[20] Table 5 shows four different aspects of the performance of FDI in transition economies. These are: cumulative FDI inflows, cumulative FDI inflows as a share of GDP, cumulative FDI inflows per capita, and the average FDI inflows as share of domestic gross fixed capital formation. Interestingly, each indicator shows a slightly different picture. For example, in terms of cumulative FDI inflows, the considerable differences between CEEB and CIS countries (the FDI stock in the average CEEB country is larger than in the average CIS country) pale with respect to differences at the level of subgroups. FDI is highly concentrated: the Visegrad and BUR (in this case, predominantly Russia) groups account for about 80 percent of the total stock of FDI in transition economies.

If we examine cumulative FDI inflows over 1988–99 as a share of GDP, the conclusions are different. Although this share is still higher in CEEB than in CIS countries, the Baltic and Asia groups, respectively, are the ones driving up these averages. In the case of Asia, for Azerbaijan the ratio of cumulative FDI inflows over GDP is above 90 percent. This ratio is also very high (about 45 percent) for Kazakhstan. For the Baltic countries, this ratio ranges from about 38 percent for Estonia to about 20 percent for Lithuania. The measure of net FDI inflows relative to countries' GDP has been somewhat more dynamic since 1994 and hints that FDI is rapidly gaining importance not only in the Baltic countries but also in Asia. For this latter group, the average rate of FDI rose from a mere 1 percent in 1994 to

[19] Source is World Bank *1999/2000 World Development Report.*
[20] Nauro Campos and Yuko Kinoshita (2001) provide a full discussion of growth impacts of FDI in transition.

almost 35 percent of GDP in 1999. It should be noted that natural resources (oil and natural gas) are one of the most important determinants of such high FDI flows to Asia.

It is in terms of cumulative per-capita FDI inflows that the gap between the CIS and CEEB is wider. The Visegrad countries have maintained a leading position, with cumulative FDI inflow per capita reaching about $1200 by 1999. Balkan, BUR, and Asia groups remain far behind as cumulative per-capita FDI was just $300 or less, while $950 per-capita FDI in the Baltic countries places them in between these two extremes.

The FDI to domestic investment ratio shows a relatively similar picture to that implied by the FDI-to-GDP ratios. The share of FDI in domestic investment has been rising in all countries except the Visegrad group, where the share has been relatively flat. Considering the average over 1997–99, notice the very high average for the Asia group. Azerbaijan, Kazakhstan, Georgia, and Armenia all show FDI to domestic investment ratios of at least 45 percent.

In summary, capital accumulation slowed considerably during the transition period. Capital shrank. In the CEEB countries, investment rates have already shown a timid recovery, while in the CIS countries the decline does not seem to have been reversed yet. FDI has played a substantial role in transition economies, particularly as carrier of new technologies, but it has been concentrated in very few countries and unable by itself to reverse the trends in aggregate investment.

In terms of future research, it seems we know much less about what happened to the stock of capital from the communist period than about increases to that stock during the transition period. For instance, we know quite a bit about domestic and foreign direct investment. But we do not know much about what happened to communist capital. Did it depreciate very fast? How much of it was reallocated to the emerging private and informal sectors?

## 2.4 *Labor Moved*

When it comes to labor, we know quite a bit about what happened in terms of participation rates and labor-market flows, but we know little about how the huge stocks of human capital that accumulated under communism were valued during the transition.[21] This section addresses the question of what happened to labor during the transition.

Labor is a fundamental determinant of growth, in both the size of the labor force and the quality of the labor input (human capital). As for the former, the literature tends to focus on population size and growth, under the assumption that differences in participation rates and demographic structure are negligible over the long run. The conventional wisdom, that these economies have quite low rates of population growth, is confirmed and marks one of the indisputable differences between economies in transition and the rest of the developing countries. The average annual population growth rate across transition economies is 0.21 percent.[22] The same average in 1990–98 is 2.0 percent for low-income economies, 1.4 percent for lower-middle-income economies, 1.6 percent for upper-middle-income economies, and 0.7 percent for high-income economies.[23] Although average population growth is low, there are exceptions: Turkmenistan, Uzbekistan, and Tajikistan show average annual population growth rates well above 2 percent (Armenia follows with a 1.29 percent average).

An important aspect of labor developments in transition is the change in participation rates (Tito Boeri 2000). Participation rates were relatively high under socialism,

[21] Jan Švejnar (1999) and Randall Filer et al. (2000) survey this literature.

[22] These low rates also reflect the demographic situation in the transition economies, where the increasing dependency ratios are usually regarded as having negative fiscal consequences. For a discussion, see Coricelli (1997).

[23] The source is World Bank *1999/2000 World Development Report.*

TABLE 6
REGISTERED UNEMPLOYMENT RATES
REGIONAL AVERAGES: 1990–99

|  | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|---|---|---|---|---|---|---|---|---|---|---|
| Baltic | 0.55 | 0.80 | 2.97 | 6.57 | 9.37 | 15.13 | 15.27 | 12.87 | 12.40 | 13.60 |
| Balkan | 7.80 | 9.23 | 15.52 | 16.58 | 14.92 | 14.97 | 13.28 | 13.90 | 14.70 | 15.58 |
| Visegrad | 2.55 | 8.28 | 8.98 | 11.06 | 10.72 | 9.70 | 9.34 | 8.42 | 9.78 | 11.20 |
| Asia | n.a. | 0.44 | 4.18 | 4.45 | 4.57 | 5.76 | 6.57 | 7.29 | 8.80 | 9.48 |
| BUR | n.a. | 0.05 | 2.00 | 2.57 | 3.40 | 4.07 | 5.03 | 5.43 | 6.43 | 6.03 |
| CEEB | 3.63 | 6.10 | 9.15 | 11.40 | 11.67 | 13.27 | 12.63 | 11.73 | 12.29 | 13.46 |
| CIS | n.a. | 0.25 | 3.09 | 3.51 | 3.99 | 4.91 | 5.80 | 6.36 | 7.62 | 7.76 |

*Note:* Authors' calculations using EBRD (2000) data. See footnote 18 for definition of regional groups.
n.a. indicates data not available.

in particular female participation rates. The initial output shock was followed by a drastic adjustment in this regard, and CEEB and CIS averages are similar: declines in participation rates of approximately 3 and 2.5 percentage points, respectively, in the first five years of the transition. There is one exception: Romania shows an increase in participation rates between 1990 and 1995 (from 68 to 75 percent). This contributes to the Balkan group showing the lowest average: a decline of about 0.5 percentage points. On the other extreme, the highest average changes in participation rates in the first five years are for the Visegrad countries (decline of 5.8 percentage points). Also note that the average in Belarus, Ukraine, and Russia is above that of the Baltic countries (1990–95). This is particularly interesting in light of the fact that empirical research strongly suggests that in BUR countries labor-market adjustment took the form of delayed payments or wage arrears (see Hartmut Lehmann, Jonathan Wadsworth, and Alessandro Acquisti 1999). In a nutshell, there was a significant increase in flows out of the labor force. Thus, a stylized fact of the transition is "labor moved."

Another important aspect of labor-market adjustment was unemployment. As noted, a characteristic of the socialist economy was the excess demand for labor (Kornai 1992). Unemployment rates during the transition process therefore grew very rapidly, but from a low starting level. Table 6 shows registered unemployment rates.[24] The trend of increasing unemployment rates is clear. One observation is that unemployment rates increased much faster in the Central and Eastern European countries than in the CIS countries. It is worrisome that it reached double-digit rates very early (1993) and more worrisome that these rates stayed above 10 percent until the end of the decade.

Table 6 also shows the breakdown of average registered unemployment rates across the five subgroups. In the former Soviet Union countries, although the BUR averages are consistently below those of the Asia group, Russian unemployment figures have been four times larger than those for Belarus or Ukraine throughout. The Asia average is kept lower thanks to the Central Asian countries that show average rates much lower than those for the Caucasus countries. Now turning to the CEEB subgroups, note that the average rates for the Balkan countries peak early on and stay

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[24] Tito Boeri and Katherine Terrell (2002) discuss the problems with this measure, with emphasis on the role of changing institutional features.

high throughout. In this group, we have Macedonia with registered unemployment rates never below 18 percent (and peaking at almost 38 percent in 1997). It is also remarkable how the behavior of unemployment rates in the Baltic countries resembles those in Central and Eastern Europe much more than those in the CIS. Finally, note that in terms of unemployment rates in the Visegrad countries, the Czech figures are the lowest ones in all years but 1999, when Slovenian rates become the lowest rates in this group (at 7.4 percent).

Let us now turn to the issue of human capital in transition. Conventional wisdom holds that if there is one area where the countries of Eastern Europe and the former Soviet Union are well served, it is with respect to their stocks of human capital. Most human capital indicators (e.g., gross or net enrollments, average years of schooling, and literacy rates) tend to be better in these countries than in the OECD (Robert Barro and Jong-Wha Lee 2001). Yet recent research shows that not all is well on this front. Boeri (2000) highlights the fact that skills acquired under communism are overly specialized and therefore not easily transferable. He notes that secondary education in Poland offered more than 700 specializations, while the (West) German system offered less than twenty. Despite the high level of educational attainment of the average worker, the mix of occupations has proven inadequate to the needs of a modern market economy; in other words, there are "too many rocket scientists, too few marketing experts" (Nauro Campos and Aurelijus Dabušinskas 2001).[25]

Table 7 reveals a worrisome trend: secondary-school gross enrollment ratios not only show considerable variation, but also in many countries have declined since 1990. In particular, the range of these ratios fell by five percentage points in the first five years alone. This decline can also be seen using different data (on average years of schooling) from Barro and Lee (2001). Note, however, that only the Asia group shows sustained decline. Although these figures remain high by international standards,[26] such a contraction is impressive.

In summary, we think it is correct to say that during the transition process, labor moved. It did not move in the most obvious way, that is, geographically. Over space, labor mobility in transition economies remains extremely low because of, inter alia, distortions in the housing market (Tito Boeri and Christopher Flinn 1999). Yet workers moved: (a) in large numbers from employment in 1988 to inactivity or unemployment by the end of the 1990s; (b) in large numbers from the state sector to the private sector (particularly in the CEEB countries; see Boeri 2000); and (c) workers changed occupation on an unprecedented scale.

### 2.5 Trade Reoriented

There are at least two good reasons for studying foreign trade when searching for the stylized facts of the transition. The first is to investigate whether or not the recessionary impact of transition affected foreign trade, and if so, whether the dynamics of trade exhibit a similar pattern. The proposition about the reverse link—that the collapse of CMEA deepened the output fall and that successful trade performance has helped in coping with the fall—reinforces the importance of trade dynamics in the process of transition (Peter Christoffersen and Peter Doyle 1998). A second reason arises from the expectation that market forces would change the trade patterns of transition countries by reorienting trade towards western markets.[27] After ten years of

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[25] Other studies on this topic are Klara Sabirianova (2000) and Nauro Campos and Dana Žlabkova (2001). These studies concur in that at least 30 percent of all employed workers changed occupation in the early years of the transition in as different countries as Estonia, Russia, and Hungary.

[26] The *1997 World Development Report* reports that, in 1993, this ratio for middle-income economies was 63, and 97 for high-income economies (table 7, pp. 226–27).

[27] Robert Baldwin (1994), Paul Brenton and Daniel Gros (1997), Bartlomiej Kaminski, Zhen Wang, and Alan Winters (1996), and Mathilde Maurel and Guillaume Cheikbossian (1997) discuss trade reorientation in transition.

TABLE 7
GROSS SCHOOL ENROLLMENT RATES (BASIC EDUCATION)
REGIONAL AVERAGES: 1990–98

|          | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Baltic   | 94.70 | 93.43 | 91.57 | 90.70 | 90.73 | 91.53 | 92.20 | 93.30 | 94.00 |
| Balkan   | 90.65 | 89.20 | 86.95 | 87.53 | 87.82 | 88.24 | 89.60 | 93.95 | 94.60 |
| Visegrad | 97.68 | 97.70 | 97.76 | 97.62 | 97.36 | 97.46 | 97.80 | 97.94 | 97.40 |
| Asia     | 92.96 | 91.66 | 90.58 | 88.35 | 87.96 | 86.80 | 86.69 | 86.83 | 87.88 |
| BUR      | 92.80 | 91.93 | 91.53 | 90.87 | 90.83 | 91.13 | 90.90 | 90.73 | 91.53 |
| CEEB     | 94.34 | 93.44 | 92.09 | 91.95 | 91.97 | 92.41 | 93.20 | 95.06 | 95.33 |
| CIS      | 92.88 | 91.80 | 91.05 | 89.61 | 89.40 | 88.97 | 88.79 | 88.78 | 89.71 |

*Note:* Authors' calculations using UNICEF's MONEE data. See footnote 18 for definition of regional groups.

transition, one should ask whether foreign trade data indicate that such redirection has indeed taken place. In this section, our focus is on three foreign trade dimensions: trade volumes, trade patterns, and openness (trade-to-GDP ratio).[28]

The data support the proposition that the level of foreign trade in transition countries has followed a decline and (partial) recovery pattern. Unweighted averages of export indexes indicate a very strong initial decline and partial recovery in foreign trade for both CEEB and CIS countries. CEEB exports declined by 62 percent since the start of transition to reach their lowest point in 1993, and then rose to 71 percent of 1990 exports level in 1998. CIS exports reached their lowest level a year later, in 1994, but the drop in CIS trade was much more pronounced. Although CIS exports did show clear signs of recovery since, they declined

[28] The trade data of the FSU countries (Baltic and CIS) are taken from Misha Belkindas and Olga Ivanova (1995) for 1990–94 period and from the IMF Direction of Trade Statistics (DOTS) for 1994–98. The inclusion of 1994 in both series serves to evaluate the use of different data sources. For the non-FSU transition economies data are taken from the IMF DOTS. Trade volumes are measured in current U.S. dollars. Trade data in constant U.S. dollars as well as trade-to-GDP ratios are found in the World Bank's *World Development Indicators.*

again in 1998, this time due to the crisis in Russia. In 1998 CIS exports were about 30 percent higher than in the trough year (1994) but reached only 15 percent of 1990 exports.

As for trade redirection, table 8 shows that the share of industrial countries has increased dramatically for exports from CEEB and CIS, as well as for all the transition-economy subgroups. The percentage of exports to industrial countries from the CEEB started out twice as high as that of CIS countries and ended the period three times as high. The share of Visegrad trade to industrial countries has always been the highest, while the shares from the Asia and BUR groups have been consistently the lowest (indeed almost a third of the Visegrad share throughout). Despite their relatively high initial shares, the adjustment was rapid: these export shares rose from about 55 percent to more than 70 percent for the Visegrad group, from 45 to 55 percent for the Balkan countries, and from roughly 15 to 25 percent for BUR and Asia economies. Keeping in mind the collapse of the Soviet Union and its implications for interindustry trade, the speed of reorientation of trade in the Baltics is remarkable. The percentage of Baltic exports to industrial countries grew

TABLE 8
TRADE REORIENTATION (SHARE OF EXPORTS TO INDUSTRIAL COUNTRIES)
REGIONAL AVERAGES: 1990–98

|          | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Baltic   | 6.25  | 3.70  | 41.73 | 42.97 | 42.52 | 49.52 | 46.56 | 56.82 | 55.42 |
| Balkan   | 43.58 | 47.70 | 32.89 | 38.03 | 40.17 | 40.87 | 44.35 | 47.81 | 54.34 |
| Visegrad | 54.13 | 64.07 | 69.46 | 67.08 | 68.47 | 68.78 | 68.10 | 69.68 | 72.96 |
| Asia     | 8.40  | 6.87  | 17.50 | 22.44 | 26.50 | 23.93 | 21.53 | 19.59 | 23.12 |
| BUR      | 21.61 | 18.55 | 13.76 | 16.79 | 28.00 | 26.42 | 24.76 | 24.59 | 26.60 |
| CEEB     | 34.65 | 38.49 | 48.03 | 49.36 | 50.38 | 53.06 | 53.00 | 59.10 | 60.91 |
| CIS      | 15.00 | 12.71 | 15.63 | 19.61 | 27.25 | 25.17 | 23.15 | 22.09 | 24.86 |

*Note:* Authors' calculations using IMF's *Direction of Trade Statistics* (various issues) data. See footnote 18 for definition of regional groups.

from less then 5 percent in 1991 to more than 50 percent in 1998. This compares very favorably with increases in the shares of the Asia and BUR groups from about 7 percent to about 24 percent and from about 14 percent (1992) to about 26 percent, respectively, over the same period.

What dynamics would one expect for openness in transition economies? It was often claimed that central planning created excessively integrated economies and, if this assessment is correct, the collapse of CMEA would lead to somewhat less open economies. A closer look at the evolution of openness brings up two observations. First, there was a relatively turbulent period characterized by a strong decline of the ratio in the case of CIS in 1991, and a sharp rise in openness for both CEEB and CIS in 1992. Second, the trade-to-GDP ratio was relatively stable over 1992–97, although slowly but steadily declining in the case of CIS. In 1997, both CEEB and CIS countries are not less but rather more open economies than at the start of transition. This is clearly so for the Balkan, Visegrad, and Baltic countries. BUR and Asia countries seem to have the same trade-to-GDP ratios as at the beginning of transition. An alternative but often preferred openness measure, trade-to-GDP

(PPP) ratio, reveals a similar trend: these economies are gradually becoming more open. At a less aggregated level the same tendency has prevailed: the openness of transition economies has increased continuously.[29]

In sum, the performance of foreign trade in transition economies suggests the following developments, which seem to be general enough to allow another stylized fact of transition. There was a common decline and partial recovery pattern in the dynamics of foreign trade. Trade patterns have changed in that the share of industrial economies as destination rose significantly. The collapse of the CMEA was the major reason for the changing trade patterns in the initial stage of transition, while better export performance in western markets vis-à-vis eastern ones seems to dominate later. The data suggest that there has been no tendency for transition

[29] Oleh Havrylyshyn and Hassan Al-Atrash (1998) used a cross-section regression analysis to answer the question of how trade-to-GDP (PPP) ratios of transition economies in 1995 compared to those of "more established market economies." Their conclusion was that (with some puzzling exceptions) transition economies were as open as the "benchmark" economies. One might note, however, that this trade-to-GDP (PPP) has not been stable and mostly moved upwards since 1995 (except for Asia), implying that transition economies became even more open.

TABLE 9
STRUCTURAL CHANGE (VALUE ADDED IN INDUSTRY AS PERCENTAGE OF GDP)
REGIONAL AVERAGES: 1990–98

| | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 |
|---|---|---|---|---|---|---|---|---|---|
| Baltic | 48.89 | 44.93 | 37.48 | 39.06 | 32.65 | 32.28 | 31.07 | 31.13 | 29.57 |
| Balkan | 45.41 | 39.37 | 34.89 | 35.56 | 36.13 | 31.66 | 31.19 | 30.17 | 30.38 |
| Visegrad | 47.79 | 46.01 | 39.32 | 37.72 | 35.51 | 36.17 | 35.07 | 35.49 | 35.35 |
| BUR | 46.72 | 48.11 | 46.65 | 39.70 | 42.26 | 39.67 | 38.18 | 37.88 | 38.58 |
| Asia | 36.36 | 37.40 | 36.30 | 37.04 | 31.93 | 31.87 | 30.56 | 28.30 | 29.93 |
| | | | | | | | | | |
| CEEB | 47.36 | 43.44 | 37.23 | 36.45 | 34.76 | 33.37 | 32.44 | 32.44 | 31.77 |
| CIS | 41.54 | 42.75 | 41.48 | 38.37 | 37.09 | 35.77 | 34.37 | 33.09 | 34.26 |

*Note:* Authors' calculations using (2000) *World Development Indicators* data. See footnote 18 for definition of regional groups.

economies to become less open, and in 1999 they were relatively more open than under central planning.

## 2.6 *Structure Changed*

Although one definition of the transition process is the structural change consisting of the reallocation of resources on the basis of market incentives, it is useful to analyze the structural change that actually occurred in transition economies and compare it with predictions from the experience of developing countries. This may help to emphasize how much of the structural change reflects a movement toward an economic structure consistent with relative prices.

According to the Chenery hypothesis (Hollis Chenery 1960),[30] as real per-capita GDP grows, the structure of output changes (in that the share of agriculture declines, while that of services increases). Since the socialist economic structure favored industry and repressed services, one should expect the structure of output to change rapidly in the first ten years of transition. That is precisely what one finds, but with important caveats both in terms of which sectors

[30] Moses Syrquin (1988) surveys this large literature, and Roland Döhrn and Ullrich Heilemann (1996) present a test of the hypothesis for early transition.

adjusted faster and in which group of countries (CEEB or CIS) it happened more prominently.

Not surprisingly, industry was the largest sector at the beginning of the transition. Comparing the shares of value added by industry in GDP between the CEEB and CIS countries, notice that in 1990 it was higher in the former than in the latter (around 47 percent and 42 percent, respectively), but it declined faster in the CEEB than in the CIS group (table 9). In 1998, the share of industry stands at around 32 percent of GDP in the CEEB countries (compared to 34 percent in the CIS). The declines in the manufacturing shares are very much in line with these changes. Yet one observes the opposite regarding the share of services in GDP. These shares are basically identical in 1990 in the CIS and CEEB groups (approximately 35 percent of GDP), but they increase in the next six years at different speeds, reaching 55 percent of GDP in the CEEB countries in 1996 and 47 percent in the CIS countries.

Although the changes in the share of agriculture pale in comparison, they are still interesting, in particular when contrasting the CEEB with the CIS experience. In the CIS countries, the share of agriculture in GDP declined from 27 to 20 percent between 1990

and 1998. The discrepancies between simple averages and GDP per-capita-weighted averages can be safely ignored for the CIS but not for the CEEB countries. For the latter, the unweighted average does not seem to change at all in those years and stands at 18 percent of GDP. Yet, when examining GDP per-capita-weighted averages, this share declines from 15 percent of GDP in 1990 to a mere 9 percent in 1996. One finds the reason for this discrepancy in the Balkan countries, for which the simple average increases in 1990–98 while the weighted average decreases, although in both cases the share of agriculture is still twice as high for the remaining (non-Balkan) CEEB countries.

How deep is this process of structural change in an international perspective? To answer this question, first recall that most of the CIS countries end this period as low-income or lower-middle-income, while the majority of the CEEB countries in the late 1990s are classified as upper-middle-income economies. The declines in the share of agriculture in GDP between 1990 and 1998 in the CIS countries are very much in line with those between 1980 and 1998 for low-income or lower-middle-income economies.[31] The same can be said for the behavior of this share in the CEEB countries vis-à-vis its change between 1980 and 1998 in the upper-middle-income economies. Therefore, the sources of dynamism are to be found in the increases in the shares of services and in the declines in the shares of industry.

The rate of decline of the shares of industry in GDP is more than twice as high in the CEEB countries than for the upper-middle-income group. A similar statement is true with respect to those shares in CIS countries vis-à-vis the changes observed in low-income or lower-middle-income countries. Regarding services, note that the rate of increase in the share of services in GDP is more than twice as high in the CEEB countries than for the upper-middle-income group. Yet the rate of increase of the shares of services in GDP in the CIS countries are not noticeably different from this rate of increase in low-income or lower-middle-income countries.[32]

On this basis, we claim that during the transition the structure changed. The sectoral composition of GDP changed rapidly. In the CEEB countries we observe the share of services in GDP growing, and the share of industry shrinking. On the other hand, in the CIS countries structural change takes place in a slightly different manner. It is driven by a more modest growth in the share of services, and more modest declines (vis-à-vis those in the CEEB countries) in the shares of agriculture and industry. The process of structural change in the CEEB countries is impressive even when compared to similar changes in countries at the same levels of development. On the other hand, the process of structural change in the CIS countries is not impressive in an international perspective, as similar changes can be observed in low-income and lower-middle-income countries.

## 2.7 *Institutions Collapsed*

As the transition experience has advanced, it has become clearer that the "persistent disparity between progress in liberalization and privatization, on the one hand, and in the development of institutions that support markets and private enterprise . . . , on the other" (EBRD 1999, p. 26) is directly related to overall economic performance. Countries where this disparity decreased during the transition performed better than countries where it was allowed to persist or to increase. A major impediment to assessing the role of institutions in explaining economic performance during transition is the difficulty in identifying theoretically sound measures of those institutions that are

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[31] World Bank, *1999/2000 World Development Report* (table 12, p. 252–53) provides population weighted averages for these shares in upper-middle, low, and lower-middle-income countries.

[32] See World Bank, *1999/2000 World Development Report* (table 12).

TABLE 10
RULE OF LAW
REGIONAL AVERAGES: 1990–99

|  | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 |
|---|---|---|---|---|---|---|---|---|---|---|
| Balkan | 3.611 | 4.389 | 4.250 | 4.111 | 5.333 | 5.889 | 6.167 | 6.389 | 6.500 | 6.500 |
| Visegrad | 6.800 | 7.933 | 8.133 | 8.133 | 8.633 | 8.800 | 9.233 | 9.633 | 9.833 | 9.833 |
| Baltic | 4.667 | 5.667 | 7.789 | 8.333 | 8.333 | 8.333 | 9.111 | 9.433 | 9.500 | 9.500 |
| BUR | 4.000 | 5.000 | 5.289 | 5.056 | 5.056 | 5.056 | 5.056 | 5.056 | 5.056 | 5.056 |
| Asia | 2.250 | 2.375 | 2.271 | 2.937 | 3.896 | 3.896 | 4.417 | 4.913 | 5.625 | 5.625 |
| CEEB | 5.026 | 5.996 | 6.724 | 6.859 | 7.433 | 7.674 | 8.170 | 8.485 | 8.611 | 8.611 |
| CIS | 3.125 | 3.688 | 3.780 | 3.997 | 4.476 | 4.476 | 4.736 | 4.984 | 5.340 | 5.340 |

*Note:* Authors' calculations based on data from Campos (2000). See footnote 18 for definition of regional groups.

relevant for growth. This constraint is particularly severe: it demands a systematic panel data set of institutional indicators instead of the incomplete and mostly cross-sectional data available so far. A preliminary attempt to circumvent this problem is offered by Campos (2000), using the concept of "governance" as developed by the World Bank (1994) to put forward a set of four indicators for different institutional dimensions of "governance" for 25 transition countries during 1989–98.

Let us examine the "rule of law" indicator. Notice first that there are two important issues in constructing the indicator. One relates to the aggregation of different underlying components, and the other to the choice of the underlying components. As for the aggregation, a simple procedure was adopted: the series was re-coded over an identical 1–10 scale (re-based first if needed) and then aggregated by simple averaging. As for the underlying components, the indicator for "the rule of law" was constructed on the basis of three indicators, the first two focusing on enforcement and the latter on the type and substance of the "law" itself. The first is an ICRG indicator ("rule of law tradition") reflecting the country-specific degree to which citizens are willing to accept the established institutions for making and implementing laws and resolving disputes. Higher scores of "rule of law" indicate that the country has sound political institutions and a strong court system. The second indicator, property rights, is "factor #8" from Kim Holmes, Bryan Johnson, and Melanie Kirkpatrick (1997, 1998). It measures, on a 1–5 scale, the government influence over the judicial system, the commercial code defining contracts, the sanctioning of foreign arbitration of contract disputes, corruption within the judiciary system, delays in judicial decisions, and the extent of legally granted and protected private property. The third indicator upon which this measure is based is "rule of law" from Adrian Karatnycky, Alexander Motyl, and Boris Shor (1998), which measures on a 1–7 scale whether a post-communist constitution has been adopted, whether it provides for property and human rights, whether the criminal code has been subject to reform, whether judges rule fairly and impartially and whether they were appointed during the communist era, whether the courts are free of political control, whether the state provides public defenders, and whether ethnic minority rights are protected.

Table 10 shows the regional averages for the "rule of law" indicator between 1989 and 1998. It is clear from these data that the process of institutional build-up took off much faster in the Central and Eastern

TABLE 11
GOVERNMENT EXPENDITURES AS PERCENTAGE OF GDP
REGIONAL AVERAGES: 1990–99

| | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|---|---|---|---|---|---|---|---|---|---|---|
| Baltic | 49.10 | 38.70 | 31.53 | 36.87 | 39.57 | 39.90 | 38.03 | 37.63 | 40.50 | 43.00 |
| Balkan | 55.57 | 42.73 | 45.08 | 39.48 | 39.78 | 38.33 | 37.52 | 36.23 | 36.18 | 37.62 |
| Visegrad | 47.63 | 49.10 | 50.40 | 49.00 | 48.02 | 46.30 | 45.62 | 45.82 | 44.30 | 43.90 |
| Asia | 39.85 | 37.81 | 42.77 | 45.35 | 34.73 | 25.81 | 23.60 | 24.50 | 25.60 | 25.83 |
| BUR | n.a. | n.a. | 58.53 | 51.80 | 47.93 | 38.17 | 42.47 | 44.00 | 41.73 | 40.33 |
| CEEB | 50.77 | 43.51 | 42.34 | 41.78 | 42.46 | 41.51 | 40.39 | 39.90 | 40.33 | 41.51 |
| CIS | n.a. | n.a. | 50.65 | 48.58 | 41.33 | 31.99 | 33.03 | 34.25 | 33.67 | 33.08 |

*Note:* Authors' calculations using (2000) *World Development Indicators* data. See footnote 18 for definition of regional groups. n.a. indicates data not available.

European countries, despite starting at a much higher level. Among CIS countries, Belarus, Ukraine, and Russia are characterized by an extremely slow process of deepening of a rule of law tradition.[33] There is also considerable heterogeneity among CEEB countries; on the one hand we can see a consistent process of institutional deepening in the Visegrad and Baltic countries, while very little of it is observed in the Balkan group.

Institutional choices are also related to the size of government, often measured in the literature as the share of government consumption in GDP. The study of the effects of government size on economic growth is highly controversial, to say the least, and consensus is being built upon the notion that different types of expenditures have different effects on economic growth.[34] Table 11 shows the evolution of government expenditures in transition economies between 1990 and 1999. There seem to be no clear trends across those groups. It should also be noted that the levels of government consumption are high in comparative perspective (except for the Asia countries). In 1998, government consumption in low-income economies averaged 12 percent of GDP, in lower-middle-income countries it averaged 14 percent, in upper-middle-income countries 11 percent, and in high-income countries it averaged 17 percent of GDP.[35]

In summary, the transition started off with the implosion of a tight political-economic system. Its collapse generated an institutional vacuum. The data used in this section serve to show the painful, and in many cases slow, effort to build-up institutions that could support a modern market economy.

## 2.8 *Transition Costs*

The objective of this subsection is to briefly discuss the extent to which output performance in transition has been associated with other measures of well-being

[33] To the point that the average for the Asia countries in 1997 surpassed the BUR average.

[34] See William Easterly and Sergio Rebelo (1993), Alberto Alesina and Roberto Perotti (1996), Shantayanan Devarajan, Vinaya Swaroop, and Heng-fu Zou (1996), Stephen Miller and Frank Russek (1997), John Baffes and Anwar Shah (1998), and references therein. Analyses focusing on transition economies include Ke-young Chu and Gerd Schwartz (1994), Kornai (1995), Coricelli (1997) and Marek Dabrowski (1997).

[35] Source is World Bank, *1997 World Development Report,* table 13, pp. 238–39.

TABLE 12
LIFE EXPECTANCY AT BIRTH FOR MALES (IN YEARS)
REGIONAL AVERAGES: 1990–99

|  | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|---|---|---|---|---|---|---|---|---|---|---|
| Baltic | 65.13 | 64.50 | 63.90 | 62.43 | 61.53 | 62.03 | 64.26 | 64.86 | 65.00 | n.a. |
| Balkan | 67.89 | 67.81 | 67.33 | 66.57 | 66.90 | 66.79 | 67.06 | 67.12 | 67.30 | 67.19 |
| Visegrad | 67.04 | 67.12 | 67.38 | 67.80 | 67.94 | 68.31 | 68.84 | 69.06 | 69.09 | 70.84 |
| Asia | 65.99 | 65.50 | 65.70 | 62.86 | 63.78 | 64.14 | 64.40 | 65.22 | 65.53 | n.a. |
| BUR | 65.23 | 64.33 | 63.63 | 61.90 | 61.20 | 60.99 | 61.54 | 61.90 | 61.97 | n.a. |
| CEEB | 66.69 | 66.48 | 66.20 | 65.60 | 65.46 | 65.71 | 66.72 | 67.01 | 67.13 | 69.02 |
| CIS | 65.61 | 64.92 | 64.67 | 62.38 | 62.49 | 62.57 | 62.97 | 63.56 | 63.75 | n.a. |

*Note:* Authors' calculations using (2000) *World Development Indicators* data. See footnote 18 for definition of regional groups. n.a. indicates data not available.

such as poverty and inequality, longevity and morbidity, and literacy. One of the stylized facts of the transition so far is that the output fall has been associated with substantial costs in terms of rapidly rising poverty and inequality, as well as the sharp deterioration of various social indicators (notably, life expectancy and school enrollment rates).[36] Three important issues to keep in mind are: first, the starting (i.e., 1989) levels were high vis-à-vis countries at similar levels of development. One of the most trumpeted successes of the pre-1989 regimes was the delivery of health, education, and income equality. Second, the drastic fall in output was not accompanied by equally drastic falls in consumption levels. In other words, consumption fell less than output, so that the welfare costs of the early years of the transition were smaller than those associated with the slowdown in economic activity. Third, here the divide between Central and Eastern European and former Soviet Union countries is seen very clearly. For instance, mortality rates rose faster and were higher throughout in the latter group (Brainerd 2001).

The rapid changes in mortality rates prompted the World Bank's (1996) *World Development Report* to raise the question "Is transition a killer?" The early years of the transition witnessed a rapid increase in mortality rates, and a major explanatory factor for these is the increase in adult male mortality rates (table 12). The effect of transition seems to be straightforward. The rising mortality rate of adult males is explained in large part by the psychological stress associated with turbulent times, with rising unemployment, poverty, and alcohol consumption (Elizabeth Brainerd, Ichiro Kawachi, and Bruce Kennedy 1998). Further, the much smaller increases in adult male mortality rates observed in the Caucasus and Central Asian economies (vis-à-vis all other former Soviet Union countries) seem closely related to the preponderance of family and other informal arrangements ("social capital") in cushioning those effects of transition. Note that increases similar to the ones in the Caucasus and Central Asia did not occur outside of the former Soviet Union (FSU) countries. Among transition economies, public health expenditures (as percent of GDP) show an increasing trend until 1994,[37] when

[36] See Brainerd (1998), Judith Shapiro (1995), John Flemming and John Micklewright (1999), EBRD Transition Report (1999), UNDP (1998), and UNICEF (1999).

[37] The same trend is seen for the division into CEEB and FSU groups, with FSU starting the decline from 1993. As expected, total number of hospital beds and physicians per capita were also declining in these first ten years.

they start to decline, returning to their 1990 level (the exception is the Asia group, where health expenditures decrease from the start). However, the increase in health expenditures did not hamper the overall decline of life expectancy at birth until 1993. As expected, the largest decline was for the FSU countries, not for the CEEB.

Similar developments are observed with regard to changes in education indicators. For instance, the literacy rate declined in all the countries for which data are available.[38] We commented above on the changes in secondary-school enrollment rates, and similar developments can be seen with respect to primary-school enrollment. The CEEB-FSU differences in this case are reinforced by the fact that enrollment declined faster in the least urbanized countries, which happen to be FSU countries. Interestingly, there seems to be no common pattern regarding public spending on education.

As for poverty and inequality, the emerging consensus is that they both increased sharply in the beginning of transition and have so far not shown signs of declining. For example, the poverty headcount index (percentage of the population whose income is below the poverty line) was around 4 percent in the late 1980s, increasing to 45 percent in 1993–95 (Branko Milanovic 1998, esp. table 5.1). Income inequality, as measured by the Gini coefficient, has also increased. Because of transition itself (price liberalization and privatization fuelling higher wages in the private sector), one could argue that it is normal for inequality to increase. Yet it is important to note that inequality increased faster and more decisively among FSU countries.

In sum, the relationship between economic growth and various measures of well-being during the transition is marked by the rapid appearance of substantial social costs.

Although inequality was expected to rise, there were few reasons to expect health and education conditions to deteriorate the way they did.

### 2.9 *The Seven Stylized Facts of the Transition*

Table 13 summarizes what we consider to be the seven main stylized facts of the transition so far. Based on our previous analysis we believe that the following should stand as a robust set even in the face of (needed) future revisions and refinements in the underlying data. We think that there is enough evidence to argue that, in this first ten years, output fell, labor moved, the stock of physical capital shrank, there was a rapid and intense reorientation of international trade towards the West, the structure of the economy changed, there was rapid collapse of institutional structures followed by a vacuum in many countries, and the transition involved large social costs principally in terms of worsening income inequality, mortality, and poverty rates. The next section presents an overview of the theoretical and empirical literature in the light of this set of stylized facts.

Before proceeding, we should comment on the important issue of economic reform in the transition. As we mentioned earlier, the debate in this literature is whether initial conditions or economic reform policies have played the crucial role during the transition process so far. One problem in gauging the role of policies is the difficulty in obtaining reliable measures. The available ones are not detailed enough and more often than not are based on Western experts' judgement, when they need not be.[39] With these caveats in mind, table 14 shows a measure of economic reform that is widely used in this literature,

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[38] The data cover only twelve countries for the years 1990, 1995, and 1997. See UNICEF (1999).

[39] The point here is that for, say, "rule of law," an expert's judgment is necessary, while for, say, "number of key prices liberalized in a certain year" we can clearly have a measure that is not necessarily based on an expert's judgment but on hard evidence.

TABLE 13
THE MAGNIFICENT SEVEN: STYLIZED FACTS OF TEN YEARS OF TRANSITION

| Stylized Fact | Comments |
|---|---|
| (1) Output Fell | Output fell in all countries of the former Eastern Bloc, in stark contrast with development in China and Vietnam (where growth has been fast and sustained). The exact magnitude of the fall is a matter of controversy, inter alia, because of the sizeable informal sectors that quickly emerged. |
| (2) Capital Shrank | Capital stocks reduced dramatically during the transition, although the expectation is that efficiency has increased. |
| (3) Labor Moved | Labor moved in all senses, but the most obvious one: measures of geographical mobility are very low. Yet we observe large changes in labor market status, sectors, and occupations. |
| (4) Trade Reoriented | CMEA trade collapsed and was redirected to industrial countries in a very short period of time, with few exceptions (the slow reorientation in BUR is led by Ukraine and Belarus, not Russia). |
| (5) Structure Changed | The share of value added by industry in GDP declined rapidly. In the CEEB case, this is due almost exclusively to the increase of the services share. In the case of CIS, the reasons for the slower decline are much less clear-cut. |
| (6) Institutions Collapsed | The fall of communism created an enormous institutional vacuum. Although efforts to understand and measure it are just starting, its effects are sizeable and omnipresent. |
| (7) Costs Were High | One of the surprises of the transition was the appearance of unexpected costs. The rise of unemployment and income inequality was expected. The rise in mortality rates and the decline in school enrollment rates were not expected. |

namely De Melo et al.'s (1997) "cumulative liberalization index." Higher values indicate a more intense, deeper and wider reform effort. The data show that reform has progressed much faster in Central and Eastern European than in FSU countries. It is surprising to learn that here we cannot distinguish the Asia from the BUR countries. Also of interest is that the reform effort in the Balkan countries has been much more modest than in the Visegrad and Baltic countries. Despite these interesting insights, we believe better data is needed before attempting further analysis.

The above seven facts apply to the countries of Central and Eastern Europe and the former Soviet Union and thus should not be seen as stylized facts of transition in general. Indeed, the experience in Asia has been very different, and a review of developments in transition economies cannot afford to exclude some of the fastest-growing countries. Economic performance in China and Vietnam during the 1990s is impressive and markedly contrasts with the performance of the European transition economies discussed above.[40]

A large body of research addresses these differences. Why have these Asian economies been so successful in conducting transition and the former Soviet bloc economies so unsuccessful? Initial conditions certainly play a role, not only because they provide for major differences between the two groups of countries. China, and the Asian economies in transition in general, did not embark on political and economic transitions simultaneously, have a relatively large share of agriculture in employment and in

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[40] The performance of Mongolia is similar to that of the CIS countries. Like an FSU economy, it experienced a severe fall in output. Yet it had an earlier and sustained recovery. Growth rates are still modest compared to Laos, Vietnam, and China (Sanjay Kalra and Torsten Slok 1999). Average growth rates in Laos are higher than in Mongolia but significantly lower than in Vietnam. On China, see John McMillan and Barry Naughton (1992), Gregory Chow (1993), Naughton (1995), Loren Brandt and Xiaodong Zhu (2000), and Qian (2000). For a revisionist perspective, see Alwyn Young (2000). On Vietnam, see Christina Dawkins and John Whalley (1996), James Riedel and Bruce Comer (1997), and Naughton (1996).

TABLE 14
CUMULATIVE INDEX OF INTERNAL ECONOMIC LIBERALIZATION
REGIONAL AVERAGES: 1989–98

|          | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 |
|----------|------|------|------|------|------|------|------|------|------|------|
| Balkan   | 0.28 | 0.54 | 0.97 | 1.57 | 2.24 | 2.93 | 3.66 | 4.38 | 5.14 | 5.91 |
| Visegrad | 0.42 | 0.85 | 1.60 | 2.42 | 3.26 | 4.12 | 5.01 | 5.90 | 6.80 | 7.71 |
| Baltic   | 0.05 | 0.20 | 0.52 | 1.08 | 1.84 | 2.70 | 3.57 | 4.46 | 5.36 | 6.26 |
| BUR      | 0.04 | 0.08 | 0.18 | 0.49 | 0.84 | 1.26 | 1.82 | 2.40 | 2.95 | 3.49 |
| Asia     | 0.04 | 0.08 | 0.17 | 0.45 | 0.80 | 1.20 | 1.71 | 2.27 | 2.86 | 3.46 |
|          |      |      |      |      |      |      |      |      |      |      |
| CEEB     | 0.25 | 0.53 | 1.03 | 1.69 | 2.45 | 3.25 | 4.08 | 4.91 | 5.77 | 6.62 |
| CIS      | 0.04 | 0.08 | 0.18 | 0.47 | 0.82 | 1.23 | 1.76 | 2.33 | 2.91 | 3.48 |

*Note:* Authors' calculations using De Melo et al. (1997) indexes. See footnote 18 for definition of regional groups.

GDP, have much lower per-capita incomes, and were relatively less integrated with CMEA. Institutions also account for an important difference: Yingyi Qian, Gérard Roland, and Chenggang Xu (1999) argue that while the Soviet-type economy was organized in specialized ministries, the Chinese-type economy was organized on a regional basis, allowing more latitude for experimentation and thus for gradualism. Chinese reform started with decentralization in 1979 (Qian and Roland 1998). Local governments were given significant autonomy, which allowed needed experimentation with a number of reforms and the rapid entry of new firms (the TVEs, township and village enterprises, being a prime example). The new entrants generated an interesting paradox in that considerable competition emerged without privatization or property rights well-defined by law (McMillan 1997). Using the space for experimentation meant that successful reforms were gradually introduced (on a national scale). Lawrence Lau, Qian, and Roland (2000) discuss the advantages of the dual-track approach to price liberalization. They note that liberalization in China involved the government slowly phasing out planned prices and quantities. Balancing the plan and market tracks did this, as agents could buy and sell at market prices only once plan obligations were fulfilled. This process culminated with most prices being liberalized by the mid-1990s (Qian 2000).[41] The adoption of a reform strategy marked by gradualism and sequencing concerns seems to be intrinsically linked to the far superior performance of China and Vietnam vis-à-vis the other transition economies.

### 3. *Growth in Transition: The Theoretical Literature*

The theoretical literature on transition can usefully be divided into two groups, one focusing on the initial fall in output, the other on medium-term issues. The short time span that covers the experience of transition from a planned to a market economy makes it impossible for the analysis of economic growth to neglect the initial sharp, and largely unexpected, fall in output. Moreover, in some instances the initial collapse translated into a persistent depression. Following the collapse of output, a lively debate started on its causes. Several observers claimed that such a collapse could be simply explained as a Keynesian recession, driven by a fall in consumer demand (Blanchard et al. 1991;

[41] The reform process in Vietnam is similarly characterized as gradualism, as opposed to the reform in Laos and Mongolia.

Andrew Berg and Jeffrey Sachs 1992; David Lipton and Sachs 1990; Roman Frydman, Stanislaw Wellisz, and Grzegorz Kolodko 1991, among others). Other observers argued that the fall in output could not be described as a simple Keynesian recession, as the timing and the magnitude of the collapse suggested a different interpretation, the concept of "trade implosion".[42] The phenomenon of "trade implosion" can be ascribed to the break-up of the old system of coordination of production and exchange, and substitution with a system of decentralized decision making and free market practices. The absence of fundamental market institutions implied that the old mechanisms of production and trade could not be quickly replaced by new well-functioning mechanisms. Kornai (1994), for instance, defined the output fall as a "transformational" recession, related to the overall transformation of the economic system. This view appears relevant for a longer-run perspective, as it pointed out the risks of a prolonged period of recession, or low-output equilibrium. The "trade implosion" approach stresses the importance of institutional factors in affecting output performance in economies in transition. Such institutional factors, as for instance institutions relating to financial markets, play a fundamental role in the growth literature as well.

## 3.1 *Explaining the Initial Output Collapse*

The sharp and unexpected fall in output is a puzzle for economic theory. First, liberalization of prices, dismantling of trade barriers, and elimination of pervasive state intervention in economic activity should have brought large efficiency gains. Second, based on the experience of programs implemented in developing market economies, stabilization *per se* should not have caused a sharp fall in output. For instance, in Latin America and Israel, stabilization

programs relying on the exchange rate as an anchor to reduce inflation were not associated with significant output decline, at least in the initial phase of the programs (Miguel Kiguel and Nissan Liviatan 1989; Calvo and Vegh 1993). Moreover, in market economies, the output performance of stabilization programs relying on the exchange rate as an anchor differed sharply from that of countries that used monetary aggregates as an anchor. By contrast, in transition economies output fell irrespective of the type of stabilization program implemented. Therefore, the experience of transition economies cannot be easily explained with existing models used to analyze market economies. In particular, for transition economies, supply-side explanations are likely to be more relevant than simple Keynesian models.

Within the literature on the initial output collapse, two main contributions stand out. One underlines the role of credit markets, the other the role of the so-called disorganization.

## 3.2 *Credit Market Imperfections*

The artificial structure of production and trade imposed by the planning system made credit markets—and to some extent money—irrelevant, at least in connection with the enterprise sector. Dismantling the planning system implied that production and trade were not only decentralized but were carried out through monetary or credit arrangements. Development of credit markets requires time. The availability of cash for transactions by enterprises was constrained by official credit, given that firms lacked financial savings since they were illegal in most centrally planned economies (Garvy 1972). Calvo and Coricelli (1992, 1993) single out the credit market as one of the fundamental institutions missing in the former centrally planned economies. The collapse of CMEA trade can also be seen as an example of trade

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[42] The term was first used in connection with the output collapse in economies in transition by Calvo and Coricelli (1993).

implosion, as an abandonment of an old mechanism of trade and netting out of payments, without the substitution of a private credit market.

The imposition of tight financial policies at the time of price liberalization likely determined a credit crunch for enterprises. The contraction of central bank credit resulted in a contraction in overall credit to the economy, as private credit markets could not develop overnight.

Liquidity shortage can in principle explain a temporary fall in output. Over time, firms can accumulate monetary balances and converge to the optimal level of output that would have been reached in the presence of perfect credit markets. Accordingly, the implied behavior of output would follow a U-shaped pattern. An implication of this view is that output decline should be accompanied by a decline in productivity. Moreover, real wages would drop as well, as enterprises attempt to generate liquidity to purchase inputs.

The "credit crunch" approach has been extended to account for the possibility of longer term stagnation, a phenomenon observed in several transition countries, especially in the FSU. These extensions (Calvo and Coricelli 1996; Dalia Marin and Monika Schnitzer 1999; Clifford Gaddy and Barry Ickes 1998) have shown how the initial credit crunch could lead to a "bad equilibrium" with persistent low output. The main channels are the explosion of inter-enterprise arrears and barter trade, which, while cushioning the effects of credit crunch on enterprises, may lead to inefficient macroeconomic equilibria. Both are at the same time symptoms and causes of extremely high credit risk. Barter trade eliminates credit risk by requiring exchange of goods as a form of payment. Inter-enterprise arrears reflect default in payments in transactions among enterprises. Widespread use of these practices reflects dysfunctional institutions and endemic lack of trust, which imply large costs

in terms of output and growth rates (Alesina and Eliana La Ferrara 2000) and undermine the entry of new firms. Trust is an important element for the development of a new economic structure based on new networks of enterprises (Simon Johnson et al. 2000). When trust is extremely low, existing structures and systems tend to be perpetuated. Given that in transition economies the initial industrial structure was highly inefficient, the difficulty in building new institutions constitutes an important obstacle for growth. Understanding the phenomenon of generalized inter-enterprise arrears and their implications for output performance requires studying the interaction between macroeconomic and institutional variables, a topic discussed in the literature reviewed below. Similar macroeconomic policies applied to countries with different levels of institutional development may lead to sharply different outcomes. The prediction of this approach is that countries starting reforms from a system closer to a rigid central plan were worse off than countries that had partly liberalized their economies. Despite their limitations, partial reforms may have contributed to building institutions fundamental to a market economy, mainly in the area of financial markets. An indication of this is that inter-enterprise arrears and barter trade did not significantly affect more advanced countries of Central and Eastern Europe, while they proved to be a major obstacle for market reforms in the countries of the former Soviet Union. In Hungary and Poland, private credit markets in the form of trade credit developed soon after the start of reform programs (Calvo and Coricelli 1996).

### 3.3 *Disorganization*

An alternative channel that shares some of the main elements of the above view is the so-called phenomenon of disorganization, defined as the breakdown of economic relations of the old regime.

Blanchard and Kremer (1997) claim that disorganization was an important reason for output collapse especially in countries of the FSU. The main concept underlying this view is "specificity" in economic relations between firms. The period of central planning was one of extreme specificity, as firms were locked in relationships with a small number of firms, in many cases only one firm. Firms did not need to accumulate information on other firms, such as ability and willingness to pay customers. A high degree of specificity implies the presence of monopoly rents. Production chains link firms to several suppliers, depending on the degree of complexity of production. Higher complexity implies a larger number of inputs. Under a decentralized system prices are set through a bargaining process. Customer firms, generally state enterprises at the start of reforms, make an offer price to their suppliers. If the price is below the reservation price of the supplier (e.g., the outside option for the supplier), the latter does not provide inputs to the state firm and thus output falls. Assuming strong complementarities in production, the lack of even one input implies inability to produce. The reason for inefficient bargaining is that the reservation price is the private information of the supplier. An implication of the model is that the larger the number of inputs, the higher the degree of complexity of production, and the larger the output fall. One could thus expect the output fall to be more pronounced in highly industrialized economies. This may account for the different output performances of highly industrialized countries of the former Soviet Union versus mostly agrarian countries such as China (Roland 2000). Another implication is that output would decline more in countries that started reforms from a more rigid system of central planning. In countries in which firms had already experienced decentralized mechanisms of bargaining, output decisions, and even price setting, the adverse

effects of inefficient bargaining would be less acute.

One model of disorganization based on search frictions and investment specificity rather than inefficient bargaining is by Gérard Roland and Thierry Verdier (1997). In their model, production occurs through a matching process between firms. Efficient production is described as the occurrence of good matches, or matches between good firms. The exploitation of new good matches between customers and suppliers cannot occur instantaneously, and after liberalization, search externalities and relation-specific investments produce a temporary output fall. Relations existing during the previous regime break down, while new ones emerge only gradually over time. Liberalization allows new, promising opportunities, prompting firms to search for good matches. There is a search externality, as the higher the number of firms searching, the lower is the probability of finding a good match, as there are many bad firms searching as well. Investment is relation specific, and it is carried out only when firms find good binding matches. Therefore, during the search period, investment contracts. Despite important differences in the models, Blanchard-Kremer and Roland-Verdier offer similar explanations for the observed output collapse. The implications of their models are also similar. Liberalization may produce a collapse in output if the necessary conditions for effectively replacing the old relations among firms are not in place. According to Roland (2000) a dual-track liberalization approach, like the one followed in China, would solve the problem by maintaining, for state firms, the old channels and relations. This would make production feasible, and at the same time allow at the margin entry of new firms that will search for new opportunities.

The disorganization view offers an interpretation of output collapse that is different but not in contrast with the credit crunch

view. Indeed, those views may be comple-
mentary.[43]

An explicit attempt to merge the views of
Calvo-Coricelli and Blanchard-Kremer was
carried out by Marin and Schnitzer (1999),
who conclude that credit constraints may re-
duce the negative impact of disorganization.
This conclusion is not fully convincing. As
noted by Blanchard and Kremer, the coordi-
nation problem in the enterprise sector is
made worse by the lack of liquidity. The
more complex the production process, the
more important is credit. It is conceivable
that at the microeconomic level of bilateral
bargaining between supplier and customer,
liquidity constraints may reduce the effects
of disorganization by increasing the bargain-
ing power of the customer, but at an aggre-
gate level the lack of credit is likely to pro-
duce large negative effects on output.

As transition progressed and several coun-
tries of Central and Eastern Europe started
to grow out of the initial collapse, a literature
focusing on the medium-term perspective
and on dynamic issues developed. Structural
change and the reallocation of resources
across sectors and firms are at the core of
this literature.

### 3.4 *Creative Destruction and Optimal Speed of Transition*

A popular view of transition describes out-
put dynamics along a path determined by the

sector reallocation of resources. As resources
move out of the old state firms into the pri-
vate sector, productivity increases. If there
are adjustment costs, or other imperfections
such as search costs, aggregate output is
likely to drop initially and increase after-
wards, when the private sector has reached a
sufficient size. Accordingly, output follows a
U-shaped path. The initial contraction in
output is reminiscent of a phenomenon of
Schumpeterian "creative destruction." In-
efficient firms get weeded out, leaving room
for the expansion of new, more efficient
firms. A clear signal of this process would be
the increase in productivity accompanying
the initial decline in output (in stark contrast
to the implications of the models in sections
3.2 and 3.3 above). Empirical evidence pre-
sented in Simon Commander and Fabrizio
Coricelli (1995) emphasizes that in the
initial phase there were few dynamics in terms
of job flows, indicating that Schumpeterian
forces were slow to operate. At first sight, it
would appear optimal to make the process of
transition as fast as possible, by shortening
the initial period of decline in output. If one
takes into account possible adverse feed-
backs, however, such as fiscal costs of the
initial fall in output, or congestion effects
in the labor market due to high unemploy-
ment, the normative implications of the
models are less obvious. For these reasons a
literature on the optimal speed of transition
emerged.

Perhaps the most influential work in this
area is Phillippe Aghion and Olivier
Blanchard (1994). They develop a two-sector
search model in which workers displaced
from old state firms search for jobs in the new
private sector. Job creation in the private sec-
tor is a function of profits, current and ex-
pected, which in turn depend on wages. The
endogenous mechanism of job creation works
through an efficiency wage model, in which
the rate of unemployment, by reducing
wages, stimulates the creation of jobs in the
private sector. The shrinking of the state sec-
tor is considered a policy variable. Without

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[43] Ronald McKinnon (1991) argues that liberaliza-
tion and instantaneous dismantling of the old economic
system would lead to output collapse due to a financial
crisis. In the old regime of central planning the tax sys-
tem relied on state enterprise taxation, while the bank-
ing system acted simply as a central clearing house.
Decentralization and liberalization implies that the
state gives away control of its tax base and simulta-
neously, commercial banks face the problem of provid-
ing credit in a context in which they lack the informa-
tion and the expertise to act efficiently. Past information
on enterprises is irrelevant, as the arbitrary system of
taxes and transfers made profitability a bad indicator of
efficiency of firms. As a result, liberalization would im-
ply a fiscal crisis accompanied by a crisis of a banking
sector exposed to large amounts of bad loans. The con-
clusions of McKinnon's analysis are similar to those of
Roland, and a gradual approach to reform is favored.

macroeconomic feedbacks, the best policy would naturally be to shrink the state sector as fast as possible. Job creation in the private sector, however, depends on net profits, hence on tax rates paid by private firms. Given that the state pays for unemployment benefits out of its budget, the higher unemployment is, the higher would be the tax rate for private firms, not only because the needed public expenditure would be higher, but also because the tax revenue collected from state firms would be lower as the state sector shrinks. This adverse fiscal effect counteracts the potential positive effect of unemployment on job creation in the private sector. As a result, there is the risk that a too-fast speed of transition, namely a too-fast shrinking of the state sector, derails the transition process, leading to an equilibrium with persistent high unemployment. By measuring the contraction of the state sector, the economy could achieve a successful shift of resources to the private sector, which ultimately will absorb all workers in the economy. Although relevant for a normative analysis of the speed of transition and for the role of unemployment, the model is less suited for an analysis of the growth process in transition economies. Indeed, the model implies a constant difference between productivity in state and private firms and, more important, it does not consider the role of investment, both in physical and human capital. In addition, the assumption of an exogenous decline of state firms appears a too-strong assumption that rules out the important interaction between the increase of new private firms and the endogenous shrinking of the state sector.

We now turn to models that tackle directly dynamic issues and the investment process.

## 3.5 *Output Dynamics and Capital Accumulation*

One of the main challenges of transition is replacing the old capital stock. Overinvestment during central planning left transition countries with stocks of capital that are largely useless in a market economy and international competition. Even human capital, often cited as a major strength of formerly centrally planned economies, appears in many cases inadequate. Thus, new investments in physical and human capital represent the main engine of growth in transition economies.

Micael Castanheira and Gérard Roland (2000) develop a Ramsey-type model of optimal growth with two sectors, state and private, and Leontieff-type technologies. In the private sector, firms are equally productive, while in the state sector firms are ordered by decreasing productivity. Moreover, even the most productive state-owned firm is less productive than a private firm. In contrast with other models of transition, in particular Aghion and Blanchard (1994), there are no frictions in the labor market. A consequence of the assumed technology is that return to capital is always higher in the private sector. As a result, all investment takes place in private firms, and the reallocation of labor across sectors is driven by capital accumulation in the new private sector. In turn, investment is determined by optimal savings, which summarizes the speed of transition, defined as the speed of reallocation of labor from state to private firms. The higher return to capital in private firms can be captured only after capital has been installed. With Leontieff technology, labor does not jump instantaneously from state to private firms, and thus transition is a gradual process. The state sector continuously shrinks. The optimal transition path, defined in terms of the length of transition, depends on the parameters of utility function, on the discount rate, on the technology in state firms, and on the capital-labor ratio. Along the optimal path growth rates decline as the productivity gains (from a shift of resources from state to private firms) narrow. It is indeed optimal to close the less-productive state firms first. An implication of the optimal path is that growth rates decline over time during transition, but output grows continuously. Therefore, the optimal path is

inconsistent with the observed initial fall in output.

Having determined the optimal path, hence the optimal speed of transition, one can analyze the effects of deviations from such a path. In particular, one can analyze the effects of going *too fast*, by closing state firms at a rate that is initially faster than the one obtained along the optimal path, or of going *too slow*. It turns out that going slower has no effect on the speed of transition, as the private sector pulls workers from state firms irrespective of the government's attempts to initially close firms below the optimal rate. By contrast, a too-fast rate of closing affects the speed of transition, growth, and welfare. Interestingly, a faster rate of closure of the state sector may lengthen the transition process and it reduces welfare. This is due to an income effect associated with the decline in output of state firms. From a descriptive point of view, at initial stages of transition with a faster closure of state firms the growth rate increases. Thus, the empirical implication of the model for the analysis of growth is that countries that follow a bolder approach should display faster rates of growth initially.

The model by Castanheira-Roland has the advantage of using a framework as close as possible to the standard Ramsey model of optimal growth. Neglect of important deviations, however, from the general equilibrium model with perfect markets may reduce the empirical relevance of the model. For instance, the assumption that the new private sector pulls workers from the state sector starting with the less-efficient firms may hide the possible important migration out of the state sector of the most-productive workers. This migration is likely to reduce the overall productivity of firms in the state sector, a phenomenon that could be captured in models with efficiency wages and heterogeneous labor force. Similarly, with credit-market imperfections a squeeze on state firms is likely to penalize all firms, irrespective of their level of productive efficiency, a point made

in the literature reviewed in the preceding section. In sum, while very valuable as a framework to discuss the optimal speed of transition, the model does not capture the U-shaped path of output that characterized the transition process.

Models that attempt to combine the mechanisms highlighted by Aghion-Blanchard and the investment process analyzed by Castanheira-Roland have been developed by Bankhim Chadha and Fabrizio Coricelli (1995), who develop a two-sector model that incorporates dynamics of physical capital. The model shares with Aghion-Blanchard the basic structure of the labor market, but assumes flexibility in labor markets and imperfections in credit markets. The underlying assumption is that financial-sector imperfections should be a more relevant constraint on growth in transition economies than labor-market imperfections. In Chadha-Coricelli, investment in the private sector is subject to adjustment costs. The main analytical contribution of this paper is that investment becomes a function of the rate of unemployment, a function that is highly nonlinear (a similar channel works in Ricardo Caballero and Mohamad Hammour 1996). There is a minimal rate of unemployment required to push the economy toward a successful transition path, where labor shifts continuously from the state to the private sector. In the model, the contraction of the state sector is endogenous and is determined by the growth of the private sector; in other words there is a process of "creative destruction." The government can affect such a process by tightening the constraints on state firms, namely by reducing subsidies.[44] A successful transition, however, may require a sufficiently developed safety net for the unemployed. Both the ability to tighten constraints and impose discipline on

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[44] Chadha and Coricelli (1997) also discuss this point. The concept of subsidies in transition economies should be interpreted in a broad sense, including for instance interest rate subsidies, tax exemptions, and tax arrears.

state firms and the presence of a safety net depend on institutional development in terms of an efficient judicial system and administration. The model predicts that growth rates should be positively associated with unemployment up to a critical point, after which the expansion of the private sector is capable of absorbing workers leaving the state sector. Another prediction is that, other things equal, countries with poor safety nets and poor systems for enforcing discipline in the enterprise sector would show poor growth performance.

Chadha, Coricelli, and Kornelia Krajnyak (1993) examine the issue of productivity growth during transition and its connection with the dynamics of the state and private sectors. It is assumed that private firms offer greater scope for productivity growth associated with accumulation of skills. As in Robert Lucas (1988), the accumulation of skills in the private sector depends on the number of workers employed in that sector. This endogenous mechanism allows multiple equilibrium paths. If employment in the private sector does not reach a critical value, transition may derail, with the economy stuck at a low output equilibrium dominated by state firms. As in Chadha and Coricelli (1996), unemployment exerts a positive effect on job creation in the private sector and consequently on the process of productivity growth lead by accumulation of human capital.

The models by Chadha, Coricelli, and Krajnyak (1993) and Chadha and Coricelli (1995, 1997) share some of the main conclusions reached by Aghion-Blanchard and Castanheira-Roland. Their focus is more on the descriptive than on the normative aspects of transition, and some of their conclusions may serve as a useful reference point for empirical analysis. First, to understand aggregate dynamics is crucial to analyze the asymmetric dynamics of state and private firms. Second, capital-market imperfections are likely to be a major impediment to growth. Third, total factor productivity plays a key role as a determinant of aggregate growth only at later stages of transition. Indeed, productivity gains in the new private sector need time to be captured, as they result from the process of accumulation of human capital. Thus, transition is a lengthy and costly process. Several macroeconomic indicators are bound to worsen along a successful transition path. If countries face stringent macroeconomic constraints on the fiscal and external side they may be induced to slow down transition, with significant medium-term output losses. Incentives for workers to move out of the state sector are important. Adequate social safety nets permit workers to abandon outdated state firms. In this area, the experience of Central/Eastern European countries has been sharply different from that of the former Soviet Union (Boeri 2000). The presence of safety nets in CEEs allowed significant contraction of employment in state firms, whereas in the former Soviet Union workers remained attached to state firms for several years after reforms because of the lack of unemployment benefits.

In addition, factors that improve the functioning of financial markets and institutions that encourage development of new private firms should prove fundamental in determining the growth performance of transition economies.[45]

An important implication of the two brands of literature reviewed in sections 3.2, 3.3, and 3.4 is that price liberalization and tight macroeconomic policies do not necessarily foster growth. Institutions enabling the functioning of a market economy are a fundamental precondition, particularly relating to financial markets and social safety nets.

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[45] Calvo and Jacob Frenkel (1991) introduce credit-market imperfections in a growth model. Lack of information on enterprise creditworthiness, untested in the previous regime, creates a situation in which profitable investments are not undertaken. Inefficient financial markets produce a shortening of the horizon of firms, with negative effects on long-term growth.

3.6 *Institutions and Growth*

In recent years, the literature on growth has paid increasing attention to the role of institutions in affecting growth rates (Daron Acemoglu, Simon Johnson, and James Robinson 2001; Dani Rodrik 2000; David Romer 2000). Transition economies are a unique laboratory for these views. Indeed, central planning was an institutional arrangement that has proven highly inefficient, as shown by the dynamics of total factor productivity (tables 1 and 2). Mathias Dewatripont and Gérard Roland (1997) effectively define transition as a large-scale institutional change.

The notion of institutions is too vague to lead to a simple theoretical treatment.[46] Although the theories are still sketchy, several channels have been identified, each contributing to what is called social infrastructure or social capital. Romer (2000) divides the studies on the determinants of social infrastructure into three groups. One focuses on incentives and underlines the preference for dictators to build and maintain social infrastructure conducive to low average incomes. The second concerns the broad issue of cultural factors, encompassing religion, ethnic diversity, family structure, and civic participation. The idea is that ethnic homogeneity, common religion and culture, and civic participation increase social cohesion and trust. The latter seems to be crucial for the development of efficient financial markets. Finally, an even more elusive determinant of social infrastructure has been identified, namely individuals' beliefs about the right policies and institutions. Different beliefs imply different choices of institutions by governments.

All these channels seem important for transition economies. Throughout a common

shift towards more democratic societies and liberalized economies, countries in transition have displayed a wide range of institutional arrangements. For all of them, the process of institutional building takes a long time. A problem generally encountered has been the attempt to adopt a "blueprint" of efficient institutions. The debate between gradualism and shock therapy highlights this (Lipton and Sachs 1990; Fischer and Gelb 1991). The defenders of shock therapy neglected the importance of search and evolution of the right institutions for the different reality of each country (Rodrik 2000). Furthermore, emphasis on the role of institutions implies a more complex view of the relationship between the state and the market. Indeed, the state plays a fundamental role in building institutions for the functioning of markets. Mario Nuti and Richard Portes (1993) point out the phenomenon of "state desertion" as a major drawback of reforms in transition economies. The collapse of the state apparatus might have been one of the main obstacles to the development of a well-functioning market economy.[47] The state's role in the development of social capital is a key area for research.

The role of social safety nets as a fundamental factor for generating social cohesion and support for market reforms cannot be underestimated. An additional important aspect is the accession to the European Union for several countries of Central and Eastern Europe. In this case institutional change is by and large constrained to occur within the blueprint of the European Union, which would seem to collide with Rodrik's views on the need to learn and experiment with the right set of institutions for a specific country. Entry into the EU, however, is seen as one of the main objectives for the populations of CEE countries, and it is likely that individuals' beliefs are that EU institutions represent the right institutions.

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[46] A growing literature is analyzing the role of institutions and of complementarity in institutions and institutional reform. See among others Paul Milgrom and John Roberts (1990), Ugo Pagano (1993), and Masahiko Aoki (2001). This literature points to interesting directions for research on transition countries as well, but goes beyond the scope of this paper.

[47] Boeri (2000) notes that employment in the state sector (excluding state enterprises) increased during the transition period in the more successful CEE countries, while it fell in the less successful countries of the former Soviet Union.

## 4. *Growth in Transition: The Empirical Literature*

The debate in the empirical literature on economic growth in transition economies has been mostly about establishing the relative importance of structural factors (broadly defined to include initial conditions) and policies (broadly defined to include both liberalization and macroeconomic policies) in explaining output performance. In what follows, we provide a general overview of this cross-country literature. Because of the large number of individual country studies, we focus on cross-country studies, in particular, those covering Central/Eastern Europe and the former Soviet Union countries. Notice that this criterion excludes many important contributions.[48]

The cross-country literature focused on three main issues: the effect on growth of liberalization, macroeconomic adjustment (mainly inflation control), and initial conditions. Only a few exceptions discuss the impact of institutions on growth (Oleh Havrylyshyn and Ron van Rooden 2000; and Martin Raiser et al. 2001).

### 4.1 *Liberalization and Growth*

De Melo, Denizer, and Gelb (1996) and De Melo and Gelb (1997) map the output

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[48] Eduardo Borenzstein and Peter Montiel (1992), and Jeffrey Sachs and Andrew Warner (1996) both examine only three transition countries. The former uses the augmented Solow framework to identify long-term growth paths, while the latter uses three countries' experiences to argue that harmonizing with EU policy standards will result in lower growth rates than following the policies of the group the authors define as "very fast growing developing economies." Another important study is Luca Barbone and Juan Zalduendo (1997), which estimates a model for a large sample of developing countries and then uses the coefficients to discuss accession to the EU of five CEE countries. Edward Leamer and Mark Taylor (1994) provide a careful and original contribution that concludes with a number of hypothetical, though highly relevant, scenarios, and the study by Vir Barta and Thomas Url (1996) examines five Central European transition countries. Individual country studies include, among others, Mark De Broeck and Kristina Kostial (1998) on Kazakhstan; Daniel Berkowitz and David DeJong (1998) and Irina Dolinskaya (1999) on Russia; De Broek and Koen (2000b) on Poland; and Jeremin Zettlemeyer (1998) on Uzbekistan.

decline, construct an index of the extent of liberalization, and offer evidence that cumulative liberalization is closely related to the observed output dynamics. Because this liberalization index is used widely, we should note two of its distinguishing features. First, the index is based on the still-controversial notion that what accounts for the disparity in economic performance during transition are government policies (De Melo and Gelb 1997, pp. 62–63). Second, the index is a weighted average of three components: liberalization of internal markets, of external markets, and of private-sector entry (weights are 0.3, 0.3, and 0.4 respectively). All indices incorporate a significant dose of arbitrariness and judgement on the part of the researchers who built them. Even abstracting from the problem of the quality of the measures of liberalization, an important issue debated in the literature is whether liberalization has an impact on output performance through the cumulative level of liberalization achieved or through the change in liberalization indexes. In other words, there is an issue on the time dimension of the relationship between liberalization and growth. If one considers the cumulative index, the effects of liberalization do not disappear after the current period.

Fischer, Sahay, and Vegh (1996a) use the De Melo et al. liberalization indexes in a panel of twenty transition countries (for 1992–94). They find that growth is positively and statistically significantly associated with fiscal surpluses, foreign aid, and the extent of liberalization, and is negatively and significantly associated with inflation. In subsequent work (1996b), the authors increase the number of countries (from 20 to 25, for 1992–94) to conclude that growth is negatively and significantly associated with initial income, and positively and significantly associated with the choice of exchange-rate regimes, fiscal surpluses, and the (cumulative) liberalization index. Fischer, Sahay, and Vegh (1998) quantify the income losses incurred during the socialist period: using

1937 data for six countries, they estimate that approximately two-thirds of GDP per capita were lost during the socialist experiment.

Anders Åslund, Peter Boone, and Simon Johnson (1996) find that conclusions about the impact of macroeconomic policies change dramatically when considering output change (between 1989 and 1995) instead of output level at the end of the period (1995). For the first case, they report that once dummy variables for ruble zone and war-torn countries are included, "there is no robust significant correlation between output change and any measure of reform" (1996, p. 233). When they turn their attention to output levels in 1995, however, the extent of liberalization and inflation are found to be statistically significant and to have the expected signs.

### 4.2 *Initial Conditions and Policies*

Denizer (1997) stresses the role of initial conditions and in doing so provides a finer depiction of the determinants of the various "transition patterns" identified in De Melo, Denizer, and Gelb (1996). He finds that initial conditions matter, as proxied by distance from Vienna and whether the country was independent before socialism. Besides the degree of arbitrariness in the choice of the relevant variables used as initial conditions, there is the issue of correlation between initial conditions and liberalization measures. One can argue that the extent of liberalization and the speed of reform are not independent of initial conditions. This is another instance in which existing empirical work is not derived from an underlying theory. In this regard, Berta Heybey and Peter Murrell (1997) identify a set of problems in the existing literature, notably with respect to the measurement of the speed of reform and the issue of simultaneity between output performance and reform policies. They tackle the problem by using a simultaneous equations approach, and conclude that initial

conditions are "much more important than policy variables in determining growth performance" (1997, p. 15).

The debate on the relative importance of economic policies and initial conditions is likely to continue for some time.[49] On the one hand, there is evidence that policies are instrumental in explaining the recovery as argued by, among others, Marcelo Selowsky and Ricardo Martin (1997); Berg et al. (1999), and Havrylyshyn et al. (1999).[50] On the other hand, Gary Krueger and Marek Ciolko (1998) and Vladimir Popov (1999), among others, provide evidence that the impact of liberalization becomes insignificant once initial conditions are accounted for.

One of the main results achieved in the papers arguing for the dominant role of policies is that reform measures have an initial negative impact on growth but over time they determine positive growth, overcoming the initial adverse effect. Havrylyshyn et al. (1999) conclude this by inserting lagged values of the reform indices in addition to the contemporaneous one. The opposite sign, and the similar magnitude, of the coefficients of contemporaneous and lagged reform indicators may simply reflect a problem of collinearity. The reform indicators are cumulative indices and thus are surely highly correlated over time.

### 4.3 *Asymmetric Growth of State and Private Sectors*

Despite the central role that the asymmetric behavior of state and private sectors play in the theories of optimal speed of transition, most empirical analyses have focused on aggregate variables. The major obstacle for a disaggregated analysis is the lack of reliable data on private sector activity.

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[49] Further, we must note the increasing attention political factors have received recently in this debate. See Castanheira and Popov (2000), Jan Fidrmuc (2000), and Roland (2000).

[50] Holger Wolf (1999) argues that liberalization is associated with the output fall and recovery.

Nevertheless, there are a few exceptions in the empirical literature that try to test a model that takes into account the reallocation of resources from state to private sectors. Ernesto Hernandez-Cata (1997) puts forward a model of the transition that focuses on the reallocation of capital (from the state to the private sector), and relates the output fall to liberalization and stabilization. He also presents empirical results that support the view that the transition takes considerable time as it involves fundamentally the restructuring of the inherited capital stock. In addition, his results confirm a strong association between price stabilization and the resumption of growth. Of particular interest is the finding that the much-worse performance of former Soviet Union countries vis-à-vis those of Central/Eastern Europe dissipates after controlling for the timing and intensity of liberalization, price stabilization, and underreporting of output.

### 4.4 *Institutions and Growth*

Although the role of institutions has been largely neglected in the empirical analysis of growth in transition economies, a few exceptions are noteworthy. In particular, two recent papers by Havrylyshyn and van Rooden (2000) and by Raiser et al. (2001) represent valuable initial attempts to provide a comprehensive study of the role of institutions in economic performance in transition economies. Both studies, however, are still far from robust analyses of this relationship.

The paper by Havrylyshyn and van Rooden updates their previous regressions on panel data for the period 1991–98 to include institutional variables. Nine institutional variables from five different sources are used. Because of the high degree of correlation among different variables, the authors use a principal component analysis. The first component explains about 90 percent of overall variability of eight institutional indices. Inclusion of the institutional variable adds to the explanation of growth,

although its contribution is small compared to structural reform and initial conditions. A few cautioning notes are in order. First, institutional variables concern 1997, one of the last years of the sample. Second, institutional indicators are highly subjective. This is clear if one looks at the extremely high correlations between different institutional indicators. One would certainly expect some correlations among these variables, but such a high degree of correlation between legal, economic, and political institutions is suspicious. Finally, the idea that institutional development has an immediate impact on growth, without attention to the possible time dimension of the relationship, is striking in a regression in which the authors include a dynamic structure for the structural reform indicators. What does the level of institutional development in 1997 tell us about growth rates during the period 1990–98? Perhaps the authors assume that the cross-country variation in institutional development observed in 1997 is similar to the one observed throughout the period. Despite a valuable effort to collect data on institutional development, the work appears only a starting point in the analysis of institutions and growth in transition economies.

Similar comments apply to Raiser et al. (2001), who find some, though rather weak, evidence of positive impact of social capital on growth performance in transition economies. An interesting result is that social capital has a significant impact on growth, especially civic participation and trust in public institutions (especially the legal system and police), while reform variables are not statistically significant. Interacting reform indicators and social capital to test whether reforms are effective when social capital is sufficiently developed does not lead to significant results. Much more work is needed.

Perhaps, rather than continuing to rely on unnecessarily subjective reform indicators, more attention should be given to more objective measures such as financial development

and specific policies aimed at improving the functioning of a market economy. Much of the empirical work carried out on transition economies is inevitably exploratory. There is a growing consensus on the importance of institutions, but the channels through which institutions affect growth are not well understood. The time dimension of the relationship between institutions and growth is also still unclear. In light of the theoretical work discussed earlier, it would be interesting to test the impact of institutional change, not only the impact of levels of institutional development. Because of the short time interval available for empirical analysis, it would seem reasonable to concentrate on the relationship between initial levels of institutional development and economic performance. Interacting institutional variables with liberalization and macroeconomic policy measures seems a very promising research agenda.[51] In carrying out such analyses one should also consider the endogeneity of reform measures, both in connection with economic performance and institutional development. Such endogeneity problems are discussed in the political economy literature (Roland 2000; Castanheira and Popov 2000). Similarly, the role of social safety nets as a fundamental institution for the development of a market economy, especially in a period of rapid structural change, should be tackled in the empirical analysis.[52]

### 4.5 *Growth Prospects*

Finally, another strand of this empirical literature worth mentioning discusses the growth prospects for economies in transition. One of the main findings of this literature is instrumental because it establishes empirically that the underlying long-run trends are significantly different before and after 1989.[53] Using traditional growth equations (Barro 1991; Ross Levine and David Renelt 1992) to extrapolate growth prospects of transition economies would lead to reasonably optimistic forecasts, even though no "miracle" is foreseen. Indeed, growth rates are projected to hover at around 5 percent, implying a rather slow process of convergence to not only average-income EU countries, but even to low-income European countries like Greece, Portugal, and Spain (Fischer et al. 1998).

Among the favorable factors fostering growth, one can identify human capital development, although the caveats noted above apply. In the Barro specification, government consumption, which is rather high in transition economies, adversely affects growth. In light of the theories reviewed in previous sections, a fundamental factor that can hamper convergence is the level of institutional development. Using specifications of Phil Keefer and Steve Knack (1995), the EBRD Transition Report of 1997 concluded that growth prospects would be significantly reduced. Such a conclusion is reached by comparing findings on future growth in transition countries (from Levine-Renelt specifications) with those from an alternative specification that includes an index of institutional development.[54] This comparison suggests a downward revision of the estimated long-run growth trend: even for those transition economies with relatively high-quality institutions (and for which institutional data are available), the absence of further institutional change, according to those calculations, should lower long-term growth rates by 1.5 percentage points.

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[51] Coricelli and Campos (2000) present a preliminary test of these interactions, finding some significant results on the dependence of the effects of reform policies on initial conditions and on institutional development.

[52] Coricelli and Campos (2000) find a significant and positive impact of social expenditures on growth in transition economies.

[53] This literature includes Denizer (1997), Peter Havlik (1996), and Fischer, Sahay, and Végh (1997, 1998).

[54] This is a composite index encompassing: expropriation risk, rule of law, risk of contract repudiation by the government, corruption, and quality of the bureaucracy (EBRD 1997, p. 106). The enlarged Levine-Renelt specification includes enrollment rates in primary school, changes in international prices, and growth of labor force (instead of population).

## 5. *Conclusion*

Transition is the simultaneous change of economic structures and institutions, and the final outcome crucially depends upon the coherence of economic reform in terms of liberalization of goods and factor markets, macroeconomic policies, and institutional development. The collapse of output in Central/Eastern Europe and especially the former Soviet Union indicated a lack of coherence in the reform strategies. In general, more attention to a comparative analysis of the experience of China could prove useful. Initial conditions and economic structure were sharply different in China. Reform strategies differed as well. Therefore, the comparison with China highlights one of the main lessons of the first ten years of transition, namely that reform strategies cannot neglect the different institutional structures.

From our review, a few suggestions for future research stand out.

First, our list of stylized facts is based on data currently available. We highlighted the limitations of these data series, both in terms of completeness and accuracy. A fundamental direction for future research is to try to validate these facts. More work should be devoted to examining the limitations and inadequacies of the various time series needed to study growth in the early transition years. For instance, recalculations or revaluations of the capital stocks are needed and, in doing so, it is important to disentangle the roles of public and private investment. There should also be attempts to improve the available series on labor. In particular, future research should go beyond the number of workers and years of schooling and try to provide a more economically meaningful picture of the contribution of labor (specifically, in terms of hours worked and effective use of skills). More reliable estimates of physical and human capital and labor contributions to growth will improve our understanding of the sources of this process and the relative roles of various crucial factors.

Second, research should focus more on institutions, including the role and size of the government. A clear specification of the channels through which institutions affect growth is needed. In this respect, a particularly relevant area for research is the role of institutions in the development of financial markets. This extends beyond pure conceptual pursuits. Data on institutions based on objective criteria are highly desirable. A last concern is the emphasis on cross-sectional data, which we deem mistaken. Transition is a dynamic process and a crucial aspect of it has been the dynamics of institutional reform. The empirical efforts that attempt to put forward cross-sectional time series data on institutions in transition are few and admittedly crude at this point. One crucial suggestion for future research is to change this situation.

Third, relevant measures of initial conditions should be provided. Moreover, studies of how they relate to degrees of distortions across sectors, across countries, and over time are needed.

Fourth, more emphasis should be placed upon a better understanding of the role of economic reforms and reform strategies in dictating the path of the transition process. This should be pursued both conceptually and empirically. There are a number of theoretical models that stress the role of reform strategies, yet the data for discriminating among these models is lacking. The few indicators available are unnecessarily subjective and more often than not the needed documentation on their construction is not disclosed.

Last, but not least, the transition experience raises simultaneously many new challenges to the conceptual frames we use to study economic growth and development. One key example of these new challenges is isolating reallocation (its sources and effects) from accumulation and technological progress.

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