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How I Learned to Stop Worrying and Love the Crisis

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Abstract

In this paper we investigate the effects of economic crises on the subsequent economic performance, economic liberalization and institutional change. Our analysis is based on a sample of post-communist countries, most of which experienced severe economic crises in the early 1990s. We find that the severity of the crisis has a positive impact on the subsequent pace of economic reform and economic growth. The effect on institution change is more complicated: the crisis appears to cause an initial worsening of institutions followed by a subsequent improvement later on.

Keywords: crisis, transition, growth, inflation, reform, institutions.

JEL Codes: O11, O47, P27

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1 Introduction

Why do countries undertake systemic reforms of their economies? An important motivation is the desire and need to improve the country's economic performance and wellbeing of its citizens. However, the eventual long-term outcome of economic reforms is uncertain and they are usually associated with substantial costs and economic hardship in the short run (Roland, 2000, chapters 2 and 3). As a result, efficiency-enhancing reforms may be rejected by voters even if they are expected to benefit the majority of them (Fernandez and Rodrik, 1991; Rodrik, 1999) or they may be postponed inefficiently long (Alesina and Drazen, 1991).

Alesina and Drazen (1991) make an intriguing proposition: reforms are postponed because of a war of attrition over who will bear their costs. The economic situation then worsens progressively until, for one of the parties concerned, the cost of postponing the reform any further exceeds the cost of implementing them. They observe, for example, that it is typically easier to drum up wide-spread political support for a stabilization program when inflation reaches hyperinflationary proportions but not during the preceding (often long) period of moderately high inflation. In other words, reform only gets implemented when the underlying situation reaches crisis proportions and becomes unsustainable: things have to get really bad before they can start getting better.

This view received some empirical support. Bruno and Easterly (1996, 1998) find that growth accelerates following high-inflation crises and that such countries also tend to not only stabilize inflation but also liberalize and open up their economies and privatize public assets. Drazen and Easterly (2001), similarly, find that experiencing extreme values of inflation and black-market premium translates into a more dramatic improvement in subsequent performance than moderate ones. However, these papers focus on high-inflation (and debt) crises, not on economic contractions. Drazen and Easterly consider growth crises too but fail to find any evidence that they similarly foster subsequent improvements.

Crises also can hinder reform. The studies of determinants of voting behavior in post-communist countries find that the costly reforms undermine support for pro-reform parties and may lead to such parties being voted out of office (Fidrmuc, 2000 a,b; Jackson, Klich and Pznańska, 2001; Tucker, 2002). Such political reversals, in turn, allow the winners of partial reform to capture the state and stall the reform momentum (Hellman, 1998). This second view would suggest that there may be a thin line between vicious and virtuous crises: some crises may not generate political consensus in favor of reform but instead lead to the reform being abandoned altogether.

One problem with studying the effect of crises on reform is that episodes of crises and those of fundamental reform are relatively rare. Therefore, rather than address this issue in a sample of countries with few observations of crises or reform, we focus on a sample of countries that are rich both in reform and crises: the post-communist countries. These countries were characterized by a high degree of government interference in their economies, high to exclusive public ownership of productive assets and high to complete central control over prices. All experienced deteriorating economic performance in the course of the 1980s which eventually lead to attempts at systemic change in the early 1990s. The reforms undertaken (or at least attempted) involved substantial transformation of the underlying economic system, transfer of ownership and reallocation of resources. This was expected to lead to a more efficient allocation and, in turn, an acceleration of economic growth and, in the long term, improvement in economic wellbeing. In the short term, however, the reallocation process caused an economic contraction, which, it was hoped, would be followed by a recovery and overall improvement over the pre-reform status quo.

In reality, however, the depth and length of the 'temporary' output contraction differed considerably. While some countries, such as Poland, Czech Republic or Uzbekistan experienced relatively mild recessions and started recovering after 2-5 years, others saw their output falling by as much as two-thirds (Moldova, Tajikistan) or even three quarters (Georgia) of the pre-transition level, with the recession lasting in some cases for as long as a decade. We ask the question whether these initial crises, and their severity, have had any effect on the subsequent reform momentum, economic performance or institutional change. After briefly introducing the data in the following section, section 3 presents the results of our analysis of the impact of crises on economic liberalization, growth, investments, inflation and institutional change.

2 Data

The analysis covers all post-communist countries for which data are available. Altogether, we thus use data on 29 countries that used to be part of the former Soviet zone of influence, including the former constituent republics of the Soviet Union, Yugoslavia and Czechoslovakia.[1] The crises and reforms we consider started in the early 1990s, shortly after the collapse of communist regimes in these countries. Our data therefore cover the years 1990 to 2008. The latter year is the latest year for which data were available at the time our study was initiated. Conveniently, it also largely eliminates the current on-going economic crises from the analysis so that it does not compound the effects of the transition-induced crises that we are after.

To capture the countries' progress in implementing market-oriented reforms, we use the average of the eight progress-in-transition indicator compiled and published annually by the EBRD.[2] We exploit the World Bank Development Indicators 2009 as the source of all macroeconomic variables, except for unemployment rates which we obtained from the EBRD Transition Reports (various issues). We use the average Freedom House democracy index[3] and Kaufmann and al.'s (2009) governance indicators to take account of the progress in political and institutional transitions. Finally, we take account of periods of war using the Correlates of War (2010) dataset.

3 Results

As the first step in our analysis, we need a variable to measure the severity of transition-induced recession. To do this, we compute the cumulative output fall (in percent) since 1989. We only consider the contraction of output and not the subsequent recovery (which we seek to

[1] Albania, Armenia, Azerbaijan, Belarus, Bosnia-Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Georgia, Hungary, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Macedonia, Moldova, Mongolia, Monte Negro, Poland, Romania, Russia, Serbia, Slovakia, Slovenia, Tajikistan, Turkmenistan, Ukraine and Uzbekistan.

[2] These indicators measure each country's progress in the following fields: price liberalization, foreign exchange and trade liberalization, small scale privatization, large scale privatization, enterprise reform, competition policy, banking reform and non-banking financial institutions. Each indicators ranges from 1 (unreformed centrally-planned economy) to 4+ (liberal market economy). As is common in this literature, we replace plus and minus distinctions by adding and subtracting 0.33 (so that 4+ becomes 4.33 while 4- is 3.67). We do not use the more recently available EBRD indicators of infrastructure reform, only the eight original indicators measuring progress in Washington-consensus reform (liberalization, stabilization and privatization).

[3] Specifically, this index is the average of the Freedom House measures of political freedoms and civil liberties, rescaled so that higher values correspond to more democracy. It ranges between 1 (autocracy) to 7 (fully free).

explain). That means that once output reaches the bottom of its post-1989 trajectory, we keep output fall at the level attained at the lowest point. In this way, it captures the maximum size of the cumulative output contraction over the previous years since the beginning of transition.[4] Our objective is to see whether the severity of the output fall has had a lasting impact on the subsequent pace of market-oriented reform, economic performance and other outcomes of interest. Moreover, as the effect of the crisis can vanish as time goes by, we also compute a "time after crisis" variable which takes the value 0 during the crisis, and becomes a time trend thereafter. We interact this time variable with output fall to test whether the effect of the crisis diminishes or strengthens over time.

We first consider the impact of output fall on progress in implementing market oriented reform. Our dependent variable is the first difference in the average of the eight progress-in-transition indicators of the EBRD. Each regression includes the lagged level of this index to account for the past level of reform: holding everything else constant, a country can implement more reform if its starting level of reform is low. We also include the lagged level of the average Freedom House democracy index to account for the possible reform-fostering effect of democratization (Fidrmuc, 2003) and a dummy distinguishing countries experiencing a military conflict. Except for the war dummy, all independent variables are included in lags in order to avoid any endogeneity problems. All regressions are fixed-effects panel regressions.

The results are presented in Table 1. Column (1) presents the most parsimonious specification. We find that the lagged level of reform slows down the implementation of further reform; this is not surprising given that the reform index is bound from above. The level of past democracy, on the other hand, fosters economic liberalization. Not surprisingly, countries affected by war reform their economies more slowly. The variable of interest, output fall, is positive and highly significant: countries that experienced a deeper contraction, ceteris paribus, respond to this by accelerating economic reform.

It is possible, however, that this effect is found only because output fall is correlated with some other influential variable. In column (2), we replace it with lagged per-capita GDP (in thousands of PPP US dollars) to capture the effect of the level of economic development on progress in reform. Its effect is negative and significant – richer countries implement less reform – which seems similar to the positive effect of output fall in column (1). However, when we include both variables together in column (3), only output fall remains significant while GDP per capita now appears to have no effect on reform progress. In column (4), we add lagged inflation (in logs to reduce the influence of episodes of extremely high inflation). Its effect is positive and significant: a recent experience of high inflation helps accelerate reforms. Yet, the effect of output fall remains strongly significant and essentially unchanged. Adding unemployment (column 5) similarly makes little difference (although it makes the effect of inflation insignificant and unemployment itself seems to discourage reform). Finally, the last column introduces a measure of the time that elapsed since the end of crisis, along with squared time, and these two terms interacted with output fall.[5] The quadratic time trend can potentially capture the time specific profile of reform while the interaction term between time and output fall will show whether the effect of the crises on subsequent reform strengthens or diminishes over time. None of these variables are significant, however. This

[4] In several cases, a country in question experienced a double-dip recession. One example is Russia where output initially started to recover in 1997 only to fall further in 1998 following its economic and financial crisis. In that case, we consider the deeper dip out of the two as the bottom of the transformational recession (the second dip in 1998 in Russian case).

[5] We also test for non linear effect of output fall itself introducing it on a quadratic form, but it wasn't significant. This result is available upon request.

means that the effect of crisis appears immediately and appears permanent.

Next, we consider the impact of transition-induced output fall on the subsequent growth. Specifically, the dependent variable now is the growth rate of per-capita GDP. Each regression controls for lagged growth, lagged reform index as well as for being involved in a military conflict. The results are summarized in Table 2. Lagged growth appears with a positive coefficient which, nevertheless, is well below one: there is path-dependence in growth but it is limited. Countries that progressed further in terms of market-oriented reform appear to grow faster but this effect is not always significant. Importantly, the effect of output fall is always strongly significant and positive: the crises are followed by accelerated growth. The positive effect of output fall is akin to the standard economic-convergence pattern: countries experiencing transition-induced recession become poorer and then, not surprisingly, they catch up faster. Indeed, when we include GDP per capita in our regressions, it appears, as is standard in the growth literature, with a negative and significant coefficient (column 2). However, when controlling for per-capita GDP alongside output fall (column 3), the coefficient of output fall changes only little while that of lagged output per person loses its significance: the effect of crisis dominates the convergence effect. Inflation translates into lower growth but again the positive effect of output fall persists, as is the case when adding unemployment (columns 4 and 5). In column (6), we again introduce the time since end of crisis and the interaction term between time and output fall. The quadratic time trend is not significant but the interaction terms are. Specifically, we observe an inverted U-shaped pattern: the positive effect of the crisis initially strengthens but eventually falls again.[6]

In Tables 3 and 4, we consider the effect of output fall on investment and inflation. It is conceivable that a crisis can have indirect effects on growth via its impact on the evolution of some of the determinants of growth. However, neither investment nor inflation seems to be affected by the severity of the transition-induced recession. It is worth noting, nevertheless, that the progress in reform is as a strong determinant of investment. Since we find that crises foster reform progress, they would also tend to encourage investment indirectly. Furthermore, the crisis effect on both investment and inflation appears to change over time, following an inverted U-shaped pattern for investment and U-shaped one for inflation. Hence, the crises affects both investment and inflation favorably, that is increasing investment and lowering inflation, but this favorable effect only appears gradually and with a delay (and eventually dissipates again). Table 5, in turn, shows that the severity of the crisis depresses inflows of foreign direct investment (interestingly, military conflicts are less of a deterrent). Again, it is noteworthy that the reform index fosters FDI inflows. The crisis effect dominates that of per-capita GDP: when entered on its own, the latter is marginally significant, indicating that richer countries are more attractive as destinations for FDI. However, GDP is never even close to being significant when entered alongside output fall.

So far, we focused on the effect of crises on progress in economic reform and on economic performance. However, crises may also affect political institutions. Therefore, in Table 6, we consider the impact of the transition-induced recession on the pace of democratization. We measure the level of democracy as the average of the indicators of political freedoms and civil liberties reported by the Freedom House. Our measure of democratization, correspondingly, is the first difference of this indicator. Since we found earlier that crises translate into faster economic reform and that democratization also correlates with economic reform, we expected to find a positive effect again. Surprisingly, we

[6] We also introduced a quadratic term for ouptput fall itself in the 5th model. We found a U shape curve between output fall and gdp per capita growth rate. Yet, the minimum of the function stands at 13.095, which is below the lowest observed output fall in our sample (Belarus in 1992 with an output fall egals to 13.35). Therefore, output fall has always a positive effect on gdp per capita growth rate in our model.

found the reverse: the deeper the crises, the slower the subsequent democratization process. This effect is very robust to the inclusion of other variables, including GDP per capita – which appears to have positive effect on democratization (although it is not always significantly positive), richer countries tend to become more democratic. As the negative effect of output fall on democratization can vary over time, we again allow the effect to vary over time. None of the time and interaction terms are significant while the effect of the crisis itself remains unaffected (results not reported but available upon request). The last test we undertake is to introduce quadratic term of the output fall, to allow for nonlinearity in the effect, in column (6). We obtain a U-shaped effect, with the minimum attained for output fall reaching 39.5 percent. Hence, if the crisis is deep enough, it does foster democratization.

Given that we find that crises affect economic liberalization as well as democratization, although possibly in opposite directions (fostering liberalization but discouraging democratization), we explore the institutional effect further. Therefore, we ran regressions also with the institutional variables constructed by Kaufmann, Kraay and Mastruzzi (2009). The results, however, appear mixed and not very consistent, at least at the first sight (Table 7). The depth of the transition-induced recession appears to translate into worse institutions (greater corruption and worse rule of law, voice and accountability, political stability, government effectiveness and regulatory quality), although this negative effect is mostly insignificant. However, a very interesting pattern obtains when we account for the time-varying effect of the crisis: the profile of that effect over time is U-shaped, with the quadratic term always significant. This implies that although the crisis may initially lead to a worsening of institutions, this is followed by an improvement later on: when it comes to crises, good things come to those who wait.

The crises tend to be associated not only with output contractions but also with high inflation. We therefore construct another variable capturing cumulative inflation. This is an index of the overall cumulative price increase since 1989 (i.e. value of 2 corresponds to a doubling of the price level, 10 implies a ten-fold increase in prices, etc.). Once inflation has been stabilized, the index stays at the level attained at the time of stabilization. We define stabilization as inflation of 80% pa or lower. Most countries in our data set appear to succeed in controlling inflation after it has been brought down to two-digit levels, therefore this threshold tends to be indicative of a successful stabilization. The cumulative inflation variable thus captures the legacy of high inflation in the past even after run-away inflation has been stopped. All regressions, reported in Table 7, again control for the level of the reform index (which is not consistently significant) and for being involved in a military conflict (not surprisingly, wars are associated with much higher inflation). Neither output fall nor GDP per capita now appear significant as determinants of inflation. However, having a legacy of high past inflation exerts a negative effect: countries tend to learn a lesson from high-inflation episodes.

4 Conclusions

In this paper, we investigate the effect of crises on economic reforms, economic growth, inflation, investment and institutional change. We utilize the experience of the post-communist countries which experienced periods of (often severe) crises following the collapse of communism and central planning in the early 1990s. Our results show that crises indeed serve as a catalyst for reforms. Specifically, crises foster economic reform and lead to better institutions (though the institutional improvement only occurs with a delay). Crises also improve economic performance: they are followed by higher growth and lower inflation. Our

results thus offer support for the 'crises beget reform' hypothesis put forward by Alesina and Drazen (1991) and others.

A plausible implication of our results is that seeking to avoid crises at all costs, as was the case with the Eurozone bailouts of Greece and Ireland in 2010, need not necessarily be productive. While it delivers short term benefits, it may come at a cost of postponing or even avoiding reform and result in lower long-term growth.

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Table 1 Output Fall and Progress in Market-oriented reform

Dependent variable:	EBRD index (first difference)					
	(1)	(2)	(3)	(4)	(5)	(6)
Lagged EBRD index	-0.278	-0.185	-0.302	-0.277	-0.304	-0.35
	(0.014)**	(0.012)**	(0.017)**	(0.019)**	(0.022)**	(0.025)**
Lagged Democracy index	0.079	0.059	0.077	0.065	0.055	0.058
	(0.008)**	(0.008)**	(0.008)**	(0.009)**	(0.010)**	(0.010)**
War	-0.085	-0.108	-0.064	-0.104	-0.109	-0.091
	(0.027)**	(0.032)**	(0.030)*	(0.031)**	(0.034)**	(0.035)**
Lagged outputfall	0.006		0.007	0.006	0.007	0.007
	(0.001)**		(0.001)**	(0.001)**	(0.001)**	(0.001)**
Lagged gdp p.c. (thousands)		-0.013	0.005	0.008	0.006	-0.014
		(0.004)**	(0.004)	(0.004)*	(0.004)	(0.006)*
Lagged inflation				0.013	0.005	0.011
				(0.004)**	(0.005)	(0.005)*
Lagged unemployment					-0.004	-0.004
					(0.002)*	(0.002)*
Outputfall*time						0.0001
						(0.0002)
Outputfall*time²						-3.54E-06
						(0.00002)
Time after crisis						0.0106
						(0.011)
Time after crisis²						0.0003
						(0.0007)
Constant	0.265	0.421	0.241	0.23	0.384	0.563
	(0.031)**	(0.038)**	(0.040)**	(0.049)**	(0.059)**	(0.035)**
Observations	550	524	524	495	456	456
Number of Countries	29	29	29	29	29	29
R-squared	0.45	0.39	0.48	0.5	0.55	0.57

All regressions include country-specific fixed effects. Standard errors in parentheses.
Significance: * 5%; ** 1%

Table 2 Output Fall and Economic Growth

Dependent variable:	GDP p.c. growth rate					
	(1)	(2)	(3)	(4)	(5)	(6)
Lagged EBRD index	4.031	7.612	4.158	2.273	3.162	2.733
	(0.725)**	(0.520)**	(0.854)**	(0.731)**	(0.818)**	(0.947)**
Lagged Investment	0.009	-0.063	0.018	-0.017	-0.075	-0.112
	-0.058	-0.057	-0.058	-0.044	-0.053	(0.056)*
War	-12.359	-14.932	-12.957	-9.455	-9.854	-8.448
	(1.717)**	(1.752)**	(1.753)**	(1.334)**	(1.354)**	(1.372)**
Lagged outputfall	0.246		0.248	0.327	0.323	0.252
	(0.043)**		(0.049)**	(0.040)**	(0.041)**	(0.044)**
Time*outputfall						0.028
						(0.005)**
Time²*outputfall						-0.0015
						(0.0006)*
Time after crisis						-0.273
						(0.424)
Time after crisis²						0.0225
						(0.027)
Lagged gdp p.c. (thousands)		-0.613	-0.134	-0.259	-0.192	-0.428
		(0.182)**	(0.201)	(0.149)	(0.156)	(0.235)
Lagged inflation				-1.404	-1.109	-0.696
				(0.162)**	(0.178)**	(0.197)**
Lagged unemployment					0.089	0.055
					(0.072)	(0.071)
Constant	-16.473	-10.567	-16.062	-8.709	-12.172	-9.6
	(1.819)**	(1.849)**	(2.109)**	(1.932)**	(2.251)**	(2.805)**
Observations	505	503	503	479	451	451
Number of Countries	29	29	29	29	29	29
R-squared	0.49	0.46	0.49	0.67	0.69	0.7

All regressions include country-specific fixed effects. Standard errors in parentheses.
Significance: * 5%; ** 1%

Table 3 Output Fall and Investment

Dependent variable	Investment					
	(1)	(2)	(3)	(4)	(5)	(6)
Lagged Investment	0.702	0.7	0.701	0.718	0.665	0.613
	(0.032)**	(0.031)**	(0.032)**	(0.032)**	(0.038)**	(0.040)**
Lagged EBRDindex	1.485	1.695	1.621	1.808	2.299	2.971
	(0.394)**	(0.280)**	(0.476)**	(0.541)**	(0.592)**	(0.687)**
War	-1.116	-1.219	-1.177	-1.711	-1.482	-0.485
	-0.945	-0.943	-0.969	-0.972	-0.961	-0.98
Lagged outputfall	0.01		0.005	-0.01	-0.015	-0.053
	-0.024		-0.028	-0.02	-0.03	-0.032
outputfall*time						0.0198
						(0.007)**
outputfall*time²						-0.0009
						(0.0005)*
Time after crisis						-0.95
						(0.305)**
Time after crisis²						0.052
						(0.019)**
Lagged gdp p.c. (thousands)		-0.024	-0.013	-0.02	-0.046	-0.171
		-0.101	-0.115	-0.112	-0.115	-0.171
Lagged inflation				0.059	0.039	0.093
				-0.12	-0.127	-0.142
Lagged unemployment					-0.11	-0.11
					(0.052)*	(0.051)*
Constant	2.584	2.609	2.49	2.122	3.504	5.033
	(0.998)**	(1.000)**	(1.179)*	-1.416	(1.601)*	(2.010)*
Observations	503	500	500	476	448	448
Number of Countries	29	29	29	29	29	29
R-squared	0.59	0.59	0.59	0.62	0.6	0.61

All regressions include country-specific fixed effects. Standard errors in parentheses.
Significance: * 5%; ** 1%

Table 4 Output Fall and Inflation

Dependent variable:	Inflation				
	(1)	(2)	(3)	(4)	(5)
Lagged EBRD index	4.104	51.012	139.601	-450.8	-479.3
	-461.71	-393.82	-586.14	(106.67)**	(136.6)**
War	4,552.84	5,083.95	5,040.40	576.576	196.05
	(1,126.2)**	(1,172.3)**	(1,192.7)**	(213.6)**	-220.86
Lagged outputfall	4.308		-6.22	7.45	15.52
	(24.06)		(30.46)	(6.069)	(6.15)*
Outputfall*time					-6.9
					(1.493)**
Outputfall*time²					0.376
					(0.103)**
Time after crisis					210.47
					(68.24)**
Time after crisis²					-10.83
					(4.35)*
Lagged Gdp p.c. (thousands)		-8.138	-23.865	34.627	30.26
		(128.2)	(149.66)	(24.71)	(38.07)
Lagged unemployment				-9.278	-3.9
				(10.517)	(10.54)
Constant	-21.855	73.299	189.697	918.949	813.9
	(944.906)	(1,181.98)	(1,313.27)	(229.015)**	(220.86)*
Observations	524	512	512	469	469
Number of Countries	29	29	29	29	29
R-squared	0.04	0.04	0.04	0.11	0.17

All regressions include country-specific fixed effects. Standard errors in parentheses.
Significance: * 5%; ** 1%

Table 5 Output Fall and Foreign Direct Investment Inflow

Dependent variable:	Foreign Direct Investment					
	(1)	(2)	(3)	(4)	(5)	(6)
Lagged FDI	0.275	0.263	0.276	0.274	0.269	0.265
	(0.046)**	(0.048)**	(0.046)**	(0.047)**	(0.048)**	(0.048)**
Lagged EBRD index	5.658	-1.402	6.069	2.482	2.011	0.561
	(1.895)**	(2.033)	(2.381)*	(2.912)	(3.197)	(3.762)
War	2.281	13.164	2.323	1.824	-0.205	0.333
	(5.203)	(5.013)**	(5.221)	(5.614)	(5.835)	(6.058)
Lagged outputfall	-0.976		-0.992	-1.039	-0.996	-1.059
	(0.168)**		(0.179)**	(0.187)**	(0.211)**	(0.218)**
Outputfall*time						0.0282
						(0.035)
Outputfall*time²						-0.0023
						(0.0023)
Time after crisis						-0.169
						(1.588)
Time after crisis²						0.063
						(0.098)
Lagged gdp p.c. (thousands)		0.813	-0.119	-0.208	-0.006	-0.684
		(0.485)	(0.498)	(0.511)	(0.544)	(0.843)
Lagged inflation				-1.422	-1.099	-0.605
				(0.627)*	(0.7)	(0.843)
Lagged unemployment					0.221	0.212
					(0.246)	(0.249)
Constant	27.027	1.904	27.468	43.243	38.238	44.126
	(6.208)**	-4.963	(6.647)**	(9.362)**	(10.788)**	(12.49)**
Observations	448	447	447	433	414	414
Number of Countries	29	29	29	29	29	29
R-squared	0.18	0.12	0.18	0.19	0.15	0.16

All regressions include country-specific fixed effects. Standard errors in parentheses.
Significance: * 5%; ** 1%

Table 6 Output Fall and Democratization

Dependent variable:	Democracy (first difference)				
	(1)	(2)	(3)	(4)	(5)
Lagged democracy	-0.327	-0.354	-0.342	-0.396	-0.434
	(0.026)**	(0.025)**	(0.027)**	(0.030)**	(0.030)**
Lagged EBRD index	-0.05	-0.018	-0.106	0.079	0.191
	(0.046)	(0.054)	(0.06)	(0.063)	(0.065)**
Lagged output fall	-0.004	-0.005	-0.002	-0.009	-0.044
	(0.002)*	(0.003)*	(0.003)	(0.003)**	(0.007)**
Lagged output fall squared					0.00048
					(0.000)**
War	-0.556	-0.508	-0.363	-0.329	-0.158
	(0.089)**	(0.095)**	(0.100)**	(0.101)**	-0.103
Lagged gdp p.c. (thousands)		0.025	0.017	0.016	0.019
		(0.012)*	(0.012)	(0.011)	(0.011)
Lagged inflation			-0.044	-0.008	0.014
			(0.013)**	(0.013)	(0.014)
Lagged unemployment				0.004	0.008
				(0.005)	(0.005)
Constant	1.821	1.747	1.963	1.85	2.037
	(0.101)**	(0.128)**	(0.157)**	(0.174)**	(0.172)**
Observations	551	525	496	457	457
Number of Countries	29	29	29	29	29
R-squared	0.37	0.4	0.37	0.33	0.38

All regressions include country-specific fixed effects. Standard errors in parentheses.
Significance: * 5%; ** 1%

Table 7 Output Fall and Quality of institutions

Dependent variable:	Control of Corruption (1)	Voice and Account-ability (2)	Political Stability (3)	Gov Effective-ness (4)	Regulatory Quality (5)	Rule of Law (6)
Lagged EBRD index	0.155	0.192	0.340	0.313	0.270	0.144
	(0.085)	(0.076)**	(0.127)**	(0.078)**	(0.086)**	(0.068)*
Lagged democracy	0.103	0.214	0.027	0.039	0.014	0.068
	(0.026)**	(0.023)**	(0.039)	(0.024)	(0.027)	(0.021)**
Lagged output fall	-0.006	-0.015	0.012	-0.009	0.004	-0.021
	(0.014)	(0.013)	(0.021)	(0.013)	(0.014)	(0.011)
Outputfall*time	-0.0013	-0.0009	-0.0008	-0.0020	-0.0011	-0.0006
	(0.0006)*	(0.0005)	(0.0009)	(0.0006)**	(0.0006)	(0.0004)
Outputfall*time^2	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
	(0.0000)**	(0.0000)*	(0.0000)*	(0.0000)**	(0.0000)**	(0.0000)**
Time after crisis	0.0348	0.026	-0.042	0.077	0.035	-0.018
	(0.0282)	(0.025)	(0.042)	(0.026)	(0.028)	(0.023)
Time after crisis^2	-0.0053	-0.0023	-0.0007	-0.0058	-0.0019	-0.0027
	(0.0015)**	(0.0014)	(0.0023)	(0.0014)**	(0.0015)	(0.0012)*
Lagged gdp p.c. (thousands)	0.038	-0.018	0.033	0.032	-0.016	0.052
	(0.011)	(0.010)	(0.017)*	(0.011)**	(0.011)	(0.009)**
Lagged inflation (log)	-0.052	-0.010	0.032	-0.007	-0.013	-0.004
	(0.012)	(.010)	(0.017)	(0.011)	(0.011)	(0.009)
War	-0.002	-0.183	-1.069	-0.148	-0.812	-0.198
	(0.204)	(0.182)	(0.304)**	(0.189)	(0.206)**	(0.164)
Constant	-1.076	-0.828	-1.758	-1.099	-1.124	-0.294
	(0.628)	(0.559)	(0.935)	(0.582)	(0.633)	(0.503)
Observations	278	278	278	278	278	278
Number of Countries	29	29	29	29	29	29
R-squared	0.36	0.46	0.30	0.36	0.51	0.40

All regressions include country-specific fixed effects. Standard errors in parentheses.
Significance: * 5%; ** 1%

Table 8 Cumulative Inflation

	(1)	(2)	(3)	(4)
Dependent variable:	Inflation			
Lagged EBRD index	55.355	234.517	231.533	-493.653
	(484.589)	(422.007)	(619.201)	(112.527)**
War	3,839.13	4,217.13	4,219.20	585.734
	(1,211.194)**	(1,239.001)**	(1,279.563)**	(222.243)**
Lagged outputfall	11.216		0.221	8.54
	(26.885)		(33.533)	(6.424)
Lagged gdp p.c. (thousands)		-42.474	-41.971	38.195
		(131.345)	(152.015)	(25.341)
Cumulated inflation	-0.002	-0.002	-0.002	0.000
	(0.000)**	(0.000)**	(0.000)**	(0.000)
Lagged unemployment				-10.802
				(11.092)
Constant	-92.201	148.483	144.648	975.601
	(1,019.0)	(1,237.3)	(1,368.5)	(236.606)**
Observations	493	482	482	448
Number of Countries	27	27	27	27
R-squared	0.09	0.09	0.09	0.12

All regressions include country-specific fixed effects. Standard errors in parentheses.
Significance: * 5%; ** 1%