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The Myth of Output Collapse after Communism

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SUMMARY

According to official statistics, output plunged in almost all Soviet-type countries toward the end of communism. Then in the first year of transition, the plunges turned even more dramatic, continuing for years. The total registered declines in GDP range from 13 percent in the Czech Republic from 1989 to 1992 to 77 percent in Georgia from 1989 to 1994. This collapse has been widely proclaimed as the worst depression in the industrialized world, exceeding the Great Depression of 1929–33. Both communist and post-communist statistics are deeply flawed, however—and in different ways.

The analysis and conclusions here contrast sharply with the conventional view. First, everywhere the decline in output has been much smaller than perceived, and a few countries grew immediately rather than contract. Second, the Soviet economy was in a far worse shape than generally understood. Third, even after revising the official statistics, the differences between failures and successes remain vast—and the correlation between structural reform and economic performance becomes much stronger. Fourth, flawed statistics misled policy makers in post-communist transformation, inciting them to adopt inefficient gradual reforms, which reinforced rent-seeking and prolonged stagnation. And fifth, economic welfare has diminished far less than output.

Use the right base year and focus on the post-communist fall in output. Economic chaos prevailed at the end of communism, with Romania and the Soviet Union registering sharp falls of output in its last year—Romania 7.9 percent in 1989, and the Soviet Union 6.1 percent in 1991 (table 2). While East-Central European transition is measured against the last communist year, the standard for the former Soviet republics (FSRs) is 1989, though it should be 1991 if discussing post-communism. That correction to 1991 eliminates an average of 5 percent of 1989 GDP in the decline for the FSRs.

Add unregistered output. Central planning was a system of cheating. Everybody had an interest in over-reporting production, as bonuses of ministers, managers, and workers depended on their gross production. Their persistent over-reporting probably amounted to some 5 percent of GDP (Åslund 1990). The interest in such doctoring of numbers disappeared immediately with the transition. Under capitalism, people and enterprises became anxious to avoid taxes, implying a downward bias. Furthermore, statistical agencies failed to keep up with myriad new enterprises.

This unofficial economy thus makes the economic development of the region look very different. The average contraction from 1989 to 1995 was 32 percent rather than 40 percent for the whole region, and 36 percent rather than 54 percent in eight CIS countries. This adjustment eliminates 39 percent of 1989 GDP for Azerbaijan, 28 percent for Ukraine, and 25 percent for Russia.

Deduct unsalable goods. Much Soviet manufacturing was sheer value detraction, as Ronald McKinnon (1991) put it. For instance, Soviet fishermen caught excellent fresh fish. But rather than sell it on the market, they processed it into (often inedible) fish conserves, reducing the fish's value to almost zero. This value detraction was recorded, incorrectly, as value added in national accounts and thus included in the GDP.

For most countries, the reduced value detraction in industry is in the range of 9–20 percent of GDP until 1995. The size of the decline corresponds largely to the intensity of structural reforms. Because hard budget constraints started to bite later in most FSRs, the contraction of their industrial sectors continued after 1995, while non-reforming Belarus pumped up its old industrial sector after 1995, undoing its initial reduction of value detraction. It appears plausible that the share of unsalable goods, or value detraction, amounted to around 20 percent of GDP in the last year of communism in most countries.

Deduct implicit trade subsidies for recipients. Socialist states mostly exchanged goods nobody wanted, forcing substandard and overpriced merchandise on one another. The wrong things were traded for the wrong reasons between the wrong people in the wrong places at the wrong prices. The share of unsalable goods in mutual trade was probably even greater than that in domestic economies. Much intra-regional trade consisted of exports of manufactured goods from the more developed countries to the energy exporters, which effectively paid subsidies to the exporters of manufactures.

Raw materials, on the contrary, were fine, but their low prices involved huge implicit export subsidies paid by the energy exporters—essentially Russia, Turkmenistan, Kazakhstan, and Azerbaijan.

The foreign trade "shocks" thus reflect a combination of unsalable goods, previously disregarded transportation costs, and the elimination of implicit trade subsidies—essentially from Russia, Turkmenistan, and Kazakhstan—to other countries. Because these subsidies were implicit, they boosted the GDP of the receiving countries. But their elimination was a result of political independence, not a cost of transition. So the implicit subsidies should be deducted from the base GDP of the recipients to facilitate a comparison with their post-communist output.

These corrections raise overall output substantially, but the differences between success and failure remain stark. Central Europe, South-East Europe, Estonia, Kazakhstan, and Russia saw no contraction of output, and Central Europe even enjoyed significant early growth, with Poland in a class of its own. The implausibly large declines in the Baltics disappear. While statistics are incomplete, the war-torn countries, Georgia, Tajikistan, Azerbaijan, Armenia, and Moldova, probably lost 20–30 percent of their GDP. In non-reforming Belarus and Turkmenistan, GDP plummeted by more than 20 percent from 1991 to 1995, revealing these presumed star performers (in official statistics) as miserable failures. Within the CIS, the order of performance is totally reversed, and Russia, Ukraine, and Belarus have performed in correspondence to their degree of reform.

ACCORDING TO OFFICIAL STATISTICS, output plunged in almost all Soviet-type countries toward the end of communism. Then in the first year of transition, the plunges turned even more dramatic, continuing for years. Poland was the first to return to growth after two years of transition; Ukraine did so only after eight years. The total registered declines in GDP range from 13 percent in the Czech Republic from 1989 to 1992 to 77 percent in Georgia from 1989 to 1994. This collapse has been widely proclaimed as the worst depression in the industrialized world, exceeding the Great Depression of 1929–33.

Both communist and post-communist statistics are deeply flawed, however—and in different ways. Everybody recognizes these statistical problems and some authors detail them, but all proceed to work with official statistics, because no full alternative set exists. For many purposes, the approach is reasonable, but it leaves unanswered the fundamental question about the fate of real output.

The purpose of this paper is to figure out what really happened to output during the initial transition in the former Soviet bloc, comprising the former Soviet Union (FSU) and six East-Central European countries. The focus is on four factors that would change the picture portrayed by official statistics: the contraction of output prior to marketization, the underreporting of output, the reduction of value detraction, and the elimination of implicit trade subsidies. It touches on defense production, investment, and economic welfare, but the main issue is real output in 1989–95 for East-Central Europe and 1991–95 for the FSU.

The conclusions contrast sharply with the conventional view. First, everywhere the decline in output has been much smaller than perceived, and a few countries grew immediately rather than contract. Second, the Soviet economy was in a far worse shape than generally understood. Third, even after revising the official statistics, the differences between failures and successes remain vast—and the correlation between structural reform and economic performance becomes much stronger. Fourth, flawed statistics misled policy makers in post-communist transformation, inciting them to adopt inefficient gradual reforms, which reinforced rent-seeking and prolonged stagnation. And fifth, economic welfare has diminished far less than output. But because of all the methodological problems, it is not possible to have precise knowledge of the actual development of output in the transition.

This paper is inspired by an excellent presentation by Yevgeny Yasin in St. Petersburg in February 2000. A prior version was presented at the conference Post-Communist Russia in the Context of World Social and Economic Development at the Institute of the Economy in Transition in Moscow, December 1–2, 2000. I am grateful for many comments from participants, especially Gur Ofer and Karoly Atilla Soos. I thank Victoria Levin for excellent research assistance.

The Focus Should Be the Post-communist Fall in Output

With the collapse of communism, officially recorded output plummeted throughout the post-communist world. Annual drops of more than 10 percent were standard, and Armenia's GDP sank the most, 53 percent in one year (table 1).

The statistical biases are monumental, however. The first problem is the starting point. Economic chaos prevailed at the end of communism, with Romania and the Soviet Union registering sharp falls of output in its last year—Romania 7.9 percent in 1989, and the Soviet Union 6.1 percent in 1991 (table 2). While East-Central European transition is measured against the last communist year, the standard for the former Soviet republics (FSRs) is 1989, though it should be 1991 if discussing post-communism. That correction to 1991 eliminates an average of 5 percent of 1989 GDP in the decline for the FSRs.

Table 1. GDP, 1990–99
(annual percentage change in constant prices)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999 (EST.)
Central Europe										
Poland	-11.6	-7.0	2.6	3.8	5.2	7.0	6.1	6.9	4.8	4.1
Czech Republic	-1.2	-11.5	-3.3	0.6	2.2	5.9	4.8	-1.0	-2.2	-0.2
Slovakia	-2.5	-14.6	-6.5	-3.7	4.9	6.9	6.6	6.1	4.4	1.9
Hungary	-3.5	-11.9	-3.1	-0.6	2.9	1.5	1.3	4.6	4.9	4.5
South-East Europe										
Romania	- 5.6	- 12.9	-8.8	1.5	3.9	7.1	4.1	-6.6	-5.4	-3.2
Bulgaria	-9.1	-11.7	-7.3	-1.5	1.8	2.9	-10.1	-7.0	3.5	2.5
Baltics										
Estonia	-6.5	-13.6	-14.2	-9.0	-2.0	4.3	3.9	10.6	4.7	-1.4
Latvia	2.9	-10.4	-34.9	-14.9	0.6	-0.8	3.3	8.6	3.9	0.1
Lithuania	-5.0	-5.7	-21.3	-16.2	-9.8	3.3	4.7	7.3	5.1	-4.1
CIS										
Russia	-4.0	-5.0	-14.5	-8.7	-12.7	-4.1	-3.5	0.8	-4.6	3.2
Belarus	-3.0	-1.2	-9.6	-7.6	-12.6	-10.4	2.8	11.4	8.3	3.0
Ukraine	-3.4	-11.6	-13.7	-14.2	-23.0	-12.2	-10.0	-3.0	-1.7	-0.4
Moldova	-2.4	-17.5	-29.1	-1.2	-31.2	-1.4	-7.8	1.3	-8.6	-4.4
Armenia	-7.4	-17.1	-52.6	-14.8	5.4	6.9	5.9	3.3	7.2	3.3
Azerbaijan	-11.7	-0.7	-22.6	-23.1	-19.7	-11.8	1.3	5.8	10.0	7.4
Georgia	-12.4	-20.6	-44.8	-25.4	-11.4	2.4	10.5	10.8	2.9	3.0
Kazakhstan	-0.4	-13.0	-2.9	-9.2	-12.6	-8.2	0.5	1.7	-1.9	1.7
Kyrgyzstan	3.0	-5.0	-19.0	-16.0	-20.1	-5.4	7.1	9.9	2.1	3.6
Tajikistan	-1.6	-7.1	-29.0	-11.0	-18.9	-12.5	-4.4	1.7	5.3	3.7
Turkmenistan	2.0	-4.7	-5.3	-10.0	-17.3	-7.2	-6.7	-11.3	5.0	16.0
Uzbekistan	1.6	-0.5	-11.1	-2.3	-4.2	-0.9	1.6	2.5	4.4	4.1

Source: EBRD (2000), p. 4.

At GDP's nadir, the registered contraction was 17 percent in Central Europe from 1989 to 1992, some 30 percent in Bulgaria and Romania from 1989 to 1997, and an average of 40 percent in the FSU, ranging from 18 percent in Uzbekistan to 65 percent in Georgia (table 3). Armenia, Azerbaijan, Georgia, Tajikistan, and, to a minor extent, Moldova were hurt by military conflicts, but for most other countries the recorded drops have no parallels in peacetime.

Sharp Increase in Unregistered Output

Central planning was a system of cheating. Everybody had an interest in over-reporting production, as bonuses of ministers, managers, and workers depended on their gross production. Their persistent over-reporting probably amounted to some 5 percent of GDP (Åslund 1990).

The interest in such doctoring of numbers disappeared immediately with the transition. Under capitalism, people and enterprises became anxious to avoid taxes, implying a downward bias. Furthermore, statistical agencies failed to keep up with myriad new enterprises. Even in Hungary, enterprises of fewer than 50 employees were not included in aggregate statistics for years. A large unofficial economy emerged,

Table 2. National income, net material product 1986–89 (annual percentage change)

	1986–89	1989
Bulgaria	3.1	-0.4
Czechoslovakia	2.1	1.0
German Democratic Republic	3.1	2.1
Hungary	0.8	-1.1
Poland	2.9	-0.2
Romania	-1.7	-7.9
Soviet Union	1.3[a]	-6.1[b]

[a] 1986–90

[b] 1991

Sources: ECE (1990), p. 87; ECE (1991), p. 41; ECE (2000), p. 225.

Table 3. Total fall of GDP and year of nadir

	YEAR OF NADIR	TOTAL FALL IN GDP FROM 1989	TOTAL FALL IN GDP FROM 1989
Central Europe	*1992*	*17*	*17*
Poland	1991	17.8	17.8
Czech Republic	1992	13.1	13.1
Slovakia	1993	24.9	24.9
Hungary	1993	19.1	19.1
South-East Europe	*na*		
Romania	1992	25.0	25.0
Bulgaria	1997	33.4	33.4
			TOTAL FALL IN GDP FROM 1991
Baltics	*1994*	*44.8*	*38.6*
Estonia	1994	33.6	23.0
Latvia	1995	49.0	44.7
Lithuania	1994	43.9	40.5
CIS	*1998*	*46.1*	*40.7*
Russia	1998	39.8	34.7
Belarus	1995	36.6	34.6
Ukraine	1999	54.0	47.8
Moldova	1999	61.7	52.4
Armenia	1993	50.1	40.2
Azerbaijan	1995	63.0	57.8
Georgia	1994	76.0	64.2
Kazakhstan	1995	39.2	31.0
Kyrgyzstan	1995	46.9	45.0
Tajikistan	1996	64.2	61.0
Turkmenistan	1997	35.8	33.8
Uzbekistan	1995	19.5	18.4

Source: ECE (2000), p. 225.

which was not necessarily illegal, but also not reporting to the state statistical office (Johnson, Kaufmann, and Shleifer 1997, p. 173).

An underground economy also existed in the Soviet Union, but it was tiny because of severe repression, evident from the pernicious shortages. On the basis of interviews with Soviet émigrés in the early 1970s, Gur Ofer and Aaron Vinokur concluded that private activity in the urban consumer sector would add just 3–4 percent to the Soviet GNP (1992, p. 100).

The only comparable GDP numbers available for many transition countries are based on electricity consumption, assumed to develop broadly in line with GDP (Johnson, Kaufmann, and Shleifer 1997). The most elaborate and comprehensive estimates of the unofficial economy range from 27 percent of GDP in Hungary to 6 percent in Czechoslovakia and 12 percent in the Soviet Union in 1989 (Kaufmann and Kaliberda 1996) (table 4).[1] This method of estimation cannot be applied to four countries in the region, and the series ends in 1995.[2]

With the start of transition, the underground economy expanded everywhere. But it soon shrank both in successful reform countries and the most repressive state-controlled economies—while continuing to grow in partially reformed economies. It peaked in 1991 in the most successful transition economies (Poland, Hungary, and Estonia), while in less reformist countries (Russia, Ukraine, and Azerbaijan) it was still rising in 1995. In general, it peaked when official GDP hit its nadir.

On the whole, the unofficial economy expanded tremendously. The average unregistered share of real GDP in former Soviet countries rose from 12 percent in 1989 to 36 percent in 1994. In the extremes of Azerbaijan and Georgia, it exceeded 60 percent of GDP, as it presumably did in war-torn Armenia. In East-Central Europe, by contrast, the unofficial share rose from 17 percent in 1989 to 21 percent in 1992 but then dwindled to 19 percent in 1995.

The unofficial economy thus makes the economic development of the region look very different (last two columns, table 4). First, the average contraction from 1989 to 1995 was 32 percent rather than 40 percent for the whole region, and 36 percent rather than 54 percent in eight CIS countries (see table 3). Second, the differences between the most successful reformers and the laggards are reduced substantially, because the unofficial economy grew most in intermediate reformers, such as Russia and Ukraine. This adjustment eliminates 18 percentage points of the purported decline in 1989 GDP in the CIS, and it is huge for some countries: 39 percent of 1989 GDP for Azerbaijan, 28 percent for Ukraine, and 25 percent for Russia. Third, the underground economies shrank in the most repressive economies (Belarus and Uzbekistan). With this single adjustment, the intermediate reformers Russia and Ukraine both overtake non-reforming Belarus, and Russia almost catches up with Uzbekistan, which seems eminently plausible.

Revisions of official GDP are undertaken all the time, considering not only output but also the end-use side of GDP—consumption, investment, and net exports (Koen 1995). Gradually, the revisions include more of the hitherto unregistered economy, and almost all of them boost

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[1] The numbers have been contested (especially by Lackó 2000), but alternative estimates present a similar picture.

[2] Armenia suffered severe power cuts. In Kyrgyzstan, local electricity was substituted for imported energy. Tajikistan and Turkmenistan had no power consumption statistics available. The initial unofficial economy in the Caucasus is definitely understated. Family budget interviews with émigrés in the 1970s indicated that the underground economy was most developed in the Caucasus, large in Ukraine and Moldova, but small in Russia, Belarus, and the Baltics (Grossman 1987).

Table 4. Estimates of the underground economy, 1989–95

	UNOFFICIAL GDP AS A PERCENTAGE OF TOTAL GDP							1995 GDP INDEX (1989 = 100)	
	1989	1990	1991	1992	1993	1994	1995	OFFICIAL	TOTAL
Central Europe									
Poland	15.7	19.6	23.5	19.7	18.5	15.2	12.6	98.3	94.9
Czech Republic	6.0	6.7	12.9	16.9	16.9	17.6	11.3	84.3	89.3
Slovakia	6.0	7.7	15.1	17.6	16.2	14.6	5.8	83.1	82.9
Hungary	27.0	28.0	32.9	30.6	28.5	27.7	29.0	84.7	87.1
South-East Europe									
Romania	22.3	13.7	15.7	18.0	16.4	17.4	19.1	77.7	74.7
Bulgaria	22.8	25.1	23.9	25.0	29.9	29.1	36.2	73.7	89.2
Baltics									
Estonia	12.0	19.9	26.2	25.4	24.1	25.1	11.8	69.1	68.9
Latvia	12.0	12.8	19.0	34.3	31.0	34.2	35.3	47.3	62.3
Lithuania	12.0	11.3	21.8	39.2	31.7	28.7	21.6	45.1	50.6
CIS									
Russia	12.0	14.7	23.5	32.8	36.7	40.3	41.6	49.1	74.0
Belarus	12.0	15.4	16.6	13.2	11.0	18.9	19.3	56.1	61.2
Ukraine	12.0	16.3	25.6	33.6	38.0	45.7	48.9	39.0	67.0
Moldova	12.0	18.1	27.1	37.3	34.0	39.7	35.7	43.0	58.8
Armenia	..	..	..	..	..	..	..	..	..
Azerbaijan	12.0	21.9	22.7	39.2	51.2	58.0	60.6	31.4	70.1
Georgia	12.0	24.9	36.0	52.3	61.0	63.5	62.6	16.0	37.6
Kazakhstan	12.0	17.0	19.7	24.9	27.2	34.1	34.3	46.5	62.3
Kyrgyzstan	..	..	..	..	..	..	..	..	..
Tajikistan	..	..	..	..	..	..	..	..	..
Turkmenistan	..	..	..	..	..	..	..	..	..
Uzbekistan	12.0	11.4	7.8	11.7	10.1	9.5	6.5	84.0	79.0

Source: Johnson, Kaufman, and Schleifer (1997), p. 183.

output numbers. Some of these adjustments have been incorporated in later statistical revisions. For instance, the first official report stated that Bulgaria's GDP had fallen by 26 percent in 1991 and by 22 percent in 1992 (ECE 1993, p. 73). Both numbers were later revised—cut by half (12 percent) for 1991 and by a third (7 percent) for 1992 (see table 1). In 1999 Lithuania revised its national accounts radically, reducing its total decline from 1989 to 1993 from 63 percent (ECE 1998, p. 65) to 40 percent (ECE 1999, p. 199), eliminating 23 percentage points of the purported output decline!

The statistics of the five war-torn states (Armenia, Azerbaijan, Georgia, Moldova, and Tajikistan) are especially poor. Their statistical systems simply collapsed, along with registered output. Much of the strong recovery in Georgia in 1996 and 1997 appears to be rooted in the registration of previously unrecorded economic activity. Turkmenistan's statistics are a joke and best overlooked.[3]

[3] For long, the Turkmen authorities implausibly claimed that their GDP increased by 36 percent in 1992 (ECE 1998, p. 199). Eventually, this was revised to a decline of 15 percent, a shift of 51 percentage points for one single year!

Elimination of Unsalable Output or Value Detraction

The fundamental problem in socialist economies was quality. Enterprises had little (or no) interest in producing what customers wanted because of the persistent shortages of goods and services, and the soft budget constraints on enterprises. The shortages implied extreme monopoly, reinforced by severe protection. Enterprises aimed at attaining their physical production targets, happily ignoring the quality and choice of products, which grew steadily worse. Almost anything was difficult to buy in the Soviet Union, and when communism collapsed the typical Soviet grocery store was empty. Richard Ericson has perceptively characterized this state of affairs: "Thus the whole economic system was based on economic illusion—the pursuit of goals unrelated to economic value creation in the absence of real economic information" (1994, p. 195). Partial market economic reforms improved the situation in Central Europe, notably in Poland and Hungary, but it still remained bad.

Much Soviet manufacturing was sheer value detraction, as Ronald McKinnon (1991) put it. For instance, Soviet fishermen caught excellent fresh fish. But rather than sell it on the market, they processed it into (often inedible) fish conserves, reducing the fish's value to almost zero. This value detraction was recorded, incorrectly, as value added in national accounts and thus included in the GDP.

Such value detraction increased down the processing chain. Soviet raw materials were excellent, Soviet intermediate goods (such as metals and chemicals) were shoddy, and consumer goods and processed foods were substandard. Value detraction also involved excessive costs because of obsolete equipment and uneconomical location. Heavy industry was far from both inputs and markets, producing what nobody wanted to buy (McKinsey Global Institute 1999). Many unsalable goods disappeared in storage or were quietly scrapped without any statistical recording.

Proper national accounts should thus exclude most of the "production" of consumer goods and processed foods, and any elimination of such value detraction is positive for real output. The decline in manufacturing was staggering everywhere. For instance, in Russia from 1991 to 1996, it was 84 percent in light industry, 44 percent in food processing, and 57 percent in civilian machine-building (Goskomstat 1997, p. 336). Because it was difficult to find any manufactured goods that were worthwhile to buy even at extremely low prices, this decline in manufacturing output seems to reflect some reduction of value destruction. Yet, it was recorded as a decrease of GDP, and most observers (wrongly) saw it as a major tragedy. The positive effect of reducing value detraction can be noticed in expanded exports of raw materials and intermediary goods, which have typically led economic recovery in transition countries. This is probably the greatest statistical confusion in post-communist transition.

Value detraction can be assessed in various ways. Unfortunately, the eliminated value detraction cannot be calculated directly because manufacturing's share of GDP is not available. Another measure is trade with non-market economies as a share of GDP, but not all socialist trade was useless, and it cannot be easily related to GDP because of sharp swings in real exchange rates and thus in GDP in dollars. The same is true of increased exports of raw materials and intermediate goods. A single measure is preferable to avoid double counting; it should be related to GDP in domestic currency; it must be widely available. And rather than total value detraction,

the interest is in eliminated value detraction, because much has long been maintained through regulations and state subsidies.

The most relevant overall measure of reduced value detraction available appears to be reduced over-industrialization, the decline in the industrial sector's share of GDP (table 5). It is reasonably neutral to GDP level and exchange rates, while reflecting a major structural improvement. But it is only a partial measure. Although value detraction pertained mostly to manufacturing, it existed throughout the economy. And it persists in non-reforming countries, while new production has arisen in parallel. To capture the whole adjustment a long period of measurement is needed.

For most countries, this decline in the industrial share—the reduced value detraction in industry—is in the range of 9–20 percent of GDP until 1995.[4] The size of the decline corresponds largely to the intensity of structural reforms. Because hard budget constraints started to bite later in most FSRs, the contraction of their industrial sectors continued after 1995, while non-reforming Belarus pumped up its old industrial sector after 1995, undoing its initial reduction of value detraction. It appears plausible that the share of unsalable goods, or value detraction, amounted to around 20 percent of GDP in the last year of communism in most countries.

Table 5. The declining share of industry in GDP, 1989/1991–95
(share of GDP in percent)

	INDUSTRY		
		1995	DIFFERENCE
Central Europe	*1989*		
Poland	52	34	-18
Czech Republic	58	39	-19
Slovakia	58	37	-21
Hungary	44	32	-12
South-East Europe	*1989*		
Romania	56	43	-13
Bulgaria	59	31	-28
Baltics	*1991*		
Estonia	40	30	-10
Latvia	44	33	-11
Lithuania	51	34	-17
CIS	*1991*		
Russia	48	39	-9
Belarus	46	37	-9
Ukraine	50	42	-8
Moldova	33	32	-1
Armenia	49	32	-17
Azerbaijan	..	31	..
Georgia	37	19	-18
Kazakhstan	45[a]	32	-13
Kyrgyzstan	35	20	-15
Tajikistan	35	35	0
Turkmenistan	31	59	28
Uzbekistan	37	28	-9

Note: Industry includes construction. The statistics around 1990 vary greatly for no good reason, leaving great uncertainty. The strange Turkmen numbers depend on its expansive and dominant fuel industry.

[a] 1992

Source: World Bank (2000).

Reduction of Implicit Trade Subsidies

The economic distortions of communism were especially severe in trade among socialist states—trade largely politically determined both for its commodity structure and prices. Socialist states mostly exchanged goods nobody wanted, forcing substandard and overpriced merchandise on

[4] Because of early market reforms, Hungary had the least distorted industrial structure at the outset of its transition. Moldova and Tajikistan had not adjusted much to the market by 1995. Nor did they suffer much from over-industrialization to begin with. Turkmenistan, with its rising energy industry, is an exception.

one another. The wrong things were traded for the wrong reasons between the wrong people in the wrong places at the wrong prices.

The share of unsalable goods in mutual trade was probably even greater than that in domestic economies. For instance, Hungarian losses of exports to formerly socialist countries consisted predominantly of machinery and buses, which Hungary hardly exported to the West (Gács 1995, pp. 165–6). Some enterprises had three lines of production: a high-quality line for free international markets, an intermediate line for the domestic market, and a substandard line for socialist partners. Much intra-regional trade consisted of exports of manufactured goods from the more developed countries to the energy exporters, which effectively paid subsidies to the exporters of manufactures.

Raw materials, on the contrary, were fine, but their low prices involved huge implicit export subsidies paid by the energy exporters—essentially Russia, Turkmenistan, Kazakhstan, and Azerbaijan. The early decline of intra-regional trade was more an elimination of implicit trade subsidies than a costly deterioration of terms of trade, as the early literature on the collapse of the socialist trading system argued.

Berg and others (1999) note that high trade dependence had the greatest aggregate adverse effect on the initial output decline. EBRD (1999) and Popov (2000) rightly specify the problem as trade with other communist countries, which was even more distorted than domestic trade. The decline in mutual trade between the post-communist countries was largely a beneficial shake-out of unsalable goods or unaffordable waste of raw materials, though there was also some disruption of viable trade. Trade restructuring comprised desirable systemic change and the elimination of implicit trade subsidies. While the losses of implicit subsidies were real, they were inevitable costs of national independence. To avoid double counting, the reduction of unsalable output is measured only through the diminution of the industrial sector, while the implicit subsidies are considered in intra-regional trade.

In 1991 the clean dissolution of the CMEA (Council of Mutual Economic Assistance) eliminated both unsalable goods and energy subsidies. Economists have calculated the "costs" or changes in terms of trade for South-East and Central Europe, which pursued about half their foreign trade with CMEA countries (Rodrik 1992; Rosati 1995; Gács 1995). Their assessments of the impact of the Soviet trade shock ranged from a high of 7.8 percent of GDP for Hungary (Rodrik 1992) to 1.5 percent for Czechoslovakia and negligible for Romania in 1991 (Rosati 1995, p. 152) (table 6).

Table 6. Estimated initial impact on GDP of changes in trade with CMEA
(percent of GDP)

	RODRIK: TERMS OF TRADE	ROSATI: EXPORTS ONLY	GÁCS: EXPORTS ONLY
Poland	-3.5	-2.2	..
Czechoslovakia	..	-1.5	..
Hungary	-7.8	-2.6	-4.1
Romania	..	0.4	..
Bulgaria	..	-5.4	..

Sources: Rodrik (1992); Rosati (1995); Gács (1995).

Because trade with market economies was enormously dynamic, providing a strong positive effect, these totals are likely to be understated.[5] The trade effect was greater for countries that traded more with the Soviet Union and the CMEA (notably Bulgaria), that were more open (most of all Hungary), and that imported a lot of energy (Bulgaria and Hungary). Thanks to far-reaching early liberalization of foreign trade, the East and Central European countries, including Estonia and Latvia, achieved EU export shares predicted by the gravity model as early as 1994 (EBRD 1999, p. 91).

Foreign trade distortions were far greater in the Soviet Union than in Central Europe. Extreme protection forced the Soviet republics to pursue 90 percent of their trade with one another. Further aggravating the situation, the CIS countries undertook slow trade and payments reforms, maintaining much of their mutual trade in unsalable goods until 1994. The share of mutual trade among the CIS countries dwindled gradually, from 57 percent of their total trade in 1992 to 33 percent in 1997 (Michalopoulos and Tarr 1997), staying larger than the gravity model would have predicted (EBRD 1999, p. 91).

Lucjan Orlowski (1993) and David Tarr (1994) have calculated implicit trade subsidies for the FSRs, comparing prior prices with prevailing world market prices. Orlowski dealt only with interrepublican subsidies, while Tarr also included subsidies in trade with other former socialist countries. Both focused on 1990, and their numbers are surprisingly similar (table 7). For seven FSRs the total effect was less than 5 percent of their GDP. Three countries exporting oil and

Table 7. Implicit transfers as share of GDP, 1990

	TARR OUTSIDE OF USSR	TARR INTER-REPUBLICAN	ORLOWSKI INTER-REPUBLICAN	TARR TOTAL
Estonia	0.7	-13.5	-12.1	-12.7
Latvia	0.2	-11.6	-10.4	-11.3
Lithuania	5.9	-15.6	-17.1	-9.7
Russia	13.2	4.5	3.7	17.7
Belarus	7.2	-11.4	-8.9	-4.2
Ukraine	3.8	-6.9	-3.6	-2.6
Moldova	2.7	-18.8	-24.1	-16.1
Armenia	3.5	-11.1	-9.2	-7.6
Azerbaijan	10.5	-6.7	-10.1	3.7
Georgia	12.1	-12.1	-16.0	0.0
Kazakhstan	4.0	3.4	-0.5	7.4
Kyrgyzstan	2.6	-1.3	-2.7	1.4
Tajikistan	8.6	-6.9	-6.1	1.7
Turkmenistan	3.6	15.9	10.8	19.5
Uzbekistan	3.1	-1.9	-1.3	1.1

Sources: Tarr (1994), pp. 18–19; Orlowski (1993), p. 1006.

[5] For Central Europe, new beneficial trade started instantly. Hungarian exports to former CMEA countries dropped by 60 percent from 1988 to 1992, but its exports to the West surged by 60 percent, providing Hungary with a positive net effect from trade restructuring (Gács 1995, p. 179). Similarly, in 1990, Polish exports outside the CMEA increased by no less than 51 percent, while its exports to the still existing CMEA dropped by 13 percent. As a result, foreign trade made a *positive* contribution to Poland's GDP of 5.5 percent of GDP in its first year of transition (Berg 1994, p. 7).

natural gas provided substantial subsidies: Russia 17.7 percent of GDP, Turkmenistan 19.5 percent, and Kazakhstan 7.4 percent. These three countries benefited greatly from the abolition of implicit trade subsidies. Five states received substantial trade subsidies: Moldova 16.1 percent of GDP, Estonia 12.7 percent, Latvia 11.3 percent, Lithuania 9.7 percent, and Armenia 7.6 percent. Not surprisingly, these countries (except Estonia) suffered comparatively large falls in output, though most have undertaken substantial reforms.

Subsidies dwindled only gradually after the break-up of the Soviet Union—at great Russian expense. The IMF has estimated the costs of direct Russian financing of the other CIS countries at 9.3 percent of Russia's GDP in 1992 and the implicit trade subsidies at 13.2 percent of GDP (1994, p. 25). Russia's total burden was thus an unaffordable 22.5 percent of GDP, or $18 billion in 1992. In absolute dollars, however, Russian financing plunged. Formally, the gains of other CIS states were enormous. Direct credits alone ranged from 11 percent of GDP in Belarus and Moldova in 1992 to 91 percent of GDP in Tajikistan (table 8). The Russian government gradually reduced both its financing and implicit trade subsidies by raising commodity prices. That makes it desirable to avoid making an assessment for the immediate post-communist years, but by 1995 these subsidies were small.

In Soviet times, direct budget transfers between states were of limited significance, but they were substantial for Soviet Central Asia, whose five states benefited from large direct budget transfers from the central Soviet government. Orlowski has dug out these numbers for 1989, when Kyrgyzstan received 7.8 percent of its GDP in union budget transfers, Tajikistan 8.2 percent, Turkmenistan 9.0 percent, Kazakhstan 9.3 percent, and Uzbekistan 11.3 percent (1995, p. 66). By 1994, however, these subsidies were gone. These inevitable losses for the Central Asian republics, were connected more to their independence than any change of economic system. Presumably, these subsidies were not included in their official GDP, so no compensation is made for them. But their elimination obviously hurt economic welfare in Central Asia, especially the provision of public services. The donors, primarily Russia, benefited when these transfers ceased, and these subsidies were presumably included in their GDP.

Table 8. Russian financing of other FSRs, 1992 (percent of national GDP financed by CBR)

Russia	-11.7
Tajikistan	90.7
Uzbekistan	69.9
Turkmenistan	53.3
Georgia	51.5
Armenia	49.0
Azerbaijan	25.8
Kazakhstan	25.5
Kyrgyzstan	22.9
Ukraine	21.7
Moldova	11.3
Belarus	10.7
Estonia	4.0
Lithuania	3.2
Latvia	1.0

Source: IMF (1994).

The foreign trade "shocks" thus reflect a combination of unsalable goods, previously disregarded transportation costs, and the elimination of implicit trade subsidies—essentially from Russia, Turkmenistan, and Kazakhstan—to other countries. Because these subsidies were implicit, they boosted the GDP of the receiving countries. And as noted, their elimination was a result of political independence, not a cost of transition. So the implicit subsidies should be deducted from the base GDP of the recipients to facilitate comparison with their post-communist output. But because they were presumably included in the donors' GDP, no adjustment of their GDP is warranted. Because of the very gradual transition in the CIS, the years 1992–94 are avoided (Olcott and others 1999).

Collapse of Defense Production and Consumption

Soviet defense expenditure was persistently disputed by western Soviet watchers. Gradually, the CIA raised its assessment of Soviet defense spending to 15–17 percent of GDP in 1986 (Berkowitz and others 1993), but that was based on the CIA's clearly exaggerated estimate of Soviet GDP. As late as 1990 the CIA considered Soviet GDP per capita no less than 43 percent of the US level in purchasing power parities (PPP). The European Comparison Program (ECP)—which cooperated with Soviet statistical authorities in a careful empirical analysis—set Soviet GDP per capita at 32 percent of that of the United States in 1990, and Soviet household consumption per capita at only 24 percent of the US level (Bergson 1997).[6] The CIA assessment of Soviet defense expenditures and the ECP assessment of Soviet GDP give a defense burden of 22 percent of GDP.

But even these GDP numbers are too high, as the poor quality of goods and services cannot be fully considered, while shortages and forced substitution are disregarded. Thus, the Soviet Union probably spent about one quarter of its GDP on military purposes in the late 1980s (Åslund 1990), going to both military production and military consumption, a sheer waste of public resources.

The Russian reform government swiftly reduced military spending to an internationally normal level of about 3 percent of GDP, while most other post-communist countries reduced such expenses to 1–2 percent of GDP. This reduction of defense expenditures resulted in a nominal decline in the 1989 GDP of about 22 percent in the whole FSU. Yet, this might be an exaggeration. Much of the barter, arrears, and enterprise subsidies pertains to the military-industrial sector. Western intelligence argues that a couple of percent of GDP should be added, because the military does not pay for all the costs it actually causes society, such as electricity and land use. A counter argument is that the military might use more resources for black market activities than for defense.

There is not enough information to distribute the military costs among the FSRs. For Russia, Belarus, and Ukraine, this nominal decline must have been disproportionately large, because they had hosted most of the military-industrial complex, probably about 20 percent of GDP, while about 10 percent of GDP seems reasonable for the other FSRs. In East-Central Europe, military expenditures were not much higher than in the West, but even there the trimming of the military sector probably accounted for a couple of percent of the fall in recorded GDP. No such correction is made here—to avoid the accusation of double counting, because part of the declining defense costs are reflected in the contraction of industry. Still, an additional deduction of 10 percent of GDP for Russia, Belarus, and Ukraine seems justified.

Wasteful Investment

Although this paper focuses on production, the use of output needs to be kept in mind. Socialism was a system of waste. Soviet production usually needed three times more inputs than a Western factory, since costs were irrelevant to managers. Some of these losses represented

[6] This tallies reasonably with a World Bank study led by Paul Marer (1985) setting the Soviet GNP per capita at 37 percent of the US level for 1980.

inefficiency, others theft. With harder budget constraints, enterprises started bothering about costs, sharply reducing domestic demand for such inputs as steel, metals, and chemicals. Initially, however, budget constraints were soft or lacked credibility, prompting energy intensity to rise everywhere.

The same was true of investment. Communist regimes prided themselves on huge investment ratios, but the socialist landscape was scarred by unfinished construction projects (Winiecki 1988, 1991). One reason was the accepted practice of state employees stealing from construction projects to build their own houses or repair their apartments. Enterprises also used unfinished construction projects to pressure the government to provide additional state funds, because the state usually financed investment. So, the persistently high ratios of fixed investment were indications more of theft and waste than of substantial real investment. With capital goods underused or unusable, a contraction of investment for a few years was desirable to stop the thefts, halt the hoarding, and allow for a re-allocation of unused capital goods.

Socialist countries piled up large inventories of inputs, such as raw materials, which were labeled investment in national accounts. As these inventories accumulated continuously without any cyclical tendency, this was obvious waste. Poland had the best statistics, showing "investment" in inventories of 7 percent of GDP, or a quarter of total investment in the mid-1980s.

Early in the transition, reformers managed to introduce a demand barrier in a few countries, notably Poland, Czechoslovakia, Estonia, and Latvia. The national demand curve shifted permanently, initially reducing recorded output. Substantial dishoarding of inputs and capital goods started, as desired, while stocks of finished goods rose less, reflecting the problems to sell leading to the characteristic over-production of capitalism. The dishoarding of inputs led to a stark decline in demand for enterprises producing inputs. Andrew Berg (1994) has calculated that the total reduction in inventory accounted for two-thirds of the total decline in Poland's GDP in 1990. But even though Polish enterprises faced a real demand barrier in 1990, heavy manufacturing and mining contracted least, suggesting that the budget constraints of large Polish producers remained pretty soft. Apparently, even Poland needed a more severe monetary crunch.

The investment that was sheer waste should be deducted from GDP. A comparison with East Germany is apt. The German Institute of Economic Research in West Berlin had assessed East German GDP per capita stably at about 60 percent of the West German—and that the GDR had a higher investment ratio than West Germany (DIW 1977). When the wall fell, it became obvious that the East German fixed capital per capita was only 30 percent of the West German (Siebert 1992, p. 39).

Without more detailed knowledge, it would appear reasonable to deduct the difference between the investment ratio under late communism and the investment ratio at the nadir (table 9). While the average decline in the investment ratio of 11 percent of GDP makes sense, the individual observations show that these data contain far too much noise. Any single year of measurement contains special biases, and investment ratios vary greatly from year to year. Some countries had artificially boosted investment ratios in 1989/90 (Armenia, Latvia, and Poland). A few countries suffered truly devastating crises, which brought down investment excessively at the nadir (Georgia, Armenia, and Bulgaria). Most undertook large wasteful public investment long after their nadirs, while new productive investment started early on. Moreover, as some double-

counting may occur with unsalable goods included in investment, I abstain from making a justified adjustment.

Table 9. Gross domestic investment as a share of GDP
(percent of GDP)

	INVESTMENT RATIO	INVESTMENT RATIO AT NADIR	CHANGE
Year 1989			
Poland	38	19	-19
Czech Republic	27	26	-1
Slovakia	32	27	-5
Hungary	27	20	-7
Romania	27	31	4
Bulgaria	33	11	-22
Year 1990			
Estonia	30	29	-1
Latvia	40	18	-22
Lithuania	33	18	-15
Russia	30	16	-14
Belarus	27	25	-2
Ukraine	27	21[b]	-6
Moldova	25	26[b]	1
Armenia	47	10	-37
Azerbaijan	..	24	..
Georgia	31	2	-29
Kazakhstan	32[a]	23	-9
Kyrgyzstan	23	18	-5
Tajikistan	23	..	..
Turkmenistan	40	..	..
Uzbekistan	32	27	-5

[a] 1992

[b] 1998

Sources: World Bank (2000); own calculations.

Re-interpreting Nominal Output Data

This line of analysis gives a new perspective on changes in output in the transition, prompting a revision of both current and old GDP numbers. I limit myself to the most conservative, indisputable revisions. Several years are needed to capture the structural changes, but the unavailability of assessments of the unofficial economy after 1995 hinders the analysis from proceeding beyond that year. The starting point is the latest official GDP in 1995, as a percentage of the official GDP in 1989 (table 10, column 1).

1. The decline in registered output started during the last years of communism, but the focus is post-communist transition, so start with 1991 for the former Soviet republics. That

boosts primarily small post-Soviet countries—the Baltics, Moldova, and the Caucasus (table 10, column 2).

2. The unregistered real economy has grown substantially, especially in such intermediate reformers, as Russia, Ukraine, Azerbaijan, and Georgia. It is added to real GDP (table 10, column 3).[7]
3. Eliminated value detraction, revealed by declining industrial shares in GDP until 1995, hovers around 20 percent of GDP in some of the most reformist countries, notably Poland, the Czech Republic, Slovakia, Lithuania, Armenia, Georgia, and Kyrgyzstan. GDP before the transition should be reduced by this share to correct for its overestimation (table 10, column 4).[8]
4. The large implicit trade subsidies should be deducted from the base GDP of the recipients, as these were costs of independence, not of the post-communist transition (table 10, column 5). The main recipients were small Western countries, not producing energy, essentially Moldova, Bulgaria, Estonia, Latvia, Lithuania, Hungary, and Armenia, which obtained implicit subsidies of 8–16 percent of GDP in 1990. Presuming their inclusion in the GDP of the donors, we do not adjust their GDP.

These corrections raise overall output substantially, but the differences between success and failure remain stark. Central Europe, South-East Europe, Estonia, Kazakhstan, and Russia saw no contraction of output, and Central Europe even enjoyed significant early growth, with Poland in a class of its own. The implausibly large declines in the Baltics disappear. While statistics are incomplete, the war-torn countries, Georgia, Tajikistan, Azerbaijan, Armenia, and Moldova probably lost 20–30 percent of their GDP. In non-reforming Belarus and Turkmenistan, GDP plummeted by more than 20 percent from 1991 to 1995, revealing these presumed star performers (in official statistics) as miserable failures. Within the CIS, the order of performance is totally reversed, and Russia, Ukraine, and Belarus have performed in correspondence to their degree of reform.

These assessments are very conservative. No adjustment has been made for the reduced defense expenditures, which should have boosted output, especially for Russia, Belarus, and Ukraine. Nor has the abolished waste in the investment sector been considered. If only one quarter of investment were taken out of the base GDP, most numbers would rise by about 8 percentage points. With that adjustment, even Ukraine would have suffered no output decline by 1995 and Russia would emerge as a strong performer.

Reality Test

Does this revision tally with other observations of output? Obviously, communism caused a serious economic crisis, which contributed to its collapse. Then, it would be strange if the

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[7] The underground economy data for Estonia and Lithuania in 1995 suggest a sharp fall in total output in 1995, which makes no sense, so we use the data for 1994 for those two countries.

[8] Neither the Bulgarian prominence here nor its overall numbers make sense and it has to be taken out.

Table 10. Revision of GDP development in transition, 1989/1991–95

	OFFICIAL GDP IN 1995 % OF 1989	OFFICIAL GDP IN 1995	INCLUDING UNOFFICIAL ECONOMY, AT NADIR	DEDUCTION OF VALUE DETRACTI-ON FROM BASE GDP	DEDUCTION OF IMPLICIT TRADE SUBSIDIES FROM BASE GDP	FINAL REVISION OF GDP AT NADIR OR 1995
Central Europe		*% of 1989*				
Poland	98.6	98.6	94.9	115.7	119.9	**120**
Czech Republic	94.1	94.1	89.3	108.9	112.3	**112**
Slovakia	84.2	84.2	82.9	104.9	108.2	**108**
Hungary	85.6	85.6	87.1	99.0	107.4	**107**
South-East Europe		*% of 1989*				
Romania	84.8	84.8	74.7	85.9	na	**86**
Bulgaria	79.7	79.7	89.3	..		**..**
Baltics		*% of 1991*				
Estonia (1994)	66.4	77.0	75.9	84.3	96.6	**97**
Latvia	51.0	56.3	70.4	79.1	89.2	**89**
Lithuania (1994)	56.1	59.5	65.2	78.6	87.0	**87**
CIS		*% of 1991*				
Russia	60.2	65.3	85.5	94.0	na	**94**
Belarus	63.4	65.4	67.6	74.3	77.5	**78**
Ukraine	46.0	52.2	76.0	82.7	84.9	**85**
Moldova	38.3	47.6	54.0	54.5	65.0	**65**
Armenia	49.9	59.8	..	..	..	**..**
Azerbaijan	37.0	42.2	82.8	..	..	**..**
Georgia	24.0	35.8	61.3	76.6	na	**78**
Kazakhstan	60.8	69.0	84.3	96.9	na	**97**
Kyrgyzstan	53.1	55.0	..	..	na	**..**
Tajikistan	35.8	39.0	..	..	na	**..**
Turkmenistan	64.2	66.2	..	..	na	**..**
Uzbekistan	80.5	81.6	80.5	88.5	na	**89**

Notes:

Column 2 is from table 2. For the countries whose nadir occurred after 1995 and the difference is limited, that year is selected for lack of later data for the underground economy. Russia's GDP was 65.3 of its 1991 level, 52.3% for Ukraine, and 47.6 for Moldova. Bulgaria does not make sense here as it had a big decline till 1997, involving great structural changes.

Column 3, calculated from Johnson et al (1997), p. 183.

Column 4: Deduction of value detraction from base GDP, as revealed in industrial structure in table 6. No correction has been made for Turkmenistan and Azerbaijan, which have expanding fuel industries.

Column 5: Deduction of subsidies from base (table 9; column 1 for Poland and Hungary and column 2 for Czechoslovakia; table 9 for FSU; no correction for those countries that paid implicit subsidies).

Sources: ECE (2000), p. 225; Johnson et al. (1997), p. 183; World Bank (2000); Rodrik (1992); Rosati (1995); Tarr (1994), pp. 18-19; Orlowski (1995).

abandonment of communism greatly enhanced social costs, even if the poison pills of communism led to significant transition costs.

Politically, transition has faced surprisingly little popular resistance. The strongest ex-communist parties have just about 30 percent of the votes cast, and they are either the most reformed communist parties (Poland and Hungary) or orthodox parties in relatively slow reformers (Romania, Moldova, Ukraine, and Russia) (Åslund, Boone, and Johnson 2000). This is much easier to understand if there were no major output collapse and little deterioration in the standard of living.

Virtually everybody agrees that the underground economy has grown and that it is still not fully included in official statistics. Regression analyses on the effects of initial conditions on output show that over-industrialization and trade with socialist countries are of overwhelming importance, explaining 60–75 percent of the contraction (Berg and others 1999; Popov 2000; EBRD 1999; De Melo, Denizer, Gelb, and Tenev 1997). Because these conditions have been identified as measures of value detraction, these regression analyses fit the results here perfectly.

But what about vital statistics and the social situation? The big shock has been the decline in male life expectancy in Russia—from 64.4 years in 1989 to 57.3 years in 1994. But it rebounded sharply to 61.3 years by 1998, though it fell again after the Russian financial crash in 1998 (World Bank 2000). The collapse of the Soviet Union appears to have brought about an existential shock to Baltic and East Slavic men.

A fine regression analysis of all possible causes could not find any social or economic explanation to this decline, which occurred in countries with very different reform experiences. The sharply falling relative price of vodka explains some of the decline, but the dominant explanation is probably psychological (Shkolnikov and others 2000). From 1995 to 1998, male life expectancy increased almost everywhere in the region apart from the slow reformers, Belarus and Ukraine.

Meanwhile, infant mortality has fallen substantially in most countries in the region, excepting Latvia and Ukraine, indicating almost universally improving health standards (World Bank 2000). While many outsiders have worried about "collapsing" health care, total expenditure on health care has actually increased by 50 percent as a share of GDP from 1990 to 1997 in the CIS (UNDP 1998, p. 215; World Bank 2000).

Obviously, these social improvements indicate an improving social-economic situation. After communism, excess demand and thus value detraction dwindled, as private hoarding ended instantly. In national accounts, the dishoarding after price liberalization looked like sudden destitution verging on starvation (Cornia 1994), as both sales and demand declined, but real welfare might not have been affected. Scrutinizing statistics on consumption, investment, and exports, Sachs and Berg (1992) found that the decline in Polish GDP from 1989 to 1990 was not 12 percent as stated in the production statistics, but 4.9 percent. Unfortunately, there is no such statistical series even for Poland, so production statistics have to suffice, keeping this bias in mind.

Admittedly, poverty has increased with growing income inequality, but Soviet statistics on social matters were so poor that the real change will never be known. Surprisingly, a detailed statistical analysis of Poland has discovered that income inequality did not increase in Poland

from 1989 to 1997, an increase taken for granted in prior less elaborate analyses (Keane and Prasad 2000).

East Germany offers an enlightening comparison. As mentioned, the German Institute of Economic Research (DIW 1977) in West Berlin assessed East German GDP per capita steadily at about 60 percent of the West German level. When the wall fell, the GDP level, as well as consumption and public investment, were boosted by large West German subsidies, while production collapsed because of excessive wage rises imposed by West German trade unions. Therefore, the most relevant indicator of East German production appears to be productivity, which was barely 30 percent of the West German level (Siebert 1992, p. 39). So, the West thought East German production was twice as large as it really was. A similar overestimation for most of the former Soviet bloc appears likely, with the exceptions of Hungary and Poland.

A final question: why do people indicate in opinion polls that the material situation has deteriorated? The best counter-evidence comes from East Germany, where people admit to massive material improvements on all specific questions, while claiming a general deterioration. This appears to be more psychological than material. One explanation is that people are unable to handle negative publicity about their own society, which was prohibited under communism. Another is that they learned how badly off they were in comparison with the Western world, which few knew under communism. A third is that people do not think about whether total welfare rises or falls (Pareto optimality). They think about their relative position. And fourth, these were times of massive change. Note that pensioners opposed reforms, even though they were the main beneficiaries of the early reforms (Milanovic 1998). Public sentiment about the general situation should thus be taken with a great deal of skepticism.

Implications

Hopefully, the approach of this paper will alter the perception of the post-communist transformation. In almost all regards, the revised output data correspond much better than the old official statistics to related observations. The absurd official statistics herald non-reforming and miserable Belarus as far more successful than, say, reforming Latvia and Lithuania. The implications are profound, even though the reassessments are very conservative, requiring further upward revisions.

First, the purported tragedy of universal output loss after communism is a myth, though the region suffered stagnation in the first half of the 1990s. This helps to explain the mysterious absence of social unrest and of electoral backlashes against reformers. It also helps explain the sharp rise in social expenditures in most post-communist countries.

Second, the Soviet economy was in far worse shape than most Western observers believed at the time of its demise. The evidence is overwhelming for anybody who wants to check. A Soviet economist reported in 1988: “The USSR has 4,000 district hospitals, but more than 1,000 of them have no sewage system, 2,500 have no hot running water, 700 have neither hot nor cold running water” (Bolotin 1988). Universal old-age pensions were introduced in the Soviet Union as late as 1985. In the late 1980s Soviet health statistics, its industrial structure, and its foreign trade structure placed it close to Mexico and Brazil among what the World Bank calls “upper-middle-income countries” (Åslund 1990). The alleged misery in post-communist transformation

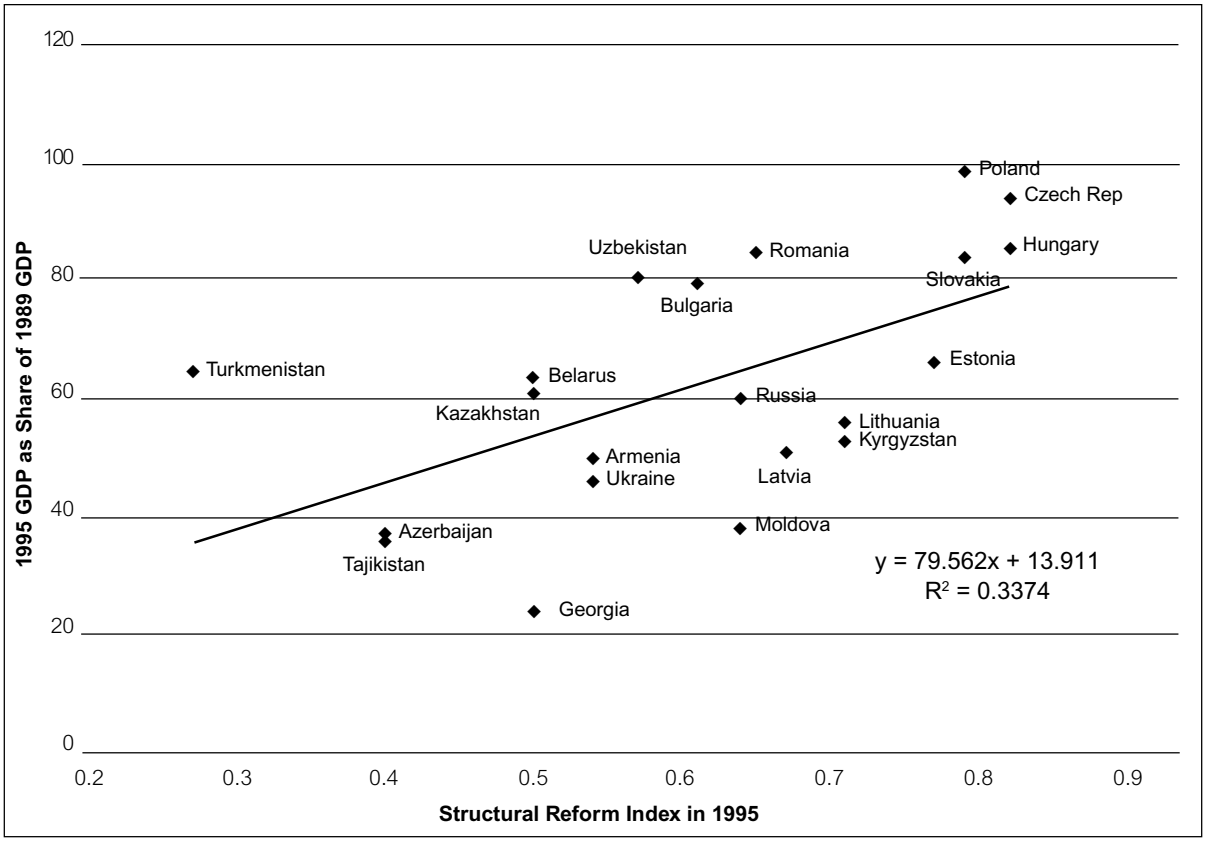
is primarily the delayed revelation of the true costs of communism. In the future, we may realize that the Soviet stagnation did not start around 1980 but perhaps a decade earlier.

Third, even after most effects of adverse "initial conditions" have been deducted, the differences between failures and successes remain almost as large as in the flawed official statistics, ranging from a decline in GDP of perhaps 35 percent in Moldova to a rise of at least 20 percent in Poland. This indicates that economic reform policies have been more important for economic performance than previously understood. The correlation between reform and output is much closer after the revisions here (figures 1 and 2).

In other words, the main problem of transition was that value detraction was not impeded quickly enough—and under-utilized or wasted resources were not re-allocated to facilitate new supply. But for the radical early reformers, Poland and the Czech Republic, a positive supply effect was in evidence early on.

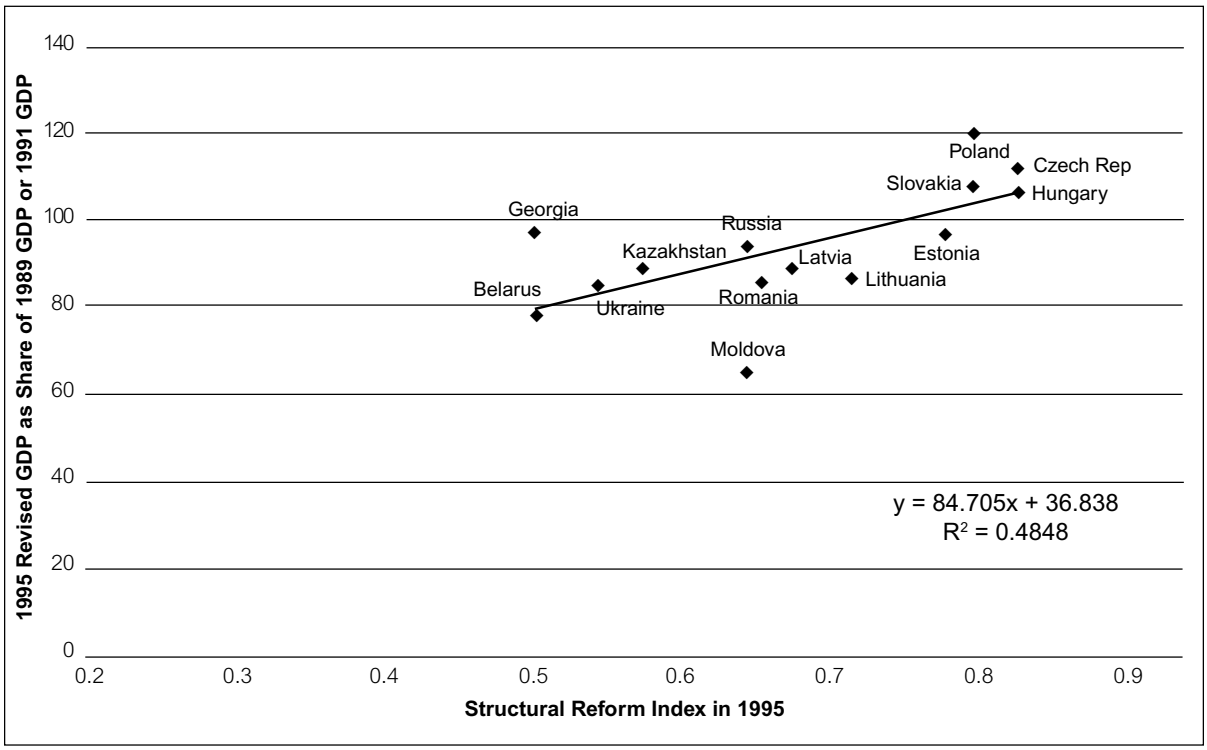
Fourth, distorted official statistics, a major cause of bad policies, did not reveal the strong, early supply effects that reforms shocks brought about. That is why the successful Polish model was not widely adopted, and many started calling for fiscal and monetary stimulation instead. Even if post-communist people are healthily skeptical of statistics, they tend to believe in bad news, which has led them astray. The distorted official statistics encouraged the march of folly to bad policies.

Figure 1. Structural reform and official GDP level in 1995 as a share of 1989 GDP



Sources: Table 3 and De Melo, Denizer, and Gelb (1997)

Figure 2. Structural reform and revised GDP level in 1995 as a share of 1989 or 1991 GDP



Sources: Table 10 and De Melo, Denizer, and Gelb (1997)

The overall lesson: radical reforms, involving liberalization and financial stabilization, were both economically effective and socially desirable. The real social concern after communism was not an initial decline in output but a lasting stagnation. Reformers should have stormed the Central Statistical Office and demanded correct statistics from the outset. A telling case was Russia, where the pre-democratic parliament controlled the State Committee on Statistics for the first two years of reform and utilized it bizarrely for doom-saying. We urgently need better statistics to improve our understanding of the real effects of different policies.

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