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How to Stabilize: Lessons from Post-communist Countries

BETWEEN 1989 AND 1991 the collapse of the Soviet bloc brought down the established political system in a number of countries.¹ With the rapid decline of the communist party's power throughout the region, and particularly following the collapse of the Soviet Union, it proved impossible to maintain an economic system based on hierarchical subordination, predominant state ownership, and a command-rationing allocation mechanism.² All previously communist-controlled countries therefore inherited both an economic system that no longer functioned properly and a political struggle for power.

The central problem has proved to be one of controlling inflation. In theory, liberalization and privatization can take place without price stabilization, but in practice this combination has not proved effective. At least in these countries, it has not proved possible to balance the budget or control monetary emission without large cuts in subsidies and

1. We focus on twenty-three countries: the fifteen countries that emerged from the Soviet Union, the seven commonly referred to as central or eastern Europe (Poland, the Czech Republic, Slovakia, Hungary, Romania, Bulgaria, and Albania), and Mongolia. We do not deal in detail with former Yugoslavia, because it had a very different starting point, nor East Germany, since it was incorporated into unified Germany with unique resources and problems. (However, some aspects of the stabilization experiences in Slovenia, Serbia, Macedonia, and Croatia are brought in where relevant.) Similarly, because of their structural economic differences, we do not deal with China and Vietnam (see Sachs and Woo, 1994).

2. See Kornai (1992).

far-reaching price liberalization. Price stabilization is therefore the necessary, although not sufficient, condition for effective reform.³

The large literature on macroeconomic stabilization and economic transformation in these countries is divided into three parts: policy prescription, formal models, and individual country studies. The policy prescription work, by both academics and international organizations, has been overwhelmingly in favor of complete stabilization and carrying out all other reforms with as much intensity as possible. In contrast, the formal models have almost unanimously argued that radical reform is too costly and a slower approach is preferable. Taking an intermediate position, individual country studies have found that radical policy has important advantages, but that slower reform can also have positive results.⁴

So far, however, there has been relatively little work comparing the reform experiences in all the post-communist countries. Among the important retrospective studies, Olivier Blanchard analyzes the experience in five central European countries, Stanislaw Gomulka compares Poland and Russia, and Daniel Citrin, Ashok Lahiri, and others review the evidence from the former Soviet Union. Only the European Bank for Reconstruction and Development's (EBRD) *Transition Report 1995*, and the studies by Martha de Melo, Cevdet Denizer, and Alan Gelb and Stanley Fischer, Ratna Sahay, and Carlos Végh discuss all the reforming countries, but they do not emphasize how reform policy is affected by, and feeds back into, political considerations.⁵

3. The leading retrospective studies of reform experiences focus on the importance of liberalization measures and give price stabilization a supporting role. For example, in a background paper for the *World Development Report* de Melo, Denizer, and Gelb (1996) measure the transition primarily in terms of the cumulative liberalization of internal prices, external markets, and private sector entry. In its *Transition Report 1995* the European Bank for Reconstruction and Development (EBRD) does not include stabilization policy or inflation as part of its otherwise comprehensive indexes measuring reform. This presumably reflects the view that liberalization, rather than low inflation, is of primary importance for reform. For a related discussion in a broader set of countries, see Sachs and Warner (1995).

4. For examples of policy prescription, see Lipton and Sachs (1990) and Fischer and Gelb (1991); of formal models, see Dewatripont and Roland (1992a, 1992b, 1995), Murrell and Wang (1993), and Labán and Wolf (1993); and of individual country studies, see Åslund (1995), Gomulka (1992), Hansson (1994), Johnson and Loveman (1995), Leitzel (1995), and Slay (1995).

5. Blanchard (1996); Gomulka (1995); Citrin and Lahiri (1995); European Bank for

There are four main questions. Has radical reform proved more costly or more beneficial than slower reform? What considerations have determined the choice of reform strategy? To what extent has radical or slow reform prevailed in elections and with public opinion? Which tactics have proved particularly effective for introducing and maintaining reform?

First we must define what we mean by the intensity and timing of reform, particularly because the terms “radical” and “gradual” have sometimes been misused. Table 1 shows the pattern of inflation, including the year in which inflation peaked and what happened subsequently. Table 2 supplements this with information about the pattern of liberalization over time, using the World Bank index that is presented in de Melo, Denizer, and Gelb’s study (such that zero indicates no reform and one indicates full reform) and also an index generated by the EBRD (such that zero indicates no reform and four indicates full reform).

By radical we mean that a country has tried to undertake a maximum of reform given its initial conditions. Our definition of radical reform focuses on two criteria: how rapidly inflation was brought under control, and the change in the level of the liberalization index. In all the countries with radical reform, inflation peaked in the year of price liberalization and then fell. Gradual reformers have a peak in inflation usually one year after liberalization, while in most of the remaining countries inflation continued to accelerate. While price stabilization is only one component of reform, in post-communist countries it has been highly correlated with liberalization. Figure 1 shows that countries with high inflation have tended to carry out the least liberalization as measured by de Melo, Gelb, and Denizer’s index.⁶

Data from post-communist countries should be treated with great caution. Since we deal with many countries, we have little choice but

Reconstruction and Development (1995); de Melo, Denizer, and Gelb (1996); Fischer, Sahay, and Végh (1996).

6. This correlation does not simply reflect differences in conditions between the former Soviet Union and central Europe. When we include dummy variables for the former Soviet Union and war-torn areas, the negative cross-country correlation between inflation and liberalization remains strong. The Soviet Union dummy captures different underlying structural factors, such as greater reliance on military-industrial production, a longer history of communism, greater reliance on trade within the communist bloc, and membership in the ruble zone when control over money creation disintegrated.

Table 1. Inflation in Post-communist Countries^a

Percent, except where indicated

<i>Country and classification</i>	<i>Year of peak</i>	<i>Level in year of peak</i>	<i>Level in next year</i>	<i>Level 2 years later</i>	<i>Level in 1994</i>	<i>Level in 1995</i>
Non-socialist						
<i>Radical reform</i>						
Poland	1990	586.0	70.3	43.0	32.2	31.7
Czech Republic	1991	56.7	11.1	20.8	10.2	10.0
Slovakia	1991	61.2	10.1	23.0	14.0	11.4
Albania	1992	225.9	85.0	28.0	28.0	9.3
Estonia	1992	1,069.0	89.0	48.0	48.0	30.0
Latvia	1992	951.2	109.0	36.0	36.0	27.4
<i>Gradual reform</i>						
Hungary	1991	34.2	22.9	22.5	19.0	29.0
Bulgaria	1991	333.5	82.0	72.8	89.0	70.0
Lithuania	1992	1,020.3	390.2	72.0	72.0	25.0
Russia	1992	1,353.0	896.0	220.0	220.0	184.0
Kyrgyz Republic	1993	1,208.7	280.0	48.6	280.0	48.6
Ex-communist						
<i>With democratization</i>						
Romania	1993	256.0	131.0	33.4	131.0	33.4
Moldova	1992	1,276.0	789.0	327.0	327.0	25.4
Belarus	1994	2,200.0	...	...	2,200.0	703.1
Ukraine	1993	4,735.0	842.0	342.0	842.0	342.0
<i>Without democratization</i>						
Kazakhstan	1994	1,980.0	...	...	1,980.0	177.1
Uzbekistan	1994	746.0	...	...	746.0	254.0
Turkmenistan	1993	3,102.0	2,400.0	2,500.0	2,400.0	2,500.0
War-torn						
<i>Former Soviet Union</i>						
Georgia	1994	18,000.0	...	...	18,000.0	163.9
Armenia	1994	5,458.0	...	...	5,458.0	179.0
Azerbaijan	1994	1,500.0	...	...	1,500.0	535.7
Tajikistan	1993	2,195.0	452.0	240.0	2,195.0	240.0
<i>Former Yugoslavia</i>						
Macedonia	1992	1,925.2	248.0	65.0	65.0	17.8
Croatia	1993	1,516.0	98.0	2.9	98.0	2.9
Other						
Slovenia	1992	201.0	32.0	19.8	19.8	10.0
Mongolia	1992	321.0	183.0	145.0	145.0	65.0

Source: In general, data for all columns except the last are from de Melo, Denizer, and Gelb (1996), and data for the last column are from *World Bank Country Studies* (various countries and years). For Tajikistan and Turkmenistan, levels two years after peak and in 1995 are estimates from European Bank for Reconstruction and Development (1995).

a. The series used is the consumer price index, average in current year to average in previous year.

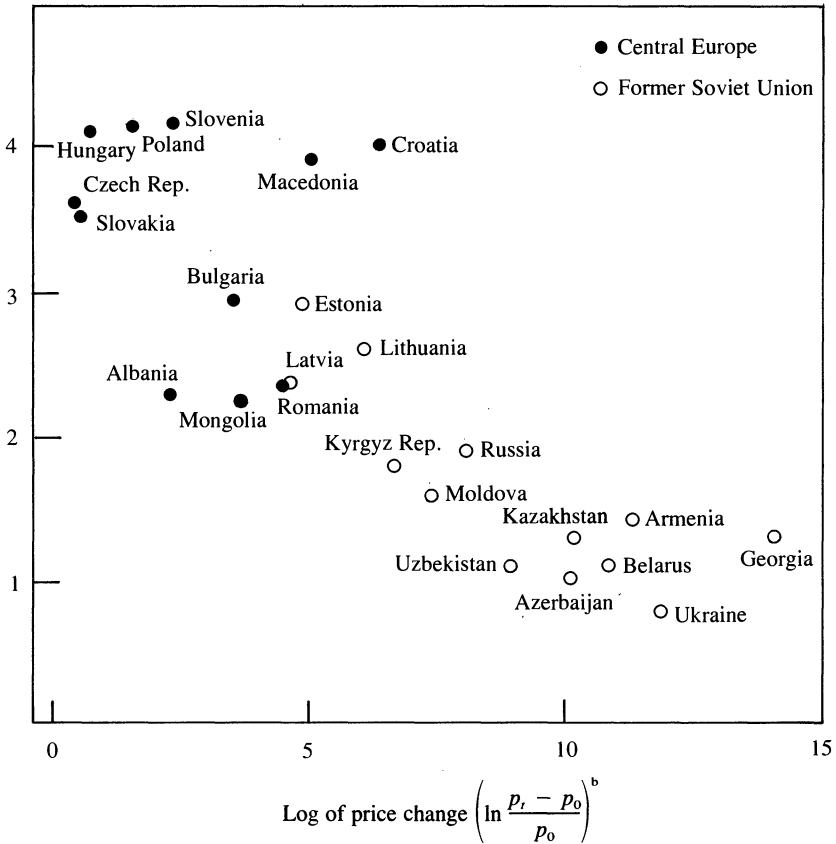
Table 2. Liberalization in Post-communist Countries
Index, except where indicated^a

<i>Country and classification</i>	<i>Year of most intense reform</i>	<i>Prior level</i>	<i>Change in year of most intense reform^b</i>	<i>Change over next 2 years^b</i>	<i>Level in 1994</i>	<i>Level in 1995</i>
Non-socialist						
<i>Radical reform</i>						
Poland	1990	0.24	0.44	0.14	0.86	3.4
Czech Republic	1991	0.16	0.63	0.11	0.90	3.6
Slovakia	1991	0.16	0.63	0.07	0.86	3.4
Albania	1992	0.24	0.42	0.04	0.70	2.6
Estonia	1992	0.32	0.32	0.25	0.89	3.4
Latvia	1992	0.29	0.22	0.26	0.78	2.9
<i>Gradual reform</i>						
Hungary	1990	0.34	0.23	0.21	0.86	3.6
Bulgaria	1991	0.19	0.43	0.04	0.70	2.6
Lithuania	1991	0.33	0.22	0.22	0.82	3.0
Russia	1992	0.10	0.39	0.17	0.66	2.7
Kyrgyz Republic	1992	0.04	0.29	0.43	0.76	3.0
Ex-communist						
<i>With democratization</i>						
Romania	1990	0.00	0.22	0.23	0.71	2.6
Moldova	1992	0.10	0.28	0.19	0.55	2.7
Belarus	1993	0.20	0.13	...	0.36	2.1
Ukraine	1994	0.13	0.13	...	0.26	2.3
<i>Without democratization</i>						
Kazakhstan	1992	0.14	0.21	0.04	0.39	2.1
Uzbekistan	1992	0.04	0.22	0.17	0.43	2.1
Turkmenistan	1994	0.16	0.06	...	0.22	1.1
War-torn						
<i>Former Soviet Union</i>						
Georgia	1992	0.22	0.10	0.03	0.35	2.1
Armenia	1992	0.13	0.26	0.03	0.42	2.3
Azerbaijan	1992	0.04	0.22	0.09	0.35	1.7
Tajikistan	1992	0.11	0.09	0.10	0.30	1.7
<i>Former Yugoslavia</i>						
Macedonia	1990	0.41	0.21	0.06	0.78	2.7
Croatia	1990	0.41	0.21	0.10	0.86	2.9
Other						
Slovenia	1990	0.41	0.21	0.16	0.82	3.3
Mongolia	1991	0.00	0.44	0.17	0.67	...

Source: Data for all columns except the last are from de Melo, Denizer, and Gelb (1996). The last column presents an average calculated with data from European Bank for Reconstruction and Development (1995) by Sten Luthman (personal communication, Stockholm Institute of East European Economics, November 30, 1995).

a. The World Bank index is a weighted average of change from 0 to 1 along three dimensions: internal prices, external markets, and private sector entry; it does not include the level of inflation. The EBRD index (used only in the last column) runs from 0 to 4 (although 4* is used for some measures).

b. Difference in index levels.

Figure 1. Liberalization and InflationCumulative liberalization^a

Source: Data for cumulative liberalization are from de Melo, Denizer, and Gelb (1996); for the log of the price change, from *World Bank Country Studies* (various countries and years).

a. Cumulative liberalization is the sum of the liberalization indexes, by country, for 1989–94, inclusive.

b. Change in prices is calculated over 1991–95.

to use official statistics. The variations in inflation are so great that problems of measurement are of limited significance. Output is generally understated in the new market economies, but the degree of understatement varies greatly, and massive revisions of output are common. Therefore we treat output statistics with particular caution. Similarly, unemployment tends initially to be understated. The liberalization index

is a crude but reliable indicator of economic policy. Our empirical goal is to draw robust conclusions, in the sense that they would not be affected by likely measurement errors.

A striking correlation exists between political regime and economic policies. In these terms, post-communist countries can be divided into five groups. First, some countries opted for democratization, were initially ruled by liberal governments, and chose radical stabilization and liberalization. With the first year of radical reform given in brackets, these countries are Poland (1990), Czechoslovakia (1991), Estonia (1992), Latvia (1992), and Albania (1992).⁷ In each country inflation peaked in the year of reform and was then brought down rapidly to under 50 percent (see table 1). Table 2 shows that the liberalization index generally jumped by at least 0.3 (although Latvia had an increase of only 0.22) and reform continued over the following years until the de Melo, Denizer, and Gelb index reached the 0.8 to 0.9 range (Albania remained at 0.7 because of poor conditions for private sector entry).

A second group of countries had democratic regimes and initially non-socialist governments but chose, or ended up with, slower or less radical reform: Hungary, Lithuania, Bulgaria, Russia, and the Kyrgyz Republic.⁸ There were various reasons for postponing reforms or making them more gradual. Hungary had a conservative and nationalist government that had won elections against two liberal parties that desired more radical reforms. Table 2 shows Hungary had less change in its liberalization index than Poland in 1990 and over the period 1990–93, but because its 1989 liberalization was greater than Poland's, by 1993 both countries had reached the same level.⁹ Lithuania had a strongly nationalist government that initially focused on privatization

7. The split of Czechoslovakia into the Czech Republic and Slovakia on January 1, 1993 created two new countries that had already embarked on radical reform. Slovakia slowed privatization significantly, but the other dimensions of reform proceeded similarly in both countries; see de Melo, Denizer, and Gelb (1996, appendix) and European Bank for Reconstruction and Development (1995, table 2.1).

8. A "non-socialist" government is centrist or right-wing, as distinct from a government formed around a former communist party.

9. Although Hungary had undertaken the most far-reaching economic reform of all countries under communism, the post-communist Hungarian government took pride in proceeding gradually and maximizing current consumption (Kornai, 1995). In particular, the Hungarian government allowed its public expenditure to rise to a much higher share of GDP than under communism, while the countries that pursued radical reform brought down the share of public spending in GDP.

rather than liberalization or price stabilization. Both Bulgaria and Russia attempted radical economic reform, but their non-socialist governments were so politically weak that they faltered after about a year, and their attempts at reform collapsed before they had taken hold (in contrast to Poland where the reform government collapsed after its reforms had taken hold). The jump in Bulgaria's liberalization index in 1991, the year of its most intense reform, was of a similar size to that in Poland in 1990 and this was not reversed, but over the next two years change was slow and inflation crept higher. On the liberalization index, Russia's initial jump was almost as large as that of Poland, and change continued over the next two years. But Russia started from a lower level and so needed to do more, and inflation was not brought under control as quickly. The Kyrgyz Republic simply started its reforms relatively late and from a low level.

In all these cases it is possible to identify the year in which reform began: Bulgaria in 1991, Hungary in 1990, Lithuania in 1991, Russia in 1992, and the Kyrgyz Republic in 1992. With the exception of Hungary, all these countries had higher inflation after two years of reform than the countries that pursued radical reform early, and none had inflation of less than 50 percent by 1994. These countries either had a relatively small initial jump in their liberalization index (Hungary, Lithuania) or a very slow subsequent increase (Bulgaria). Russia's initial jump was larger than the Baltic countries' and smaller than Poland's or the Czech Republic's; its change over the next two years was smaller than the Baltic countries' but larger than Poland's or the Czech Republic's. The Kyrgyz Republic is an exception because the initial jump was small (0.29, as against 0.44 for Poland and 0.63 for the Czech Republic), but the following years saw quite radical reforms.

Third, in countries where the former communist rulers stayed in power ("ex-communist" countries), reform was initially delayed. This was the case both where there was some democratization (Romania, Moldova, Belarus, and Ukraine) and also where there was very little (Kazakhstan, Uzbekistan, and Turkmenistan). In Romania and Moldova inflation was brought down, but was still above 100 percent in 1994, while in the other countries it remains unclear whether inflation has been controlled. In terms of liberalization, there was some slight improvement for Romania, Moldova, Belarus, and Ukraine in 1992, but the subsequent pace has been very slow and all these countries were

in the 0.22 to 0.71 range on the liberalization index in 1994. For these gradual reformers it is often difficult to date the beginning of reform, and table 2 generally shows the earliest possible date.¹⁰

Fourth, high inflation and postponed liberalization characterize the war-torn countries of the former Soviet Union: Georgia, Armenia, Azerbaijan, and Tajikistan. The former Yugoslav republics of Croatia and Macedonia are relatively high on the liberalization index and show an improvement over time, but inflation remained above 50 percent through 1994. Slovenia is hard to classify because it emerged from Yugoslavia without much fighting; we include it and Mongolia in this group only for completeness.¹¹

To assess the extent of agreement on this ordering of reform outcomes across countries, and aware that various international organizations attach different weights to attributes of economic policies and environment, we evaluate four sets of rankings by the World Bank, the International Monetary Fund (IMF), the EBRD, and Ernst & Young. The World Bank and EBRD rankings do not include macroeconomic issues (such as the inflation rate), while the EBRD puts more emphasis on institutional development.¹² For the countries of the former Soviet Union in 1994 and 1995, all four organizations agree that five of the

10. The European Bank for Reconstruction and Development (1995, p. 68) puts the start of price liberalization in the year of most intense reform shown in table 2, with the following exceptions: Lithuania starts in 1992 rather than 1991; Bulgaria starts in 1991 but ends in 1992; Russia and the Kyrgyz Republic start in 1993 rather than 1992; Romania starts in 1993 rather than 1990; Moldova, Armenia, Uzbekistan, and Georgia start in 1994 rather than 1992; and Azerbaijan, Belarus, Kazakhstan, Turkmenistan, and Ukraine are shown as not having price liberalization through 1994.

11. Mongolia could reasonably be considered to have had a non-socialist government that followed gradual reform. In fact, a minority proreform lobby pressured for radical reform but only partially succeeded before a financial scandal contributed to its electoral defeat.

12. The World Bank's categories are internal prices, external markets, and private sector entry (de Melo, Denizer, and Gelb, 1996). The IMF's categories are fiscal consolidation, privatization and land restitution, government and institutional reform, legal framework, social safety net, and trade liberalization (Citrin and Lahiri, 1995). The EBRD evaluates enterprises (large- and small-scale privatization, as well as restructuring), markets and trade (price liberalization, trade and foreign exchange system, competition policy), financial institutions (banking reform and interest rate liberalization, securities markets and nonbank financial institutions), and legal reform (European Bank for Reconstruction and Development, 1995). Ernst & Young ranks business opportunity, political risk, credit rating, status of economy, stability, and business infrastructure ("Survey of Business Locations in Europe," *Financial Times*, October 24, 1995, p. 3).

“best” reformed countries are Estonia, Latvia, Lithuania, the Kyrgyz Republic, and Russia. They also agree that Turkmenistan, Tajikistan, and Azerbaijan all performed below average. Kazakhstan gets a higher ranking from the IMF and Ernst & Young than it does from the World Bank and the EBRD, but almost all the other countries have close to the same position across the rankings. The notable exception is Ukraine, on which the rankings differ widely.¹³

Based on our classifications above, we use the cross-country evidence to obtain new answers to the four standard questions. First, the statistical evidence shows that a substantial loss of output is inevitably associated with ending the communist system, and the cross-country evidence does not support the proposition that rapid reform results in a more rapid decline in output. Instead, we find that the timing of reform determines the timing of the decline in output and its recovery: countries that entered into reform early faced early declines in output, but they were also the first to achieve renewed growth.

Comparing groups of countries with similar starting conditions, in many cases the country commonly identified as pursuing the most radical reform does better, or no worse. This is true for Poland, compared with the rest of central Europe, and Estonia (the most radical reformer in the former Soviet Union), compared with the other Baltic countries. It is also true for Russia, which pursued a gradual reform program that was more intense than the reforms in most other parts of the former Soviet Union. Furthermore, contrary to most formal models we find that radical reform does not result in higher unemployment, does not slow private sector development, and does not prevent institutional development. In fact there is strong evidence that radically reforming countries have done better in most of these regards, particularly in the growth of new private firms and promarket institutions.

Second, there is strong evidence that the timing and intensity of reform is determined by the position of the former communist elite after the fall of communism. Governments controlled by members of the old communist elite, particularly state enterprise managers, initially pursued inflationary policies that transferred large amounts of resources to their supporters. Delayed or slow reform facilitated the elite’s acquisi-

13. The explanation may be the exact time of measurement; Ukraine undertook a major liberalization in early November 1994.

tion of economic resources. Yet as these transfers have declined and members of the former elite have acquired enormous wealth, the overall resistance to reform has weakened. Some have gained so much wealth that they now want policies that safeguard their acquisitions.

In contrast, reforms introduced by anti-communist governments invariably involve measures designed to break the extraordinary power of the former elite. With hindsight it is apparent that radical reform has proved the best way to eliminate subsidy-seeking behavior. In many cases it has not been possible for the government to remain in power, but in all cases a reform “breakthrough” has been achieved, so that the reforms have so far proved irreversible. Once the former communist elite is broken, its power cannot be rebuilt.

Third, cross-country experience indicates several lessons for the design and implementation of stabilization policy. Democratization can be strongly complementary to economic reform. In particular, reformers have found the creation of new political institutions that provide new norms as well as checks and balances to be a valuable means of locking in reform. The combination of an independent monetary authority and a fixed exchange, most noticeably in some form of a currency board system, has proved particularly effective. A preemptive strike by a small reform group may also be effective in changing the preferred actions of other groups. Foreign aid can play a key role, but only when it is highly conditional on policies that break the power of the former elite and permanently reduce the scope for rent seeking. Rules for drawing up budgets, and resolving any political deadlock, also appear to have been important.

Fourth, contrary to the predictions of most political economy models of reform, we find that radical reform does not lead to much of a popular backlash. Radical reformers have lost elections primarily because the proreform forces have been less united than the former communists. Gradualists are even more likely to lose elections. The public opinion poll data is quite clear: people want faster reforms, and there is much more dissatisfaction in countries that have not had effective macroeconomic stabilization.

The remainder of this paper is divided as follows. The next section examines the theoretical debate and empirical evidence concerning the optimal intensity of stabilization. The third section considers why many countries have pursued stabilization policies that have been less intense

than would appear optimal for society as a whole. The fourth section makes the case that immediate reform is popular and can win elections. The final section considers lessons for the design of stabilization policy packages.

Stabilization and Structural Transformation

There is broad agreement that the overall goal of policy in post-communist countries should be to move in the direction of a market economy based on private property. Even Alice Amsden, Jacek Kochanowicz, and Lance Taylor, who represent an extreme in terms of their preference for a greater role for the state and industrial policy during and after the transition, agree that there is a need for such a transition at both the firm and macroeconomic levels.¹⁴ There is also agreement that some degree of macroeconomic stabilization is required, and that this forces state enterprises to contract and pushes people into the new private sector. However, there is strong disagreement about how fast and how far the budget deficit and subsidized credits to firms should be reduced.

Once subsidies to industry are removed, the demand for labor in the industrial sector falls. In the standard neoclassical model, if real wages do not adjust downward to maintain full employment, if workers need time to find new employment, or if the private sector takes time to create new jobs, then there will be unemployment during the adjustment.¹⁵ The economic policy and theoretical literature has presented several arguments as to why the state should intervene to slow this process. In this section we examine to what extent the theoretical reasoning is supported by the data.

The Case for Negative Externalities

According to the standard argument for early and radical reform, in the absence of externalities and market imperfections, the optimal pol-

14. Amsden, Kochanowicz, and Taylor (1994).

15. A good example of this model, applied to trade reform, is given in Mussa (1986). Blanchard (1996) uses the framework for his discussion of transition in eastern Europe.

icy is to reform the economy as fast as possible.¹⁶ Delay or more gradual change can only be optimal if private adjustment costs differ from social adjustment costs.

For formerly planned economies, most of the arguments against radical reform are based on the idea that social adjustment costs are larger than private adjustment costs. Thus negative externalities mean that economic agents will adjust too fast if left to their own devices, and the goal of policy should be to slow down the necessary changes. Four main concerns have emerged in this discussion: the disruption of production, the creation of excessive unemployment, constraints on private sector growth, and problems for institutional development. We review each of these arguments in turn and assess which theoretical points are confirmed by the evidence.

DISRUPTION OF PRODUCTION. Probably the most hotly debated question in post-communist countries is whether more radical reform leads to a greater fall in output. The controversy began when the Balcerowicz plan, implemented in Poland at the beginning of 1990, resulted in a much larger contraction in output than had been expected.¹⁷ At the same time it appeared that Hungary's more gradual reform would avoid this loss. There appears to be a range of explanations for why radical policy causes excessive falls in output. Other measures of performance may have more merit, but output has gained the most attention.¹⁸ Table 3 presents the raw data on output decline.

16. This proposition is clearly stated by Mussa (1986, pp. 69–70). For the case of a tariff reduction, he shows that “when private economic agents who control the disposition of productive resources have rational expectations which allow them correctly to calculate the values of locating these resources in alternative activities, and when there are no distortions of the adjustment process that cause these agents to see private adjustment costs that differ from social adjustment costs, then the adjustment process subsequent to an immediate change of commercial policy to its long-run optimum will be socially efficient. By implication, a slowing down of the implementation of the policy of trade liberalization, which would reduce the privately perceived incentive to relocate resources outside of previously protected industries, would result in a less socially desirable adjustment path for the economy.”

17. The policies were named after Leszek Balcerowicz, minister of finance and deputy prime minister. Personal communication with Sten Luthman (Stockholm Institute of East European Economies, November 30, 1995) indicates that the initial estimate of the decline in GDP in 1990 was 20 percent, although this number does not appear to have been published. Revisions suggest instead a fall of 11.6 percent. Overall, the latest numbers suggest that GDP fell by only 8 percent in 1990.

18. Output does not necessarily reflect living standards, and consumption has in-

Two main sets of theories have been developed. First, several models assume the presence of sector-specific capital that cannot be turned to alternative uses. In the work of Andrew Atkeson and Patrick Kehoe reform destroys established information capital in declining sectors, while new information capital takes time to develop. A similar argument is made by Peter Murrell and Yijang Wang. Wei Li and Blanchard argue that reform disrupts interfirm relationships, particularly between suppliers and their customers. In these models slower reform implies lower output losses because it allows the new sector to develop faster relative to the decline of the old sector.¹⁹

Second, models with important nominal rigidities also predict lower output losses when reform is less radical. For example, Guillermo Calvo and Fabrizio Coricelli argue that imperfections in the credit market mean that state firms are starved of credit, and that output can be boosted by providing more credit. A similar argument is made by Amsden, Kochanowicz, and Taylor, who emphasize wage and price rigidities. Both sets of authors argue that the fall in output was unnecessarily large because the anti-inflation policy was too tight. Both imply that overly tough stabilization policy actually slowed the economic transition.²⁰

These theoretical arguments have been refuted by de Melo, Denizer, and Gelb, who argue empirically that more reform has positive effects on the economy.²¹ Their cross-country regression results show that cumulative liberalization is positively correlated with output performance, and they infer that output fell less in countries where there was more reform.

creased as a percentage of GDP as post-communist countries have stabilized. European Bank for Reconstruction and Development (1995) presents evidence that living standards increase with reform. However, living standards are hard to measure, and this debate remains inconclusive. Life expectancy at birth has declined a great deal in Russia, comparing 1993 and 1994 with the 1980s. In contrast, there has been a much smaller fall in life expectancy in other parts of the former Soviet Union, and very little or no decline in central Europe (Skolnikov, 1995).

19. Atkeson and Kehoe (1993); Murrell and Wang (1993); Li (1994); Blanchard (1996).

20. Calvo and Coricelli (1992); Amsden, Kochanowicz, and Taylor (1994).

21. de Melo, Denizer, and Gelb (1996). Similar regression results are obtained by Sachs and Warner (1996). Further informal arguments, in particular that lowering inflation helps investment to recover, are offered by European Bank for Reconstruction and Development (1995). Johnson, Kouvelis, and Sinha (1996) formally model the idea that sufficiently radical reform reduces uncertainty and prevents firms from simply waiting for further developments.

Table 3. Output Decline in Post-communist Countries
Index, except where indicated^a

<i>Country and classification</i>	<i>Year of most intense reform</i>	<i>Change from 1989 to year of most intense reform^b</i>	<i>Change in year of most intense reform^b</i>	<i>Level 2 years later</i>	<i>Level at end 1994</i>	<i>Level at end 1995</i>
Non-socialist						
<i>Radical reform</i>						
Poland	1990	...	-11.6	84.3	91.9	97.4
Czech Republic	1991	-1.0	-14.2	78.6	80.7	83.8
Slovakia	1991	-2.5	-14.5	74.3	77.9	81.4
Albania	1992	-35.0	-7.2	72.1	72.1	77.7
Estonia	1992	-18.8	-25.8	60.1	60.1	63.7
Latvia	1992	-11.2	-43.9	42.6	42.6	42.6
<i>Gradual reform</i>						
Hungary	1990	...	-3.5	82.5	83.5	84.2
Bulgaria	1991	-9.1	-11.7	72.3	73.3	74.8
Lithuania	1991	-6.9	-15.0	36.6	37.3	39.2
Russia	1992	-15.9	-18.5	51.2	51.2	49.1
Kyrgyz Republic	1992	-2.0	-19.0	49.0	49.0	49.5
Ex-communist						
<i>With democratization</i>						
Romania	1990	...	-5.6	75.0	78.6	81.9
Moldova	1992	-19.9	-25.0	42.7	42.7	43.3
Belarus	1993	-15.5	-10.6	52.0	60.4	52.0
Ukraine	1994	-31.3	-23.0	...	52.9	47.6
<i>Without democratization</i>						
Kazakhstan	1992	-12.8	-13.0	49.6	49.6	43.2
Uzbekistan	1992	3.4	-9.5	88.2	88.2	83.6
Turkmenistan	1994	-18.6	-20.0	...	66.0	62.7
War-torn						
<i>Former Soviet Union</i>						
Georgia	1992	-36.1	-43.4	14.2	14.2	13.5
Armenia	1992	-16.4	-52.3	35.7	35.7	37.4
Azerbaijan	1992	-12.4	-35.2	35.7	35.7	32.6
Tajikistan	1992	-9.3	-28.9	45.1	45.1	43.6
<i>Former Yugoslavia</i>						
Macedonia	1990	...	...	...	...	...
Croatia	1990	...	-8.5	67.8	66.2	68.5
Other						
Slovenia	1990	...	-3.4	82.8	88.5	92.9
Mongolia	1991	-5.6	-9.2	75.2	73.7	...

Source: *World Bank Country Studies* (various countries and years).

a. Output is an index of GDP, 1989 = 100.

b. Percentage change.

Table 4. Explaining Output Change in Post-communist Countries^a

Constant	0.32*	0.84*	0.89*	0.86*
	(0.07)	(0.13)	(0.06)	(0.05)
Cumulative liberalization index ^b	0.13*	0.00	...	...
	(0.03)	(0.35)		
Log of price change	...	...	-0.05*	-0.01
$\left(\ln \frac{p_t - p_0}{p_0}\right)^c$			(0.01)	(0.01)
Ruble zone dummy ^d	...	-0.32*	...	-0.31*
		(0.08)		(0.09)
War-torn dummy ^e	...	-0.19*	...	-0.19*
		(0.06)		(0.08)
<i>Summary statistic</i>				
R ²	0.46	0.77	0.64	0.79
N	24	24	22	22

Source: de Melo, Denizer, and Gelb (1996); *World Bank Country Studies* (various countries and years).

a. The dependent variable is output change (1989–95). The regressions shown use data from all the countries listed in tables 1–3, with the following exceptions due to lack of information: the first two columns exclude Macedonia and Mongolia; the last two columns exclude Macedonia, Mongolia, Tajikistan, and Turkmenistan. Standard errors are shown in parentheses; * denotes significance at the 5 percent level.

b. Cumulative liberalization index is the sum of liberalization indexes, by country, for 1989–94, inclusive.

c. Change in prices is calculated over 1991–95.

d. Ruble zone dummy is for all members of the former Soviet Union, including the Baltic countries.

e. War-torn dummy is for Armenia, Azerbaijan, Croatia, Georgia, Macedonia, and Tajikistan.

However, this cross-country statistical result is not robust and disappears under reasonable modifications of the specification, as table 4 shows. The first two columns of table 4 show the effect of regressing the output change (1989–95) on de Melo, Denizer, and Gelb's cumulative liberalization index (1989–94), both with and without dummy variables for being a member of the former Soviet Union and for being affected by war. For output change between 1989 and 1995 the liberalization index becomes insignificant once these dummy variables are included.²²

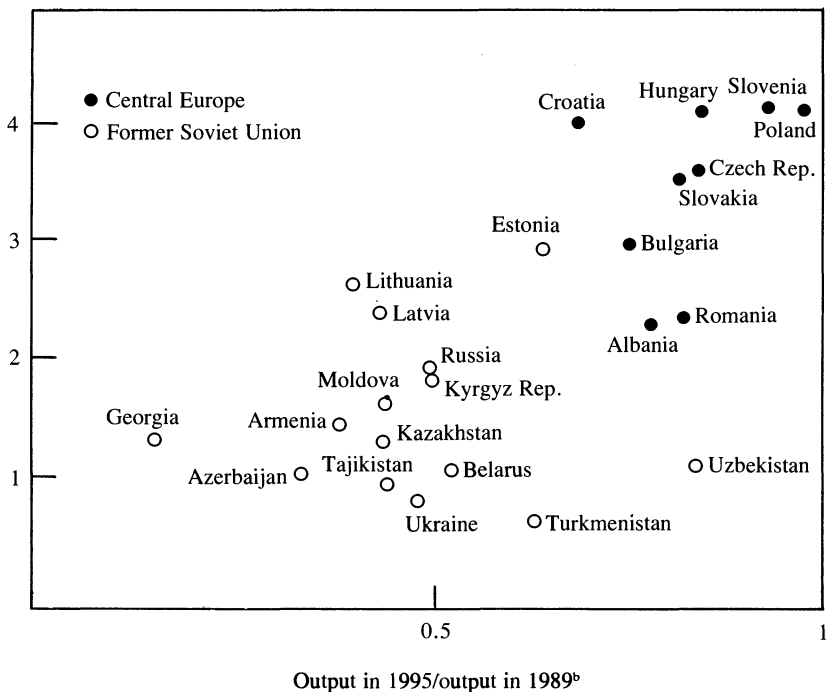
The last two columns in table 4 show the relationship between output change and inflation. Again, there is an apparently strong relationship: the coefficient on inflation is significant and negative. In this case the effect remains with the inclusion of a dummy for the former Soviet Union ("ruble zone dummy" in the tables), but it disappears with the inclusion also of a dummy for being affected by war.

Counter to both the formal models in the literature and the empirical

22. Exactly the same effect occurs from using the level of 1995 liberalization instead of cumulative liberalization. These results are not affected by excluding countries from former Yugoslavia.

Figure 2. Liberalization and Output Decline

Cumulative liberalization^a



Source: Data for cumulative liberalization are from de Melo, Denizer, and Gelb (1996); for output, from *World Bank Country Studies* (various countries and years).

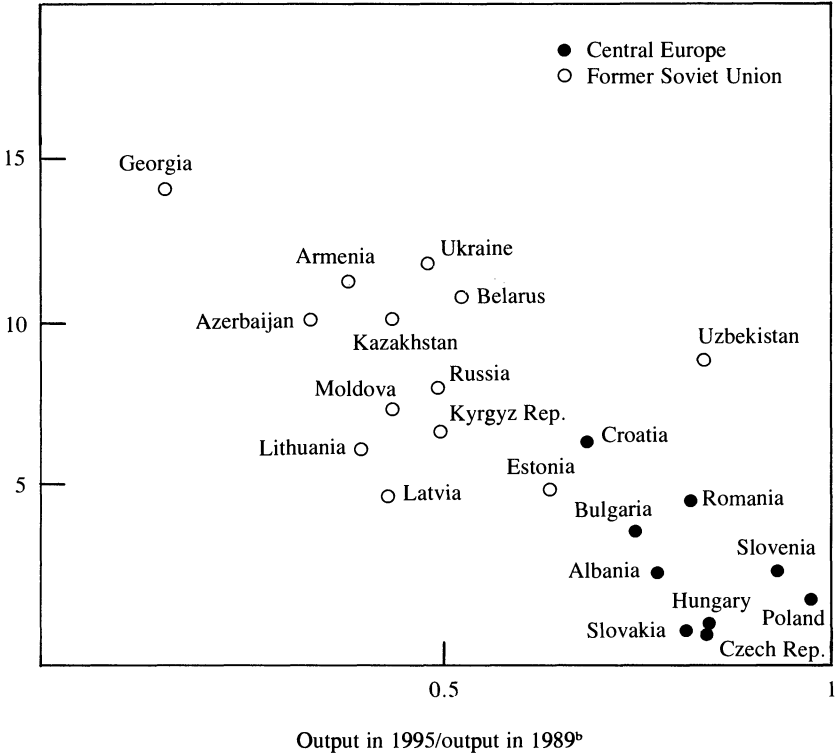
a. Cumulative liberalization is the sum of the liberalization indexes, by country, for 1989–94, inclusive.

b. Output is an index of GDP, 1989 = 100.

arguments of de Melo, Denizer, and Gelb, there is no robust significant correlation between output change and any measure of reform. Figures 2 and 3 help to explain this result. There is a relationship between reform and decline in output overall, but it is apparent that the pattern in central Europe is quite different than in the former Soviet Union (central European countries are indicated by solid dots; those of the former Soviet Union, by open dots). The most plausible explanation is that while every country in our sample had to endure a decline in output as part of its post-communist structural adjustment, the former Soviet republics had a worse legacy due to a larger military-industrial sector, a concentration in heavy industry, and a longer history of state planning

Figure 3. Inflation and Output Decline

$$\text{Log of price change} \left(\ln \frac{p_t - p_0}{p_0} \right)^a$$



Source: *World Bank Country Studies* (various countries and years).

a. Change in prices is calculated over 1991–95.

b. Output is an index of GDP, 1989 = 100.

and allocation decisions being made without an economic basis. Despite policies that ranged from the very radical to the very gradual, only three countries in the former Soviet Union, Estonia, Turkmenistan, and Uzbekistan, lost less than 40 percent of their measured output.²³ These countries also tended to have higher inflation and less liberalization for reasons of political economy and because of the turmoil in the ruble zone, particularly during 1992.

23. It is not possible to ascertain the precise size of the military-industrial sector in

Given this problem with cross-country data, it is necessary to look more closely at what happened in countries with similar starting conditions; countries differed markedly in terms of their initial level of reform, the extent of disruption caused by the breakup of previous trading arrangements, and the size of the military-industrial sector. With the average output level in 1989 as the base, table 3 shows how output fell before reform began, at the beginning of reform, and over the next two years.²⁴ Furthermore, comparison of the numbers for 1994 and 1995 yields an overall picture of comparative performance. We focus on comparisons within three sets of countries with similar starting conditions: central Europe, particularly Poland compared to the other countries; the Baltic countries, particularly Estonia and Lithuania; and the rest of the former Soviet Union, particularly Russia and Ukraine.

Within central Europe, Poland has undoubtedly had the best cumulative performance so far. Its 1995 output was 97.4 percent of the 1989 level, while in no other country was this measure above 85 percent. In 1990, when Poland became the first country to introduce radical reform, its initial output decline seemed severe. Seen now from a comparative perspective, the measured falls of 11.6 percent in 1990 and 7 percent in 1991 seem remarkably mild, and the return to growth in 1992 is impressive, particularly as the growth rate has steadily increased, reaching 6 percent in 1995.

How much of the Polish advantage is simply due to starting reform earlier? To take into account the effect of the timing of reform, table 3 shows the decline in output preceding reform, in the first year of reform, and subsequently. The Czech Republic and Slovakia both show a larger fall in output than Poland or Hungary; and Slovakia shows a larger fall than Romania. As is evident from tables 1 and 2, Romania attempted

the various countries. However, it seems likely that while the share of this sector may have been as high as 25 percent in the U.S.S.R., it was probably an order of magnitude less, in the range of 3 to 5 percent, in Eastern Europe (for the U.S.S.R., see Åslund, 1989).

24. Output in the 1980s is also important, but the numbers are much less reliable. For 1989, the World Bank numbers show most countries with positive growth, ranging from very modest growth in Poland (0.2 percent) and the Czech Republic (0.4 percent) to high growth in Albania (9.8 percent) and Moldova (8.8 percent) (Dabrowski, 1994). These numbers are highly inconsistent with what we know about economic performance, particularly because there were pervasive shortages and prices were often extremely distorted. We do not use them in this paper.

some initial reforms in 1990 but proceeded at a much slower pace. The initial decline in output was smaller than in Poland, but the downward slide was greater and continued through 1992. Growth has subsequently picked up, but output in 1995 was still less than 82 percent of its 1989 level.

Within the former Soviet Union, Estonia—the country that undertook the most radical reforms—stands out for having done relatively well. Again, the output fall in 1992 seemed steep at nearly 26 percent, but in fact Estonia's position in 1994 and in 1995 was relatively good (see table 3). In contrast, tables 1 and 2 show that Lithuania began reform a little earlier but proceeded much more gradually, and table 3 shows that while the initial decline was small, by 1994 Lithuania's output had fallen to a level equal to only two-thirds of Estonia's output.²⁵

Russian reform was not very radical, but it was the most radical in the former Soviet Union outside of the Baltic countries and the Kyrgyz Republic.²⁶ It was certainly more radical than Ukrainian reform. And yet, by 1995 Russian output had declined less than Ukrainian output, and much less than that of most of the countries of the former Soviet Union (with the curious exception of Uzbekistan).²⁷

These direct comparisons suggest there is no evidence supporting the argument that radical reform leads to a greater fall in output. Even if viewed in the least favorable light, they are highly suggestive that more radical reform results in a lower output decline, other things being equal. Furthermore, in contrast to the rather weak statistical results for output change between 1989 and 1995, table 5 shows a significant negative relationship between the growth rate of output and inflation in 1995, and a positive relationship between growth in 1995 and the level of cumulative liberalization through 1995.

25. Lithuania also did worse than Latvia, which was more radical in terms of stabilization and about the same on liberalization, but was not as radical as Estonia.

26. A recent study by the IMF concludes that within the former Soviet Union, through 1994, the Baltic countries, the Kyrgyz Republic, and Moldova were most successful against inflation, while the Baltic countries, the Kyrgyz Republic, and Russia achieved most structural change (Citrin and Lahiri, 1995). This is essentially the same ranking as we give in tables 1 and 2.

27. It seems likely that Uzbekistan continues to maintain subsidies that support industry. Sooner or later these will fall in real terms, and industrial output will decline. However, its data appear highly unreliable and reported output may well continue to be overstated.

Table 5. Explaining Output Growth in Post-communist Countries^a

Constant	-8.6*	-7.7	13.4*	13.2*
	(2.0)	(5.3)	(2.4)	(2.7)
Cumulative liberalization index ^b	3.5*	3.3*	...	...
	(0.8)	(1.4)		
Log of price change $\left(\ln \frac{P_t - P_0}{P_0}\right)^c$	...	...	-3.5*	-3.4*
			(0.6)	(0.8)
Ruble zone dummy ^d	...	-0.6	...	-0.3
		(3.5)		(2.4)
War-torn dummy ^e	...	-0.1	...	-0.1
		(2.3)		(2.1)
<i>Summary statistic</i>				
R ²	0.47	0.47	0.64	0.64
N	25	25	23	23

Source: de Melo, Denizer, and Gelb (1996); *World Bank Country Studies* (various countries and years).

a. The dependent variable is output growth in 1995, in which output is an index of GDP, 1989 = 100. The regressions shown use data from all the countries listed in tables 1-3, with the following exceptions due to lack of information: the first two columns exclude Mongolia; the last two columns exclude Mongolia, Tajikistan, and Turkmenistan. Standard errors are shown in parentheses; * denotes significance at the 5 percent level.

b. Cumulative liberalization index is the sum of liberalization indexes, by country, for 1989-94, inclusive.

c. Change in prices is calculated over 1991-95.

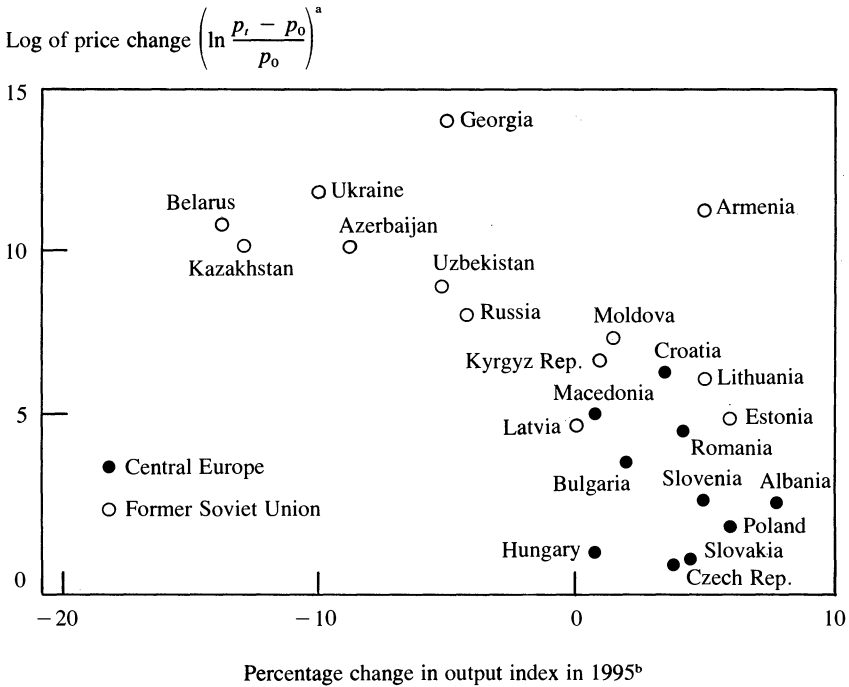
d. Ruble zone dummy is for all members of the former Soviet Union, including the Baltic countries.

e. War-torn dummy is for Armenia, Azerbaijan, Croatia, Georgia, Macedonia, and Tajikistan.

Figure 4 shows that in both central Europe and the former Soviet Union, those countries that stabilized earlier have now started to recover. Hence the timing of reform affected the timing of adjustment. By 1996 most countries, regardless of their early reform strategies, will likely have halted the decline in output. But the cross-country differences in the decline in output in the formerly socialist countries reflect underlying structural factors as well as reform strategies during the period 1991-95.

UNEMPLOYMENT. In the model of Blanchard, Simon Commander, and Coricelli, which is closely related to that of Philippe Aghion and Blanchard, reform means a reduction in subsidies that directly causes cuts in employment in the state sector. People fired from the state sector must search for a new job in the private sector. Search externalities mean that it takes time to find new work and unemployment is created. The optimal policy for a government that takes into account this externality is to slow reform (compared to the standard neoclassical prescription, for example, in Michael Mussa's model).²⁸

28. Blanchard, Commander, and Coricelli (1995); Aghion and Blanchard (1994); Mussa (1986).

Figure 4. Inflation and Growth

Source: *World Bank Country Studies* (various countries and years).

a. Change in prices is calculated over 1991–95.

b. Output is an index of GDP, 1989 = 100.

The relevance of this model depends on the assumption that faster reform leads to higher unemployment. Again, this view is influenced by the early experience of Poland, which had radical early reform and relatively high unemployment, but it cannot be maintained as a general proposition. Table 6 shows the overall unemployment rates across the region. Radical reform does not necessarily imply high unemployment, and slow reform does not always mean low unemployment. The Czech Republic has reformed very rapidly and has low unemployment. Bulgaria and Romania have proceeded much more slowly but have high unemployment. The former Soviet Union has consistently had lower unemployment than most of central Europe.

The theoretical model assumes that the creation of new jobs is either constant regardless of reform strategy, or slower if reform is more

Table 6. Unemployment in Post-communist Countries

Percent, except where indicated

<i>Country and classification</i>	<i>Year of most intense reform</i>	<i>Prior level</i>	<i>Change in year of most intense reform^a</i>	<i>Change over next 2 years^a</i>	<i>Level in 1994^b</i>
Non-socialist					
<i>Radical reform</i>					
Poland	1990	0.1	6.0	7.5	16.0
Czech Republic	1991	0.8	3.3	-0.6	3.2
Slovakia	1991	1.5	10.3	2.6	14.8
Albania	1992	8.6	18.6	-7.4	19.5
Estonia	1992	0.1	3.7	3.3	8.1
Latvia	1992	0.1	2.0	4.4	6.5
<i>Gradual reform</i>					
Hungary	1990	0.3	2.2	9.8	10.9
Bulgaria	1991	1.5	9.6	5.3	12.8
Lithuania	1991	0.0	0.3	4.1	3.8
Russia	1992	0.1	0.7	1.4	2.2
Kyrgyz Republic	1992	0.0	0.1	0.6	0.7
Ex-communist					
<i>With democratization</i>					
Romania	1990	0.0	0.0	8.4	10.9
Moldova	1992	0.0	0.7	0.5	1.2
Belarus	1993	1.0	0.5	...	2.1
Ukraine	1994	0.4	0.0	...	0.4
<i>Without democratization</i>					
Kazakhstan	1992	0.1	0.4	0.5	1.0
Uzbekistan	1992	0.0	0.1	0.2	0.3
Turkmenistan	1994	0.0	0.0	...	0.0
War-torn					
<i>Former Soviet Union</i>					
Georgia	1992	0.0	5.4	...	8.4
Armenia	1992	3.5	2.7	2.1	5.6
Azerbaijan	1992	0.1	0.1	0.7	0.9
Tajikistan	1992	0.0	0.3	1.4	1.7
<i>Former Yugoslavia</i>					
Macedonia	1990	...	...	...	19.0
Croatia	1990	0.0	9.3	8.5	18.0
Other					
Slovenia	1990	2.9	2.8	6.4	14.5
Mongolia	1991	...	...	...	...

Source: de Melo, Denizer, and Gelb (1996).

a. Percentage point difference.

b. For Georgia, data are for 1993.

Table 7. Explaining Unemployment in Post-communist Countries^a

Constant	-2.7 (1.9)	7.4 (3.8)	13.7* (2.2)	13.2* (1.5)	-1.9 (2.7)	19.4* (5.6)
Cumulative liberalization index ^b	4.3* (0.7)	1.7 (1.0)	...	...	...	...
Log of price change $\left(\ln \frac{P_t - P_0}{P_0}\right)^c$	...	...	-1.1* (0.3)	-0.0 (0.4)	...	...
Change in output ^d	...	...	...	...	14.4* (5.9)	-7.7 (6.8)
Ruble zone dummy ^e	...	-8.0* (2.5)	...	-11.3* (2.7)	...	-13.0* (2.4)
War-torn dummy ^f	...	3.3 (1.6)	...	3.1 (2.2)	...	1.0 (2.3)
<i>Summary statistic</i>						
R^2	0.6	0.76	0.33	0.73	0.22	0.72
N	25	25	25	25	24	24

Source: de Melo, Denizer, and Gelb (1996); *World Bank Country Studies* (various countries and years).

a. The dependent variable is the unemployment rate in 1994, except in the case of Georgia, for which the 1993 level is used due to lack of data for 1994. The regressions shown use data from all the countries listed in tables 1-3, with the following exceptions due to lack of information: the first four columns exclude Mongolia; the last two columns exclude Macedonia and Mongolia. Standard errors are shown in parentheses; * denotes significance at the 5 percent level.

b. Cumulative liberalization index is the sum of liberalization indexes, by country, for 1989-94, inclusive.

c. Change in prices is calculated over 1991-95.

d. Cumulative change in output is calculated over 1989-95. Output is an index of GDP, 1989 = 100.

e. Ruble zone dummy is for all members of the former Soviet Union, including the Baltic countries.

f. War-torn dummy is for Armenia, Azerbaijan, Croatia, Georgia, Macedonia, and Tajikistan.

radical. The empirical evidence, on the contrary, suggests there is no consistent relationship between output and employment across countries. Throughout the former Soviet Union unemployment has remained low despite the very great falls in output and a highly flexible labor market. When unemployment benefits are low in real terms, people do not register as unemployed. Direct survey evidence suggests that labor markets are extremely flexible in Russia and Ukraine, and workers tend to find new jobs as they leave their old jobs; no less than one-fifth of all Russian workers found new jobs in 1993. Thus they do not enter the pool of unemployed.²⁹

This lack of correlation between unemployment and reform strategies is confirmed by cross-country regression analysis. As table 7 shows, there is no correlation between unemployment in 1994 and cumulative liberalization or inflation (which measure the intensity of reform) when

29. Layard and Richter (1995).

dummies for the former Soviet Union and for being adversely affected by war are included.³⁰

Unemployment outcomes remain a considerable puzzle.³¹ Figure 5 plots 1994 unemployment against the natural log of price change from 1991 to 1995. Table 7 shows that unemployment is actually higher if a country's output in 1994 is higher than it was in 1989. However, with the inclusion of the same two dummies this coefficient also loses its significance.³² Surprisingly, it appears that unemployment is simply not correlated with the decline in output or any measure of the intensity of reform.

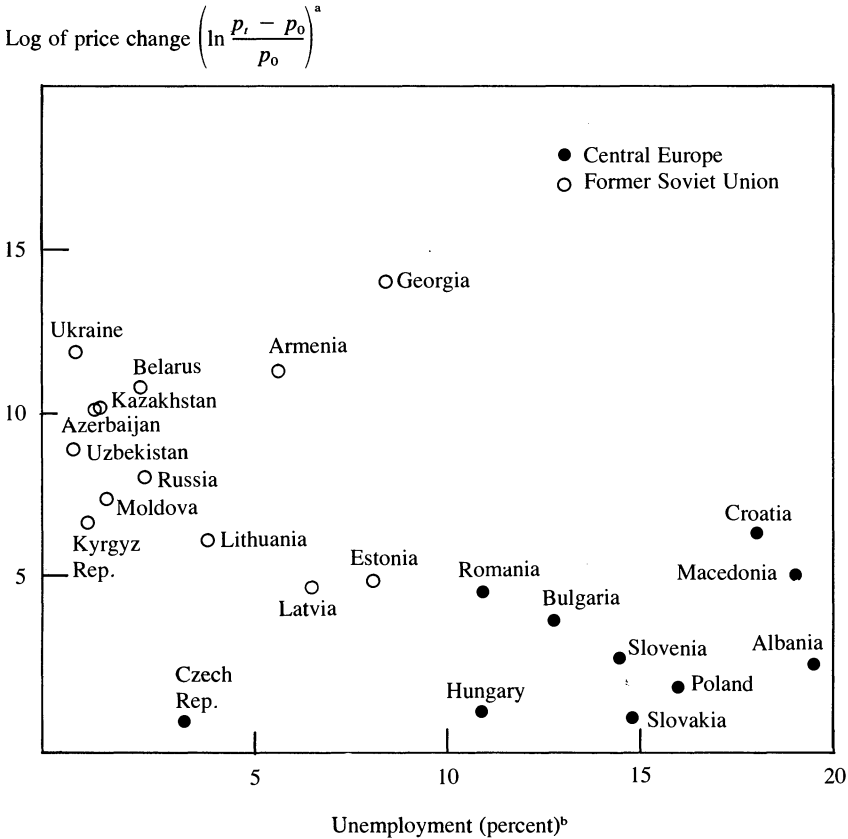
Direct comparisons between similar countries are again useful, particularly because there appears to be a large difference between outcomes in central Europe and the former Soviet Union and, in this case, some evidence that radical reform is more costly. Table 6 shows that Poland's unemployment rose by 6 percentage points in the first year of reform, and then increased by a further 7.5 percentage points over the next two years. In Albania, too, there was a large increase in unemployment during the year of most radical reform, although subsequently there was a fall. Slow-reforming Bulgaria had an increase of 9.6 percentage points in 1991, a year of relatively intense reform. Unemployment in Hungary, however, rose by almost as much (to 10.9 percent in 1994). Unemployment in Romania grew steadily, and even surged 5.4 percentage points in 1992, despite slow reform. The case against radical reform is weakened substantially by the experience of the Czech Republic, which had intense reform (measured by the liberalization index) but experienced rather low unemployment: a 3.3 percentage point in-

30. The coefficient on cumulative liberalization ceases to be significant when the ruble zone dummy is included. The coefficient on the log of price change is insignificant when both the ruble zone and war-affected dummies are included. The same results are obtained by using the 1993 level of unemployment regressed on policy measures through 1993.

31. Again there is measurement error, but taking this into consideration is likely to make more radical reform look better not worse. Registered unemployment is almost certainly lower than real unemployment in the former Soviet Union. For example, estimates suggest that unemployment in Ukraine may be above 10 percent and significantly higher than in Russia, where there has been more reform (International Labour Office, 1995).

32. The war-affected dummy is not itself significant, but adding it reduces the absolute value of the t statistic for the output decline from 1.77 to 1.14.

Figure 5. Inflation and Unemployment



Source: Data for the log of the price change are from *World Bank Country Studies* (various countries and years); and for unemployment, from de Melo, Denizer, and Gelb (1996).

a. Change in prices is calculated over 1991–95.

b. 1994.

crease in the year that reform began, and a 0.6 percent fall over the next two years.³³

In general, the decline in output in the former Soviet Union has been

33. The unemployment differential between the Czech Republic and Slovakia fits the sectoral shift model of Mussa (1986) and Blanchard (1996). Heavy industry and other contracting sectors were concentrated in Slovakia. The high-growth service sector, particularly related to tourism, is mainly in the Czech Republic.

larger but unemployment remains lower than in central Europe.³⁴ Estonia's reform policies were almost as intense as those of Poland, in terms of liberalization, and the stabilization was even more dramatic, but unemployment increased only 3.7 percentage points in the first year of reform and 3.3 percentage points in the following two years. The increase in Latvia was similarly moderate. Within the Baltic countries there is some confirmation that more radical reformers might have more unemployment. In 1994 Estonian unemployment was 8.1 percent, only slightly higher than that of Latvia (6.5 percent) but considerably above that of Lithuania (3.8 percent).

The Baltic countries also have significantly higher unemployment than the rest of the former Soviet Union (although, as shown above, their losses in output are comparable or perhaps a little less). The explanation is that in most of the former Soviet Union there has been very little unemployment, irrespective of the intensity of reform. Russia's reform in 1992 hardly produced any unemployment, and in December 1995 the official rate of the registered unemployed was only 3.1 percent, while the official estimate of actual unemployment was 8.2 percent.³⁵ Presumably, registered unemployment remained below actual unemployment because unemployment benefits were so low. However, even the estimated actual unemployment, which is based on the methodology of the Organisation for Economic Co-operation and Development and the International Labour Organisation, is not very high. Other former Soviet republics had even lower registered unemployment in spite of huge declines in official output.

These data suggest that unemployment has been a surprisingly limited problem in the post-communist transition, and they give very little support to the proposition that radical reform leads to higher social costs.

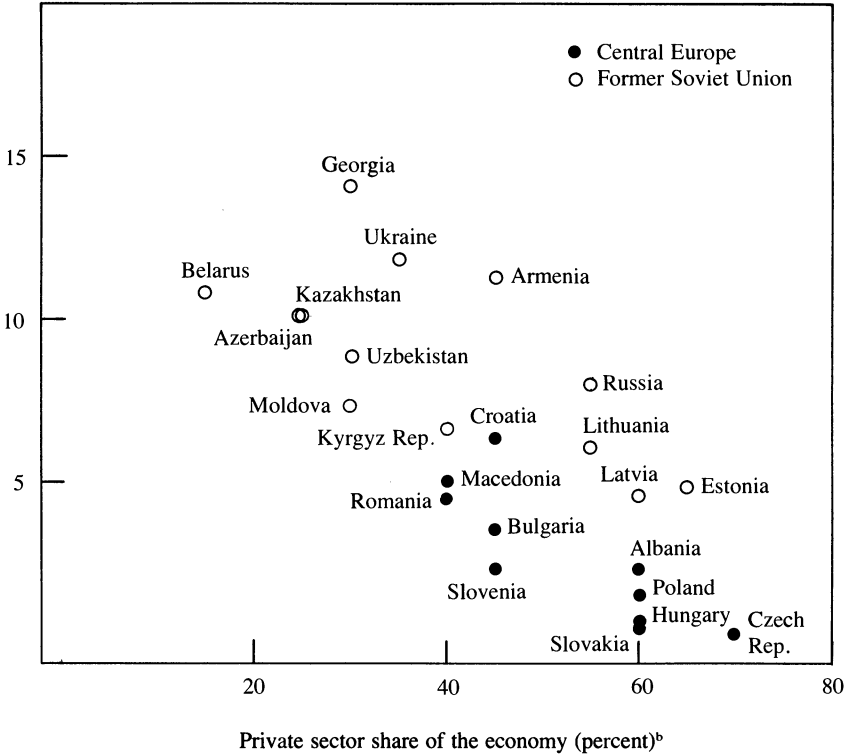
PRIVATE SECTOR DEVELOPMENT. In Aghion and Blanchard's model there is an additional negative externality because unemployment ben-

34. A full explanation of this phenomenon is outside the scope of this paper and requires more empirical work. But it appears likely that a large self-employment sector offers opportunities to earn a survival wage for some, and that interhousehold transfers take care of the rest (Johnson, Kaufmann, and Ustenko, 1995). Also, labor force survey data generally show higher unemployment rates than those calculated using registration data. Nevertheless, it is still something of a mystery why more people do not register as unemployed.

35. Stockholm Institute of East European Economies (1996, p. 10).

Figure 6. Inflation and Private Sector Share of the Economy

$$\text{Log of price change} \left(\ln \frac{P_t - P_0}{P_0} \right)^a$$



Source: Data for the log of the price change are from *World Bank Country Studies* (various countries and years); and for private sector share of the economy, from European Bank for Reconstruction and Development (1995).

a. Change in prices is calculated over 1991-95.

b. 1995.

efits are assumed to be paid for by taxes on the private sector. If faster cuts in subsidies mean higher taxes, then they can slow private sector development and make unemployment worse: “Even if restructuring increases output, its indirect effects through unemployment on private job creation may make it undesirable if unemployment is already high.”³⁶ They predict that more radical reform will lead to slower

36. Aghion and Blanchard (1994, p. 317).

private sector growth, and this position is supported by the “evolutionary” arguments of Murrell.³⁷ However, the evidence does not appear to support it.

It is empirically hard to separate out private sector development and privatization, but some conclusions are possible. Table 8 shows that private sector development is generally higher in countries with more liberalization and stabilization. Figure 6 shows the relative size of the private sector plotted against the natural log of the price change from 1991 to 1995. Figure 7 shows the same measure of private sector development plotted against cumulative liberalization.

Table 9 shows cross-country regression results using our sample. Both cumulative liberalization and the natural log of the price change are significant with the right signs (positive and negative, respectively) in a regression with share of the private sector in 1995 on the left-hand side and the former Soviet Union and war-affected dummies included on the right-hand side.³⁸ We obtain similar results when the dependent variable is instead the change in the share of the service sector in GDP from 1989 to 1994. The growth of the service sector reflects the rise of new activities, usually provided by private entrepreneurs.

Table 8 shows the detailed pattern of private sector development, as far as it can be ascertained. Rapid growth in the private sector’s share of the economy is generally only seen in radically reforming countries, although Hungary has also done well. In some of these countries the private sector has grown through privatization (for example, the Czech Republic), while in others the driving force has been the creation of start-up firms (for example, Poland).³⁹ In slow-reforming Bulgaria and Romania, on the other hand, the private sector is significantly smaller than that in Poland. Of the countries of the former Soviet Union, the

37. Murrell (1992).

38. This result is not affected by dropping the Czech Republic and Russia, the countries in which most of the private sector growth is due to mass privatization.

39. A very useful survey of the available quantitative and qualitative evidence on small enterprises is in European Bank for Reconstruction and Development (1995, pp. 147–51 and table 9.1). The latest numbers indicate that in Poland 60 percent of total employment is in small- and medium-scale enterprises, compared with only 37 percent in the Czech Republic and 10 percent in Russia. Estonia has 45 percent of total employment in this sector, while Romania has 27 percent, and Belarus has only 6 percent. Economies that have completely broken down may also have a lot of activity in the small-scale sector, although this is very hard to measure. The EBRD estimates that in Georgia 58 percent of employment was in this sector in 1994.

Table 8. Private Sector Share of GDP in Post-communist Countries^a

Percent, except where indicated

<i>Country and classification</i>	<i>Year of most intense reform</i>	<i>Prior level</i>	<i>Change in year of most intense reform^b</i>	<i>Change over next 2 years^b</i>	<i>Level in 1994</i>	<i>Level in 1995^c</i>
Non-socialist						
<i>Radical reform</i>						
Poland	1990	28.6	2.8	16.8	56.0	60
Czech Republic	1991	12.3	5.0	17.8	56.3	70
Slovakia	1991	...	...	...	43.8	60
Albania	1992	...	...	...	...	60
Estonia	1992	17.7	4.3	13.0	58.0	65
Latvia	1992	12.0	19.0	16.0	53.0	60
<i>Gradual reform</i>						
Hungary	1990	14.9	...	...	...	60
Bulgaria	1991	7.2	...	19.3	40.2	45
Lithuania	1991	11.6	3.8	...	...	55
Russia	1992	10.1	3.9	11.0	25.0	55
Kyrgyz Republic	1992	...	...	...	58.0	40
Ex-communist						
<i>With democratization</i>						
Romania	1990	12.8	3.6	10.0	35.0	40
Moldova	1992	36.0	2.0	...	...	30
Belarus	1993	8.1	...	...	...	15
Ukraine	1994	7.5	...	...	...	35
<i>Without democratization</i>						
Kazakhstan	1992	12.2	...	...	20.2	25
Uzbekistan	1992	9.8	-3.2	...	54.2	30
Turkmenistan	1994	...	...	...	...	15
War-torn						
<i>Former Soviet Union</i>						
Georgia	1992	27.3	12.7	19.6	60.0	30
Armenia	1992	24.2	12.5	...	...	45
Azerbaijan	1992	...	...	...	...	25
Tajikistan	1992	...	...	...	...	15
<i>Former Yugoslavia</i>						
Macedonia	1990	...	...	...	...	40
Croatia	1990	8.5	...	16.0	44.9	45
Other						
Slovenia	1990	8.1	3.3	8.1	...	45
Mongolia	1991	...	...	...	...	...

Source: All columns except the last are from European Bank for Reconstruction and Development (1995, tables 1 and 3). The last column is from EBRD (1995, table 2.1), with the following exceptions: Bulgaria and Croatia: prior level is for 1989 and is taken from EBRD (1993, table 3.1); Estonia and Uzbekistan: prior level and change in year of most intense reform are from EBRD (1993, table 3.2)—for Estonia, the numbers in these two columns are not consistent with those in the next two columns; Armenia: change in year of most intense reform is calculated as the difference between numbers in EBRD (1993, table 3.2) and EBRD (1995, table 2.1).

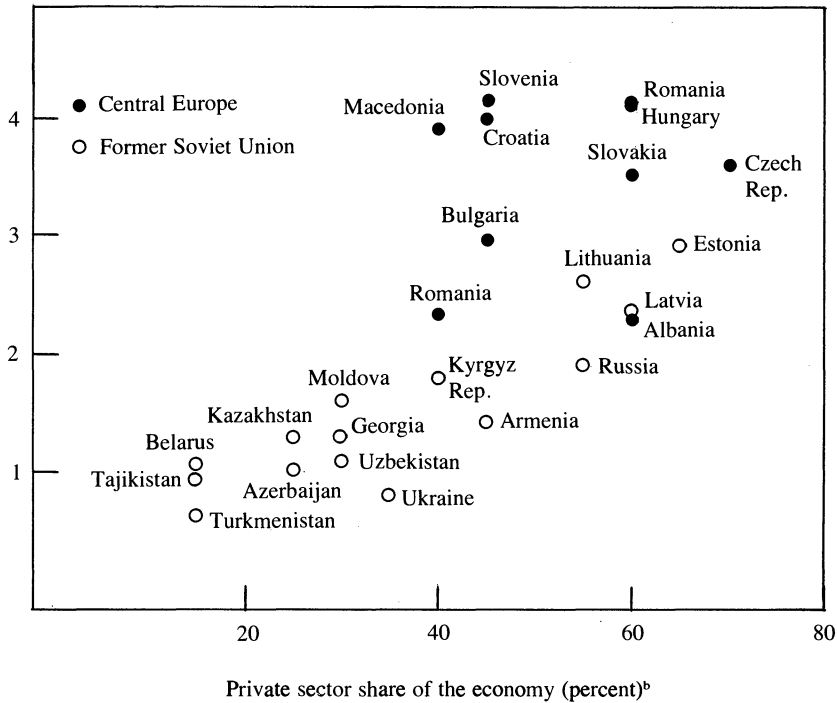
a. All estimates are for the "pure" private sector (that is, excluding cooperatives) and, as far as possible, for 100 percent privately owned companies, except in the case of Moldova, for which we use the share of employment in the "nonstate" sector. The numbers include agriculture (which is why the prior private sector share is so high in Poland).

b. Percentage point difference.

c. For Georgia, the Kyrgyz Republic, and Uzbekistan, the decline in the private sector share from 1994 to 1995 probably reflects measurement problems.

Figure 7. Liberalization and Private Sector Share of the Economy

Cumulative liberalization^a



Source: Data for cumulative liberalization are from de Melo, Denizer, and Gelb (1996); and for private sector share of the economy, from European Bank for Reconstruction and Development (1995).

a. Cumulative liberalization is the sum of the liberalization indexes, by country, for 1989–94, inclusive.
 b. 1995.

pattern in Estonia is very similar to that in Poland, while Latvia’s private sector may have grown somewhat faster. For the rest, the numbers are not very reliable: note, for example, the odd discrepancy between the 1994 and 1995 levels in Russia and Uzbekistan. Once again, however, there is no evidence that faster reformers have done worse in this regard.

If anything, the cross-country regression evidence suggests that radical reformers have had more private sector development and more growth in the service sector (which tends to comprise mostly start-up firms), irrespective of whether they have also managed to introduce a mass privatization program. Aghion and Blanchard’s externality has

Table 9. Explaining Private Sector Share of GDP in Post-communist Countries^a

	<i>Dependent variable</i>			
	<i>Private sector share of economy (1995)</i>		<i>Change in service sector share (1989–94)^b</i>	
Constant	9.3 (12.1)	64.1* (3.7)	-12.6 (9.7)	17.1* (3.8)
Cumulative liberalization index ^c	12.8* (3.3)	...	7.0* (2.7)	...
Log of price change $\left(\ln \frac{P_t - P_0}{P_0}\right)^d$	...	-4.9* (1.1)	...	-2.7* (1.1)
Ruble zone dummy ^e	9.6 (7.9)	16.2* (7.4)	8.0 (6.3)	11.6 (7.3)
War-torn dummy ^f	-9.5 (5.2)	8.8 (6.2)	-14.9* (4.5)	-6.5 (6.2)
<i>Summary statistic</i>				
<i>R</i> ²	0.61	0.66	0.49	0.49
<i>N</i>	25	23	26	24

Source: de Melo, Denizer, and Gelb (1996); European Bank for Reconstruction and Development (1993, 1995); *World Bank Country Studies* (various countries and years).

a. The regressions shown use data from all the countries listed in tables 1–3, with the following exceptions due to lack of information: the first column excludes Mongolia; the second excludes Mongolia, Tajikistan, and Turkmenistan; the last two columns exclude Tajikistan and Turkmenistan. Standard errors are shown in parentheses; * denotes significance at the 5 percent level.

b. Percentage point difference.

c. Cumulative liberalization index is the sum of liberalization indexes, by country, for 1989–94, inclusive.

d. Change in prices is calculated over 1991–95.

e. Ruble zone dummy is for all members of the former Soviet Union, including the Baltic countries.

f. War-torn dummy is for Armenia, Azerbaijan, Croatia, Georgia, Macedonia, and Tajikistan.

not proved empirically important. The explanation is, first, that the new private sector has invariably begun in the service sector, where companies are small, and it has proved extremely difficult for the authorities to collect taxes from these firms. In fact, governments have generally faced the opposite problem: as the private sector has grown, tax revenues have declined, and they have been forced to cut state expenditure or raise taxes on the state sector. Second, as discussed above, in many countries a low level of unemployment benefits has kept registered unemployment down.

INSTITUTIONAL DEVELOPMENT. There is also an argument, put forward by Murrell, that rapid reform slows the development of new institutions; institutions take time to develop and gradualism provides the necessary

opportunity.⁴⁰ In addition, it is often argued that without new institutions, such as a judiciary that enforces property rights, economic reforms such as privatization may be ineffective or harmful.⁴¹

The first question to ask is whether institutional development is hindered by more rapid reform. Measuring institutional development is hard, but the EBRD has attempted to do this for all the reforming countries under consideration here (except Mongolia) in two important areas: laws and legal practices, and banking and financial markets. The IMF has ranked institutional reform and the development of government and the legal framework in the former Soviet Union.⁴²

Table 10 shows regression results with these alternative indexes of institutional development as the dependent variable and the right-hand-side regressors used previously. The cumulative liberalization index is positive and significant in both cases, and the log of cumulative inflation is significant and negative for the IMF's measure for the former Soviet Union (and misses being significant for the EBRD measure by the narrowest possible margin). This result, and the raw data, indicates that the countries that stabilized early show at least as much institutional change as those with slower overall reform. The key problems in institutional development, such as weak banks and bad debts in the banking system or lack of enforcement for property rights, can usually be attributed to the postponement of real reform. If anything, the evidence suggests that institutional development is stimulated by early and radical reform.

There is a good deal of logic behind a positive correlation between radical reform and the evolution of promarket economic institutions. A government that embraces radical macroeconomic stabilization and rapid liberalization is also likely to speed up the introduction of accompanying legal changes; these are complementary policies. At the same time, the existence of private enterprise and market relations creates demands for institutions that will defend property rights, enforce contracts, and so forth; this is an example of positive externalities at work.

40. See Murrell (1992).

41. See Frydman and Rapaczynski (1994, ch. 6).

42. See European Bank for Reconstruction and Development (1995, table 2.1) and, for the IMF, Citrin and Lahiri (1995).

Table 10. Explaining Institutional Development in Post-communist Countries^a

	<i>Dependent variable</i>			
	<i>EBRD measure of institutional development (1994)^b</i>		<i>IMF measure of institutional development (1994)^c</i>	
Constant	3.2* (0.9)	9.1 (0.4)	1.0* (0.5)	6.6* (0.9)
Cumulative liberalization index ^d	1.5* (0.3)	...	1.5* (0.3)	...
Log of price change $\left(\ln \frac{P_t - P_0}{P_0}\right)^e$	...	-0.3 (0.1)	...	-0.4* (0.1)
Ruble zone dummy ^f	0.3 (0.6)	-0.9 (0.9)	...	...
War-torn dummy ^g	-1.2* (0.4)	-0.3 (0.7)	-0.8 (0.4)	-0.3 (0.7)
<i>Summary statistic</i>				
<i>R</i> ²	0.85	0.65	0.81	0.67
<i>N</i>	25	23	15	13

Source: The EBRD measure is taken from European Bank for Reconstruction and Development (1995, table 2.1), by adding the scores for legal reform, banking reform, and security market reform. The IMF measure is taken from Citrin and Lahiri (1995).

a. The regressions shown use data from all the countries listed in tables 1-3, with the following exceptions due to lack of information: the first column excludes Mongolia; the second excludes Mongolia, Tajikistan, and Turkmenistan; the third excludes all countries not formerly in the Soviet Union; the fourth excludes all countries not formerly in the Soviet Union, as well as Tajikistan and Turkmenistan. Standard errors are shown in parentheses; * denotes significance at the 5 percent level.

b. The EBRD's 1994 index measuring institutional development in all countries under consideration here, except Mongolia, is calculated by adding the scores for legal reform, banking reform, and security market reform.

c. The IMF's 1994 index measuring institutional development in all countries of the former Soviet Union is calculated by assigning numerical values of 1 to "little," 1.5 to "little-moderate," 2 to "moderate," 2.5 to "moderate-substantial," and 3 to "substantial," and then adding together the scores for institutional reform, and government and legal framework.

d. Cumulative liberalization index is the sum of liberalization indexes, by country, for 1989-94, inclusive.

e. Change in prices is calculated over 1991-95.

f. Ruble zone dummy is for all members of the former Soviet Union, including the Baltic countries.

g. War-torn dummy is for Armenia, Azerbaijan, Croatia, Georgia, Macedonia, and Tajikistan.

The Role of Complementarities and Positive Externalities

Most of the formal academic literature on transition has focused on reasons why market externalities and imperfections would lead a benevolent reformer to choose to slow reform relative to the prescriptions of Mussa's standard neoclassical model.⁴³ In fact there are two important economic mechanisms that might induce such a reformer to accelerate reforms: policy complementarities and positive externalities. These factors have been implicit in some of the policy analysis literature, but until recently have been missing from formal models.

43. Mussa (1986).

There are at least six categories of policy change required in moving from a planned to a market economy: macroeconomic stabilization, price liberalization, liberalization of trade, privatization, promotion of new business development, and development of a supportive legal framework. The impact of each may depend on whether the other reforms are pursued. For example, freeing domestic prices will encourage firms to alter their operations to take advantage of the new opportunities. They will be prompted to upgrade their operating efficiency and to alter their product mix and marketing strategies. But if particular industries are monopolistic, welfare may be reduced with price liberalization. This can be countered by trade liberalization, so that domestic industries face foreign competition. The two policies in combination may increase overall welfare.

When reform policies are complementary, as described above, each one has greater benefits if it is introduced along with others, and changing one kind of policy to be more “market system” does not preclude changing other policies in the same direction. To take the obvious example, merely liberalizing prices will have fewer benefits than liberalizing prices at the same time as stabilizing the macroeconomy and opening up to international trade.

Eric Friedman and Simon Johnson develop a general formal model with complementarities, and yet retain the convex adjustment costs of other formal models (so that taking large reform measures is more costly than taking small measures).⁴⁴ Even when there are market imperfections and externalities imposing social costs, it may be more beneficial to conduct reforms in a package, and hence take advantage of the complementarities across measures, rather than postpone particular reforms. A benevolent planner would consider both the benefits and the costs of various speeds of reform. In general, it is not the case that the optimal reform path minimizes adjustment costs.

The complementarities approach can be extended to allow also for positive externalities. As far as we know, no other models of positive externalities have been applied to the economic transition process. This

44. Friedman and Johnson (1995). This work builds on recently developed mathematical tools that make it possible to model complementarities formally and to incorporate assumptions about complementarities in a wide range of models (see Athey, 1994; Milgrom and Roberts, 1990, 1994; and Milgrom and Shannon, 1994). Gates, Milgrom, and Roberts (1996) also study complementarities in transition economies.

is surprising, since positive externalities are more obvious than negative externalities. For example, if the rapid adjustment of one firm permits others to learn how to operate more efficiently in a market system, there will be externalities associated with learning. A greater number of private suppliers means more competition and hence a market that functions better, with information more widely available and lower costs of doing business.

The model of Friedman and Johnson provides a stronger theoretical basis for the idea that radical reform had important advantages in central Europe and the former Soviet Union. Established models probably have the right assumptions in terms of adjustment costs, but by ignoring complementarities they inaccurately represent the benefits of reform. Slow reform, because it fails to take advantage of these complementarities and positive externalities, has not proved superior to radical reform.

The Politics of Reform

The fact that slow reform had less positive impact on social costs or economic outcomes than rapid reform begs several questions. Why did so many nations choose to introduce reform gradually? Was it a misjudgment due to false expectations that gradual reform would improve the situation? Or was there a deeper reason in the political economy of transition?

When analyzing these questions, it is essential to keep in mind the initial political conditions in these countries. The collapse of communism left a political vacuum in many of them. This legacy had two major characteristics that varied by region and country.

First, there was no well-defined political process for choosing leaders and demarcating their powers. Elections are the most unambiguous means of picking leaders, and where early compromises between democrats and communists were quickly followed by elections, such as in Poland and Czechoslovakia, the powers of the leadership could be consolidated. In some countries, such as in most of central Asia, with the exception of the Kyrgyz Republic, the former elite simply reinforced its position when Moscow's hegemony collapsed. But in other countries, most visibly Russia, parliaments, presidents, and government

leaders fought actively for power. Invariably this type of battle set the former elite, such as enterprise directors and former communist party officials, against the younger liberal reformers who aimed to break the old system.

Regardless of who managed to gain power, the second key characteristic of the political legacy of communism was that there were few checks and balances on the behavior of the new leaders. There were no political parties with long-standing reputations to uphold, media coverage and investigative journalism were limited, and there had never been a fair system of courts and a judiciary that was prepared to challenge and penalize leaders who took actions for personal gain. In addition, communism left society deprived of moral or religious standards. Everything was allowed to those who controlled public resources, and they prided themselves on exploiting their opportunities.

The lack of political process and of checks and balances, and the historical legacy of exploitation, provided political leaders with great opportunities both for the abuse of power and for enlightened change. The ultimate political outcome and the resulting economic policies can best be understood in this light. Hence the crucial issues are which factors determined who would gain the levers of power at the start of reform? And, once a power structure was in place, what incentives did the political leadership face when deciding economic policy?

A Model of Rent Seeking in Transition

The relative power of interest groups at the start of the post-communist reforms gave clear advantage to the former elites. Both politically and economically, the state enterprise managers entered the transition period as the strongest organized group. This was most pronounced in the former Soviet Union, where they became dominant.⁴⁵

The market socialist reforms that started in Hungary in 1968 and spread to the Soviet Union in the late 1980s were aimed at making enterprises more independent of branch ministries. The idea was to depoliticize state enterprises and thus make their managers focus on economic performance. As a result, the managers were relieved of most supervision by the branch ministries, the formal owners of the state enterprises, but no other owners entered the stage (with partial exceptions in the workers' councils of

45. See Åslund (1995).

Poland and Hungary). In effect, the state enterprise managers gained ever more freedom but no responsibility.

As communism and the state collapsed, the managers' control over the formally state-owned enterprises became more firmly entrenched, and the formal threat of their being sacked was removed. Contrary to many predictions, neither labor nor social unrest erupted, and unions remained weak and disorganized. Their disorganization made them unable to fight, as a student of the logic of collective action would foresee.⁴⁶

These observations place the interests of enterprise directors, along with private interests of leaders, at the heart of the economic decision-making process. This motivates our simple formalization of *rent seeking* as an explanation of inflation, as illustrated in figure 8.⁴⁷

At the end of communism, the money creation process in most formerly communist-controlled countries was in the hands of a political elite. The revenues from credit issue directly lead to inflation (denoted π). The benefits to the political leaders of credit issue associated with a given level of inflation is $U(\pi)$. The perceived costs of inflation to the elite depend on whom they represent, and more generally, on the penalties imposed by the political process on leaders who take socially harmful actions. We define these costs as $\alpha C(\pi)$, where $0 < \alpha < 1$ is a number that indexes the representativeness of political leaders; that is, their willingness to take the social costs of resulting inflation, $C(\pi)$, into account in their calculations of welfare. We also assume that α captures the system of checks and balances on a politician's behavior: when α is low, society and the political system do not penalize leaders who take socially costly actions.

A benevolent reformer cares about all of society, so α is equal to one, while a rent-seeking elite might represent only a fraction of the population. Figure 8 shows a static characterization of socially optimal inflation in this rent-seeking political environment. The government

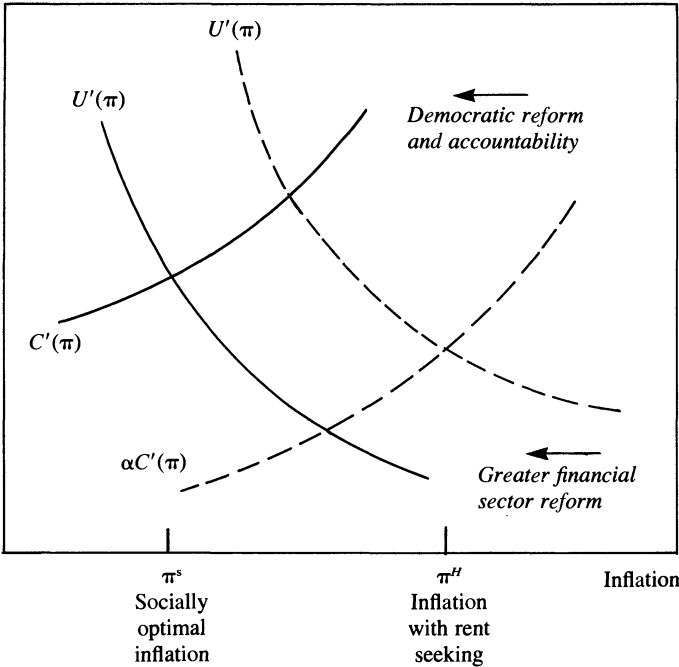
46. See, for example, Olson (1965).

47. A *rent* is defined as those earnings above what is necessary to attract a factor into a particular use. Rent-seeking activities serve no social purpose other than to create or transfer rents. For further discussion, see Buchanan, Tollison, and Tullock (1980).

Throughout this section we consider the government as a single agent with cohesive leaders who maximize their joint welfare. Uncoordinated decisionmaking can also lead to socially costly policies. See Shleifer and Vishny (1993, 1994) on corruption and Aizenman (1992) on inflation.

Figure 8. Effect of Financial Sector Improvements, Political Reform, and Penalties for Rent Seeking on Choice of Policy^a

Marginal benefits
and costs of inflation



Source: Authors' model, as described in text.
 a. $C'(\pi)$ denotes the marginal social cost of inflation, $U'(\pi)$ denotes the marginal benefits of credit issue, and α is a parameter between 0 and 1 that indexes the representativeness of a leader.

weighs the marginal costs and benefits of inflation when deciding how much credit to issue. Higher credit issue leads to higher inflation and this raises marginal costs, since the inflation tax is distortionary. The marginal benefits of credit issue, $U'(\pi)$, fall as the inflation rate rises.⁴⁸

If the government represents only the rent-seeking elite, and if there

48. A sufficient assumption here is that the marginal revenue from credit issue associated with a unit increase in inflation declines as the inflation rate rises. Steady-state marginal revenues would be constant in a model where money demand was insensitive, but in a model such as the Cagan model, where agents conserve on money balances as inflation rises, there will be a maximum level of seigniorage that the government can obtain; that is, $U'(\pi)$ eventually reaches zero (see Cagan, 1956).

are no checks and balances in the political system that penalize self-interested leaders, then α will be low, and hence the political leadership's perceived costs of inflation may be quite low. This is shown by the marginal cost curve shifted to the right in figure 8. Likewise, if the financial system is undeveloped, so that enterprises and households have difficulty in avoiding the inflation tax, then money demand will stay high even when the credit issue is large. This will raise the marginal benefits to the political leaders from higher inflation at every level of inflation, so the marginal benefit curve also shifts to the right. In such a situation credit issue would be high, leading to high inflation, π^H , in figure 8. This yields several explanations for why credit issue may be so large, and why it should fall over time in reforming countries.

In high-inflation countries, governments will typically represent narrow elites, and it will be difficult to avoid the inflation tax due to archaic payments systems and financial sectors. But if a new leader comes to power who is more representative of the population, the model predicts that inflation will fall, since the incoming leader perceives higher costs of inflation.

Also, if the political system "normalizes" over time (for example, as new interest groups develop and a free press emerges, placing more checks on the leader's behavior), then the incentive to inflate will be reduced. As people realize that the leader's actions are harmful, and that "subsidized" bread does not reach the stores, they will be less tolerant of a government that uses such policies to make transfers.

Finally, if the financial sector gradually improves, seigniorage will be lower for every level of inflation and the benefits of inflation will decline, so inflation should fall. As the unwillingness to hold domestic currency increases, dollarization proceeds, and the velocity of money rises, the revenues from the inflation tax will fall sharply.

Evidence on Rents after Communism

In the political vacuum at the start of reforms, it is no wonder that some leaders chose, or accepted, a regime of high inflation and restrictive policies. The extent of the potential gain to leaders who use office to make transfers has been staggering, particularly in the former Soviet Union. To understand how these incentives impede reform, it is nec-

Table 11. Net Revenue from Credit Issue and Natural Resource Endowments in Post-communist Countries, 1992

Units as indicated

	<i>Value of net credit issue^a</i>	<i>Exports of major natural resources^b</i>
Estonia	0.2	0
Hungary	0.4	0
Poland	6.4	0
Romania	6.4	0
Latvia	11.9	0
Albania	14.4	0
Lithuania	19.7	0
Kyrgyz Republic	29.1	0
Moldova	32.6	0
Russia	32.7	24,200
Ukraine	34.5	. . .
Kazakhstan	35.7	1,000
Belarus	42.8	0
Turkmenistan	63.2	840
Uzbekistan	. . .	673

Source: Data for the value of net credit issue for countries of the former Soviet Union, except Russia and Ukraine, are from *International Financial Statistics*; and in all other cases, from *IMF Economic Review* (various issues) for the respective countries. Data for exports of major natural resources are from *IMF Economic Review* (various issues) for the respective countries. Data for Russia and Ukraine are from Russia's European Centre for Economic Policy, *Russian Economic Trends* (various issues), and Ukraine's Ministry of Economy, *Ukrainian Economic Trends* (various issues).

a. Change in net credits to government plus gross credits to the rest of the economy by the monetary authority as a percent of GDP, calculated on a quarterly basis. To calculate quarterly GDP, we allocate annual nominal GDP according to the quarterly pattern of producer price indexes (or, when these were unavailable, consumer price indexes). The estimates will tend to overstate the real value of credits when there are long lags in credit allocation and when quarterly inflation is high (as reflected by the high measures for Turkmenistan). For Russia, the measure is calculated by using monthly data, and so the inflation bias should not be large. For Latvia, Lithuania, the Kyrgyz Republic, and Moldova the estimates are calculated by using credits from both commercial banks and the monetary authorities because data from the latter alone are not available; they will therefore be substantially larger than credits from the monetary authorities alone. To the extent that governments also directed commercial bank loans, and given the negligible nominal interest rates in most countries during this period, this may be a better measure of the resources available to the authorities.

b. Millions of dollars of cotton, oil, and gas.

essary to scrutinize the primary methods of rent seeking used by state enterprise managers and government officials.

Table 11 shows the revenues from net credit and export rents in sixteen formerly communist-controlled countries for which we could obtain data. Besides subsidized credits, the most popular means of capturing rents was probably through trade restrictions. In virtually all the countries of the former Soviet Union there were substantial quantitative restrictions on natural resource exports. In Turkmenistan, Tajikistan, and Kazakhstan extensive systems of trade taxes, licenses, and quantitative controls secured for the state a near monopoly over sales

of cotton and energy. In each case the president's office or government ministries would directly approve export licenses and sales. The result was an opaque system of transfers that generated little direct revenue to the budget and undoubtedly bred corruption.

The potential rents from subsidized credits, import subsidies, and export controls added up to a staggering 55 to 75 percent of GNP in Russia in 1992.⁴⁹ It is no wonder the reformers faced strong battles against their policies of liberalization. These rents varied substantially across countries. Countries without natural resource exports, and countries where potential seigniorage revenues were smaller (notably small countries) would be less predisposed to rent-seeking behavior. It is not surprising that Russia and the cotton- and energy-rich central Asian republics have experienced the greatest resistance against liberalization of foreign trade and stabilization.

There are, of course, many other methods by which rents can be extracted that we have not quantified. The most straightforward means to extract rents was to demand subsidies from the state budget. The bargaining power of enterprises rested primarily in their ability to threaten strikes and unemployment. It was mainly large enterprises, coal mines, and other well-organized groups of importing enterprises that could take advantage of these threats. Direct credits from the budget were used only modestly because they are relatively transparent and therefore difficult to defend in the political process.⁵⁰

49. During 1992 the Russian central bank issued 32.7 percent of GNP in net credits to commercial banks and enterprises, the government, and former republics of the Soviet Union at minimal interest rates (see table 11). In addition, the government received \$12.5 billion in bilateral credits that financed import subsidies, some of which covered 99 percent of the cost of an import. Finally, the potential revenues from export taxes and the implicit values of export quotas and remaining quantitative trade restrictions had an approximate value of \$10 billion to \$25 billion (see Åslund, 1995, 1996; Boone and Fedorov, 1996). Since Russia's GNP was approximately \$80 billion in 1992, these gross rents add up to 55 to 75 percent of GNP. Of course, a part of the seigniorage gains were simply transferred back to the same enterprises that had paid the inflation tax, so these are gross numbers that do not reflect the net redistribution resulting from seigniorage.

50. Tax breaks have been widely used because they are less transparent. The most blatant example is the exemption of the enormously profitable Russian gas monopoly, Gazprom, from most taxes. Similarly, the Russian Sports Foundation, run by President Yeltsin's tennis trainer, was the main importer of alcohol into Russia in 1994 and 1995, as it was exempt from import tariffs and excise taxes. For 1995, the Russian Ministry of Finance valued the tax exemptions of the Sports Foundation at no less than \$6 billion,

Finally, it would appear that the greatest opportunity for gains was through directly stealing state enterprises, particularly those possessing large natural resources, notably oil and gas. The reforms opened enormous scope for joint ventures, asset sales, and other means to effectively transfer assets and profits to the nonstate sector and personal control. Confusion over asset ownership and pricing policies naturally aids those trying to transfer resources. As an indication of the scale of these transfers, the market capitalization of the two hundred biggest Russian companies traded on the stock market, many of which are in the energy sector, was only 6 percent of GDP in early 1996.⁵¹ However, such transfers may ultimately force full reform. The asset transfers strengthened the private sector, and when they were legal (or later legalized) they helped to define property rights over resources. While the transfer may be extremely unequal, as additional resources are fully transferred to new owners, the new owners will likely begin to lobby for greater liberalization in their sectors.

Could this large transfer of resources be explained as benevolence and rational economic behavior rather than rent seeking? For most countries the answer is decisively no. The enormous rents in these countries were far beyond the scale of transfers needed for benevolent social programs or well-targeted subsidies. A 1991 study by the IMF and certain other international organizations estimated that a well-targeted social safety net in the Soviet Union (still in existence at the time of the study) would have cost approximately 2.4 percent of GNP.⁵² Furthermore, in most reforming countries low wages ensured the high profitability of industry, thus there would be little justification for additional subsidies of more than 5 percent of GNP to sensitive industries.

Yet Russian credit issue in 1992 was 33 percent of GNP, and all of it was highly subsidized. For the bulk of these credits, the interest rate was 10 or 25 percent per year, while annual inflation in 1992 was over 1,000 percent. The only plausible explanation is that this massive issue of subsidized credit permitted the antireform leaders to transfer enor-

or 2 percent of Russia's GDP in that year. Anatoli Chubais's opposition to this privilege probably contributed to his dismissal as deputy prime minister in January 1996.

51. Personal communication from Brunswick Brokerage, Moscow, February 10, 1996. See also Boone and Fedorov (1996).

52. See International Monetary Fund and others (1991, vol. 2, p. 188).

mous gifts, or rents, to their supporters, and the political system was too weak to hold it back.⁵³

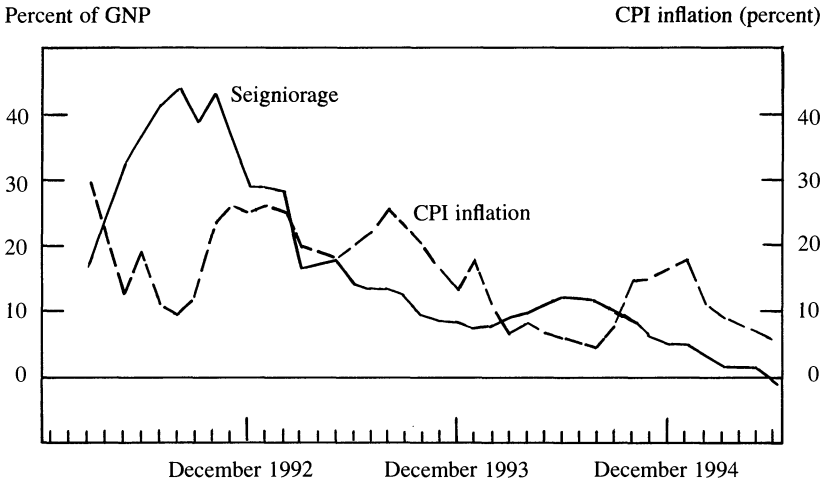
This explanation also provides the most convincing rationale for the close correlation between inflation and liberalization shown in figure 1. It is not only ignorance or poor judgment that leads to such distortionary policies. Those governments that avoided a period of extreme rent seeking did so by avoiding both large credit issue and trade and price regulations. It could be argued that an optimizing benevolent planner would have carefully designed subsidies and interventions to minimize social costs, but the pattern of restrictions and credit issue in the slow-reforming formerly communist-controlled countries does not reflect such a purpose.

A simple rent-seeking explanation matches empirical outcomes well, and it provides a useful framework for understanding the pattern of reform over time. Several purely economic factors have tended to reduce the scope for rents after reform has begun. First, as the financial system improves, enterprises and households can better economize on money balances, and seigniorage will fall. Second, with financial stabilization, the real exchange rate tends to appreciate and this reduces the rents from natural resources, as domestic costs rise toward world prices. Finally, commodity credits from foreign sources, as distinct from the IMF or other donors that insist on financial conditionality, dried up in 1992, thus reducing the third main source of financing to the government.

Figure 8 shows that a reduction in seigniorage—which all these countries have experienced with the improvement in the financial sector—would reduce the benefits of rents, thus causing the marginal benefit curve to shift leftward. Indeed, as shown in figure 9, the net credit issue in Russia declined sharply from late 1992. Improvements in the financial system, and the ensuing opportunity to avoid the inflation tax, gave enterprises and households more opportunities to conserve on ruble balances, thus reducing state revenues from credits sharply after mid-1992.

There are also important political factors that have changed the incentives for rent seeking. As countries became more democratic, politicians were increasingly held responsible for harmful policies by a free

53. Åslund (1995).

Figure 9. Seigniorage and CPI Inflation, Russia, 1992–95

Source: Boone and Fedorov (1996).

press and popular opinion (see the next section, below). This reduced their incentives to maintain a regime of distortionary policies; that is, the cost curve in figure 8 shifts left. Even when elections were not held, opposition groups gained strength and organization over time, as a result of both their changing economic powers and improved logistics. The harmful effects of high inflation helped to unite society against inflationary policies. Ever more people understood—and reacted against—the ongoing rent seeking.

The Reformer's Political Choices

The political vacuum at the start of the reforms in the formerly communist-controlled countries, and the enormous opportunities for rent seeking, meant that any group lobbying for reform faced an uphill battle. Hardly any norms existed. The state was weak, as were popular representation, civil society, and public understanding of economics. The legal system was rudimentary, with irrelevant laws and a weak judiciary. The legacy of price distortions was enormous, and a multitude of obsolete economic regulations persisted.

But this situation did not have to prevent reform; indeed, the political vacuum gave both reformers and rent seekers great opportunities. The

new political leaders came to power for many different reasons, but they generally had leeway to design and carry out policies as they chose. President Leonid Kravchuk of Ukraine was elected on a wave of nationalism and then chose to buy support from vested interests through credits. In Poland, Prime Minister Tadeusz Mazowiecki and Deputy Prime Minister Leszek Balcerowicz chose to implement real reform. Similarly, Russian president Boris Yeltsin decided to back Yegor Gaidar and his radical reform program. In all these cases, leaders made choices based on a popular mandate to conduct reform.

The main question facing a benevolent reformer is: what is the optimal speed and design of reform so to maximize social welfare? Just like the economic arguments discussed in the first section of this paper, there are political arguments that suggest that optimal reform could be either slow or fast.

For example, Mathias Dewatripont and Gerard Roland argue that gradual reform is politically optimal since it allows the government to buy compliance from interest groups that are hurt by the process. If the government does not buy off the opposition, the opposition will prevent or reverse the reforms. In their framework, since it can become too costly to buy off all groups at once, the government sequences its reforms and buys off each group in a piecemeal fashion. Gradual reform becomes the only politically sustainable outcome.⁵⁴

An alternative view is that a politician has a brief grace period after coming to power in which to succeed or fail. Balcerowicz calls this the time of "extraordinary politics," when much can be done with relative ease that later will prove all but impossible.⁵⁵ Opponents will soon mobilize strength and coordinate to oppose the politician. Once these opponents are strong, a political battle ensues, and the reformer either maintains power or is eventually toppled. In such an environment, the goal of a politician who favors broad reform will be to maximize overall social welfare in order to increase the likelihood of winning the battle, and also to ensure that reforms are irreversible.

54. See Dewatripont and Roland (1995). The same result is provided by Wei (1993), who expands on a paper by Fernandez and Rodrik (1991). Labán and Wolf (1993) argue that more radical reform can lower real wages and lead to social backlash that prevents reform. In these models, if the government could buy off the losers, it could ensure that reform was rapid.

55. Balcerowicz (1994).

We formalize this argument by modifying our political economy model. Suppose a benevolent politician who wants to conduct reform comes to power. In terms of our previous framework, this is a politician who cares about the whole population; that is, α is equal to one. The reformer's subsequent choice of policies will affect both the returns to society today, and his or her chances of winning an election. If an antireform group comes to power in the next period, it will choose a different (high) inflation path, $\pi = \pi^H$. The politician wins the election with probability $p(\pi)$ that depends on policy choices today. Thus in a two-period framework the benevolent reformer today chooses π_t , to maximize

$$\begin{aligned} \max_{\pi_t, \pi_{t+1}} & U(\pi_t) - C(\pi_t) + p(\pi_t)[U(\pi_{t+1}) - C(\pi_{t+1})] \\ & + (1 - p(\pi_t))[U(\pi_{t-1}^H) - C(\pi_{t+1}^H)], \end{aligned}$$

which has a solution based on the first-order conditions

$$\begin{aligned} \pi_t &> \pi_t^S & \text{if } p'(\pi_t) < 0 \\ \pi_t &= \pi_t^S & \text{if } p'(\pi_t) = 0 \\ \pi_t &< \pi_t^S & \text{if } p'(\pi_t) > 0. \end{aligned}$$

where π_t^S is the socially optimal inflation rate.⁵⁶ This illustrates two clear mechanisms by which today's choices affect future outcomes. First, if today's policies have no effect on the probability of staying in power for the next period, then p' is equal to zero, and it is clear that the leader would choose to reduce inflation according to broad social benefits (setting the marginal social benefit equal to the marginal social cost of inflation).

But in theory, the effect of current policies on the probability of reelection can go either way. Consistent with the model of Dewatripont and Roland, if a rapid reduction in inflation reduces the probability of winning the next election, then even a benevolent reformer would prefer more gradual reform.

In contrast, if reform actually raises the probability of winning elections, then p' is greater than zero, and the party in power would gen-

56. Assuming that U and C are strictly concave and convex, respectively.

erally want to move more rapidly than is socially optimal. This could be the case if reform undermines opposition and builds support sufficiently quickly.

The second mechanism through which today's choices affect the outcome in the next period is their impact on the antireformer's optimal choice of π_{t+1} . It may be possible to introduce policies that change the payoffs from high inflation to subsequent politicians. There are both economic measures and modifications to the political process that can reduce the scope for further distortionary policies. If today's policies reduce the optimal level of inflation for all future leaders, reforms may be sustainable even if the government that introduces them subsequently loses power. Below, we discuss this issue further and examine the lessons from several post-communist countries.

The framework presented here also demonstrates the critical role that empirical analysis can play in deciding the speed of reform. Does the public tend to penalize or to support rapid reform? Are the chances that reform will be sustained enhanced or hurt by rapid change? These are questions that theory cannot answer unambiguously. A careful examination of the political and social outcomes can help to sort through plausible answers to these questions.

The Electoral Fortunes of Reform

Since 1992 a general impression has formed that in the formerly communist-controlled countries reformers have lost most elections to revived communist parties, sometimes in alliance with other antireform groups, such as peasant parties. This perception began when the former communist party regained a parliamentary majority in Lithuania in October–November 1992, and strengthened as proreform parties proceeded to lose in Poland (September 1993), Russia (December 1993), Hungary (May 1994), Bulgaria (December 1994), Estonia (March 1995), and Latvia (fall 1995). Leaving aside central Asia, which is not very democratic, and the war-torn Caucasus, there are fourteen formerly communist-controlled countries in Europe with at least formal democracy; thus a backlash against proreform parties in seven of them appears to represent a serious trend.

However, the election results are not as straightforward as these numbers suggest. In almost all countries the center-right parties have been much more fragmented than the former communist parties and the peasant parties. Because most of these countries have a system of proportional representation with a minimum threshold for obtaining seats (for example, 5 percent of the votes cast in Poland at present), the popularity of former communists has generally been lower than their share of the parliamentary seats.

Table 12 shows, for each country, the share won by ex-communist parties in the first two or three freely contested parliamentary elections associated with the end of the communist regime. In this table, an ex-communist party is rather narrowly defined as one arising directly out of a former communist party; some still call themselves communist, while many have changed name and political orientation. In several cases the communist party split into more than one party—in Russia and Moldova, a communist party and an agrarian party for rural areas—all of which should be considered ex-communist, in the sense that they have a clear organizational legacy.

As can be seen from table 12, only in Moldova and Mongolia did ex-communist parties gain an absolute majority of the votes cast in the second parliamentary elections. In one other country, Lithuania, such a party surpassed 40 percent of the votes. However, throughout the region the electoral system repeatedly turned a modest plurality of votes for ex-communist parties into an absolute majority of legislative seats.

In Lithuania the ex-communist Democratic Labor party received 43 percent of the votes cast in October–November 1992, but 52 percent of the seats. In Hungary the Socialist party increased its share of the votes cast from 10.9 percent in March–April 1990 to only 33.0 percent in May 1994, but that sufficed for 54.4 percent of the seats. In Poland the ex-communist Democratic Left Alliance increased its share of the votes cast from 12.0 percent in October 1991 to 20.4 percent in September 1993, while its ally the Polish Peasant party rose from 8.7 percent to 15.4 percent. However, their combined 35.8 percent of the votes was enough to win 66 percent of the parliamentary seats, because no less than 34.5 percent of the votes were cast for centrist and right-wing parties that did not cross the minimum threshold. A reasonable conclusion is that if the non-socialist parties had maintained sufficient coop-

Table 12. Ex-communist Vote Share in Parliamentary Elections in Post-communist Countries
Percent, except where indicated

<i>Country and clarification</i>	<i>First election</i>	<i>Vote share</i>	<i>Second election</i>	<i>Vote share</i>	<i>Third election</i>	<i>Vote share</i>
<i>Non-socialist</i>						
<i>Radical reform</i>						
Poland	June 1989	...	Oct. 1991	12.0	Sept. 1993	20.4
Czechoslovakia	June 1990	13.6	June 1992 ^d	...	...	...
Czech Republic	...	...	June 1992 ^d	14.2	...	...
Slovakia	...	...	June 1992 ^d	15.2	Sept.–Oct. 1994	13.1
Albania	Mar.–Apr. 1991	56.2	Mar. 1992	25.6	...	...
Estonia	Mar. 1990	minority	Sept. 1992	13.6	Mar. 1995	0.1
Latvia	Mar.–Apr. 1990	minority	June 1993	12.0	Oct. 1995	15
<i>Gradual reform</i>						
Hungary	Mar.–Apr. 1990	10.9	May 1994	33.0	...	...
Bulgaria	June 1990	47.2	Oct. 1991	33.1	Dec. 1994	43.5
Lithuania	Feb.–Mar. 1990	minority	Oct.–Nov. 1992	42.6	...	...
Russia	Mar. 1990 ^b	majority	Dec. 1993	20.3 ^c	Dec. 1995	32.7 ^c
Kyrgyz Republic	Feb. 1990 ^b	90	Feb. 1995–Apr. 1995	...	...	...
<i>Ex-communist</i>						
<i>With democratization</i>						
Romania	May 1990	69	Sept. 1992	38.6	...	...
Moldova	Feb. 1990 ^b	...	Feb. 1994	65.2 ^c	...	...
Belarus	Mar. 1990 ^b	87	May 1995 ^b	...	...	...
Ukraine	Mar. 1990 ^b	majority	1994 ^b	minority	...	...
<i>Without democratization^a</i>						
Kazakhstan	Mar. 1990 ^b	...	Mar. 1994 ^b	...	Dec. 1995 ^b	...
Uzbekistan	Feb. 1990	...	Dec. 1994–Jan. 1995	...	...	...
Turkmenistan	Jan. 1990	...	Dec. 1994	...	...	...

War-torn								
Former Soviet Union								
Georgia	Oct.–Nov. 1990	minority	Oct. 1992	...	Oct.–Nov. 1995	8.9		
Armenia	May 1990 ^b	minority	July 1995	12.1	...	...
Azerbaijan ^a	Sept.–Oct. 1990	majority	Nov. 1995	...	...	...
Tajikistan ^a	Feb. 1990	majority	Feb. 1994	...	Feb.–Mar. 1995	...		
Former Yugoslavia								
Macedonia	Nov.–Dec. 1990	...	Oct. 1994	...	...	...
Croatia	Apr.–May 1990	26.5	Aug. 1992	5.4	...	...
Other								
Slovenia	Apr. 1990	22.7	Dec. 1992	13.6	...	...
Mongolia	July–Aug. 1990	61.7	June 1992	57.0	...	...

Source: Inter-Parliamentary Union, *Chronicle of Parliamentary Elections and Developments*, 23–29 (1988–95); Commission on Security and Cooperation in Europe, *Elections in Central and Eastern Europe*, December 1990; *Facts on File World News Digest*.

a. Classified as unfree in *Freedom Review*, 26(1) (1995): 12–13.

b. Political parties not allowed during these elections.

c. Includes agrarian party.

d. The June 1992 election was a national election in Czechoslovakia; results are here decomposed by region.

eration, the ex-communists would have remained a minority in Lithuania, Hungary, and Poland.⁵⁷

Table 12 can also be used to examine further the relation between the speed of reform and the ex-communist comeback. Of the six countries that pursued immediate radical reform, similarly proreform party coalitions were reelected in four: the Czech Republic, Slovakia, Albania, and Latvia.⁵⁸ (Slovakia might be excluded, however, because its radical reforms originated in the former Czechoslovakia and not from the Slovak government. Moreover, subsequent Slovakian governments have been highly unstable, so that it is not clear to whom the voters would credit Slovakia's radical reform policies.)

Only two governments pursuing radical reform were beaten in post-reform parliamentary elections: the Polish in September 1993, and the Estonian in March 1995. The primary cause of the Polish result was the fragmentation of the non-communist vote, discussed above. The Estonian government headed by Mart Laar was arguably the most purely liberal government in the region. It insisted on fully liberal trade, cut subsidies massively, liberalized all prices, cut entitlements (notably pensions), raised the retirement age, and implemented a Treuhand-style privatization that sold enterprises to the rich and foreigners. While these radical reforms appear to have gone beyond what was publicly acceptable, the subsequent centrist coalition has not revoked them so far.

But what happens to governments that choose not to reform? Table 12 shows big advances for ex-communist parties in each of the four European countries that initially had gradualist non-socialist governments. Indeed, three of these countries are currently governed by ex-communists, while only one of the six countries that pursued radical reform has a government dominated by ex-communists. That country is Poland, where the ex-communists have been transformed into fairly liberal social democrats. Furthermore, few governments have been as badly beaten as the Hungarian and Lithuanian governments. The Russian government managed to hang onto power but effectively lost the elections in December 1993. The Bulgarian Union of Democratic

57. For more details on the formation and nature of political parties in previously communist-controlled countries, see Kitschelt (1995).

58. In Albania, radical reforms were launched by democrats during 1991 in a communist-led coalition government, and the democrats won the 1992 elections. The Latvian parliament was effectively hung after the third elections, in fall 1995.

Forces has suffered splits, and the government fell apart after an attempt at rapid reform in February 1991, but there was also a substantial swing to the ex-communist party in the elections of December 1994.

Ex-communist governments that delay reform can also have electoral troubles (assuming they accept some democracy). Although none of the four countries in this group has been fully democratic, governments have lost elections in two.⁵⁹ In spite of several restrictions on the electoral process, the incumbent presidents in Ukraine and Belarus were beaten in the presidential elections in the summer of 1994 (table 12 does not include presidential elections). In Moldova the government won the second parliamentary election after delaying reform, and subsequently embraced radical economic policies. The Romanian government won the second, but with a sharply reduced majority—the ex-communist vote fell from 69 percent in May 1990 to 38.6 percent in September 1992.

This analysis of election results does not suggest that slowing reform raises the odds of winning elections. The empirical record shows that as a strategy for political survival, radical reform may actually raise the chances of winning subsequent elections. Further, apart from Estonia, there is no clear sign of a popular backlash against radical reform, and in all the cases when a reforming government has lost an election, its reforms have not been reversed.⁶⁰

A second conclusion is that under post-communist transition, most incumbent governments became unpopular regardless of their economic program. In countries with slower reforms, incumbent governments were more likely to be thrown out if democratic elections were permitted. Third, in all countries the ex-communist parties benefited from having better organization and less fragmentation than newer parties, and this helped them to gain disproportionately large representation after the initial reform period.

Finally, in many cases the former communist parties have, in effect, transformed themselves into social democratic parties. There is very

59. On the political character of these countries, see "Freedom Around the World," *Freedom Review* 26(1) (1995).

60. The indexes of both de Melo, Denizer, and Gelb (1996) and European Bank for Reconstruction and Development (1995) indicate that there has been almost no backtracking on reform. According to these measures, the only country to have reversed any dimension of policy is Ukraine in 1993; that is, before it started real reform.

little backtracking on policy, even in the countries with the most radical early reform programs. The observer is left with the impression that people in the formerly communist-controlled countries have taken all the economic suffering surprisingly well, and that once reforms are implemented, they are irreversible.

However, most of these elections have been characterized by low participation, and they do not necessarily reveal broader public opinion. In fact, it has been claimed that the disillusion with reform goes much deeper than is actually reflected in election results. To assess this position we consider opinion poll data. In order to have comparable numbers for the most possible countries over several years, we use the Eurobarometer, a survey carried out by the European Commission in eighteen post-communist countries for up to six years.⁶¹

The first relevant question is whether people believe that their country is moving in the right direction. Table 13 contains only the net positive responses to this question; that is, the percentage of positive replies minus the percentage of negative replies. The overall pessimism is striking. Only three nations in the region displayed a positive outlook in 1994: Albania, the Czech Republic, and Estonia (leaving aside Slovenia). Curiously, these happen to be three of the most radical reformers. In 1995 the average net response among the radical reformers was 13 percent positive, in sharp contrast to the 44 percent negative among the non-socialist gradualists (again, Slovakian politics are an anomaly, presumably lowering that country's score). Although not all radically reforming countries showed optimism, gradual reforms do appear to breed greater pessimism, irrespective of regime.

Table 14 shows responses in 1994 to a direct question about the speed of reform desired. Strikingly, more people found that reforms were too slow, or simply absent, than that reforms were too fast in all the countries investigated. Only the population of the Czech Republic maintained a rough balance between the two views. Even after a great deal of difficult structural change associated with radical reform, as in Albania and Estonia, a large majority desired faster reforms.

This picture is further corroborated by other data from the Eurobarometer. Responses to questions about future expected household incomes and preferred alternative economic systems, for example,

61. European Commission (various years).

Table 13. Public Opinion About Direction of the Country, 1990–95^a

Net percentage positive

<i>Country and classification</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>
Non-socialist						
<i>Radical reform</i>						
Poland	13	-41	-29	-4	-30	7
Czech Republic	37	17	24	28	25	24
Slovakia	13	-30	-1	-32	-39	-27
Albania	...	41	60	56	29	63
Estonia	...	30	7	23	17	24
Latvia	...	47	-17	7	-9	-13
<i>Gradual reform</i>						
Hungary	...	-19	-14	-47	-34	-69
Bulgaria	4	38	2	-37	-39	-8
Lithuania	...	28	-39	-47	-49	-52
Russia	...	-12	-24	-16	-51	-46
Kyrgyz Republic
Ex-communist						
<i>With democratization</i>						
Romania	...	26	-7	-6	-6	-13
Moldova
Belarus	-16	-51	-32	-36
Ukraine	-24	-63	-55	-51
<i>Without democratization</i>						
Kazakhstan	-33	6
Uzbekistan
Turkmenistan
War-torn						
<i>Former Soviet Union</i>						
Georgia	-39	13
Armenia	-49	-49	-60	-31
Azerbaijan
Tajikistan
<i>Former Yugoslavia</i>						
Macedonia
Croatia	50
Other						
Slovenia	40	-5	8	9
Mongolia

Source: European Commission (various years).

a. Respondents were asked, "In general, do you feel things in [our country] are going in the right or wrong direction?"

Table 14. Public Opinion About Speed of Economic Reform, 1994^a

Percent, except where indicated

<i>Country and classification</i>	<i>Response</i>		<i>Difference^b</i>
	<i>Too slow</i>	<i>Too fast</i>	
<i>Non-socialist</i>			
<i>Radical reform</i>			
Poland	51	15	36
Czech Republic	28	26	2
Slovakia	64	13	51
Albania	39	18	21
Estonia	48	9	39
Latvia	62	11	51
<i>Gradual reform</i>			
Hungary	48	13	35
Bulgaria	67	7	60
Lithuania	52	19	33
Russia	59	18	41
Kyrgyz Republic	...	...	...
<i>Ex-communist</i>			
<i>With democratization</i>			
Romania	58	15	43
Moldova	...	...	...
Belarus	67	8	59
Ukraine	65	12	53
<i>Without democratization</i>			
Kazakhstan	59	14	45
Uzbekistan	...	...	...
Turkmenistan	...	...	...
<i>War-torn</i>			
<i>Former Soviet Union</i>			
Georgia	74	4	70
Armenia	72	12	70
Azerbaijan	...	...	...
Tajikistan	...	...	...
<i>Former Yugoslavia</i>			
Macedonia	...	...	...
Croatia	...	...	...
<i>Other</i>			
Slovenia	...	...	...
Mongolia	...	...	...

Source: European Commission (various years).

a. Respondents were asked, "The way things are going, do you feel that [our country's] economic reforms are going too fast, too slow, or about the right speed?"

b. Percentage point difference.

show that while the market economy is not all that popular in itself, people expect household incomes to rise in the future, and few see any viable alternative to the market economy. Although radical reforms hardly raise the standard of living in immediate terms, people expect that they will do so later. In most of the former Soviet republics, however, people are deeply dissatisfied.

In terms of the reversibility of reforms, an important indicator should be popular attitudes to the market economy overall. Table 15 shows that in 1995 attitudes were positive in all of the fast-reforming countries (except Slovakia), but negative among half of the group of countries composed of gradual reformers and ex-communists. The market economy is generally unpopular in countries where the reforms remain far from complete.

Thus our conclusions from the election results are reinforced by the opinion polls: rapid reform does not meet with a groundswell of political opposition that would threaten to reverse it. On the contrary, this evidence suggests that rapid and early reform both raises the odds that a reform government will win future elections and diminishes the risk that its policies will be reversed. Experience so far indicates that once a far-reaching reform has been launched, generally even subsequent ex-communist governments support its continuation.

Economic Strategies for Irreversible Reforms

We have shown above that there is no strong empirical evidence that economic outcomes or popular support were adversely affected by rapid reforms in formerly communist-controlled countries. Further, gradual reform reflected underlying rent seeking that contributed to slow structural adjustment and enormous income redistribution. And the evidence suggests that once reforms are embarked on, they become extremely difficult to reverse.

The goal of a reform leader should hence be to promote reform by limiting the possibilities for rent seeking through multiple methods. Programs should include rules that limit policies aimed at squandering resources, including full price and trade liberalization; measures to raise the penalties associated with distortionary policies, such as legislation on corruption and the activities of public sector employees; and also,

Table 15. Public Opinion about Market Economy, 1990–95^a

Net percentage positive

<i>Country and classification</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>
<i>Non-socialist</i>						
<i>Radical reform</i>						
Poland	47	28	33	29	26	46
Czech Republic	54	39	24	15	11	6
Slovakia	28	29	15	-4	0	0
Albania	...	45	51	52	41	59
Estonia	...	32	19	26	14	20
Latvia	...	43	-12	2	-5	1
<i>Gradual reform</i>						
Hungary	47	51	39	21	20	5
Bulgaria	22	45	36	18	-2	6
Lithuania	...	55	44	33	9	16
Russia	...	8	-7	-22	-41	-44
Kyrgyz Republic
<i>Ex-communist</i>						
<i>With democratization</i>						
Romania	...	-5	41	29	50	38
Moldova
Belarus	-24	-25	-27	-13
Ukraine	-12	-19	-18	-27
<i>Without democratization</i>						
Kazakhstan	-30	-18
Uzbekistan
Turkmenistan
<i>War-torn</i>						
<i>Former Soviet Union</i>						
Georgia	-24	15
Armenia	-25	-40	-45	-9
Azerbaijan
Tajikistan
<i>Former Yugoslavia</i>						
Macedonia
Croatia	47
<i>Other</i>						
Slovenia	36	2	14	1
Mongolia

Source: European Commission (various years).

a. Respondents were asked, "Do you personally feel that the creation of a market economy, that is, one largely free from state control, is right or wrong for [our country's] future?"

measures to ensure closer monitoring of political leaders. Thus well-designed stabilization programs in the post-communist countries should include both economic and political measures.

But implementing such measures is no easy task. A stark battle rages over stabilization in these countries. On the one hand, the state enterprise managers insist on receiving subsidized credits and other forms of assistance and privileges from the government. They use the sharp decline in output—both before and after stabilization has been attempted—as an argument for more funds. However, the more subsidies, or rent, that they obtain, the less effort they put into restructuring and raising production. The managers benefit from having had a high reputation under the former regime, and from the continuation of a system that subsidizes them. They argue that they need time for adjustment, but when they get the money, they use it for anything but adjustment. This lobby demands loose credit as the principal means to postpone the decline in output, and then transfers resources to itself.

The reformers, on the other hand, are in an unenviable position. They need to stop the flow of subsidies to the big state enterprises, thus forcing them to adjust and, ultimately, ending the decline in national output.⁶² However, it is counterintuitive that disrupting subsidies to producers would lead to the revival of production. Moreover, post-socialist societies maintain a Marxist preoccupation with material production and large-scale industry.

Despite the apparent difficulties for reformers, the post-communist experience shows that an immediate stabilization can be politically self-sustaining. Whenever a stabilization is launched, the industrial lobby cries out. However, its resistance is highly dependent on the determination and intellectual and political credibility of the reformers. When stabilization starts to bite, many industrial managers give up hope of state subsidies and start adjusting in order to survive in the market. At this point the industrial lobby breaks up, and reform wins.

The best example is Czechoslovakia, where at the time of radical reform the reformers had won the public debate, prevailed in parliamentary elections, and controlled all relevant government agencies. In Poland the reformers' mandates were weaker in these regards, but they were able, in part, to compensate for that with the vigorous introduction

62. Bruno and Easterly (1995).

and pursuit of a radical reform program. In Russia, on the contrary, radical reform lacked credibility and aroused massive resistance from the industrial lobby, which, in turn, succeeded in breaking the attempted program.

The conclusion is unequivocal: the more determined, and thus credible, a stabilization attempt is, the less the state industry protests and the earlier it starts to adjust. Soon industry is divided between progressive market-oriented managers and regressive state-oriented managers, and the militant subsidy-seeking lobby fades away.

In considering which elements of stabilization programs have played an important role in making policies hard to reverse, we focus on five issues: the main ingredients of reform packages, preemptive policy changes, poison pills, conditional assistance, and deadlines within the budgetary process.

The Main Ingredients of Reform Packages

The best way to ensure that reforms continue is to break rent seeking. In this regard our analysis provides further support for the position of Balcerowicz and David Lipton and Jeffrey Sachs.⁶³ Programs must include near-complete price and trade liberalization, the elimination of subsidies to and preferential treatment of producers, and early measures to better define property rights and governance over state assets. Programs must also include measures that limit political payoffs and opportunities for rent seeking and corruption. For example, in Poland the communist associations that threatened reforms were dismantled, including the formal structures of the coal lobby, the union of cooperatives, and other important bastions of the *nomenklatura*.⁶⁴

These policies must be matched by measures that penalize corruption. In this, the government must demonstrate a clear commitment to democracy and transparency. There is no greater force for seeking out corruption than a free press, and a democratic process in combination with a free press can limit the most extreme forms of rent seeking. In the face of social criticism, the threat of losing power, and even legal punishment, politicians will undoubtedly weigh the costs of corruption carefully.

63. See Balcerowicz (1995) and Lipton and Sachs (1990).

64. See Johnson and Kowalska (1994).

One clear lesson from the post-communist countries is that the introduction of political checks and balances should be at the top of the list of policy changes. In many cases, these can be added directly to IMF programs, as part of conditionality. But such measures are sometimes impossible to implement at the start of reforms, or out of reach of the leaders attempting to carry out reforms. In the following discussion we examine a range of specific policies that have proved successful in particular circumstances.

Preemptive Policy Changes

Partial or preemptive policy changes may affect the payoffs to political actors so that reforms are maintained. In Ukraine there was a relative power vacuum in the fall of 1993, after a coal miners' strike incited a political battle between the parliament and the president. The result of the struggle was a compromise agreement to hold new elections for the parliament and the presidency. In December 1993, before the elections were held, the governor of the central bank launched a single-handed attempt to reduce inflation from hyperinflationary levels. He virtually stopped credit issue, which led to an immediate decline in inflation and output. These policies met with substantial criticism from President Leonid Kravchuk, who vowed to fire the governor once elections were over.

In surprise election results Kravchuk lost to former prime minister Leonid Kuchma, and once Kuchma came to power he faced the choice of either reversing the stabilization or agreeing to it. Given that many of the costs of stabilization had already been borne, and that by maintaining the program he would receive conditional aid from the IMF, Kuchma was faced with a much different environment than Kravchuk had faced before the elections. By making a preemptive attack on inflation, the governor of the central bank had changed the incentives for Kuchma, and this presumably contributed to his decision to continue with the relatively tight monetary policies.⁶⁵

A similar pattern is seen in Serbia. After the hyperinflation of 1993, in January 1994 the minister of finance announced a stabilization pro-

65. It is not at all clear that Kuchma would have chosen stabilization in any case. He had previously been prime minister of Ukraine during a high-inflation period, and in the 1994 election campaign he did not advocate stabilization or radical reform.

gram with a pegged exchange rate. At the same time, the Serb government announced that its budget deficit would be 15 percent of GNP. Lacking other sources of financing, it could only achieve this through money issue. Since the government had built up more than enough reserves to cover outstanding reserve money, the pegged exchange rate was a credible policy for approximately four to five months, assuming that the budget deficit would be implemented as planned.⁶⁶ After this time, there would likely have been a run on reserves and a move to higher inflation, as domestic money rose above outstanding reserves.⁶⁷

As in the Ukrainian case, the initial public support for the stabilization changed the political game. The reformist ministers within the government were strengthened by this support and the success of the program as inflation fell. It then became clear that unless the budget was adjusted, the program would break down. In April the cabinet finally agreed on a reduced deficit, and failure was avoided. Once again, it seems likely that early stabilization, and the subsequent changes in payoffs to the political players, was sufficient to shift the balance of opinion in favor of budget cuts.

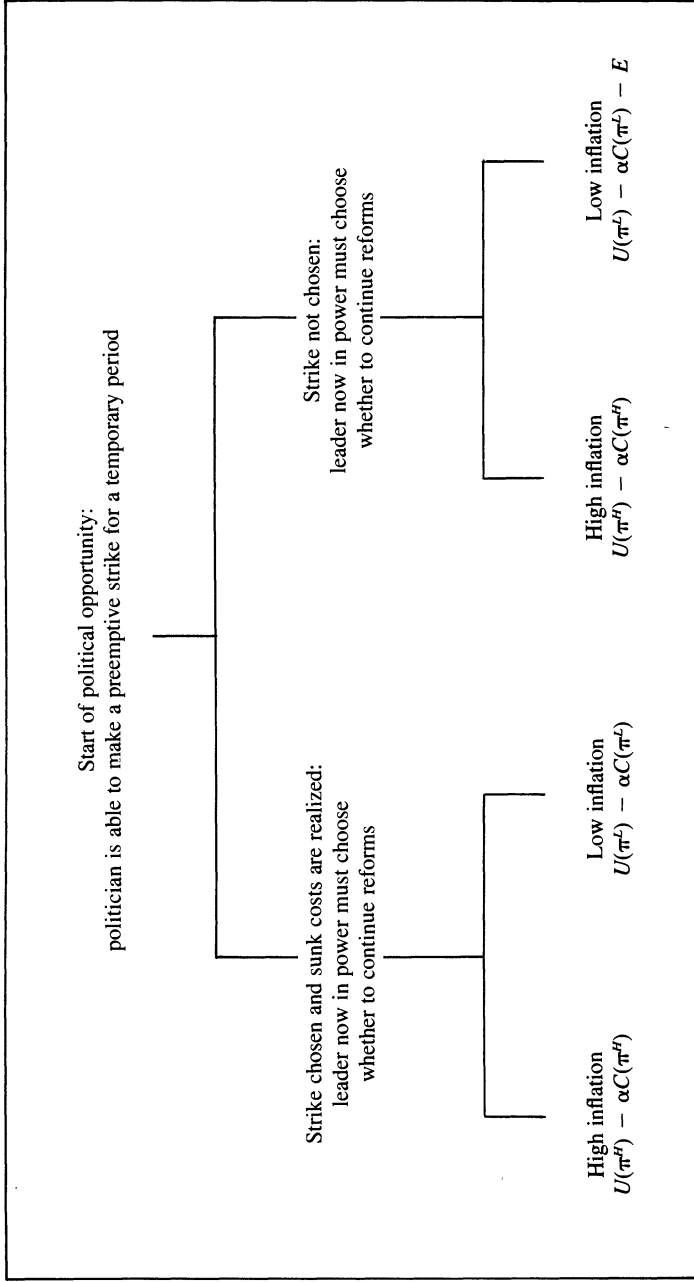
The game tree in figure 10 helps to explain this process. A preemptive action on the part of a small group with some temporary power over exchange rate policy, or monetary policy, changes subsequent incentives for political actors. The essential point is that the costs of adjustment (E) are sunk and occur at the start. The cost of maintaining stabilization is less for leaders who come to power after these sunk costs have been paid.

This is consistent with the previous discussion of the industrial lobby. A partial stabilization program that hits hard enough and remains in place for long enough will cause the industrial lobby to lose power. The industrial lobby is at its strongest before the first attempt at stabilization, but its power steadily weakens if reform continues. The reformer's problem is therefore to get the policy started and achieve sufficient reform before the opposition becomes too strong. In order to

66. See the discussions in Rostowski (1994) and Beogetic, Dragutinovic, and Petrovic (1995).

67. In theory, in the case of perfect foresight, the run on reserves occurs when the difference between the existing stock of base money plus the stock of base money demanded at the subsequent higher inflation rate equals the outstanding foreign reserves of the central bank.

Figure 10. Preemptive Strikes^a



Source: Authors' model, as described in text.

a. $C(\pi)$ denotes the social cost of inflation. $U(\pi)$ denotes the benefits of credit issue, E denotes sunk costs, and α is a parameter between 0 and 1 that indexes the representativeness of a leader.

break the asocial endeavors of the industrial lobby and turn it to industrial restructuring, it would seem desirable to have as hard a stabilization as possible.

In practice, it is never clear whether such temporary changes will be enough to ensure that reforms are not reversed. In Ukraine the decision to maintain course was in part due to the change of leadership, but in part also to IMF financing and a growing popular understanding of the situation. In Serbia the decision to stop financing the war ensured that the budget could be kept reasonably in balance, and political actors had already been burned by the severe hyperinflation in 1993.

Preemptive strikes will obviously work best in an environment where the costs and benefits of inflation are nearly balanced, but there are still some actors opposing deflation. The strategy requires that a group favoring stabilization gains control of money issue for some period. It is also helpful if the temporary stabilization creates costs to undoing the reform; for example, because a fixed exchange rate has become popular, or people learn the benefits and possibilities of low inflation. In this case, the temporary policy not only incurs the sunk cost, but also sets up a poison pill—any retreat will arouse adverse popular opinion.

Poison Pills

Poison pills are a well-known device employed against corporate takeovers, but some post-communist countries have used similar methods in their macroeconomic policies.⁶⁸ The leading example is a currency board, in that it is extremely difficult to reverse without risk of financial turmoil.⁶⁹

For example, in July 1992, just before the national election, the governor of the Estonian central bank announced a fixed exchange rate and introduced a currency board system. By introducing such a system, the incumbent government effectively changed the incentives for subsequent governments. Under the rules of operation, the Bank of Estonia must buy or sell foreign exchange at a given exchange rate on demand from all domestic entities; there are no provisions for the suspension of

68. See Downen, Johnson, and Jensen (1994) for a discussion of poison pills in corporate finance.

69. Boone and Horder (1996) discuss issues related to poison pills in stabilization policy.

foreign currency sales; and the exchange rate is pegged, and onerous procedures are required to change it. The parliament must approve any change in the exchange rate, and thus there is a real risk that news will leak, and hence there will be a run on foreign reserves, before an agreement is reached. Unless there was wide consensus on changing the rules, any one group would open Pandora's box by trying to change the system.⁷⁰

The second example of a poison pill also comes from Estonia. After fixing their exchange rate, the Bank of Estonia sold futures contracts up to eight years ahead, at low fees, promising to sell foreign exchange at 8 kroon to the DM. Approximately 4 percent of GNP in contracts have been sold to date—this is a very clear example of a poison pill. Any central bank governor who chooses to devalue the currency in the future will face losses on these outstanding futures contracts.⁷¹

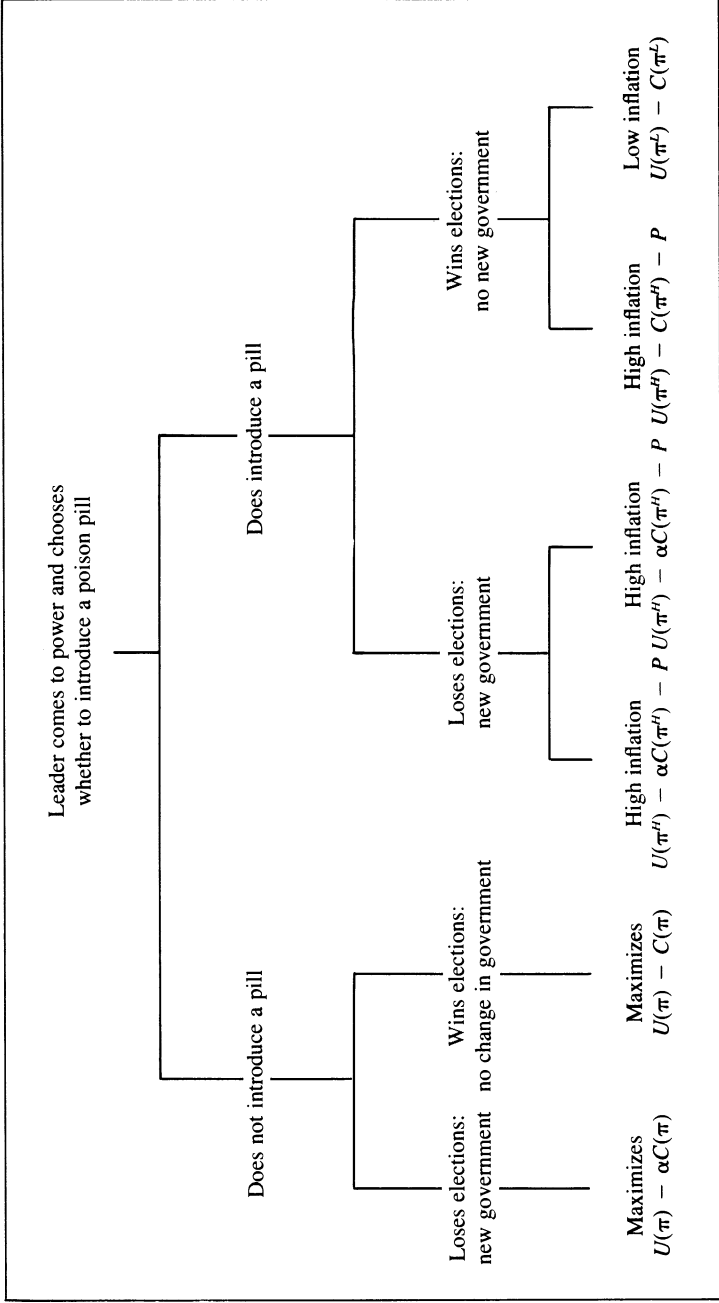
The poison pill aspect of the currency board system means that it changes the political payoffs to policy reversals. Figure 11 shows how payoffs might change. Suppose in the first stage of a game, the government is unsure whether it will win an election and stay in power in the second stage. The alternative second-period government is less representative of social interests ($\alpha < 1$), and hence has greater incentive to cause inflation.

Suppose, further, that if reforms last long enough, which in this case means two periods, they will not be reversed, since the major proponents of reversal will be sufficiently weakened. The payoffs to alternative policies are shown in figure 11. If, in the second stage of the game, the opponents come to power, the net payoff from reversing reforms is $U(\pi^H) - \alpha C(\pi^H) - P$ when there is a poison pill and $U(\pi^H) - \alpha C(\pi^H)$ when there is no pill. Here, P is the cost imposed on the political leaders who initiate the poison pill and π^H is the high inflation that results if reforms are reversed. This makes it clear that there are two key criteria for a poison pill to work: the opponents must pay and expect a penalty when they reverse reforms, and the opponents' ex-

70. Of course, politicians might not want to tie themselves irrevocably to such rules. For this reason, it might make sense to limit the legal duration of these rules, and to specify the eventual transition to a more flexible system (for example, a crawling peg).

71. Personal communications with Ardo Hansson, adviser to the Estonian prime minister and the Bank of Estonia, 1992–95. This is obviously a dangerous policy. The Bank of Estonia runs the risk of creating interest groups (that is, those holding the futures contracts) that will lobby for a devaluation.

Figure 11. Poison Pills*



Source: Authors' model, as described in text.

a. $C(\pi)$ denotes the social cost of inflation, $U(\pi)$ denotes the benefits of credit issue, P denotes costs imposed on a political leader who sets off a poison pill, and α is a parameter between 0 and 1 that indexes the representativeness of a leader.

pected penalty must be greater than the perceived net gains from policy reversal. Note that a poison pill may also be painful for other members of society, and there is a risk that if the two criteria are not satisfied, poison pills will backfire. It is also important to be able to limit the duration of the pill.⁷²

The Estonian examples are clearly poison pills, but the argument can be extended to other policies. As described below, conditional foreign aid can have the attributes of a poison pill. Pegged exchange rates can also lock in policies if they are popular with the public, so that politicians are penalized if they revoke the peg. Short-term debt also serves as a poison pill. If financial markets believe that the government may alter monetary policy in the future, they will bid up interest rates today, thus immediately penalizing a government that needs to roll over outstanding bonds.

However, when the potential gains from breaking the rules are large, such a system will be politically ineffective. Another question is whether those who would suffer are those who would make the decisions. For example, if a poison pill were used to lock in stabilization that reduced the rents reported in table 11, then for the countries and periods in which potential seigniorage revenues were largest, any plausible pill might be insufficiently significant to prevent reversals. Seigniorage revenues are likely to be greatest in large countries where there is less indexing to the exchange rate, and opportunities for other rents are largest in countries where there are substantial natural resources. In these countries poison pills are not likely to be feasible as mechanisms to lock in stabilization or liberalization, since they would not satisfy the criterion that the penalty be greater than the potential benefits of breaking the rules.⁷³

Conditional Assistance

In post-communist countries where rent seeking is an important hindrance to reform, and where reforms eventually weaken the opposition,

72. It may be possible to find a poison pill that should not be of limited duration. In his analysis of restitution, Costello (1996) suggests that returning property to its original owners may be politically more costly to undo than other forms of privatization. Under the right conditions, restitution could act as a form of poison pill.

73. The standard argument for why currency boards do not work in large countries is that they are less open. By contrast, our reasoning is based on political economy.

conditional aid can shift the balance of power in favor of reform when it is highly conditional on reform measures. Such measures will be sustainable if they change the future political equilibrium—in this case, if they weaken the former elite, or prevent it from reversing reforms or returning to power.

The chief mechanism of conditionality in the formerly communist-controlled countries has been IMF programs. These have generally contained requirements that countries aim to reduce seigniorage and inflation, remove price and trade restrictions, and liberalize foreign exchange markets. Each of these measures sharply reduces the scope for rents, and hence will meet with opposition. Thus the success of conditional aid programs will depend on the scope for rents. For example, similar amounts of aid (measured as a fraction of GNP) would be more effective in the Kyrgyz Republic or Latvia, both countries with few natural resources and little scope for seigniorage, than in Russia or cotton- and energy-rich Turkmenistan.

The main question facing reformers and aid agencies is whether such reforms will eventually become irreversible. If reforms do become irreversible in a short time, then early financial assistance that is highly conditional on reform measures will ensure that policy measures remain in force. But if reforms are reversible, then there is a risk that aid will be wasted because measures will be changed the moment conditionality ends, or a new government will reverse them.

There are good reasons to believe that unique aspects of the post-communist era have made sustainable reform more likely. The power of the state enterprise managers peaked just before the radical economic reforms were launched. If the reforms are successful, the former industrial elite will lose out. They no longer have free access to state funds, and they are checked by both domestic and foreign competition. The main resistance to reform tends to coalesce around the mechanisms generating rents. Energy pricing has been one mainstay of rents; collective action among *kolkhoz* chairmen for state procurement backed by budget financing has been another; a third focus of resistance has been the largest enterprises, because of their sheer size. The political instability and the redrawing of political and economic forces in the countries of the former Soviet Union has made sustainability particularly plausible. This argues strongly in favor of providing large amounts

of aid early, to buttress governments that are implementing reform programs.

Aid can also be specifically designed to raise the chances of sustainability. The clearest example of this is a conditional stabilization fund. In the cases of Poland and Czechoslovakia, a large stabilization fund gave political benefits to leaders and also provided implicit monetary and exchange rate rules. If a stabilization fund were to be withdrawn, it would substantially reduce the government's credibility in financial markets and provide direct evidence to the population that its policies were not consistent with stabilization and liberal market reforms. Thus stabilization funds can act like poison pills. A program of aid that includes such a fund is more likely to be sustainable than a program with conditional aid only. But if the potential rents were large, a country would still refuse to enter into such an agreement.

The Budget Process: Checks and Balances

While we have focused so far on cases when reformers are fighting off opposition from those demanding subsidies or rents, sometimes the risk to reforms comes from a breakdown of political process that is then used by opponents of reform. Then it is vital to have checks and balances that defend the current system.

In theory, poor economic policies can represent rational indecision or a lack of coordination, rather than outcomes chosen by any single agent. Alberto Alesina and Allan Drazen argue that wars of attrition, whereby one party has a right of veto over decisions needed to stabilize the economy, can result in long periods of socially costly inflation.⁷⁴ In their model it is possible to introduce mechanisms that change the incentives of each group such that they are more willing to make early agreements and concessions. According to Joshua Aizenman, lack of coordination amongst policymakers drives the inflation process.⁷⁵ In his model, a number of ministries each effectively have the opportunity to issue credits, say by committing in advance to spending and building up arrears. If each of the spending agencies does not take into account

74. Alesina and Drazen (1991).

75. Aizenman (1992).

the costs of its actions to the others, there is potential for high subsequent inflation, in part driven by a lack of coordination.

Similarly, in post-communist societies rent-seeking groups use the lack of credit coordination to their own advantage. As opposition to reform grows, rent-seeking groups find ways to obstruct and delay change. Rules that force coordination and early decisionmaking may help the reformer to ensure that stabilization is sustainable. Indeed, in many countries the lack of coordination between agencies has been an important contributing cause of inflation.

In Ukraine the parliament had the legal right to make special demands for emergency credits and spending through 1994. This meant that the government, the parliament, and the central bank were all effectively able to issue credit demands. In Russia in the early years after stabilization, there was no clear process for credit coordination. This confusion was further exacerbated by the right of both the government and the president to grant tax waivers and make spending promises, and of the parliament to legislate similar measures. It is possible to introduce a great deal more transparency and rigor into the process and control of budgeting.

First, it is vital to bring all expenditures under the control of the ministry of finance. In the communist-controlled countries the ministry of finance was weak and did not control all central government expenditures. In the early transition period, quasi-fiscal expenditures, such as subsidized credits, exchange rate subsidies, and extrabudgetary funds proliferated, as did tax exemptions.

Second, the central bank should also be strengthened. The financing of the government must no longer be automatic, nor conducted at a minimal rate of interest. The central bank should receive statutory independence, so that it not only can, but is supposed to refuse funding for the budget.

Third, the budget process should be regularized, with penalties that help to limit debates, and measures that ensure coordination between the main political actors.

The Russian stabilization program was designed with a set of clear rules to ensure coordination. The budget has to be adopted by the Duma in three readings. Next, it must be adopted by the Federation Council—the upper chamber of parliament. The president can veto draft budget

laws three times, and can then call for the resignation of the parliament. The program also integrates an earlier presidential decree that required that any spending outside the budget agreement must be explicitly approved by the president. Otherwise, the budget can only be revised by again going through all the above procedures. The new constitution also provides a mechanism to ensure coordination by outlining the formation of reconciliation teams that include delegated members of the parliament and the government.

The Russian rules effectively make the president the main coordinating agent. He or she must approve the budget agreement reached between the parliament and the government, and can also dismiss the parliament if it misses the prescribed deadlines for approving the budget. The president is responsible for ensuring that the budget is implemented as planned, and can veto all spending orders that are outside the budget. Thus the system effectively prevents excessive credit issue for reasons related to lack of coordination.

The Estonians have established similarly stringent rules. Under the currency board system, it is illegal for the Bank of Estonia to issue credits, hence there can be no monetary financing of the government deficit. In addition, there are extremely rigid rules to ensure policy coordination in the budget process. The constitution requires that the parliament approve a budget no later than two months into the fiscal year. If no budget is approved, the parliament is automatically dissolved, and new elections are held.

In the formerly communist-controlled countries, as communism crumbled and early in the political transition, the disintegration of the political decisionmaking process meant that such rules and processes were often lost. There is both the need and the opportunity to design the budget process anew at the beginning of a stabilization program. The specifics will depend on the country in question, but some basic rules follow:

- there should be an ultimate arbiter who has the authority to penalize groups that do not make decisions. Such penalties should be obligatory;
- there must be a mechanism to ensure participation and encourage agreement between all major political groups involved in the process;
- when the process breaks down and deadlines are not met, the costs

should be clearly defined and attributed to each group; and if no ultimate agreement can be obtained, a means must be specified for resolving the crisis (such as by election); and,

—there should be a mechanism to ensure that the budget is implemented as planned and prevent deviations from this program, except in emergencies. One arbiter must be held responsible for deciding when deviations are legitimate.

Even when such procedural rules are included in a stabilization program, there may still be a problem of enforcement. Such rules can only work when the program is genuinely accepted by most political groups. In practice, the new leaders in the formerly communist-controlled countries appear to have the most power at the start of their period in office. If there is a window of opportunity for a leader to implement such rules, then these rules may, in turn, have a chance to change the political environment and so become difficult to reverse later. Thus they will lock in a stable budget-making process that will prevent inflation resulting from wars of attrition or uncoordinated policymaking.

Implications for the Design of Political and Economic Reform

The first six years of post-communist economic transformation strongly suggest that the way in which macroeconomic stabilization is undertaken is a key determinant of both overall performance and the distribution of the benefits from reform. Price stabilization and all dimensions of trade liberalization are closely related because effective stabilization requires both price and trade liberalization.

The experiences of various countries demonstrate that the choices that governments make are important. Some governments have tried to undertake early and radical stabilization and liberalization, while others have chosen to delay implementation of these policies.

Is there an economic case for delaying reform or slowing it down? On this point there is a stark contrast between the policy prescription literature, which tends to favor radical macroeconomic stabilization policies, and most of the formal models, which advocate considerably slower stabilization. The formal models tend to be based on the view that radical stabilization causes negative externalities that lead to some

combination of a greater decline in output, less private sector growth, higher unemployment, and less promarket institutional development.

Empirically, the evidence appears to suggest rather that immediate radical reform leads to an earlier but no larger total decline in output, and to faster and larger development of the private sector. Unemployment does not vary systematically with the pattern of reform.⁷⁶ The development of promarket institutions is more difficult to measure, but the early stabilizers appear to do rather well. Given this evidence, it seems quite plausible that complementarities and positive externalities at least balance the adjustment costs and negative externalities. In fact, the evidence available so far suggests that radically reforming countries perform better.

Why, then, do governments opt for gradual or delayed reform? One of the most striking facts about post-communist economies is that a limited number of people have gained greatly from rent seeking. Unlike the externalities discussed in the formal models, rent seeking is closely correlated with slow or delayed stabilization.

The delay of reform is best explained by a model of rent seeking in transition, whereby the transfer of resources occurs through cheap credits, which, in turn, directly influences the development of inflation. The other main source of rents appears to be arbitrage in foreign trade, made possible by domestic price controls, multiple exchange rates, and foreign trade controls. The beneficiaries of these kinds of rents are a small elite of traders, financiers, enterprise managers, and corrupt officials.

It therefore follows that a more representative government will tend to restrict rent seeking more. For a limited subset of rents (subsidized credits and arbitrage in regulated foreign trade), we find that the gross rents in Russia were probably as high as 55 to 75 percent of GDP in 1992, but that they declined sharply with subsequent liberalizations.

Greater rent seeking in the former Soviet Union explains why inflation has been higher there than in central Europe. Thus inflation primarily reflects the strength of the elite of former economic managers. It can also be seen as a reflection of the extent to which ordinary social norms and the “rule of law” exist in society.

76. The variation in unemployment rates is probably due more to labor market policies—*wage controls, wage flexibility, and unionization*—than to overall economic policies. But there is still no fully satisfactory theoretical or empirical explanation for cross-country unemployment patterns.

When reformers have the opportunity, they must aim to minimize the rent seeking early on, as protracted rent seeking leads both to greater inequality and higher social costs of transition. It is true that sooner or later most countries do stabilize, but late stabilization appears to be the result of the diminishing scope for extracting rents as enterprises, banks, and the new private sector find means to avoid the inflation tax. It is probably also the case that a sufficient number of members of the former economic elite have accumulated a great deal of wealth by this time. In any case, the costs to society are almost certainly higher when stabilization is later.

From this perspective, in these newly democratic countries the political task is complementary to the essential economic package of stabilization and liberalization. Politically, the task is to deprive the former economic elite of its disproportionate political power. Economically, the task is to prevent it from receiving a disproportionate share of GDP. The aim is to establish a new political and economic system by locking in reforms.

The most sensible policy is to undertake a full-fledged economic reform early. Any lingering trade or price regulation invariably leads to the emergence of rents. Reforms yield effective adjustment in state enterprises when managers decide that they are better off trying to make profits on the market than garnering extra subsidies from the government.⁷⁷

If full-fledged reform is not an immediate possibility, the standard analysis suggests that little can be done. The evidence from previously communist-controlled countries, however, suggests that at least four measures are still available. One option is to introduce a preemptive strike that makes firms adjust to lower inflation. Another is to introduce a poison pill; that is, proreform measures that are hard to undo. Currency boards have worked well in this regard. A third means is conditional international assistance, which is the basis of IMF programs. The fourth option is a regularized budget process that includes checks and balances. Ideally, bad decisions should be blocked and sound decisions locked in, so that they cannot be undone.

77. For instance, in hindsight it is clear that the Russian oil executives who resisted price hikes for oil have made massive fortunes by selling oil abroad and reaping a hefty profit margin on their private account, rather than bothering about the profits of the state enterprises that they are supposed to run.

It has become the conventional wisdom that radical reformers lose elections. In fact, non-socialist governments that pursue gradual reform or fail to carry out radical reform most often lose elections. Nor do ex-communist governments do well. Voters do not like massive rent seeking and rightly blame the incumbent government.⁷⁸ Gradual reform is very unpopular, and whoever is responsible is likely to lose any election.

In contrast, of the six countries that have pursued radical reform, in four proreform governments were reelected in the ensuing elections, after launching the reforms. Of these, the Czech Republic stands out as the country that has done everything right, introducing radical liberal reform in such a way as to minimize rent seeking. Moreover, the population is most optimistic about the economy in the radically reforming countries. Contrary to expectations, there has so far been no backtracking of policy in any of the countries that have pursued reform. In fact, it appears that the achievements of more radical reform are safer.

78. Rent seeking is the focal point of popular disapproval, even if criticism is frequently diverted to other issues, such as privatization. Privatization is targeted because it is more apparent and transparent than the manipulation of financial flows, but these flows tend to be worth far more than the enterprises that are privatized.

Comments and Discussion

Stanley Fischer: This is a very interesting paper by three economists (henceforth, ABJ) who have distinguished themselves by getting their hands dirty, working to make economic reform succeed in eastern Europe and the former Soviet Union.¹ It is an addition to a rapidly growing literature evaluating the early stages of reform in transition economies. While it will not surprise anyone that the authors conclude in favor of radical rather than gradual reform, it may surprise some that a fair reading of their evidence supports that position; and it will surprise many that there is evidence that boldness pays off at the polls.

Appropriately for the spring meeting, the authors start with four questions. With answers, they are: Has radical reform been more costly than slower reform? No, quite the contrary. What factors determine the choice of reform strategy? The power of the former communist elite. How did radical reforms do in the elections? Much better than you would have thought. What tactics are effective in introducing and maintaining reform? Whatever tactics will minimize rent seeking by members of the previous elite. The authors have something new to say on each of these questions, but they are especially interesting on the political economy issues.

I will take the questions in turn, starting with the evidence on whether radical reform has been more costly than gradual reform. The authors warn about data difficulties, but it is worth reemphasizing that the data are likely to be seriously in error, for at least two reasons. One is that

1. The views expressed here are not necessarily those of the International Monetary Fund.

relative prices have changed radically, which means that the data will change when real output measures are rebased. Output behavior looks far worse in prereform than in postreform prices. Second, there is the practical difficulty of measuring total output with a statistical system that was set up to capture output in the official sectors. There have been attempts to get better measures of output, based mainly on electricity consumption, but these are not sufficiently systematic to use in a study of this kind. The most surprising numbers in this paper, such as output declines of 50 to 60 percent in some economies not affected by war, are almost surely exaggerated. It is probably also true that the countries that were more developed to begin with (the early reformers) have better data, so that output declines in the late reformers are likely to be systematically overstated relative to those in eastern Europe.

At the start of the reforms, it was reasonable to expect that a country that reformed rapidly would have a deep recession followed by a relatively rapid recovery, whereas a slow reformer would have a much flatter recession, and perhaps a more gradual recovery. Output in the gradually reforming country would be above that in the rapidly reforming country for some time. Advocates of rapid reform believed that the fast reformer would overtake the slow reformer at some point, but in any case, it would have been necessary to compare the present discounted values of output under the alternative strategies.

It was also expected that the output losses would depend on country-specific features, such as how far market mechanisms had penetrated in the old regime, the debt situation, and the shocks received in the reform process (for instance, as a result of the breakup of the Council for Mutual Economic Assistance [CMEA]). In explaining output loss, ABJ start by trying to match the finding of de Melo, Denizer, and Gelb that countries that undertook more macro stabilization or more micro liberalization suffered smaller output losses.² However, in table 4 the authors are unable to find a robust correlation between the change in output over the period 1989–95 and either the log of the price change (as an index of macro stabilization) or the cumulative liberalization index. This is a surprising result, and it also appears to be inconsistent with related regressions by Sahay, Végh, and myself.³ ABJ run implicit

2. de Melo, Denizer, and Gelb (1996).

3. See Fischer, Sahay, and Végh (1996).

output loss regressions in table 4, by assigning countries to six groups, and by comparing countries that appear to differ mainly in the extent of their reforms. These comparisons do not support the view that more rapid reform produces more output loss.

ABJ try another tack in table 5, where they find that the growth rate in 1995 is significantly related to macrostabilization or the cumulative liberalization index. These results are robust to the inclusion of dummy variables, and thus help to make the case that reform pays off in growth. They agree with the results of de Melo, Denizet, and Gelb, and also with those of Sahay, Végh, and myself. Further, they are borne out by the fact that more than half of the twenty-six countries in the sample are now growing. Sahay, Vegh, and I show that the sooner a country reformed, the more likely it is to be growing.⁴

While the results on the determinants of the extent of output decline probably could be refined further, ABJ make a convincing case that more rapid reform in this sample of countries does not lead to more output loss. The most persuasive evidence comes from particular country cases. Perhaps the most surprising performance among the transition economies is that of Albania. In 1990, no one would have expected that this country, one of the least developed among the transition economies, would turn out to be among the better performers. But the Albanians decided to pursue radical reform, and stabilize and move to the market very quickly—and that paid off in growth. That example is worth at least three regressions. Among other persuasive examples are Ukraine in comparison to Russia, and Poland in comparison to Hungary.

The paper shows why it is difficult to answer the question of whether macro stabilization or structural reform is more critical to success. Figure 1 shows an almost perfect correlation between the decline in inflation and the extent of structural reform, as measured by indexes constructed by the EBRD and the World Bank: countries that begin to reform move on both macro stabilization and liberalization.

The authors then try to develop a theory that accounts for the conclusion that rapid reform is not inimical to growth. They rely on a paper by my IMF colleague Michael Mussa, which they claim makes their case. However, that paper applied to the transition economies probably

4. Fischer, Sahay, and Végh (1996).

has the opposite implication. Mussa's is a second-best result which says that if there is only one distortion, it should be removed as quickly as possible. If there are multiple distortions, some of which cannot be removed rapidly, the Mussa result does not imply that these other distortions should be removed as fast as possible. There certainly were various imperfections that could not be removed quickly—market-based institutions could not be established immediately, privatization could not occur in all sectors at the same time, and the financial sector could not be built up quickly.

The analytic argument could, therefore, be turned around to argue that other reforms should not be implemented until a decent financial system, that would enable firms that ought to survive to borrow for that purpose, is put in place. Equivalently, it is not optimal to put everybody to the test of market prices before the financing to meet that test efficiently is available.

ABJ then develop two other arguments that provide a better basis in economic theory for a rapid approach to reform. The first is that there are important complementarities in the reform process; the second is that by moving more rapidly, the government reduces uncertainty for those who are contemplating shifting resources, whether by investing or changing jobs.

There is one other basic argument for rapid macroeconomic reform, of which the authors are undoubtedly aware, but that still needs to be mentioned because it is so widely ignored in the discussion of macro stabilization. It is that the way to create real credit in the long run is the opposite of the way to create it in the short run. In the short run, credit can be created by printing money fast. ABJ come up with an extraordinary estimate of the amount of resources obtained in this way in Russia at the height of the inflation—an inflation tax of 37 percent of GDP. Whoever obtained those resources became rich, and that is the rent-seeking mechanism that, ABJ convincingly argue, lies at the heart of the slow pace of macro—and also micro—reform in Russia and other countries where the former elite remained powerful.

However, inflation destroys the financial system and reduces the real amount of credit in the process. Therefore printing money is the way to destroy real credit over a longer horizon, even though it makes it available in the short run. Nevertheless, for those engaged in plunder—and there certainly were many such people—that short period is quite

enough to establish massive fortunes, which may serve as the foundation of family wealth for generations.

The second question that ABJ pose asks what determined the choice of reform strategy. They point to the position of the previous elite, especially enterprise managers. The successful reformers found strategies to break its power. The authors write their paper identifying with the reformers. At times, they seem to assume that the reformers were in power at the beginning. That was the case in some of the countries that ABJ advised (although the reformers' position was more ambiguous in others), but the reformers never made it into power in some countries. One needs to know why, and whether there are lessons for reform in the answers.

The initial power of the reformers must have had something to do with the extent to which the previous system was seen as a foreign imposition, or had been successful. In eastern Europe and in the Baltic countries, the communist system was widely seen as a foreign imposition, and one that had impeded progress. In some of the poorer republics of the former Soviet Union, it could be argued that membership had brought transfers and benefits. Further work needs to be done to establish what made some of the transition countries firmly democratic after the breakup of the Soviet empire, and what allowed the previous elites to retain political power in others.

The evidence on the third topic, the election results, is encouraging. Before seeing the ABJ data, I had the very clear impression that the reformers always lost the next election. It is good to know that in the bulk of cases where there was a clear rapid reform strategy, the reformers actually won the next election. And it is also useful to be reminded to ask the other question: did the antireformers win the election? To which the answer is no.

It is, nonetheless, worrying to see the growing pessimism of people in transition countries. ABJ show that people are not becoming notably more cheery about the future, even in the countries that are doing relatively well. Unrealistic expectations of the speed of reform no doubt contribute to this pessimism.

The fourth question asks what reform tactics are successful. ABJ, like good revolutionaries, say that the sooner the reformers can implement change, the more likely they are to break the power of those who

would retard reform. They agree with Balcerowicz, that the opportunities are greatest during the early period of extraordinary politics, which makes the case for rapid action all the more pressing; and that once the first set of changes are made, there is an urgent need to put in place a set of rules and institutions to establish the rules of the market economy. That must be right.

The next question is: how do you do it? One of the recommendations is poison pills, which make it very expensive to backtrack on reform. My enthusiasm for poison pills has diminished after seeing Mexico be forced to take one. Putting poison pills in place is a good strategy if it succeeds and the pill does not have to be taken. When a country has to take the pill, the resultant mess may make you wonder whether it was such a good idea. For instance, to be told that the Estonian central bank has sold eight-year-forward contracts on the currency is more bothersome than impressive. There must be a trade-off in terms of social responsibility between tying things down so that nobody can untie them, and recognizing that the unexpected does happen, and that therefore there is a real chance the society may have to deal with the adverse consequences of measures so ingeniously taken at the start of the reform process.

In terms of outside assistance, the authors conclude that conditional (IMF-style) assistance is very useful, and preferable to unconditional aid. I am sure that is correct—and I was sure of that even before going to the IMF.

I would like to enter a small clarification and caveat about stabilization funds, which the authors praise as valuable devices that make reform more palatable. Stabilization funds are intended to be self-denying; their presence should help to ensure that confidence in an exchange rate peg is maintained, and that there is no attack on the currency. A stabilization fund makes excellent sense in support of a strong exchange rate-based stabilization. If the donors, or the IMF, are willing to provide *additional* financing for a stabilization fund, then it is a good idea for a country with a strong program. But suppose the donors are only willing to provide a fixed amount of funding for a country, and will not augment that amount, even if some of it is segregated in a stabilization fund. Under those circumstances, it is not clear that it is advisable to put some of the aid into a separate stabili-

zation fund. The country may be better off putting those resources wholly into reserves, without constraining the use of part of them in this way.

Let me conclude with two further points. The first is the question of whether the success of China and Indochina establishes that gradualism is not the right strategy. This is a topic on which Jeffrey Sachs and his coauthors have written a great deal. They argue persuasively that structural differences between the East Asian and other transition economies account for differences in optimal strategy; in particular, that since the industrial sector in the East Asian countries was small at the start, there was no need to privatize it in order to get growth. Rather, rapid reform could begin in agriculture, where, in China, the transition to the market was essentially completed in three years.

Second, ABJ tell us that these reforms are irreversible. To a remarkable extent, they have been. Indeed, one of the most surprising features of the reform process is how few of the early fears have turned out to be justified. The biggest fear was that reform would not be sustained if it did not produce early success; the communists would soon be back, and the reforms would end.

We certainly have not seen quick results. In only a very few countries can it be claimed that people believe that they are, or will soon be, better off as a result of the reforms. But, so far, no country has given up on reform. That is why the authors' claim that the reforms are irreversible appears to be true.

Yet there remains one very big question: what will happen in Russia? The result of the election in June 1996 could change our view on the irreversibility of reform. If Yeltsin wins, then the view that reform—messy as it has been—really is acceptable to the electorate will turn out to have been right. If the communist candidate, Zhuganov, wins, then we will have a very strong test of the hypothesis that reform is irreversible.

Barry W. Ickes: In this paper, Åslund, Boone, and Johnson analyze the efforts of economies in transition to control inflation, as a necessary consequence of economic reform. The focus is on the choice of the *pace* of liberalization as a determining factor in stabilization. The authors argue that there is a dissonance between the policy advice that most westerners offer to transition economies (rapid liberalization) and

the recommendation yielded by academic analysis of the problem (more gradual liberalization). The situation in transition economics is thus a lot like that in trade theory, where everyone writes papers deriving the optimal tariff, and then counsels policies of free trade.

Why this dissonance? I suspect that it is the natural tendency of economists to assume convex adjustment costs somewhere in a model. As economists, we always assume that it is better to spread the costs of some activity (enterprise shutdowns, unemployment, layoffs) over several periods, so that marginal costs are equated. Standard economist technology thus biases us toward explanations that favor gradualism. Consequently, Åslund, Boone, and Johnson's analysis of the role of complementarities in the reform process is most welcome. They argue that rapid liberalization is more credible than gradual liberalization, because in the latter case, forces will coalesce to block reform. In addition, they provide an interesting analysis of institutions that can promote the credibility of the reform process.

Yet the authors wish to argue, further, that there is no empirical basis for the assertion that there are higher costs to more rapid liberalization. This discussion is based on an examination of the cross-country experience of transition economies. Their empirical analysis can be characterized by the following regression equation:

$$(B1) \quad SS_i = \alpha_i L_i + \epsilon_i,$$

where SS_i is the success of macroeconomic stabilization in country i , L_i is the degree of liberalization chosen, and ϵ is an error term. SS is variously measured by growth in 1995, the probability of reelection, the cumulative fall in output following liberalization (here, measured negatively), and unemployment, among other factors. They run regressions of this form and find that, except in terms of unemployment, the more rapid is liberalization (measured by a higher value of L_i), the more successful is stabilization.

I would like to raise some questions about the empirical approach of Åslund, Boone, and Johnson. One important question relates to the measurement of liberalization. For the most part, they use the cumulative liberalization index constructed by de Melo, Denizer, and Gelb.¹ There are two points to consider about the use of the index in this way.

1. de Melo, Denizer, and Gelb (1996).

First, it is constructed retrospectively. World Bank country experts were asked in 1995 to provide a score for the level of liberalization in their country for each of the transition years. Thus the scores for individual years may suffer from the bias of hindsight. One might suspect that had analysts of Russia been polled during 1992 for their opinion on how much liberalization that country had achieved to date, its score would have been much higher.

Second, and more important to note, this index gives weight to the duration, as well as to the intensity, of reform. If, for example, the communists win the Russian presidential election in June 1996 and then reverse all the reforms that Russia has pursued to date, the cumulative liberalization index will not fall. Indeed, if this occurs Russia will continue to score as more liberalized than Ukraine for about four more years, at current rates of liberalization in Ukraine. The problem is that cumulative liberalization is not so much a measure of how intensive reform was at the start of the process—which is what the authors really wish to have as the independent variable in equation B1—but for how long reform has proceeded. Indeed, Romania scores as more liberalized than Russia simply because it started reform a couple of years earlier. In every year since the start of transition in Russia, the annual liberalization index is at least as high for Russia as for Romania. This is problematic, because the more successful is reform, the longer a country will persist with it, and therefore a higher value of L will be produced. If a country liberalizes radically and then reverses course, it will not show up as one that has tried shock therapy, but rather, as a gradual reformer. It is thus not at all clear that it makes sense to use cumulative liberalization as the independent variable in regressions explaining output growth, inflation, and unemployment.

As noted above, the one exception that the authors find in their empirical work is with respect to unemployment, where “outcomes remain a puzzle,” since there appears to be no correlation between unemployment and reform strategies, as measured by L . It seems to me that, at least with respect to Russia, there is not much of a puzzle. Unemployment is a poor measure of the excess supply of labor when enterprises avoid layoffs by the expedient of not paying wages. Here is a case of almost perfect downward wage flexibility. The enterprise avoids having to pay statutory severance payments (three months’ wages), and by keeping workers notionally employed at very low

wages, reduces the burden of the excess-wage tax (eliminated only in early 1996).² Moreover, maintaining a large labor force (on the books) may enhance the ability of the enterprise to extract subsidies. Under-employment is thus much greater than unemployment. The real puzzle is why there is not more worker resistance to unpaid wages.

Leaving aside these questions of measurement, however, there is another issue that I would like to raise about equation B1. Given that these regressions are cross-country, it is apparent that this analysis will be meaningful only if the possible values of L are distributed randomly across countries; more precisely, if there are no variables correlated both with the choice of liberalization intensity and the success of stabilization.

What does the choice of L depend on? The authors emphasize the possibilities for rent seeking in different transition economies; they discuss how this could relate to some aspects of structure, such as oil and gas deposits, or the size of a country. One could add a history of the rule of law (certainly absent in Russia) and the length of time that a country operated the Soviet system. Subsuming these suggestions in a variable (a vector) of initial conditions, \mathbf{IC} , one might write the decision to choose among liberalization policies as

$$(B2) \quad L_i = \beta_1 \mathbf{IC}_i + \delta_i.$$

From this, it is apparent that if initial conditions not only affect the choice of L , but also affect the likelihood of success, then equation B1 is misspecified. This is an omitted variables problem. Indeed, any initial conditions that are positively correlated with both the choice of liberalization and the probability of successful stabilization will bias α_1 upward. To take a simple example, consider the size of the agricultural sector at the onset of transition. When the agricultural sector is large, not having to worry about layoffs in industry makes the choice of radical liberalization more likely; and it is probably much easier to stabilize an agricultural economy successfully.

Åslund, Boone, and Johnson recognize the role of initial conditions and deal with it by partitioning the sample into countries of the former Soviet Union and those that are not. But this does not really solve the

2. See, for example, Organisation for Economic Co-operation and Development (1995).

problem. It eliminates the one common source of bias, the starting date of reform, but there are many other country-specific factors to worry about. Notice that even including IC_i in equation B1 would not solve the problem, unless we fully accounted for all of the initial conditions that could affect both L and SS . Since the authors fail to control for these initial conditions, it is not surprising that the intensity of liberalization “explains” the success of stabilization in their regressions. But it also means that the regressions are spurious.

Are there initial conditions that affect both L and SS ? The central lesson of transition is certainly yes. The level of underdevelopment of the financial system affects an economy’s ability to support liberalization and the likely success of its program. So does the inherited industrial structure. The more negative-value-added enterprises that exist at the onset of transition, the more costly stabilization will be, and hence, the less likely leaders will be to pursue radical liberalization. Similarly, the larger the agricultural sector, and the shorter the history of collectivization, the less distorted that economy is likely to be, compared to a market economy, and thus the easier it will be to pursue radical reform. If one looks across economies in transition, one finds that the choice of liberalization strategy is correlated with these factors. My argument is simply that the initial conditions that a transition economy faces affect its choice of liberalization strategy and the success of its reforms.

This point has implications for how to view the record of reforms in transition. Åslund, Boone, and Johnson focus heavily on the credibility of policymakers. Cases like Russia, where attempts at radical reform fail, are attributed to the lack of credibility of the policymakers, combined with immense opportunities for rent seeking. In the Czech Republic and Estonia, success is due to credibility. These arguments are typically tautological, as the means of identifying reforms that were not credible is by looking for unsuccessful reforms. Credibility is important, of course, and the authors provide a significant service in their interesting analysis of the institutional sources of credibility. But the costs associated with building credibility are (commonly) ignored. They provide an excellent analysis of what policymakers can do to enhance their own credibility. It is necessary, however, also to ask how the cost of achieving credibility varies with the initial conditions that policymakers face.

It is crucial to keep in mind the nature of the distortions that must be dealt with in the process of transition. The inherited legacy is more than just monetary overhang. The state of market infrastructure, which varies greatly across the countries that the authors analyze, also has a large effect on the success of stabilization.³ I focus here, however, on another distortion that is, perhaps, at the heart of the transition problem: the inherited industrial structure. The nature of planning in all Soviet-type economies resulted in an emphasis on heavy industry over light, investment goods over consumer goods. Moreover, the nature of pricing was also seriously distorted. Basic factors of production were undervalued (land, for example, was free; capital in place, likewise), raw materials were undervalued, and highly processed goods, especially investment goods, were overvalued. The physical flows of goods at these prices display an economy that is not all that material-intensive, because of the arbitrary nature of prices. But financial flows do not guide behavior in a planned economy, so this does not affect the reproduction of the economy.

Liberalize a Soviet-type economy, and the hidden distortions become evident. Indeed, Richard Ericson has shown how such an economy (that is, the industrial sector as a whole) that appeared to be covering the costs of production at the arbitrary pretransition prices, may be unable to cover the costs of production at market prices.⁴ Postliberalization, enterprises must raise their prices to cover their material costs, at the same time that the demand for many goods decreases with the elimination of the plan. Everyone knows what happens next. Enterprises continue to ship goods, even in the absence of payment (the arrears problem), output falls because of the inability to cover costs, and the government begins to worry about “deindustrialization” as the primary result of liberalization.

My argument is not that the government should reverse its liberalization policy at this point, although many do. Such a reversal subsidizes loss-making enterprises, which prevents the redeployment of their assets to other uses. This is costly because one of the characteristics of transition, especially in the former Soviet Union, is a shortage of structures and space, precisely because enterprises are not shut down.

3. See Ickes and Ryterman (1995).

4. Ericson (1996).

What I am suggesting is that the extent to which such distortions in industrial structure exist determines the costs of liberalization. Economies that begin transition with more distorted industrial structures will suffer more severely along the path of reform. This will have important effects both on the probability of success, and on the choice of the reform path (even if, as the authors argue, it should not). If reformers are unable to make the reforms “stick,” this may not be because they are not credible (except in a vacuous sense), but because the costs are too high. That the alternative may be worse is not evidence against the notion that the reformers failed because of the costs.

How does an economy burdened with a distorted industrial structure reform? Clearly, one important aspect is to restructure the capital stock, and this often requires investment in new plant and equipment. Investment is required to rebuild enterprises, often from the ground up, but with underdeveloped financial markets, self-finance is required. Hence those enterprises with the most serious need for restructuring are the least able to do so. The authors would argue that these enterprises should be shut down, and many of them should be. That does not eliminate the costs, however; it simply stops further bleeding. A therapy of rapid liberalization may have been the appropriate program in these cases. But there may also be economies that are so ill that the therapy will kill the patient. To determine this critical level of health is the key task of transition economics.

Although I have questioned the empirical support for the proposition that radical liberalization is always appropriate, I nonetheless agree with Åslund, Boone, and Johnson on the virtues of rapid liberalization. Unwilling to base this on the credibility argument, which I argue is tautological, I would focus on the role of uncertainty. As John Cochrane and I argue, there is a reform conundrum in transition economies because of the option value of waiting for investment decisions.⁵ Given sunk costs to investment, managers prefer to wait until uncertainty is resolved before investing. And uncertainty is never more important than during transition, when the system is changing and the very rules of the game are in constant flux. But if all managers wait to see what will happen, then little restructuring will take place. And the strain that this puts on the reform process enhances the uncertainty. A typical example

5. Cochrane and Ickes (1995).

is tax policy, where the failure to restructure leads to lower tax revenues, and thus higher tax rates than would be the case if the economy booms.

The bottom line of this analysis is that if uncertainty can be reduced—and the greatest uncertainty concerns the system itself—restructuring can be accelerated. And accelerated restructuring means a more rapid rebound in fiscal revenues and support for reform. That is why I think that rapid liberalization is a good idea. If the rules of the game can be settled immediately, environmental uncertainty can be reduced, the option value to waiting is reduced, and the reform conundrum is eliminated. This seems a fruitful way of thinking about the interesting evidence that this paper provides about the benefits of rapid liberalization.

General discussion: Panel members discussed one of the central themes of the paper: nonproductive rent seeking by the former elite in countries undergoing transition to a free-market economy. Robert Hall noted that the paper focuses its attention on rent seeking by the government and largely ignores the possibility of private rent seeking by criminal organizations like the Mafia. He argued that this focus might be justified for countries like the United States, where the suppression of private rent seeking is extremely effective, but not for Russia and other formerly communist-controlled countries, where Mafia activities represent a first-order problem and are surely important in slowing down reform. Johnson responded that private rent seeking in post-communist countries is probably substantially less than rent seeking by the government. He suggested that in Russia, Mafia rent seeking is most likely below 5 percent of GDP and therefore not of the same order as the government rent seeking emphasized in the paper. James Duesenberry suggested that the distinction between the rent seeking of upper management and other politically influential people, on the one hand, and the rest of the population, on the other, is overdrawn. This sharp distinction ignores the possibility that certain actions by managers or political insiders also benefit workers in state-run companies, so that rent-seeking behavior by the elite is not necessarily carried out at the expense of the population at large. In particular, Duesenberry conjectured that some forms of rent seeking might avoid extreme short-run outcomes

that hurt some people a lot and are only of marginal benefit to the population as a whole.

Commenting on the fact that in many formerly communist-controlled countries, substantial output declines were not accompanied by large increases in unemployment, some Panel members suggested that this absence of a typical Okun's law relation was evidence of shortcomings of the instituted reforms. Others suggested that it might simply reflect measurement error. Hall reasoned that unemployment would normally rise as resources were reallocated from loss-making industries to profitable ones. The failure of unemployment to rise substantially during initial reforms indicates one of two things. Either Russia can reallocate workers much better than Germany, which suggests that markets in Russia are already functioning well and are able to absorb large numbers of workers as unprofitable industries are shut down. Or the reorganization of the Russian economy has not yet been effectively implemented. Hall noted that the latter suggests that substantial unemployment still lies ahead for Russia. Alan Blinder was more inclined to attribute the strong violation of Okun's law for post-communist countries to measurement error, noting that the liberalization of these economies might be yielding substantial restructuring gains that are obscured by large changes in relative price structures. John Flemming agreed that restructuring gains might be substantial, and that changes in output mix might explain the apparent violation of Okun's law. He noted that output can rise, measured at world prices, and fall when, as is commonly the case, it is measured at old, prereform prices.

Duesenberry noted some other distortions that would help explain the violation of Okun's law. Individuals who used to work at state-run companies start very small businesses of their own, whose output is very low or, possibly, not counted. And companies that lose their subsidy retain employees so that they can continue to receive company housing and other nonmonetary benefits even if they are not working, producing, and receiving wages. In addition, he noted that low unemployment benefits can contribute to mismeasurement, since people do not find it worthwhile to register as unemployed, although the importance of this measurement problem differs substantially across post-communist countries; some eastern European countries have quite reliable reporting systems. Duesenberry concluded that one should not

place much emphasis on the discussion of unemployment in the paper, but should focus on output declines, where measurement problems might be less severe.

Johnson agreed that the apparent violation of Okun's law may reflect the fact that many workers engage in informal economic activities in the secondary economy. He added that the secondary economy appears to be much more prominent in Russia than in many eastern European countries, and agreed that the structure of unemployment benefits in Russia may lead to greater mismeasurement of unemployment there than in other post-communist countries. Åslund, however, noted that in areas of Russia where people are actually being laid off, unemployment (including hidden unemployment) is actually lower than it is elsewhere. He reasoned that once employees are fired and are forced to fend for themselves, they are quite successful, since they are highly educated and there is ample capital equipment. Åslund asserted that the real problem of hidden unemployment comes from managers who refuse to fire people, so that the reallocation of labor is severely curtailed. In addition, he emphasized that the substantial downward real wage flexibility in Russia is an important factor in keeping Russian unemployment low over the transition period.

A number of Panel members addressed questions about initial conditions and the extent to which the reform process is predetermined, issues raised by Barry Ickes in his formal comment. Debate over whether to reform gradually or radically might be academic if reforms along the transition paths of many post-communist countries are substantially predetermined. Laurence Kotlikoff noted that the paper did not distinguish between exogenous reforms that might have a causal role in economic transitions, and reforms that are inevitable, given a set of initial conditions. Blinder noted that one key initial condition for the reform process might be the degree to which a social and political consensus exists before the reform process starts. Duesenberry agreed, and noted that the Baltic countries, Poland, and Hungary all began reform with a strong social consensus to move toward democracy and a free-market economy. He conjectured that this consensus arose because all these countries had been occupied by the Soviets, and were therefore motivated to move away from Soviet-style, centrally planned economies. Flemming added that it would be useful to classify the

initial conditions with greater care in order to gauge the obstacles to reform and to evaluate the connection between the feasibility of reforms and their success.

Members of the Panel were divided as to whether the liberalization indexes used in the paper appropriately measure the extent to which post-communist countries have reformed their economies. While Duesenberry noted that the indexes capture the multidimensional nature of liberalization by accounting for diverse developments such as privatization and price and trade liberalization, Flemming questioned their ability to reflect the extent of reforms. He illustrated the inherent ambiguity with an example: Suppose a post-communist country institutes comprehensive reforms that replace a centrally planned economy with a free-market system, but retains some tariffs as a protective structure that is to be phased out over time. The initial reforms might be classified as radical, even though the country's price structure evolves only slowly toward liberalization. Such a plan defies easy classification because it combines elements of both radical and gradual reform.

John Helliwell recalled that back in 1990 many of the post-communist countries, particularly in eastern Europe, were considered good candidates for fast convergence to western European levels of per capita income. High levels of education and human capital and substantial linguistic, cultural, and financial ties to emigre communities in Western nations were thought to give these countries an advantage relative, say, to countries in Latin America. In light of these supposed advantages, Helliwell wondered why the average growth rates of post-communist countries have actually been so low, relative to other countries with emerging markets. Johnson responded that the paper does not address that comparison, but does address why output fell so much further in those countries that were formerly republics of the Soviet Union than in other post-communist countries. He reasoned that the much more severe output declines in these economies were due to the complete disruption of trade and the much larger military and heavy industry sector, which could not compete with Western companies.

References

- Aizenman, Joshua. 1992. "Competitive Externalities and the Optimal Seigniorage." *Journal of Money, Credit, and Banking* 24(1): 61–71.
- Aghion, Philippe, and Olivier J. Blanchard. 1994. "On the Speed of Transition in Central Europe." In *NBER Macroeconomics Annual 1994*, edited by Stanley Fischer and Julio J. Rotemberg. Cambridge, Mass.: MIT Press.
- Alesina, Alberto, and Allan Drazen. 1991. "Why are Stabilizations Delayed?" *American Economic Review* 81(5): 1170–88.
- Amsden, Alice H., Jacek Kochanowicz, and Lance Taylor. 1994. *The Market Meets its Match: Restructuring the Economies of Eastern Europe*. Cambridge, Mass.: Harvard University Press.
- Åslund, Anders. 1989. *Gorbachev's Struggle for Economic Reform*. Ithaca, N.Y.: Cornell University Press.
- . 1995. *How Russia Became a Market Economy*. Washington: Brookings.
- . 1996. "Reform vs. 'Rent-Seeking' in Russia's Economic Transformation." *Transition* 2(2): 12–16.
- Athey, Susan. 1994. "Monotone Comparative Statics in Stochastic Optimization Problems." Unpublished paper. Stanford University, Graduate School of Business (November).
- Atkeson, Andrew, and Patrick J. Kehoe. 1993. "Industry Evolution and Transition: The Role of Information Capital." Staff Report 162. Minneapolis: Federal Reserve Bank of Minneapolis Research Department (August).
- Balcerowicz, Leszek. 1994. "Understanding Postcommunist Transitions." *Journal of Democracy* 5(4): 75–89.
- . 1995. *Socialism, Capitalism, Transformation*. Budapest: Central European University Press.
- Beogetic, Zeljko, Diana Dragutinovic, and Pavle Petrovic. 1995. "Anatomy of Hyperinflation and the Beginning of Stabilization in Yugoslavia, 1992–94." Unpublished paper. World Bank and Center for Economic Studies, Belgrade.
- Blanchard, Olivier. 1996. *The Economics of Transition in Eastern Europe*. Oxford: Oxford University Press (forthcoming).
- Blanchard, Olivier, Simon Commander, and Fabrizio Coricelli. 1995. "Unemployment and Restructuring in Eastern Europe and Russia." In *Unemployment, Restructuring, and the Labor Market in Eastern Europe and Russia*, edited by Simon Commander and Fabrizio Coricelli. Washington: World Bank.
- Boone, Peter, and Boris Fedorov. 1996. "The Ups and Downs of Russian Economic Reforms." In *Economies in Transition: Asia and Europe*, edited

- by Jeffrey Sachs and Wing Thye Woo. Cambridge, Mass.: MIT Press (forthcoming).
- Boone, Peter, and Jacob Horder. 1996. "Why Formerly Socialist Countries Maintained High Inflation." Unpublished paper. London School of Economics (April).
- Bruno, Michael, and William Easterly. 1995. "Inflation Crises and Long-Run Growth." Working Paper 5209. Cambridge, Mass.: National Bureau of Economic Research (August).
- Buchanan, James M., Robert D. Tollison, and Gordon Tullock, eds. 1980. *Toward a Theory of the Rent-Seeking Society*. College Station, Tex.: Texas A&M University Press.
- Cagan, Phillip. 1956. "The Monetary Dynamics of Hyperinflation." In *Studies in the Quantity Theory of Money*, edited by Milton Friedman. Chicago: University of Chicago Press.
- Calvo, Guillermo A., and Fabrizio Coricelli. 1992. "Stabilizing a Previously Centrally Planned Economy: Poland 1990." *Economic Policy* 14(April): 175–208, 213–26.
- Citrin, Daniel A., and Ashok K. Lahiri, eds. 1995. "Policy Experiences and Issues in the Baltics, Russia, and Other Countries of the Former Soviet Union." Occasional Paper 133. Washington: International Monetary Fund (December).
- Cochrane, John H., and Barry W. Ickes. 1995. "Macroeconomics in Russia." In *Economic Transition in Eastern Europe and Russia: Realities of Reform*, edited by Edward P. Lazear. Stanford, Calif.: Hoover Institution Press.
- Costello, Humphrey. 1996. "The Fox or the Farmer? An Experience Goods Approach to Property Restitution and Investment." Unpublished paper. Duke University, Department of Political Science (February).
- Dabrowski, Marek. 1994. "Different Strategies of Transition to a Market Economy: How they Work in Practice?" Unpublished paper. Warsaw: Center for Social and Economic Research (December).
- de Melo, Martha, Cevdet Denizer, and Alan Gelb. 1996. "From Plan to Market: Patterns of Transition." Policy Research Working Paper 1564. Washington: World Bank.
- Dewatripont, Mathias, and Gérard Roland. 1992a. "Economic Reform and Dynamic Political Constraints." *Review of Economic Studies* 59(4): 703–30.
- . 1992b. "The Virtues of Gradualism and Legitimacy in the Transition to a Market Economy." *Economic Journal* 102(411): 291–300.
- . 1995. "The Design of Reform Packages under Uncertainty." *American Economic Review* 85(5): 1207–23.
- Downen, Richard J., James M. Johnson, and Gerald R. Jensen. 1994. "Poison

- Pills and Corporate Governance." *Applied Financial Economics* 4(4): 305–13.
- Ericson, Richard E. 1996. "Note on Input-Output Tables of Centrally Planned Economies." Unpublished paper. Columbia University (March).
- European Commission. Various years. *Central and Eastern Eurobarometer: Public Opinion and the European Union*.
- European Bank for Reconstruction and Development. 1993. *Annual Economic Outlook*. London: European Bank for Reconstruction and Development.
- . 1995. *Transition Report 1995*. London: European Bank for Reconstruction and Development.
- Fernandez, Raquel, and Dani Rodrik. 1991. "Resistance to Reform: Status Quo Bias in the Presence of Individual-Specific Uncertainty." *American Economic Review* 81(5): 1146–55.
- Fischer, Stanley, and Alan Gelb. 1991. "The Process of Socialist Economic Transformation." *Journal of Economic Perspectives* 5(4): 91–105.
- Fischer, Stanley, Ratna Sahay, and Carlos A. Végh. 1996. "Stabilization and Growth in Transition Economies: The Early Experience." *Journal of Economic Perspectives* 10(2): 45–66.
- Friedman, Eric J., and Simon Johnson. 1995. "Complementarities and Optimal Reform." Unpublished paper. Duke University (November).
- Frydman, Roman, and Andrzej Rapaczynski. 1994. *Privatization in Eastern Europe: Is the State Withering Away?* Budapest: Central European University Press.
- Gates, Susan, Paul Milgrom, and John Roberts. 1996. "Complementarities in the Transition from Socialism: A Firm-Level Analysis." In *Reforming Asian Socialism*, edited by John McMillan and Barry Naughton. Ann Arbor, Mich.: University of Michigan Press (forthcoming).
- Gomulka, Stanislaw. 1992. "Polish Economic Reform, 1990–91: Principles, Policies, and Outcomes." *Cambridge Journal of Economics* 16(3): 355–72.
- . 1995. "The IMF-Supported Programs of Poland and Russia, 1990–94: Principles, Errors, and Results." *Journal of Comparative Economics* 20(3): 316–46.
- Hansson, Ardo H. 1994. "The Baltic States: Poised for Growth." *Östekonomisk Rapport* 6(5). Stockholm Institute of East European Economies.
- Ickes, Barry W., and Randi Ryterman. 1995. "The Organization of Markets and Its Role in Macroeconomic Stabilization During Transition." Unpublished paper. World Bank (October).
- International Labour Office, Central and Eastern European Team. 1995. *The Ukrainian Challenge: Reforming Labour Market and Social Policy*. Budapest: Central European University Press.
- International Monetary Fund and others. 1991. *A Study of the Soviet Economy*, vols. 1–3. Paris: International Monetary Fund, World Bank, Organisation

- for Economic Co-operation and Development, and European Bank for Reconstruction and Development.
- Johnson, Simon, Daniel Kaufmann, and Oleg Ustenko. 1995. "Formal Employment and Survival Strategies After Communism." Unpublished paper. Duke University (December).
- Johnson, Simon, Panos Kouvelis, and Vikas Sinha. 1996. "On Reform Intensity Under Uncertainty." Unpublished paper. Duke University, Fuqua School of Business (February).
- Johnson, Simon, and Marzena Kowalska. 1994. "Poland: The Political Economy of Shock Therapy." In *Voting for Reform: Democracy, Political Liberalization, and Economic Adjustment*, edited by Stephan Haggard and Steven B. Webb. Oxford: Oxford University Press.
- Johnson, Simon, and Gary Loveman. 1995. *Starting Over in Eastern Europe: Entrepreneurship and Economic Renewal*. Boston, Mass.: Harvard Business School Press.
- Kornai, János. 1992. *The Socialist System: The Political Economy of Communism*. Princeton, N.J.: Princeton University Press.
- . 1995. "The Political Economy of the Hungarian Stabilization and Austerity Program." Unpublished paper. Harvard University (June).
- Kitschelt, Herbert. 1995. "Formation of Party Cleavages in Post-Communist Democracies: Theoretical Propositions." *Party Politics* 1(4): 447–72.
- Labán, Raúl, and Holger C. Wolf. 1993. "Large-Scale Privatization in Transition Economies." *American Economic Review* 83(5): 1199–210.
- Layard, Richard, and Andrea Richter. 1995. "Labour Market Adjustment—the Russian Way." In *Russian Economic Reform at Risk*, edited by Anders Åslund. New York: St. Martin's.
- Leitzel, Jim. 1995. *Russian Economic Reform*. New York: Routledge.
- Li, Wei. 1994. "A Tale of Two Reforms." Unpublished paper. Duke University, Fuqua School of Business (November).
- Lipton, David, and Jeffrey D. Sachs. 1990. "Creating a Market Economy in Eastern Europe: The Case of Poland." *BPEA*, 1:1990, 75–133.
- Milgrom, Paul, and John Roberts. 1990. "Rationalizability, Learning, and Equilibrium in Games with Strategic Complementarities." *Econometrica* 58(6): 1255–77.
- . 1994. "Comparing Equilibria." *American Economic Review* 84(3): 441–59.
- Milgrom, Paul, and Chris Shannon. 1994. "Monotone Comparative Statics." *Econometrica* 62(1): 157–80.
- Murrell, Peter. 1992. "Evolution in Economics and in the Economic Reform of the Centrally Planned Economies." In *The Emergence of Market Economies in Eastern Europe*, edited by Christopher K. Clague and Gordon C. Rausser. Oxford: Basil Blackwell.

- Murrell, Peter, and Yijiang Wang. 1993. "When Privatization Should Be Delayed: The Effect of Communist Legacies on Organizational and Institutional Reforms." *Journal of Comparative Economics* 17(2): 385–406.
- Mussa, Michael. 1986. "The Adjustment Process and the Timing of Trade Liberalization." In *Economic Transition in Developing Countries*, edited by Armeane M. Choksi and Demetris Papageorgiou. Oxford: Basil Blackwell.
- Olson, Mancur, Jr. 1965. *The Logic of Collective Action: Public Goods and the Theory of Groups*. Cambridge, Mass.: Harvard University Press.
- Organisation for Economic Co-operation and Development. 1995. *The Russian Federation 1995*. OECD Economic Surveys. Paris: Organisation for Economic Co-operation and Development.
- Rostowski, Jacek. 1994. "The Yugoslav Hyperinflation and Stabilization of 1992–4." Unpublished paper. Central European University, Budapest (June).
- Sachs, Jeffrey D., and Andrew Warner. 1995. "Economic Reform and the Process of Global Integration." *BPEA*, 1:1995, 1–95.
- . 1996. "Achieving Rapid Growth in the Transition Economies of Central Europe." Unpublished paper. Harvard Institute for International Development (January).
- Sachs, Jeffrey D., and Wing Thyee Woo. 1994. "Structural Factors in the Economic Reforms of China, Eastern Europe, and the Former Soviet Union." *Economic Policy* 9(18): 101–45.
- Shleifer, Andrei, and Robert W. Vishny. 1993. "Corruption." *Quarterly Journal of Economics* 108(3): 599–617.
- . 1994. "Politicians and Firms." *Quarterly Journal of Economics* 109(4): 995–1025.
- Slay, Ben. 1995. "The Polish Economy: Six Years After." Working Paper 95-6. Middlebury, Vt.: Middlebury College.
- Skolnikov, Vladimir M. 1995. "Recent Trends in Russian Mortality: 1993–94." Unpublished paper. Russian Academy of Sciences, Moscow (October).
- Stockholm Institute of East European Economies (Östekonomiska Institutet). 1996. *Key Economic Indicators* 4(1)(April 12).
- Wei, Shang-Jin. 1993. "Gradualism versus Big Bang: Speed and Sustainability of Reforms." Faculty Research Working Paper R93-2. Cambridge, Mass.: Harvard University, John F. Kennedy School of Government (March).