SYSTEMIC TRANSFORMATION AND OUTPUT DECLINE

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Abstract

The massive output decline, which has occurred in transitional economies since the systemic transformation begun, has been explained in various ways. Besides statistical and methodological errors, the following factors have been examined: (1) the initial institutional, economic and social conditions; (2) the disruption of the CMEA and the FSU; (3) shocks of deregulation and other factors connected with systemic transformation. The paper argues that the output decline was deeper and longer, while recovery slower in a country or group of states where dichotomy between initial conditions and implemented policies larger. It also attempts to shed a new light on the role of financial intermedition in otput decline in transitional economies.

Key Words: Economies in transition; Systemic Transformation; GDP decline; Financial inter-mediation
JEL classification: O42, O57, P43, P52

I. *Introduction*

It is difficult to feel comfortable about the large-scale output collapses experienced in peacetime, especially in the majority of the newly independent states (NIS), comparable with losses during the World War II. Nor are there many who accept the proposition that massive output decline was inevitable during the transition to a market economy. The theoretical background of this proposition is weak and empirically it contradicts the experience of some other countries that have been managing to introduce market reforms with rapid economic growth.[1]

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[1] China being a clear-cut example of remarkable growth of GDP and investment that were 2 and 5.8 times higher in 1997 compared to 1990 accompanied with market reforms [Bogomolov (1998, p.35, 40)].

On average, the GDP halved in the transition countries, before starting to recover. But even after some revival, the average output in 1998 for all Central and East European (CEE) states and NIS as a whole remained 35 percent below what it was in 1989. Overall, although the size of output falls varied (ranging from 20 percent over three years in Poland, to 63 percent in ten years of continuous non-stop output decline in Ukraine), deep GDP declines and, as a rule, rather weak recoveries have become the most disappointing and striking common feature of the systemic transformation process. Empirically it is obvious that output decline were much larger in the Commonwealth of Independent States (CIS), both individually and as a group compared to the states of CEE. The gap between these two groups of countries in transition had been increasing throughout the decade starting with 1992: in 1998 they had respectively 53% and 95 % of their estimated weighted average level of real GDP compared to 1989 [EBRD (1999, p.73)].

What was behind such an experience that was so devastating in terms of real income? Is it possible to identify the major factors, which affected the growth performance of different group of countries and individual states? Were there other measures and ways to diminish high economic and social costs of systemic transformation, the negative effect of radical macroeconomic stabilisation and structural adjustment policies? Would different speed and sequence of reforms make a difference in terms of output?

II. *Transformation Strategy and GDP Decline*

Liberalisation, Inflation and Barterisation

Liberalisation represents one of the first and most acute instruments in the arsenal of the market reformers. However, there were different views on how fast and comprehensive it should be. Murphy, Shleifer, and Vishny (1992) advocated the necessity of full price liberalisation to avoid inefficient diversion of output from state to private enterprises, while Blanchard and Kremer's model (1997) supports the idea that full price liberalisation may lead to larger reductions in output and welfare especially in the short run. Both arguments had enough empirical evidence in transition countries and in China. "Shock therapy" proponents assumed that the negative features of the "neither plan nor market" mechanism under partial reforms could be eliminated by full liberalisation that would remove all price and trade distortions and promote economic growth. In reality, the shocks of overall price and foreign trade (especially import) liberalisation largely contributed to a sharp decline in production due to contraction of demand for domestic goods. In other words, from an economic growth viewpoint they proved to be much more destructive.

The Central Asian and other NIS have experienced impacts of both models. Decisions about partial and full liberalisation were taken in Moscow. The first set of incomplete price reforms was launched in the former Soviet Union (FSU) under Gorbachev in 1991. The full price liberalisation introduced in Russia by Yeltsin in January 1992 affected to much larger extent all NIS. It was the most radical price liberalisation, involving 80% of producer prices and 90% of retail prices. In Hungary, this level of price liberalisation was reached over more than 20 years, where the share of free retail prices increased from 23% in 1968 to 55% in 1985, 80% in 1989 and 92% in 1992. In Poland, liberalisation of prices had started about a decade before the transition and by mid 1989 29% of retail prices for commodities and goods had been

still regulated by the state. Only after further price liberalisation in August and December 1989, the share of free retail and wholesale prices exceeded 90% [Nekipelov (1996, p.p.245-246)]. So, it is clear that the shocks of price liberalisation were much more destructive in Russia and other NIS, in which enterprises and households had 8 to 24 times less time to adapt to a new environment compared to Polish and Hungarian cases.

Despite the political dissolution of the FSU in December 1991, the economic impact of almost total price liberalisation started on January 1, 1992 in Russia and fast changes in relative prices, due to the common currency and economic interdependence, led to an asymmetric shift of production all over the FSU. Falls in production in traditional sectors were much higher than increases in production of services and goods, which had previously been in shortage. Aggregate output had dropped immensely, and, as a rule had not been linked with more efficient resource allocation. Due to faster liberalisation inflation rocketed to much higher levels in all NIS than in CEE, especially in those of them combined with delayed stabilisation measures reached such heights that paralysed economy having a huge negative effect on output.

The full price liberalisation and follow-up efforts to cushion its negative effects on economic and social development during first years of transition in Central Asia like elsewhere in the FSU led to sharp price increases and hyperinflation that was much higher than in the CEE.

Liberalisation of prices without efficient financial institutions that could provide fast, low-cost and risk-free money transactions even under high inflation inevitably led to a barter trade. Initially it was used to avoid the inefficiency of the banking system, which was unable to make transactions in due time using traditionally established direct links between producers and suppliers. Since then it has become regarded as safer because of increasing cases of arrears - another by-product of fast liberalisation and hyper-inflation that practically turned all assets of enterprises in the banks into being worth nearly nothing. Later, when inflation was more or less curbed and commercial banks became more efficient, barter was still widely spread because it permitted to avoid taxes.

Foreign trade liberalisation, especially imports and exchange rate, rapid liberalisation also strongly affected domestic production. Y. Nishimura (1999), is right including "hastily implemented import liberalisation" in addition to fast price liberalisation among other factors that "contributed to the reduction in demand in 1992-1993" in Russia. It was true for Poland in 1990 too, when import tariffs in one year were decreased from 18.3 % to 5.5%. However, the latter immediately re-introduced, in the first half of 1991, much larger tariffs, the average size of which reached 16%. At the beginning of 1992, the average tariffs further increased, especially in agriculture up to 18% [EBRD (1994, p.115)]. It is not a coincidence that 1992 in Russia and 1990 in Poland, the years of the most radical trade liberalisation, were marked with the largest output declines in the decade (-14.5%) and (-11.6%) respectively. However, in Poland due to immediate measures, including re-imposed higher tariffs, and slowing down the speed of the structural reforms, recovery started in 1992. While in Russia, this did not occur until 1997, interrupted again in 1998 [EBRD (1999, p. 63)].

In Central Asia, Kyrgyzstan's fast trade and exchange rate liberalisation led to a large and chronic current account deficit, the size of which increased by three times in only one year (1996). By the end of the year, its GDP was only 58% and industrial output 36% compared to 1991. In Uzbekistan, within a gradual opening up, somewhat bolder steps in 1996 (in import

liberalisation, replacement of quantitative restrictions by milder tariffs and easier access to hard currency convertibility) resulted in the largest current account deficit (-7.2%) for the decade. Certain imports and currency convertibility restrictions were re-introduced in the fourth quarter of the same year that had been practically kept by mid-2000. The elements of protectionism have contributed not only to an improvement of current account balance, but also to an uninterrupted positive economic growth since 1996. They helped also in cushioning trade shocks, as well as the impact of global and regional financial crises in 1997-1998 [Islamov (1998, p.80); (1999, p.p.86-90)].

Thus, it is necessary to state that radical liberalisation had, obviously, a negative impact on production and balance of payments in all economies in transition. The countries that made steps that were more cautious in the process of systemic transformation and opening up, pragmatically reacting to the changes both in the domestic and external markets were better off in terms of economic growth. At the same time, the states that really, not allegedly, engaged in radical reforms and rapid globalisation via fast price and trade (import and exchange rate) liberalisation suffered most of all.

Macroeconomic Stabilisation and Disinflation

The main target of macroeconomic stabilisation was disinflation by rigid monetarist policies. Was it justified from the viewpoint of the real sectors of economy? The theoretical grounds for the costs of disinflation derive from a trade-off between output and inflation, often referred to as the Philips curve. What does empirical evidence say about the costs of disinflation undertaken in all transition countries after continuous surges of inflation? In this regard, the experience of the transitional countries seems to be very intriguing to assess whether there has been any trade-off between inflation and output due to rapid disinflation. Wyplosz (1999) dismisses the view that disinflation resulted in reduced output. He justifies this view by noting that, in the CEEs, there was no banking system channelling financial assets from lenders to borrowers and therefore there should not have been the standard channel for a contractionary effect of monetary policy. Wang (1999) states without any statistical investigation that, in Georgia, disinflation even stimulated output, leading to the rise of agricultural production followed by a rise in the service sector. Cottarelli and Doyle [(1999, p. 2))] even claim that "... the sacrifice ratio — that is, the loss of output associated with disinflation — for the region (CEE and FSU countries) as a whole has been zero."

On the other hand, Saavalainen (1995) calculates the sacrifice ratio between disinflation and growth and finds that each 100 percentage-point decline in annual inflation involved a loss in real GDP ranging from 0.7 percentage points to 1.7 and 2.7 percentage points in Estonia, Latvia, and Lithuania respectively. Saavalainen then estimates the total costs of disinflation for the three countries, ranging from 7 percent in Estonia to 17 percent in Latvia and 20 percent in Lithuania.

It is clear that there is no agreement among economists on the contractionary effects of disinflation on output. A few remarks are worth noting. First, the claims about the zero or even the stimulative effect of disinflation on economic activity do not fit empirical evidence at all [for in-depth details see Ball (1991) and Romer (1989)]. Second, to claim that, in the Soviet-type economy, there was no banking system is equivalent to the statement that there was no financial intermediation and prices did not play any role in the decision-making process. It would be more correct to assert that financial intermediation and prices played

TABLE 1.   DISINFLATION AND OUTPUT PERFORMANCE IN CENTRAL ASIAN COUNTRIES
IN TRANSITION, 1990s

	Year in which inflation peaked	Maximum inflation rate	Stabilization Programme date	Year in which inflation fell below 40%	Year of the lowest output	The lowest GDP to 1989 (%)
Kazakhstan	1992	2984.1	Jan. 1994	1996	1995	55.0*
Kirgizia	1993	1363.0	May. 1993	1996	1995	50.4
Tajikistan	1993	7343.7	Feb. 1995	1994/1998	1996	39.2
Turkmenistan	1993	9750.0	Jan. 1997	1997	1997	42.0
Uzbekistan	1994	1281.0	Nov. 1994	1998	1995	83.4

* to 1991
Source: adapted from EBRD (1999) Transition Report, p.63, 73.

different roles here from the roles they have in market economies. However, money had real value for some sectors (this is especially true for consumption decisions) and affected the resource allocation among different alternatives Ericson, (1991). Banks retained the basic functions in channelling savings to investments through accepting deposits and lending to enterprises. In addition the degree of financial depth (broad money divided by GDP) in the former socialist states was comparable with that of medium- and some high-income countries. Besides, banks played the role of clearing houses for transactions, lowering costs of exchange and promoting specialisation. Therefore, it seems unreasonable to underestimate the financial intermediation in the FSU and its role in the high growth rates in the 1950-1960s.

All these discussions call our attention to the high probability of the powerful contractionary effects of disinflation on real GDP in the transition countries. It is perhaps true if we take into consideration the fact that many countries achieved sharp disinflation (usually from four- to two-digit inflation) in a short period of time. In Central Asia there are countries that have had one of the highest (Turkmenistan and Tajikistan) and the lowest levels of maximum inflation rates (Uzbekistan) among all CIS countries.

A more rigid macroeconomic stabilisation program with a shorter period of disinflation in Kazakhstan and Kirgizia, and even more delayed stabilisation measures in Turkmenistan, with rigid disinflation in terms of output, were much worse than cushioned liberalisation, a timely introduced stabilisation program and milder disinflation afterwards as in the case of Uzbekistan. Tajikistan had civil war in 1992-1997 that badly affected its GDP and the dynamics of macroeconomic reforms. However even in the latter case the year of the lowest output decline followed immediately after the introduction of macroeconomic stabilisation program and implementation of rigid disinflation measures (Table 1).

As it was recognised by the IMF, Uzbekistan embarked on a comprehensive stabilisation and economic reform programme. While the basic features of it were similar to those programmes established by other CIS, the pace of reform chosen by the republic was more gradual than in most [IMF, (1997, p.5)]. As for the speed of reforms within Central Asia, it was actually somewhere in the middle. Uzbekistan managed to cushion shocks better than Kazakhstan and Kyrgyzstan that were faster and more radical in their policies, and avoid the bigger costs of delayed reforms which occurred for different reasons in the other two neighbouring states. It has also chosen a better combination of fiscal and monetary instruments for macroeconomic stabilisation, relying more on the former and not trying to achieve low

inflation by an overly rigid monetary policy at the expense of real sectors.

Privatisation and Capital Flight

Rapid mass privatisation was one of the three main elements advocated by the "shock therapy" approach proponents in addition to overall liberalisation and rigid macroeconomic stabilisation. It also became one of the key elements of the evaluation of the progress in systemic transformation in the classification system for transition indicators suggested by EBRD Transition Reports.

Within the decade the share of the private sector in GDP increased rapidly in all countries in transition. The extent depended on the speed and scale of privatisation; it varied from 25% in Turkmenistan and 30% in Tajikistan to 80% in Czechia and Hungary. However, the countries that did not hastily introduce large-scale privatisation programmes, both in CEE (Poland, Slovenia) and CIS (Uzbekistan and Belarus), fared better among respective groups of countries in the transition. Champions in terms of output growth Poland had 65% and Slovenia 55% - smaller than other advanced CEE states; while Uzbekistan (45%) and Belarus (20%) had much lower share of private sector versus Kyrgyzstan (60%) and Kazakhstan (55%), or versus Russia (70%) and Ukraine (55%) [EBRD Transition Report, (1999, p. 24)].

The experience of China and Vietnam also showed that advancement of market reforms at the beginning could be achieved without large-scale privatisation. Commercialisation of large state owned enterprises without their financial disruption and bankruptcy is important to avoid both economic decline and social tensions at the initial stage of reforms. The progress in their restructuring has been binding with the attraction of foreign investments and the growth of the domestic private sector via encouragement of entrepreneurship and the promotion of new small and medium private enterprises.

In contrast, hasty mass privatisation within radical reforms did not contribute either to a significant increase of fiscal revenues or efficiency of production. In many cases it did not lead to improvement but to a sharp worsening of output performance. Privatisation proceeds in transition countries were much less than in many developing and developed states that privatised their public enterprises. During the transition their ratio to GDP (unweighted average) varied in CEE between 0.1-1.4% and in the NIS 0.5-1.2%. (Kazakhstan in this respect was the only exception, where privatisation proceeds were higher than average (1.7-4.5% of GDP), but it had a much larger decline of GDP than in CEE, and privatisation involved the largest enterprises based on rich oil, metal and other primary resources). In Russia, proceeds from large-scale privatisation in 1994-1998 were around 1% of GDP (average), while it was reported that assets valued at US$ 50-60 billion were sold for US$ 1.5 billion. A small group of individuals used their position to amass enormous wealth and became rich by essentially raiding the public treasury. "As a result, privatisation, which must be a fundamental step toward a market economy, becomes in and of itself an obstacle to the enforcement of a fundamental prerequisite for a market economy, namely protection of private property" [Tanzi and Tsibouris (2000, pp. 5, 7)].

Moreover, this kind of privatisation was accompanied not with growth of efficiency of production and new wealth creation, but controversially it was mainly limited to the redistribution of accumulated wealth from past assets. New owners care not about productive use of the property grabbed from the government but more about how to cash in on it and launder

the liquid assets through offshore banks. Under such circumstances the speedy large-scale privatisation could not always be seen as a positive sign and larger private sector share of GDP, did not always reflect more progress towards a market economy. In many cases, especially in the FSU, it meant a fall of output and production on its reduced basis.

All these discussions make our point clear: that within the privatisation process it is not only the number of enterprises and/or the amount of proceeds accompanying it that are worth targeting. Creation of a potential base for real restructuring in privatised companies is more decisive for the genuine success of reforms. The initial transfer of property rights through privatisation, provided that its implementation was fair and transparent, is important. However, it represents only the beginning of the introduction of new incentives for production that is more efficient and based on private ownership.

Success of privatisation could be provided only after and only when it is followed by development and expansion of the capital market to channel scarce investment resources into the areas of highest economic returns. Lack of financial institutions, inadequate (voucher) forms of privatisation, grabbing of public treasury overtly and covertly, combined with a huge capital flight at the initial stage of transition became an additional significant factor in output decline in countries with radical reforms.

Radical Reforms and Investment Fall

In the majority of the NIS the radical reforms, the fast liberalisation of prices, external transactions and exchange rates combined with mass privatisation, triggered a huge capital flight via shadow sectors of the economy. The volume of this capital outflow was rather substantial, in some cases, much bigger than both public and private external finance. The fall in public domestic investment had especially adverse effects in those countries that could not promote adequate growth of private domestic and foreign investment. Why were radical monetarist approach-based market reforms accompanied by a fall in gross domestic investment in almost all countries in transition? Theoretically, investment might have also suffered from the decline in overall demand for goods, and from the non-accessibility of capital markets. It is known that high inflation affects the purchasing power of the population and leads to a decrease in effective demand. On the other hand, inflation diminishes the financial sector's assets, causing financial disintermediation. In the case of the transition countries investment could be affected in both ways. High inflation in all transition countries brought about the depreciation of then obsolete capital equipment even faster. In addition, increasing uncertainty and structural changes could have driven the further fall of investment. High inflation and the initial fall of output in response to the ongoing restructuring induced many enterprises to cut capital spending. Moreover, the cases where enterprises diverted their financial assets from investment to consumption needs were widespread.

Aggregated statistical data show a certain correlation between falling investment, the level of inflation, compression of the money supply and output decline. Section A of the Table 2 summarises some macroeconomic and monetary indicators in terms of the difference between pre-transition and the last year of the transition in 25 countries, for which data are available (data for Mongolia are lacking).

All columns have a striking similarity: the CEE countries (Poland, Slovenia, Slovakia, Czech Republic, Hungary, Albania, Romania, Bulgaria) as a group performed best, while the Baltic (Estonia, Lithuania, Latvia), other FSU states (Uzbekistan, Belarus, Kazakhstan,

TABLE 2.   MACROECOMIC AND MONETARY INDICATORS IN
CEE, BALTIC STATES AND NIS, 1989-1998

Four Different Groups of Countries in Transition (A.) And Central Asian NIS	Output*	Investment (Gross domestic investment/GDP)*	Inflation**	Coefficient of monetization (Broad money/GDP)*
A.				
1. CEE	−5	−6	114	−18
2. Baltics	−35	−8	131	−41
3. CIS (others than in 4.)	−40	−17	489	−50
4. War-affected CEE and FSU	−56	−18	551	−52
B.				
Uzbekistan	−5	−10	336	−50
Kyrgyzstan	−40	−22	255	−50
Kazakhstan	−41***	−29	558	−57
Turkmenistan	−56	−35	702	−58
Tajikistan (War-affected)	−58	−29	623	−54

* - change from 1989 to 1998; **- arithmetic average over 1989-1998; *** ratio of 1998 to 1988
Source: estimates based on data of IMF's International Financial Statistics (IFS) CD-ROM; (for Uzbekistan, Turkmenistan and Tajikistan) IMF Staff Country Reports, national official statistics are used.

Kirgizia, Russia, Turkmenistan, Ukraine) and especially countries which suffered war (Croatia, Macedonia, Azerbaijan, Armenia, Tajikistan, Georgia, Moldova) — exhibit a decreasing trend in all categories. In other words, output decline was less where investment fell less, the initial level of inflation was lower and disinflation procedures milder because it was treated with less rigid suppression of the money supply.

The evidence from the experience of Central Asian states and respective statistics seems to confirm this conclusion rather strongly (Section B of the Table 2). A correlation between output decline and falling investment, the average level of inflation and a contraction in monetisation is rather straightforward in all countries of the region (with one exception — Tajikistan, where larger output decline is easily explained by extra-losses in production due to the civil war in 1992-1997).

Larger average inflation rate in Uzbekistan compared to Kyrgyzstan with the equal decline of the broad money to GDP also fits well with the logic of less rigid disinflation procedures in that case. In Kyrgyzstan, the year of the largest output decline (1994 — by 20%) coincided with the most radical years in the macroeconomic stabilisation program introduced in May 1993 when the level of inflation was 1363% but diminished to 31.9% in two years. While in Uzbekistan comparable disinflation was achieved in four years between 1994 and 1998. The case of Uzbekistan with output decline equal to the CEE average (−5%) and the coefficient of monetisation exactly at the level of the FSU average (−50%) while investment and inflation indices in between of these two groups, is a special one that will require further explanations.

It is also true that the observations are not so obvious in respect to each individual country compared with another state within the same group. This again reminds us about the necessity of taking into consideration factors maintained above as well as others (such as the path of

structural and institutional reforms, or the dynamics of external trade and foreign invest-
ment). However, one thing was common to all countries: the main instrument in bringing
about low inflation had been the extra-tightening of the money supply. The next section,
therefore, attempts to discuss in more detailed fashion the role of financial intermediation
within the transition, trying to clarify further a correlation between it and output decline and
to suggest a model underlying its significance among other major causes of the output collapse.

III. *Financial Intermediation and Growth*

Channels of Financial Disintermediation and Output Fall

Schumpeter (1912) argued that banks play a crucial role in economic development
because they choose which firms get to use society's savings. According to this view, the
banking sector alters the path of economic development by affecting the allocation of savings
and not necessarily by altering the savings rate. Thus, the Schumpeterian view of finance and
development highlights the impact of banks on productivity growth and technological changes.
Recent theoretical models have carefully documented the links between banks and economic
activity [see, Diamond (1984), Boyd and Prescott (1986), King and Levine (1993), Levine
(1997)]. By economising the costs of acquiring and processing information about firms and
managers, banks can influence resource allocation with consequent productivity growth.

This theory fits the facts quite well: in all transition countries, a fall of real GDP has been
accompanied by a shrinkage of the financial sectors. The steeper the output falls, the more the
degree of financial disintermediation. There are several channels through which financial
disintermediation is likely to have an effect on the actual dynamics of output in the transition
process. Financial disintermediation took place in three main spheres, subsequently provoking
the huge output loss. These are the malfunction of the payment system, failure in the
channelling of savings to the real sector, and the collapse of credit.

Payments System Channel

Berthelemy and Varoudakis (1996) correctly observe that the greatest contribution of
financial intermediation to economic growth probably comes from properly arranged pay-
ments systems. With further economic development, exchange becomes more complex and the
deepening of the division of labour requires a more sophisticated system of payments.
Economic growth brings with it an expanding monetisation of the economy, necessary to
facilitate the increased volume of transactions.

In the transition economies, the opposite has happened. A breakdown of the inter- and
intra-payments systems halted the flow of financial assets. The banking sector was unable to
provide basic financial services such as timely clearing and wire transfers, undermining the
payment discipline and bringing havoc and disorder. In many NIS a situation where ordinary
wire transfers took two or more weeks was common. Again, among transition economies we
observe the same pattern: the countries that avoided the malfunction of the payments system
(CEE countries) had a much better output performance than those, where the breakdown of
the payment discipline was disastrous.

Mobilisation of Resources Channel

As stressed above, financial intermediaries mobilise savings and channel them to those who need capital. There are strong reasons to argue that during the transition this channel was broken. As Rother (1999) points out, the savings ratio in most transition economies is comparable to that of the OECD economies. However, the degree of financial intermediation, either measured by the money multiplier (broad money-to-reserve money ratio) or by the coefficient of monetisation (broad money-to-GDP ratio), is significantly lower in the transition economies.

This fact clearly indicates that a substantial part of the available financial resources is not intermediated by the financial sector. The dramatic financial disintermediation, or downsizing of the financial sector, mostly occurred in the beginning of the transition, seems to be indispensably associated with the monetary policy in the transition economies in that period. Rapid inflation, brought about by the growth of the money stock, and additional uncertainty and risk, produced by the pace of the failed 'creative destruction' policy severely reduced the banking system liabilities. According to Stiglitz (1999), the famous Schumpeterian principle of creation through destruction in market economies, in the transition countries turned out to be realised as destruction without creation.

Savings banks, as the holders of household savings, were most affected by this fall. High negative real interest rates, typical in the initial period of transition when inflation was accelerating, exacerbated the situation with the mobilisation of savings. As a result, the phenomenon of 'dollarisation', that is, the substitution of domestic currency by foreign hard currencies, rapidly emerged and strengthened. Extensive dollarisation of the transition economies seems to have diminished the effectiveness of monetary policy.

Credit Channel

The possible role of the credit channel in output decline was first forcefully emphasised by Calvo and Coricelli (1992). Using comparative analysis on CEE economies, these authors show that credit factors played a key role in the collapse of output in Eastern Europe. In fact, a credit decline preceded the full-fledged output drop. Calvo and Coricelli identify two sources of the credit decline, triggering an output downturn. One was the high real interest rate, by and large caused by government policy. The other was the reluctance of lenders to provide credit in the worsening economic conditions and uncertainty.

The credit view was criticised by the advocates of the 'adverse demand shock' approach on the grounds of the causality between credit and economic growth [Berg and Blanchard (1992)]. Their main argument was that the amount of credit might have fallen due to a decline of enterprises' demand for borrowed resources, rather than reflecting the reluctance of banks to lend. In practice, however, both the unwillingness of financial institutions to provide loans in the situation of uncertainty and the contraction of the enterprises' demand for new credits seem to have taken place. Nevertheless, this issue is worth further examination and can provide some account for the severity of the output collapse in transition economies.

Empirical Model of Economic Growth

Specification. The empirical analysis employs the panel data analysis techniques to exploit the advantages of both time-series and cross-section dimensions of the data set.

Though there are several ways to conduct panel data analysis, the fixed effects model shall be adopted and estimated for three reasons. First, although the data set includes 25 transitional countries out of 28 countries in total they are typical to the countries that have undertaken systemic transformation. The typicality of the sample means that the sample can be treated as exhaustive (data from all NIS and vast majority of the CEE states) rather than as partial.[2] Second, the fixed effects model is appropriate if one of the objectives of a researcher is to find out the individual behaviour (e.g., the probability that a particular country or a group of countries will achieve higher growth rates). Third, as Judson and Owen (1996) have emphasised, the choice of the appropriate sort of estimator for panel data depends on the characteristics of the data. On the basis of the Monte Carlo procedure they explore the performance of different sets of data. Their conclusion is for a dynamic panel data with the time dimension, which is less or equal to 10, the fixed effects estimator exhibits superior results. Though the estimation strategy adopted in this paper is contemporaneous estimation, the panel data set fits the criteria of small time dimension, so the fixed effects model is most likely to be efficient and unbiased.

The Model follows Odedokun's approach (1996) in modelling growth and financial variables. The model is based on the conventional neo-classical one-sector aggregate production function, in which some indicators of financial depth and development enter as an input:

$$Y_t = f(L_t, K_t, F_t, Z_t) \tag{1}$$

where Y = aggregate output or real GDP, L = labour force, K = capital stock, F = indicator of financial depth, Z = vector of other factors that can be regarded as an input in the production process. After taking the differential and some manipulations we get the equation (2) below:

$$\dot{Y}_t = \alpha \dot{L}_t + \beta \dot{K}_t + \delta \dot{F}_t + \phi \dot{Z}_t \tag{2}$$

where the dot on the top of a variable indicates that $\dot{Y}, \dot{L}, \dot{K}, \dot{F}$ and $\dot{Z}$ are now growth rates of real GDP, labour force, capital, financial intermediation, and vector of other inputs, respectively.

Recalling that investment is a change in the capital stock, and adding an intercept and disturbance term into the equation (2), we can rewrite it as:

$$\dot{Y}_t = \mu + \alpha \dot{L}_t + \beta (I/Y)_t + \delta \dot{F}_t + \phi \dot{Z}_t + \upsilon_t \tag{3}$$

where the expression (I/Y) is the ratio of gross investment (I) to the real GDP (Y), μ is an intercept and υ_t is an error term with white-noise properties.

Note that $\dot{L}_t$ is a labour force growth rate entered into the equation as an explanatory variable on the right hand side. In both neo-classical and endogenous growth theories, the labour force is one of the crucial determinants of long-run growth. But in the case of transition

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[2] The data are lacking for Mongolia. The other two transition countries excluded from this sample are: Yugoslavia, Bosnia and Herzegovina that are not undertaking full-fledged reforms yet and still affected by unresolved conflict in Kosovo. Experience of China and Vietnam with market reforms has been very different from that of those included in this sample. These differences seem to be not only in the initial structure of the economies and political arrangements, but also in the different pattern of the strategy for the transformation as for duration and sequence of reforms, and also outcome of the reforms so far.

countries, the inclusion of this variable as one of the explanatory factors onto the right hand side might be inappropriate. First, the growth theories deal mainly with the situation of a steady state in a long period of time. Clearly, the ten-year time horizon of the transition, available for us, is too short to apply the classical labour force — economic growth relationship to the post-socialist countries. Second, and more importantly, though the labour force growth rate for the transition countries, as a whole, was 0.4 percent, it varied greatly from country to country, ranging from $+33$ percent in Turkmenistan to -22 percent in Croatia. (Note that the growth rate of the labour force is difficult to estimate precisely; therefore, the majority of empirical studies use the growth rate of the population as a proxy for the former. This tradition will be followed here on.)

Though the growth rate of real GDP, as it is defined in equation (3), may be a good proxy for changes in real income in general, when there is large variability in population growth rates, the real income per capita is a more informative and precise indicator. To arrive at the equation where the dependent variable is real per-capita GDP, equation (3) will be transformed into the following equation:

$$\dot{Y}_t - \alpha \dot{L}_t = \mu + \beta (I/Y)_t + \delta \dot{F}_t + \phi \dot{Z}_t + \upsilon_t \tag{4}$$

or, denoting, $y_t = \dot{Y}_t - \alpha \dot{L}_t$, equivalently:

$$y_t = \mu + \beta (I/Y)_t + \delta \dot{F}_t + \phi \dot{Z}_t + \upsilon_t \tag{5}$$

where y_t is equal to the growth rate of real per-capita GDP.

Note that, in equation (5), the growth rate of the labour force, unlike in equation (3), is no longer on the right hand side of our model, but incorporated into the left-hand side of equation (5).

Estimation and Results

The fixed effects model estimated by OLS is as follows:

$$y_t = \mu + \beta (INV)_t + \delta \dot{F}_t - \varepsilon (INF)_t - \phi D_t + \upsilon_t \tag{6}$$

where y_t is a per-capita GDP growth rate, INV is gross domestic investment (as a ratio to GDP), F is a financial intermediation variable, INF is inflation, and D is dummy variables.

There are two variables - a coefficient of monetisation (CM) and real money balances (RMB) — that are taken as proxies for financial intermediation. We experimented with both CM and RMB as proxies for the degree of financial intermediation. And $DWAR$ and $DCMEA$ dummy variables are included to control military conflicts and the breakdown of CMEA.[3] A

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[3] **Data sources.** The data set used in this paper includes pooled time-series and cross-section data from 1989 to 1998. The data mostly was retrieved from the IMF's International Financial Statistics (IFS) CD-ROM for various periods (except for Georgia, Uzbekistan, Turkmenistan and Tajikistan). For missing data, different sources were used including the IMF Staff Country Reports, the National Statistics Agencies, the World Bank, the Asian Development Bank and the European Bank for Reconstruction and Development. When various sources contradicted with each other, the most recent estimates were used.

The following are specific data sources for each variable: Economic growth (YPC) is a percentage change of the per capita real GDP. Source: the National Statistical Agencies, the IMF Staff Country Reports and the ADB (1999). The investment-to-GDP ratio (INV) was computed as gross nominal fixed capital formation plus the increase in nominal stocks, both divided by the nominal GDP. Sources: the World Bank's World Tables and the World Development Indicators, in various issues; the IFS CD-ROM, lines 92193E, 92193I and 92199B. There are

TABLE 3.   CONTEMPORANEOUS FIXED EFFECTS MODEL ESTIMATES

Dependant variable: GDP growth rate per capita — *YPC*. Unbalanced panel data. White Heteroskedasticity-consistent t-statistics are in parentheses.

	(1)	(2)	(3)	(4)	(5)	(6)
INV	0.16**	0.16	0.15	0.02	0.01	0.01
	(2.35)	(1.29)	(1.09)	(0.13)	(0.08)	(0.08)
CM	0.09**	0.10*	0.08	0.02	0.06	0.02
	(2.12)	(1.96)	(1.30)	(0.26)	(0.28)	(0.32)
DWAR	−14.56***	−19.34***	−17.71***	−12.82**	−12.93	−12.98***
	(−5.41)	(−5.04)	(−4.00)	(−2.82)	(−2.82)***	(−2.85)
DCMEA	−8.59***	−5.48***	−6.01***	−5.75***	−5.64***	−5.65***
	(−6.45)	(−3.21)	(−3.63)	(−3.72)	(−3.51)	(−3.49)
RMB		0.12***	0.12***	0.07**	0.07**	0.08**
		(3.53)	(3.49)	(2.39)	(2.38)	(2.39)
INF			−0.002*			
			(−1.78)			
LINF				−2.46***	−2.53***	−2.55***
				(−5.04)	(−4.99)	(−5.05)
Disinfl (>25 percent)					−0.73	
					(−0.70)	
Disinfl (>50 percent)						−1.02
						(−0.95)
No. of obs.	235	157	157	157	157	157
Adj-R²	0.43	0.61	0.62	0.69	0.69	0.69
D-W	1.50	1.51	1.57	1.64	1.65	1.65

(*), (**) and (***) denote the 10-, 5- and 1-percent significance levels respectively.

priori, it is expected that *INV*, *CM* and *RMB* have positive signs, while *INF*, *DWAR* and *DCMEA* have negative ones.

Table 3 depicts the results of the regression, based on the theoretical model. Column (1)

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two indicators, proxying the financial development: (*CM*) and (*RMB*). (*CM*) is a change in the broad-money-to-GDP ratio. Source: the IFS CD-ROM, lines 92134 (Money), 92135 (Quasi-money) and 92199B (Nominal GDP). (*RMB*) is a change in real money balances, defined as a nominal money stock, deflated by CPI. Inflation (*LINF*) is a natural logarithm of the annual consumer price index (CPI, December to December). Source: IFS CD-ROM, line 91264.XX; and National Statistic Agencies. *DWAR* is a dummy variable to capture the effect of military conflicts. Equal to 1 from 1989 to 1994 for Armenia and Azerbaijan (Nagorno-Karabakh conflict), to 1 in 1991 and 1992 for Croatia (Yugoslav civil war) and in 1991-94 for FYR Macedonia (indirect effects of Yugoslav civil war and the sanctions on Serbia). Equal to 1 in 1991-94 for Georgia (internal conflicts with Abkhazian and South Ossetian rebels, fighting between the government and rebels loyal to former President Gamsakhurdia); equal to 1 in 1992-97 for Tajikistan (civil war); and equal to 1 in 1992-93 for Moldova (Trans-Dniestr conflict). Equal to 0 otherwise. *DCMEA* is a dummy variable designed to capture the effect of the CMEA dissolution on growth performance. Unlike Fisher and others (1996), who identify 1992 as the year of the CMEA dissolution, we denote two years — 1991 and 1992 — as the period of dissolution of the CMEA. The rationale here is the belief that that the breakup of the CMEA started with the shift to the world prices in the intra-CMEA trade in 1991 and developed into full-fledged disintegration in 1992. *DISINF* (>25%) is a dummy variable that measures the disinflation period, taking 1 when inflation (in log) slows down more than 1/4, and 0 otherwise. *DISINF* (>50%) is a dummy variable that measures the disinflation periods, taking 1 when inflation (in log) slows down more than 1/2, and 0 otherwise.

presents the results of the regression including all core explanatory variables. All variables have the theoretically expected and also statistically significant signs. The next step is to add real money balances.

In regression (2) investment loses significance statistically after inclusion of the real money balances. Also the coefficient of monetisation seems to be sensitive to the addition of other variables, though it is still significant at the 10-percent level. Thus, it can be concluded preliminarily that financial intermediation affects economic growth positively and significantly. Column (3) includes the natural logarithm of inflation. The coefficient of inflation is negative and strongly significant both statistically and economically. The results confirm again that investment and the coefficient of monetisation are sensitive to the inclusion of inflation and other additional explanatory variables. In regressions (4) and (5), the disinflation dummy is included to test the hypothesis that the disinflation policies of stabilisation programs add to the output decline. First, the disinflation dummy for a decline of more than 25 percent in the logarithm of the annual inflation is added. The results are reported as regression (4). The disinflation dummy, although with an expected sign, is insignificant. Then the procedure is repeated for disinflations that are more than halved in one year. The results are reported as regression (5).

The results presented above seem to be mixed: on the one hand, at least initially, there seems to have been a bold relationship between growth and the financial intermediation variables; and on the other hand, the inclusion of inflation seems to have downscaled this relationship. Several factors might be responsible for such a dilemma. First, it is quite likely that there is a problem of simultaneity, that is, the right-hand-side variables are not independent of each other, but are jointly determined. For example, inflation might be cross-correlated with the other variables such as investment, the coefficient of monetisation, and real money balances. In this situation, simultaneously including inflation and investment as the explanatory variables on the right-hand side of the regression leads to a decrease in the explanatory power of one or both of the variables. In other words, the explanatory variables, if they are correlated with each other and with the dependent variable, tend to 'dampen' each other down. This can be especially true for inflation-investment and investment-financial intermediation variables, as they are usually closely correlated. This situation is common in empirical studies, in which inflation is regressed on economic growth [Easterly et al. (1996) and Bruno and Easterly (1995)].

Second, the relationship between inflation and growth might be non-linear. In fact, as seen above, many economists believe that low inflation is positively correlated with growth. Only after some 'threshold' level, inflation becomes negatively correlated with the growth. Besides, even if inflation is detrimental to growth, this outcome is unlikely to be monotonic. It is quite clear that the rise in inflation, say, from 5 to 15 percent, is not the same as that from 100 to 300 percent. The non-linearity of inflation makes it impossible to model its impact on other variables in a linear framework.

Third, the regression results seem to support the hypothesis that inflation is inversely correlated with economic growth. Furthermore, as is clear from the regression results, inflation seems to be collinear to such variables as investment and the coefficient of monetisation. If this is the case, inflation is likely to have an effect on growth not only directly, but also through its detrimental impacts on the demand for money and by distorting the allocation of investment resources. Thus, the empirical evidence suggests that financial intermediation has

been crucial to the behaviour of output in the transition economies. The results of the econometric analysis undertaken above permits us not only to consider financial disintermedia-tion as one of the major factors of output decline but also to identify specific policies aimed at the resumption of economic growth on a market basis.

Policy Implications

Financial disintermediation was observed in all transition countries within the initial stage of systemic transformation. Several factors connected with monetarist market reforms exam-ined in the previous section (liberalisation, macroeconomic stabilisation and mass privatisation programs) contributed to it directly and indirectly. Especially, the high inflation had a devastating effect on financial intermediation, causing de-monetisation of the economies and a fall in investment.

The degree of subsequent adverse effects of this phenomenon on economic growth, unjustified output and incomes declines varied depending on the rigidity of the policies implemented and the cushioning capacities of the governments and financial institutions of countries in transition. In line with the empirical analysis undertaken we can highlight a two-fold conclusion.

Macroeconomic stability is vitally important for economic growth. Tamed inflation alleviates the investment risks and uncertainty and enhances the diversification of financial services. Low inflation also stimulates the demand for money, creating a favourable environ-ment for the deepening of financial intermediation. This condition is necessary (no one is arguing about it) but it is not sufficient. Another side of the coin is that institutional arrangements and micro-foundations of financial intermediation are as equally essential as macroeconomic regulation. A well-functioning payment system, positive real interest rates, proper managerial skills at low- and medium-levels of the banking sector, diversification of financial services — all are connected with and are affected primarily by monetary policy.

Based on the results of discussions and empirical estimations, three recommendations could also be formulated for the policymakers of countries in transition, especially in Central Asian states, the majority of which are still trying to find better strategies for systemic transformation:

1) Monetary policy should aim to increase the degree of monetisation of the economy. De-monetisation of the economy has made enormous damage to financial intermediation. Therefore, the first and most straightforward advice is to promote financial intermediation by all available means. This is not an easy task to accomplish. As Ghosh (1997) points out, there is probably an asymmetry in de-monetisation and re-monetisation under high inflation: high inflation leads to the shrinkage of money demand immediately and it takes significant time for low inflation to increase the demand for money. This can be explained by household behaviour: during high inflation, economic agents are quick to find ways to save on money holdings. But when low inflation returns, there is a little incentive for households to raise money holdings to the previous level. Monetary policy measures can and should be aimed at promoting the monetisation in the economy. Stimulation of competition, abolition of impediments to financial intermediation, promotion of diversification of financial services - these are the main areas for the policymakers to keep in mind.

2) Inflation is likely to have indirect detrimental effects on economic growth through either reducing the financial sector in size or bringing in more uncertainty and risk, thus

discouraging investment and growth. Therefore, it is crucial for the growth to curb inflation, not permitting it to grow beyond some 'threshold' level. On the other hand, extra-rigid disinflation should not be regarded as the most significant instrument in a short-term and achieved regardless of its side effects both on the financial sector and consequently on real sectors.

3) Building sound financial sector institutions is one of the most important tasks of systemic transformation. Transition to an efficient market economy could not be achieved without money-based transactions, smoothly organised payments, accumulation of savings, their rational use for productive investments, and strong financial order.

IV. *Conclusion*

The paper shows that the output decline was deeper and longer, while recovery slower in a country or group of states where dichotomy between initial conditions and implemented policies larger. In other words, decline within systemic transformation was deeper where initial conditions (domestic and external sectors of economy, social capital, institutions) were less favourable to radical reforms. The problem, therefore, was to adapt the policies to the specific circumstances and to choose the most appropriate tailor-made strategy in each country. Circumstances and quality of social capital were not only to be blamed, but uniform policies that had neglected to consider them properly and led to transformation traps with unexpected dichotomy between policies and outcomes:

1) Fast liberalisation of prices triggered high inflation, especially in countries which used to have almost completely administratively fixed prices with higher distortions and bigger "money overhang", it obtained the most destructive forms of hyperinflation.

2) Macroeconomic stabilisation attempting to curb rapidly growing inflation at any costs by rigid monetarist measures provoked enormous barter trade and inter-enterprise arrears. In other words, the policies aimed at relying mainly on monetary instruments to increase their role and sphere of influence on the real economy led to the opposite results: shrinkage of the size of the money based transaction segment of the economies with substantial decrease of money supply (de-monetisation).

3) Mass privatisation failed to create a large group of efficient owners and a middle class with a broad social base supporting reforms with new property rights. Instead, inefficient forms of insider ownership developed with corrupt managers and rent-seeking financial oligarchs who had made fast and large fortunes by raiding public property and formed a new anti-reform vested interest group, while huge social disparities led to a popular backlash.

4) Rapid disruption of traditional economic links and full opening up of the economy, in order to enhance its real sectors by exposing them to international competition, badly affected domestic industrial and agricultural production and led to the stagnation of real sectors of the economy.

5) Moreover, rapid price and trade liberalisation combined with mass privatisation triggered a huge capital flight via shadow sectors of the economy.

6) The fall in public domestic investment reinforced by financial disintermediation was not substituted by adequate growth of private domestic or foreign investment.

Cumulatively all this resulted in a huge production decline with disastrous negative

welfare effects. The main lesson of the first decade of systemic transformation is that the introduction of radical monetarist reforms, as a rule, were not justified. Both many macro- and micro-foundations and preconditions for a new money based economic co-ordination were not readily available in the majority of countries in transition. Moreover, a lack of institutions and skills obviously required a gradual and evolutionary path of systemic reform and structural adjustment. The paper also argues that not only low inflation but also maturity of the financial sector was of particular significance in the transition countries to cushion transformation shocks and to avoid huge output and income declines, providing faster recovery and achieving bolder economic growth. This conclusion, confirmed by econometric analysis, is important not only to understand better the roots of output decline in the past but also to make recommendations for the future. The balance between macro-economic stabilisation and policies promoting financial intermediation should be an indispensable component for a new generation of market reforms targeted at achieving sustained and rapid economic growth and human development within present and forthcoming stages of transition.

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