

How have the post-Soviet economies changed
in the last twenty years?

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How have the economies of the successor states of the Soviet Union changed in the 21 years since the USSR disintegrated?

The starting point:

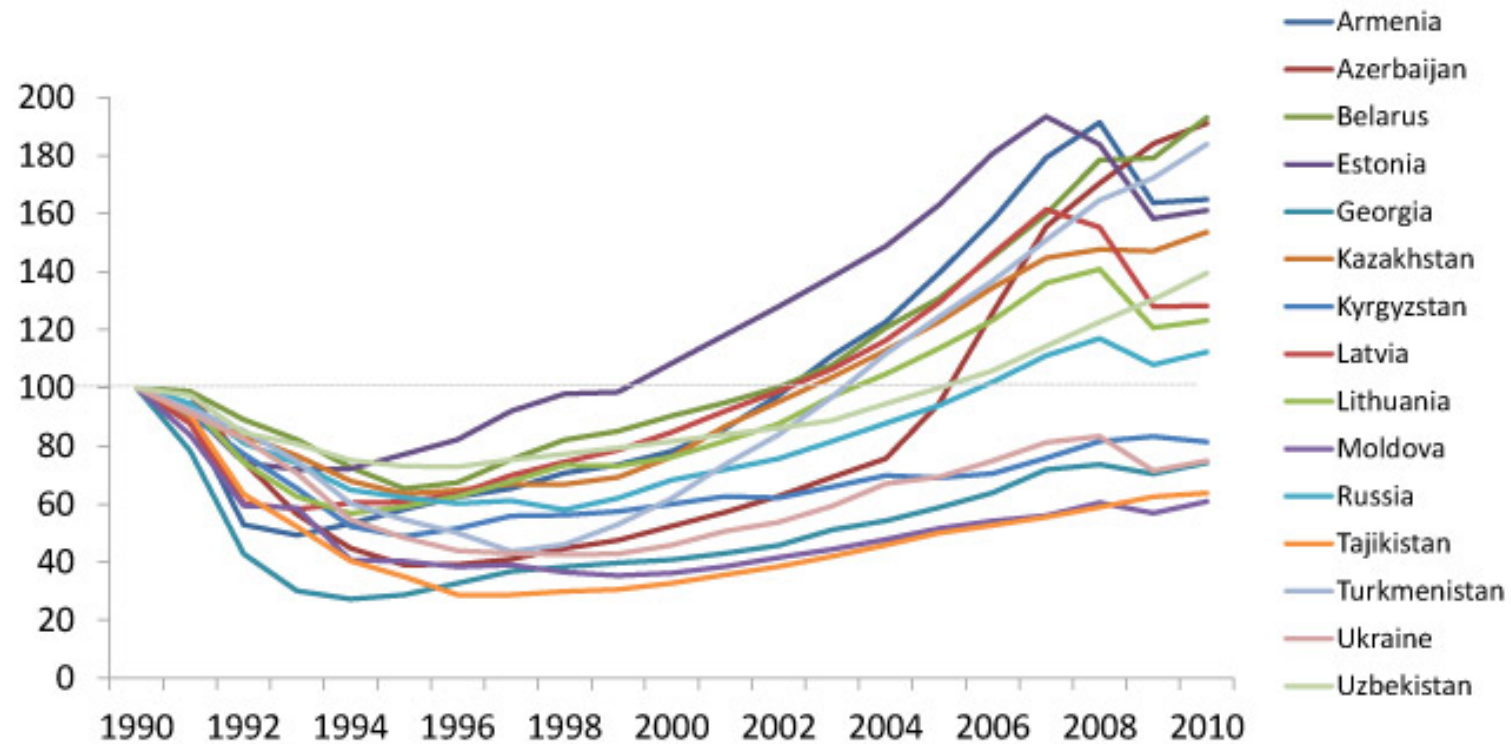
- Extremely large public sector—very little legal private activity.
- Over-industrialized. Industrial and agricultural sectors both larger than typical for countries at the relevant income level. Very small service sectors.
- Falling growth rates.
- Looming macroeconomic crisis. Repressed inflation.
- Virtually no overt unemployment.
- Most trade with other communist countries, at artificial prices.

Plan of talk

1. Review how the post-Soviet states have evolved with regard to
 - A. Output and growth
 - B. Inflation
 - C. Unemployment
 - D. Trade
2. What explains variation across countries in performance of output between 1990 and 2010. Was it initial conditions, speed of reforms, or something else?

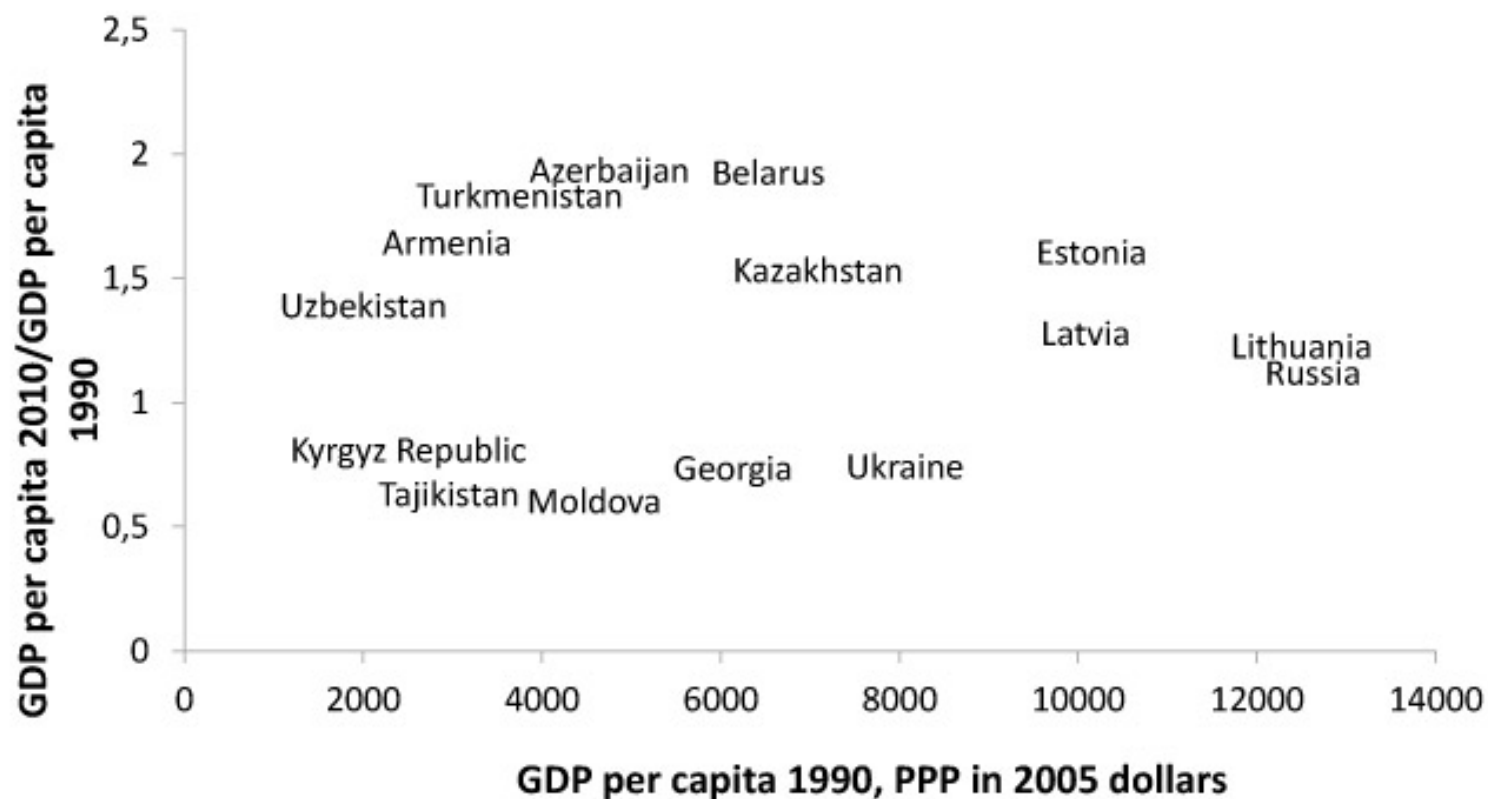
A. Output and Growth

**GDP per capita, PPP at constant prices,
index: 1990 = 100**



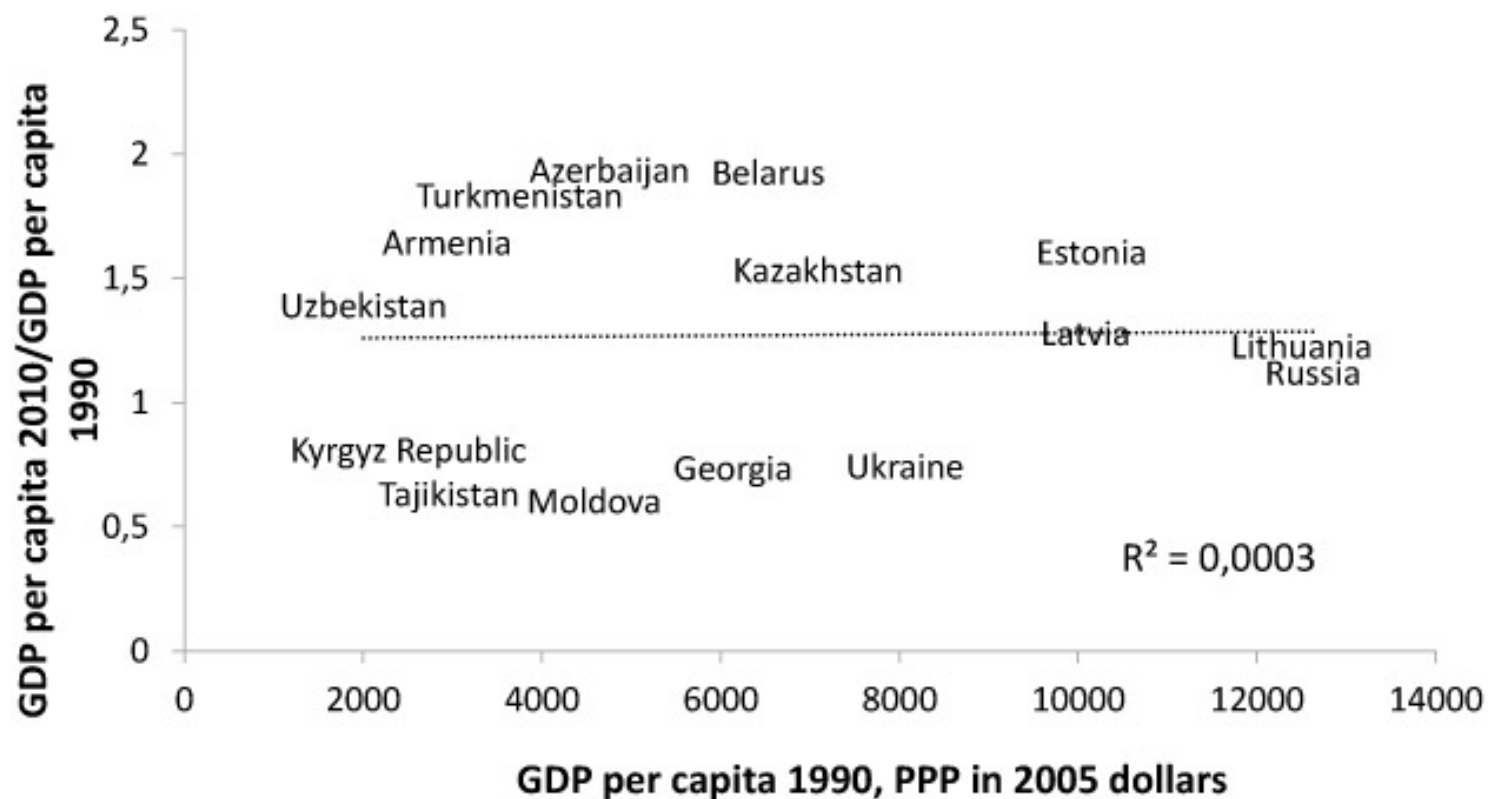
Source: World Bank, *World Development Indicators*, July 2011.

Are the poorer countries converging with the richer ones?



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Composition of Output

Private Sector

	Non-state sector share in employment		Private sector share in GDP
	1991	2005	2009
Armenia	33	79	75
Azerbaijan	35	68	75
Belarus	29	48	30
Estonia	30	76	80
Georgia	25		75
Kazakhstan	17	75	70
Kyrgyz Republic	34	81	75
Latvia		65	70
Lithuania		72	75
Moldova	39	74	65
Russian Federation	24	65	65
Tajikistan	40	74	55
Turkmenistan	44		25
Ukraine	21		60
Uzbekistan	37	77	45

Sources: Statistical Committee of the CIS, *15 Let Sodruzhestva Nezavisimyykh Gosudarstv, Naselenie i usloviya zhizni v stranakh Sodruzhestva Nezavisimyykh Gosudarstv*, 2005; EBRD Structural Indicators, 2011.

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Ukraine	21		60
Uzbekistan	37	77	45

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Sectoral Composition of Output

	Agricultural VA %			Industrial VA %			Services etc. VA %		
	1991	2008	change	1991	2008	change	1991	2008	change
Armenia	25	18	-7	49	45	-4	26	37	+11
Azerbaijan	32	6	-26	31	70	+39	36	24	-12
Belarus	21	10	-11	50	44	-6	29	46	+17
Estonia	18	3	-15	40	29	-11	42	68	+26
Georgia	29	9	-19	37	22	-15	34	69	+35
Kazakhstan		6			43			51	
Kyrgyz Republic	37	29	-8	35	19	-16	28	51	+24
Latvia	23	3	-20	44	23	-21	33	74	+41
Lithuania	17	4	-12	51	31	-19	33	64	+32
Moldova	43	11	-32	33	14	-19	24	75	+51
Russia	14	4	-10	48	36	-12	38	60	+22
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Do these changes represent convergence with the typical economic structures of non-communist countries at these income levels?

Yes.

Communism, Postcommunism and Economic Structure: Regression

	Agricultural VA %		Industrial VA %		Services etc. VA %	
	1991	2008	1991	2008	1991	2008
GDP per capita, PPP	-2.40*** (.20)	-1.43*** (.19)	.59** (.27)	.65** (.25)	1.80*** (.22)	.77*** (.22)
GDP per capita squared	.04*** (.005)	.02*** (.005)	-.005 (.009)	-.014*** (.005)	-.035*** (.007)	-.004 (.004)
Soviet/Post-Soviet	6.73*** (1.57)	-2.94* (1.53)	13.99*** (1.99)	3.37 (3.89)	-20.70*** (1.59)	-.48 (3.88)
Other post-communist	-2.45 (2.24)	-.51 (1.16)	14.57*** (2.45)	-2.90 (2.42)	-12.08*** (3.21)	3.42 (2.48)
Communist	10.30 (8.11)	2.54 (4.81)	3.11 (6.27)	8.92** (4.46)	-13.43*** (2.99)	-11.56*** (1.52)
Constant	33.20*** (1.61)	24.65*** (1.65)	23.75*** (1.31)	27.55*** (1.82)	43.07*** (1.38)	47.95*** (1.78)
R Squared	.6155	.5518	.3129	.0712	.5373	.2644
N	156	151	158	153	158	152

Source: World Bank, World Development Indicators, July 2011. Note: Robust standard errors in parentheses. *** p < .01, ** p < .05, * p < .10.

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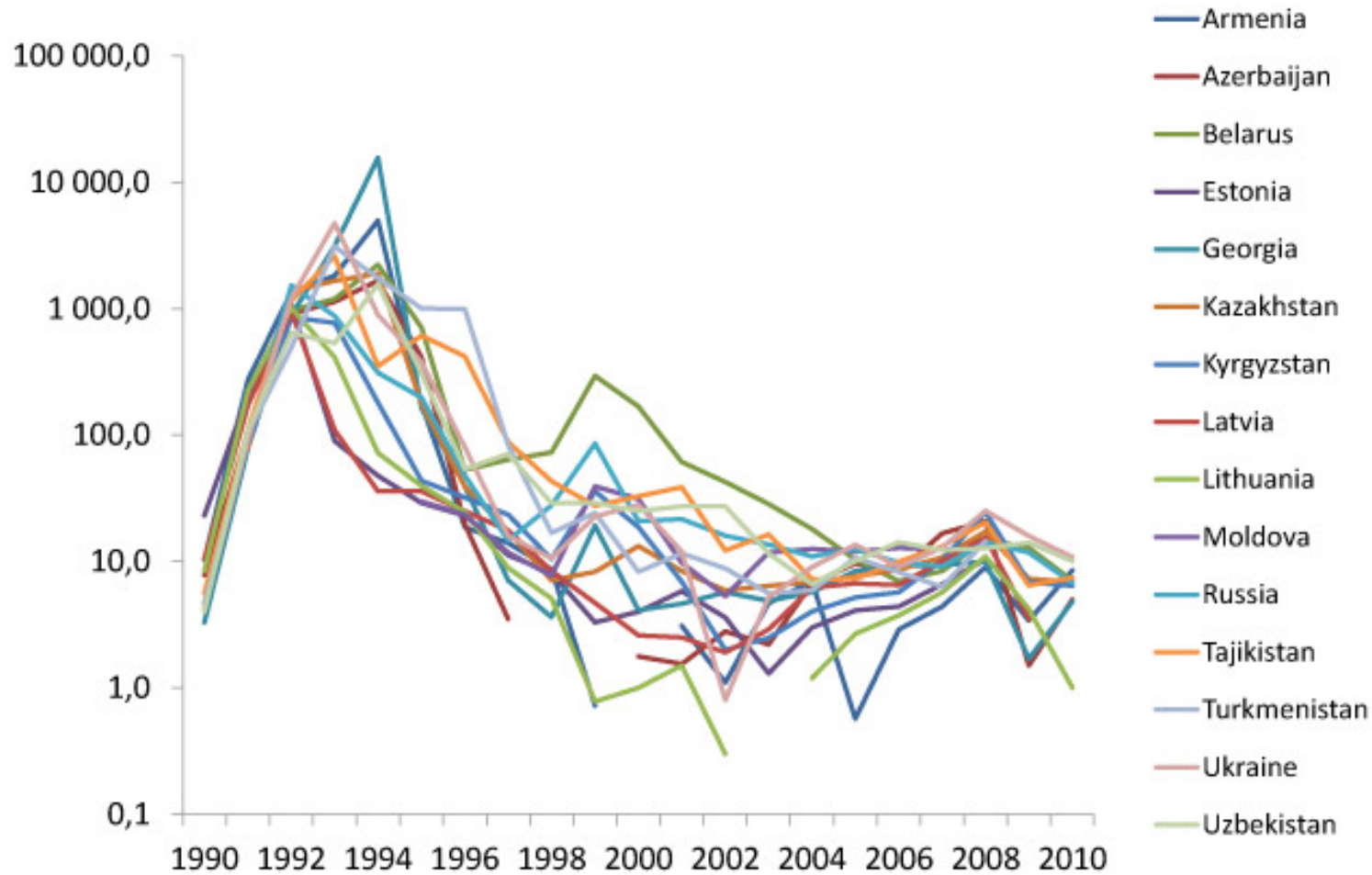
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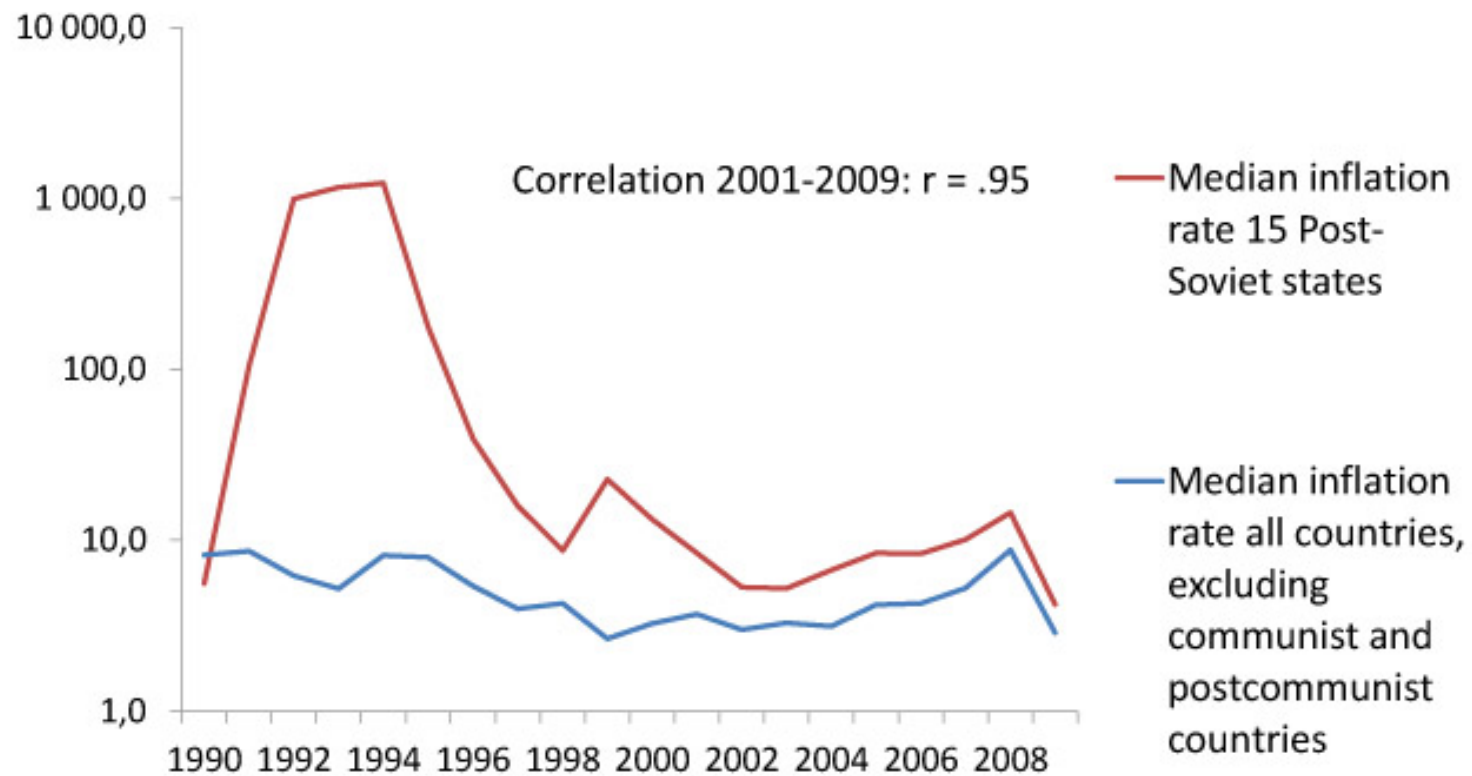
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B. Inflation

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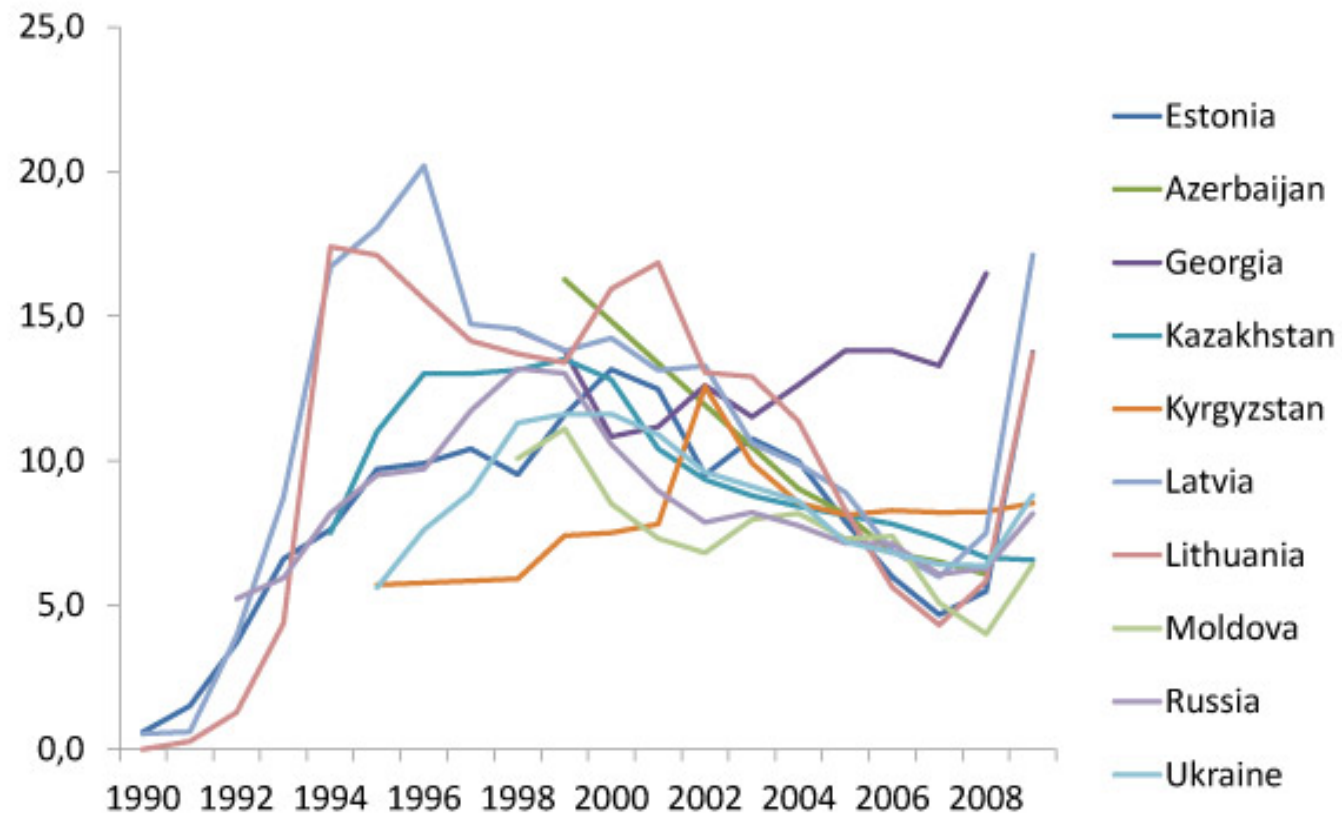
Inflation in the Post-Soviet States and Never Communist Countries, 1990-2009



Sources: World Bank, *World Development Indicators*, July 2011; EBRD Macroeconomic Database.

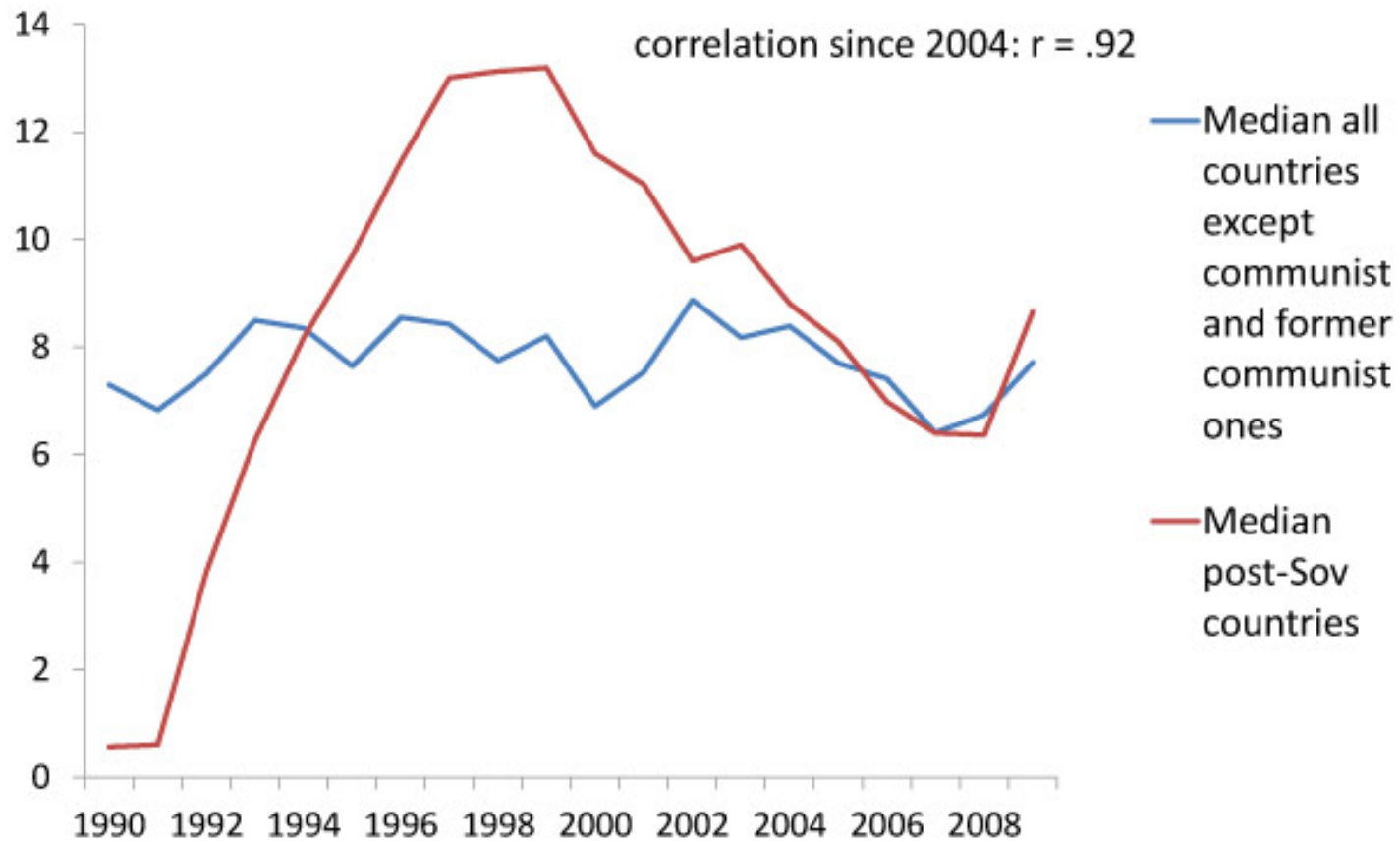
C. Unemployment

Unemployment in Post-Soviet States, 1990-2009



Source: World Bank, *World Development Indicators*, supplemented by estimates of EBRD.

Median unemployment rates



Sources: World Bank, *World Development Indicators*, supplemented by EBRD estimates.

D. Trade

Trade Patterns of Former Soviet States

	Percent of exports to CIS		Percent of exports to EU
	1991	2008	2008
Armenia	98	31	54
Azerbaijan	95	3	57
Belarus	91	44	44
Estonia	30 ^a	13	69
Georgia	94	36	22
Kazakhstan	92	16	43
Kyrgyz Republic	99	55	10
Latvia	45 ^b	15	73
Lithuania	45 ^c	26	60
Moldova	97	39	52
Russia	58	15	57
Tajikistan	87	16	40
Turkmenistan	98	n.a.	n.a.
Ukraine	87	36	27
Uzbekistan	94	34	n.a.
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Sources: Statistical Committee of the CIS, 10 let Sodruzhestva Nezavisimyykh Gosudarstv, 2001; data downloads from Estonian, Latvian and Lithuanian Statistical Agencies, September 2011.

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How can we explain the variation in growth between 1990 and 2010?

Here I will include the East European countries, to get a broader base of comparison.

What might explain different growth rates?

- Initial characteristics of the countries.
- Different speeds of economic reform.
- Different levels of government spending.
- Convergence with their neighbors.

A. Initial characteristics of the countries

Regressing total growth 1990-2010 on initial income and a variety of other initial characteristics, very few are statistically significant, and effects are small.

I tried:

- Ln gdp per capita 1990
- Urbanization 1990
- Natural resources
- Ln oil produced 1970-89
- Years under communism
- Distance from Duesseldorf
- Repressed inflation pre-transition
- Black market premium pre-transition
- Pre-transition secondary school enrollment rate
- Index of over-industrialization
- Pre-transition share of trade with CMEA

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Pre-transition secondary school enrollment rate

Index of over-industrialization but with *positive* effect ($R^2 = .11$)

Share of trade with CMEA pre-transition but with *positive* effect ($R^2 = .16$)

B. Speed of economic reform

EBRD average transition indicator for 1990-2010. Took the sum across all years 1990-2010—higher for countries that implemented reforms more fully earlier (and did not backtrack).

Regressed growth 1990-2010 on initial income and total EBRD score.

Not statistically significant—tiny coefficient.

C. Government expenditure

General government expenditure as % of GDP. Took average over transition years (1990-2010)—lower for countries that cut excessive spending earlier.

Regressed growth 1990-2010 on initial income and average government expenditure.

Not statistically significant—tiny positive coefficient.

D. Convergence with income level of neighbors

Determinants of Growth of GDP Per Capita, 2010/1990 , cross-sectional regression

Ln GDP p.c. 1990	-.45*** (.16)	-.41*** (.14)	-.61*** (.15)	-.43*** (.14)
Ln average GDP p.c. of neighbors, 1990-2010	.64*** (.21)			
Ln average GDP p.c. of neighbors, 1990		.65*** (.19)		.75*** (.15)
Ln average GDP p.c. of <i>never communist</i> neighbors, 1990-2010			.40*** (.10)	
Index of natural resources				.21** (.09)
Constant	-.43 (1.01)	-.84 (.94)	3.07*** (.90)	-1.79** (.78)
R ²	.2588	.2793	.4258	.4076
N	27	27	15	27

Robust standard errors in parentheses. *** p < .01, ** p < .05, * p < .10.

Panel with country and year fixed effects, 1990-2010

Determinants of Growth of GDP Per Capita, Panel, 2010/1990; all regressions include country and year fixed effects (not reported)

	(1)	(2)	(3)
Growth of GDP per capita of neighbors	.26*** (.05)	.25*** (.05)	.29*** (.05)
Lag growth	.47*** (.07)	.47*** (.07)	.58*** (.05)
Lag Ln GDP per capita	-.15*** (.04)	-.16*** (.03)	-.17*** (.02)
Lagged EBRD score		.01 (.01)	
General government expenditure (% GDP)			-.0008 (.0005)
R ²	.6879	.6889	.7782
N	573	.572	457

Robust standard errors in parentheses. *** p < .01, ** p < .05, * p < .10.

Conclusions

Convergence and integration

Convergence

- with world inflation and unemployment rates.
- with economic structure of countries at similar income levels.
- with income and growth rates of neighbors.
- poorer FSU countries do grow faster than rich ones *unless they also have poor neighbors*.

Integration

- trade shifted from CIS to EU, but to different degrees in different countries.