Economics of Transition
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Volume 26(4) 2018, 841–849
DOI: 10.1111/ecot.12163

Geography, geopolitics, and policy in the performance of transition economies

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Abstract

The economic performance of the transition economies as of 2015 is well explained by three variables: (1) years of membership in the EU; (2) physical distance from the heart of the EU economy, taken to be Dusseldorf; and (3) annual revenues from oil and gas production, reflecting natural resource deposits. These three factors account for around 86 percent of the variation in per capita income across the 28 transition economies, and reflect the interplay of domestic policy, geopolitics, geography and natural resources.

Keywords: Transition economies, general economic performance.
JEL classifications: P20, P27.

1. Introduction

The current economic performance of the transition economies, as measured by GDP per capita at purchasing power parity, spans an order of magnitude. The Czech Republic is the richest transition economy, with a 2015 GDP per capita measured at current international dollars of $32,076 (IMF). Tajikistan is the poorest at $2,835. For the 28 transition economies covered in this paper, the weighted average 2015 GDP per capita at current international prices was $20,021 (see Appendix for details).

Received: March 6, 2018; Acceptance: May 10, 2018

Economists tend to account for comparative economic performance as being mainly due to the nature of economic and political institutions. Nations fail, we have been told recently, when they have extractive rather than inclusive institutions (Acemoglu and Robinson, 2012). For this reason, studies of the transition economies have generally emphasized the relationship between economic performance and domestic policy reforms during the post-communist era. Yet economists tend to overlook other factors that also play a large role in comparative performance. Most importantly, economic studies of the transition economies have underestimated the roles of geopolitics, geography and natural resources in shaping each nation's division of labour within the European and global economy.

In this short note, I show that the economic performance of the transition economies as of 2015 is well explained by three variables: (1) years of membership in the EU; (2) physical distance (km) from the heart of the EU economy, taken to be Dusseldorf; and (3) annual revenues from oil and gas production, reflecting natural resource deposits. These three factors account for around 86 percent of the variation in per capita income across the 28 transition economies, and reflect the interplay of domestic policy, geopolitics, geography and natural resources. Membership of the EU, for example, reflects both a substantial degree of economic reform (notably the adoption of the EU's *acquis communautaire* by the transition economy) and the geopolitical will of the EU countries to incorporate the transition economy within the European Union.

2. An opening vignette on geography and geopolitics

Following my work in Bolivia in the mid-1980s, I became increasingly sensitive to the dual roles of geography and geopolitics in national economic development and global cooperation. When I advised Poland in 1989, I took for granted that Poland's geography in the heart of Europe would be a big boost for economic growth. I noted often that Poland has extremely low transport costs to Germany as the next-door neighbour across the Pomeranian plain, a curse during the many wars of the 18th to 20th centuries in which German and Russian armies crisscrossed Poland, but a blessing for the Polish economy in a time of peace.

During the period 1989–1990 I made several recommendations to Poland and the G7 powers that were Poland's main economic interlocutors in the early post-communist period. My main economic advice was a quick transition to market pricing of goods and services supported by a convertible currency and open trade. My hypothesis, strongly confirmed by subsequent events, was that Poland's economy would integrate relatively rapidly with the German economy and the Western European economy more generally. My economic advice relied on the idea that open trade would facilitate the rapid restructuring of the economy to produce a new generation of economic growth.

To facilitate this move to currency convertibility it was necessary to achieve financial stabilization as well. The problem, however, was the overhang of unpaid debts from the Soviet era and the intense pressures inducing short-term capital outflows due to the high economic, financial and geopolitical uncertainties facing Poland in the early years. There were fears, of course, of a renewed Soviet crackdown (as in Poland in 1953, Hungary in 1956, and Czechoslovakia in 1968); there were fears of hunger in Poland's cities; and there were real concerns about the potential for mass violence.

I mention these facts to explain the dual pillars of so-called 'shock therapy' (a much abused and misunderstood term). The first pillar was the rapid transition to currency convertibility and market-based supply and demand. The second pillar was financial stabilization built on four components: (1) a freeze (standstill) on debt servicing in the short run; (2) a Zloty Stabilization Fund to back the newly convertible currency; (3) a quick infusion of IMF and other loans, that in a bankruptcy context would be called 'debtor-in-possession' financing for working capital; and (4) debt cancellation over the longer term, eventually sparing Poland around $16 billion of long-term debt servicing.

Two years after the successful Polish stabilization and rapid move to currency convertibility, I was advising the economic teams of Mikhail Gorbachev (up to the middle of 1991 until the putsch attempt) and Boris Yeltsin (in late-1991). My advice to the Soviet Union, and then to Russia, was to follow the Polish example of restructuring through market reforms supported by financial assistance from the Western powers. The demonstrated success of Poland's reforms, which by the middle of 1991 were already leading to an inflow of foreign investment, a stable and convertible currency, low inflation, and an end to chronic shortages in retail trade, was heartening evidence to the reformers in all of the transition economies including the Soviet Union and Russian Republic.

Yet here is precisely where geopolitics intervened to spell a profound difference between Poland and Russia. While the United States (and through the US the entire G7) followed through on supporting the four components of financial stabilization in the case of Poland, the very same governments refused to undertake any comparable measures for the Soviet Union during 1991 and then for Russia in late 1991 onward.

Consider one vivid example. In the case of Poland, I recommended a $1 billion stabilization fund for the Zloty one morning in September 1989. I presented the idea to the US Government in the morning and by the end of the day had received White House confirmation of the $1 billion in support. In the case of Russia, however, my repeated pleas for a similar stabilization fund for the ruble met with blank stares and rejection by the US, the IMF and the G7. They never gave me an economic reason for rejecting the idea, only a political one. Indeed, the Acting US Secretary of State Lawrence Eagleburger was explicit with me: the US Government would not support such a fund for Russia during 1992 no matter its merits.

In the case of Poland, the US goal was to incorporate Poland (and its neighbours) into the West's security umbrella. Poland would be a member of the European Union and a member of NATO. In the case of Russia, by contrast, the US goal was to assert a US unipolar world in the 21st century that could not be threatened by a resurgent Russia. While Gorbachev envisioned a Eurasian economic and security system stretching from the Atlantic to the Pacific, the US envisioned a US-led security system that would incorporate Eastern Europe, the Baltics, the Black Sea region and the Middle East, and that would leave Russia too weak to challenge US primacy.

The result is a new geopolitical and economic divide. The 'West' has extended roughly 1,500 km to the East, through the expansion of EU and NATO membership. Those left on the other side of the new geopolitical divide are considerably poorer as a result.

3. The transition re-establishes the European division of labour

Ever since the start of the Industrial Revolution, Europe's division of labour has been divided between a relatively high-technology Western Europe and a relatively lower technology and more resource-dependent Eastern Europe. Economic historians have shown how European industrialization after 1800 diffused from west to east, originally from England across the channel to Western Europe and then later to southern, eastern and northern Europe. Western Europe formed (and remained) the core of endogenous (technology-driven) growth while Eastern Europe achieved economic growth with a time lag as the result of the diffusion of technologies over space and time. The result was a persistent geographical income gradient, with GDP per capita at any given time declining spatially from the high-income economies of Western Europe to the lower-income economies of Eastern Europe, with lower incomes and later industrialization the farther to the East.

Consider the example of Poland. According to Angus Maddison's estimates, Poland stood at about one-half of Germany's GDP per capita in 1870, 1913, 1929 and 1955. In 1970, after roughly a quarter century within the Soviet bloc, Poland's GDP per capita stood at around 41 percent of Germany's, a notable decline from historical experience.[1] By 1989, following another two decades within the Soviet bloc, Poland's GDP per capita was just 34 percent of Germany's.

Poland's separation from the technologically advanced economies of Western Europe after World War II had significantly slowed Poland's post-war economic growth; indeed, Poland's per capita growth was zero between 1974 and 1989. With transition reforms beginning in 1990 and its accession to the European Union in 2004, Poland was able to close the relative income gap that had emerged during the Soviet era through a period of supernormal or 'catch-up' growth. By 2015, Poland's

[1] Note that Maddison's measures for Germany include both West and East Germany.

GDP per capita was estimated by the IMF to be 56 percent of Germany's, higher than in the prewar period. Poland had reestablished, indeed surpassed, its prewar position with respect to Europe's division of labour.

The four main channels of Poland's supernormal growth after 1989 were: (1) the re-establishment of international trade in goods and services; (2) increased inflows of FDI from Western European firms; (3) increased overall inflows of technological know-how, through flows of experts, cross-border training of students, scientific exchanges, and other means; (4) the migration of Polish workers to Western Europe, producing remittance income and facilitating the formation of SMEs by returning migrants. FDI played an especially significant role in Poland's growth, as it brought large-scale capital, significant managerial know-how, advanced technologies, and a role for Poland within the international value chains of European multinational companies, most importantly in the machine sectors, such as the automotive industry.

4. Structural factors in the performance of the transition economies

I now test four basic determinants of the comparative performance of the 28 transition economies, measured as the GDP per capita at international prices in 2015 (denoted as Y). These are: (1) the scale of domestic policy reforms; (2) membership or not of the EU; (3) physical proximity to EU markets; and (4) natural resource endowments, notably oil and gas.

I propose the following simple model of Y_i for country i:

$$Y_i = a_0 + a_1 \times Reform_i + a_2 \times EU_i + a_3 \times Distance_i + a_4 \times Oil - Gas_i + u_i.$$

I also expect the stock of FDI per capita into country i to have the same four determinants:

$$FDIpc_i = b_0 + b_1 \times Reform_i + b_2 \times EU_i + b_3 \times Distance_i + b_4 \times Oil - Gas_i + v_i.$$

The RHS variables are defined as follows (and shown in the Appendix).

4.1 Reform

For each transition economy, the EBRD measures the strength of transition reforms on a scale of 1 to 4+ across six dimensions of economic policy. For each country, I take the simple arithmetic average across the six dimensions for the years 2000–2014, and average across the years to produce a single numerical score of reform strength.

4.2 EU membership

This variable *(EU)* measures the number of years that each country has been a member of the European Union up to 2015. It is calculated simply as 2016 - Year of Accession for EU members, and 0 for non-members.

4.3 Distance

Each country's physical distance from Europe is measured (using Google Maps) as the over-land driving distance between the country's capital city and Dusseldorf, which I take to be the geographic centre of the EU economy, following the geographic findings in Giersch (1979).[2]

4.4 Oil-gas production

Each country's oil and gas production in 2015 is measured according to the formula: Hydrocarbon Revenue = \$/bbl × 2015 Oil Production + \$/bcf × 2015 Gas Production, using \$50/bbl for oil and \$5M/bcf for natural gas. The revenue is then measured per person to give the variable *Oil-Gas*.

The basic results are shown in Table 1. Regression 1 shows the results for Y_i including all four RHS variables. We see these variables have the expected sign, though the EBRD reform measure is not statistically significant. Together the four

Table 1. Regression results

	(1) GDP per capita	(2) GDP per capita	(3) FDI stock per capita
Distance	−2.3	−2.3	−0.3
	(4.4)	(−4.6)	(−0.7)
Years in EU	1,054.6	1,144.9	418.9
	(−5.8)	(7.9)	(3.3)
Oil and gas	5.8	5.5	1.3
	(−6.3)	(6.5)	(2.1)
EBRD Reform	1,509.4		741.1
	(0.8)		(0.6)
Constant	12,007.2	16,845.5	411.5
	2.0	9.6	0.1
R^2	0.87	0.87	0.58

***Note*:** Numbers in parentheses are *t*-statistics.

[2] More elaborate GIS-based calculations can and should be made but they are beyond the scope of this study.

variables account for 87 percent of the cross-country variation in GDP per capita. Years of EU membership, distance from Dusseldorf, and production of oil and gas are all highly significant. Each additional year of EU membership is associated with an extra $1,055 per capita in 2015. Each additional 1,000 miles distance from Dusseldorf is associated with a reduced GDP per capita of $2,269. Each $1 of oil and gas production per person is associated with an incremental $5.6 dollars of overall GDP per capita. This is a larger multiplier from oil and gas production than I would expect and may reflect an overvaluation of domestic services in the GDP of the oil-dependent economies. In regression (2), I drop the EBRD reform measure from the right-hand side, and find that the three remaining variables still account for 87 percent of the cross-country variation in GDP per capita.

In regression (3), the stock of FDI per capita is regressed on the four RHS variables. We see that membership in the EU is associated with increased FDI per capita, with each year of membership associated with an extra $418.9 of FDI per capita. Each $1 of oil and gas production per capita is associated with an extra $1.3 of FDI per capita. Surprisingly, neither the distance variable nor the EBRD reform variable accounts for FDI per capita.

Consider the difference in FDI per capita between Poland and Tajikistan, neither of which is an oil or gas producer. Poland has 12 years of EU membership compared with 0 for Tajikistan; Poland is roughly 1,000 kilometers from Dusseldorf compared with 6,000 kilometers for Tajikistan. According to regression (1), these two variables therefore suggest a difference in 2015 GDP per capita of: $12 \times \$1{,}055 + 5{,}000 \times \$2{,}269 = \$24{,}000$, which is very close to the actual difference of $26,500 (Poland) − $2,835 (Tajikistan) = $23,665.

5. Discussion of results and further research

The results show three powerful influences on GDP per capita in 2015: the number of years the country has been in EU; the driving distance from Dusseldorf; and the estimated value of oil and gas production per capita. These three variables account for 87 percent of the cross-country variation in GDP per capita of the 28 transition economies.

The EBRD summary reform measure is not statistically significant. The failure of the reform measure to be significant does not prove that reform is insignificant in effect. The reform variable is certainly imperfectly measured and is also highly correlated with the EU variable ($r = 0.70$). Gaining membership in the EU signifies the successful adoption of the EU's body of commercial law (the *acquis communautaire*), and this may by itself be the most practical single indicator of reform success.

EU membership reflects both economic reforms and geopolitics, especially US-led. EU membership has proceeded basically from West to East, and among the former Soviet states has included only the Baltic States, and among the former Yugoslav states, only Slovenia, Croatia and Montenegro. What has determined the

sequence of EU enlargement? Most importantly, it has included states resisting Russian political influence, meaning the countries of Eastern Europe, the Baltic States, and the parts of former Yugoslavia least under Serbian, and hence Russian, influence. The decision to invite a country into the EU has been largely synonymous with the decision to invite the country into NATO.

My contention is that the pattern of EU and NATO enlargement has created a new and unnecessary economic and security divide in Europe. Of the 28 transition countries considered in this paper, 12 have acceded to NATO and 11 to the EU (Albania being the single transition country admitted to NATO but not yet to the EU). While some of the transition economies, such as those of Central Asia and the Caucasus, are too remote from Europe to be viable candidates for EU membership (and indeed, are not even in the European region), several other countries in the former Yugoslavia and former Soviet Union are plausible candidates for EU membership. Instead of defining a Common European Home, the expansion of the EU and NATO has unnecessarily divided the transition states between those that are 'inside' the Western security umbrella and those that are deemed to be competitor states on the outside. The economic consequences of this division have been significant, several thousand dollars of per capita income as of 2015.

References

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Appendix: Data used in the regression analysis

Country	GDP per capita	Oil and gas	Nato years	Dusseldorf distance	EU years	EBRD reform	FDI stock
Albania	11,304	122	7	1,574	0	3.37	4,826
Armenia	8,492	0	0	3,973	0	3.42	4,269
Azerbaijan	18,030	2,155	0	4,125	0	2.90	22,183
Belarus	17,715	67	0	1,654	0	2.01	17,972
Bosnia/Herz	10,550	1	0	1,183	0	2.86	6,726
Bulgaria	19,169	17	12	1,564	9	3.64	42,106
Croatia	21,625	158	12	784	3	3.62	26,375

Appendix (Continued)

Country	GDP per capita	Oil and gas	Nato years	Dusseldorf distance	EU years	EBRD reform	FDI stock
Czech Republic	32,076	31	17	487	12	3.88	113,057
Estonia	28,650	200	12	2,088	12	4.01	18,914
FYR Macedonia	14,048	0	0	1,605	0	3.44	4,572
Georgia	9,591	4	0	3,529	0	3.44	12,525
Hungary	26,275	99	17	919	12	3.97	92,132
Kazakhstan	25,912	2,309	0	5,185	0	3.08	119,833
Kyrgyz Republic	3,395	4	0	6,040	0	3.36	3,887
Latvia	24,652	14	12	1,782	12	3.78	14,549
Lithuania	28,413	58	12	1,568	12	3.86	14,440
Moldova	5,047	0	0	1,976	0	3.20	3,539
Montenegro	16,016	0	0	1,414	0	2.96	4,344
Poland	26,499	55	17	1,120	12	3.90	213,071
Romania	20,872	186	12	1,747	9	3.52	69,112
Russia	25,965	2,206	0	2,359	0	3.21	258,402
Serbia	13,699	51	0	1,176	0	2.89	28,825
Slovak Republic	29,758	44	12	756	12	3.96	48,163
Slovenia	30,918	2	12	641	12	3.56	11,847
Tajikistan	2,835	13	0	6,093	0	2.81	2,112
Turkmenistan	16,478	3,543	0	5,519	0	1.58	32,124
Ukraine	7,987	108	0	1,883	0	3.19	61,817
Uzbekistan	6,081	428	0	5,678	0	2.29	9,888

Notes: GDP per capita: IMF World Economic Outlook; Oil and Gas Earnings: US Energy Information Administration; NATO and EU Years: 2016-Year of Accession; Dusseldorf distance: Google Maps, capital to capital by road travel; EBRD reform: Average of reform scores over six sub-categories; EBRD FDI stock: World Investment Report, 2016.