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Ten Lessons from the EU Accession of Ex-Communist Countries

Călin Vâlsan ^{1,2,*} , Amos M. Rahat ³ and Elena Druică ² ¹ William School of Business, Bishop's University, Sherbrooke, QC J1M 1Z7, Canada² Department of Applied Economics and Quantitative Analysis, University of Bucharest, 030018 Bucharest, Romania; elena.druica@faa.unibuc.ro³ Doctoral School of Economics and Administrative Sciences, Faculty of Business Administration, University of Bucharest, 030018 Bucharest, Romania; amos-mordechy.rahat@s.unibuc.ro

* Correspondence: cvalsan@ubishops.ca

Abstract

We investigate the broad economic impact of accession in the case of 13 countries who joined the European Union starting with 2004, by comparing them with both EU and non-EU countries. Using 25 years of data, we document significant post-accession improvements in productivity and/or GDP per capita. Overall, these countries outperformed in terms of growth and productivity the European countries that never joined the EU. The newly admitted countries also out-borrowed non-EU countries in order to finance their transition and their subsequent economic growth. We also document a significant short-term, inverse relationship between the quality of governance and total factor productivity, on the one hand, and the ratio of debt-to-GDP on the other hand. This suggests that increases in the level of indebtedness could be driven by poor political governance and weak productivity. Borrowing appears to represent a compensatory, stop-gap measure rather than the result of sound economic strategy.

Keywords: EU enlargement; ex-communist countries; growth; productivity; governance; cultural heritage; panel data analysis



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1. Introduction

One of the most noteworthy events in recent history is the European Union (EU) accession of the former communist countries of Eastern Europe, who joined as a group in 2004 (with Romania and Bulgaria joining in 2007, and Croatia in 2013). The relatively large number of new members who joined almost at once, and the economic, social, and cultural differences between East and West, turned this event into a rare opportunity for assessing the social and economic outcome of EU enlargement.

Many economists and policymakers had predicted a win-win outcome (Baldwin et al., 1997; Breuss, 2002; Nuroglu & Kurtagić, 2012), while others had pointed out that EU membership is neither a necessary nor a sufficient condition for economic growth, which is driven mainly by liberalization and access to markets (Tupy, 2003).

The studies that follow the 2004–2007 enlargement focus mostly on Gross Domestic Product (GDP henceforth) growth and not surprisingly report a mix of sigma- and beta-convergence (Próchniak & Witkowski, 2013; Dvoroková, 2014; Siljak, 2018). Some of the more obvious limitations of convergence studies aside (Gluschenko, 2012), there is a glaring contrast between the narrow GDP growth focus, and the sweeping goals of European integration. There is no research that combines into a single conceptual framework economic,

governance, and cultural dimensions in order to document the long-run dynamic of the 2004–2007 EU enlargement.

This is where our study fills an important knowledge gap. Using data from 1996 to 2023 from the current member states and assimilated, we attempt to determine how GDP, total factor productivity (TFP), total debt to GDP, and six governance indicators co-evolved before and after the accession of former communist countries. If accession to the EU is indeed a win-win proposition, we should be able to uncover supporting evidence.

Our results indicate significant improvements in productivity and/or GDP per capita for the newly admitted former communist countries, when compared to both existing EU member states, and the countries left outside the EU. However, it appears that the quality of governance is averaging out, which might not necessarily represent good news for the older EU member states. There is a differentiation in terms of economic performance among the newly-admitted countries, with Bulgaria and Romania not surprisingly underperforming in some areas the ten countries that first joined the EU in 2004.

We document a significant and inverse relationship between the quality of governance, TFP, and GDP per capita, on the one hand, and the ratio of debt-to-GDP on the other hand. This suggests that increases in the level of indebtedness could be driven (especially in the short-term) by poor political governance and weak productivity. Borrowing appears to represent a compensatory, perhaps populist, stop-gap measure rather than the result of sound economic strategy.

Our paper is structured as follows: In Section 2 we present a brief background and we explore the existing academic literature in order to develop our hypotheses and build our model. In Section 3 we present our data and briefly describe the methodology. In Section 4 we present our econometric results and in Section 5 we discuss and interpret them. Section 6 concludes.

2. Background

Many studies analyzing long-term economic growth over a broad geographical scale consider sigma- and beta-convergence. The methodology was pioneered largely by (Baumol, 1986; Sala-i-Martin, 1996). Using almost a century of economic data, Baumol (1986) is able to document unprecedented convergence in GDP growth and productivity among developed countries and planned economies, to the exclusion of the third world, who seemed to be lagging behind. A similar finding is reported by Sala-i-Martin (1996), who presents evidence of conditional beta-convergence with a speed to the tune of 2% per year.

The rise of the EU and the dissolution of the communist bloc, in particular, made this type of research both captivating and accessible. It made it captivating because it set out to answer a very profound question with respect to the promise of economic prosperity held by regional integration, the likes of which the world had never seen before. It made it accessible because the context of European integration, the fall of communism, and the subsequent accession of former communist countries to the European Union gave us the closest thing to a large-scale controlled experiment to test our economic theories.

The EU is arguably the most successful supranational institution ever created. Born in the wake of WWII and initially known as the European Economic Community when the Treaty of Rome was signed in 1957, it set out to create a free trading bloc among a small number of Western European nations. As time went on, its objectives and scope became increasingly more ambitious and far reaching. Successive waves of enlargement brought the number of initial countries from six in 1957, to currently 27, after UK chose to exit the bloc in early 2020.

The largest waves of enlargement occurred in 2004–2007 when 12 countries in total, most of them former communist countries, joined the EU. Croatia joined in 2013. As

already mentioned earlier, this particularly large group makes it possible to conduct a more rigorous and in-depth analysis to ascertain the extent to which EU membership indeed makes a difference.

Most studies that investigate the accession of these countries attempt to document sigma- and/or beta-convergence. A 2013 study that only considers the former communist countries of Eastern Europe documents beta-convergence at a rate of 1.5 percent to 2 percent per annum (Próchniak & Witkowski, 2013). Absolute beta-convergence is also documented by (Dvoroková, 2014), although sigma convergence seems to suggest a different story. A similar, yet weaker result appears to be reported by (Siljak, 2018) taking into account the 2008 sub-prime meltdown, whose effects mostly interfere with absolute convergence.

Other studies had previously documented convergence among a larger number of countries, oftentimes including European countries, prior to the 2004–2007 enlargement waves (M. Mello & Perrelli, 2003; Liberto & Symons, 2003; De La Fuente, 2003; Giudici & Mollick, 2008; Miller & Upadhyay, 2002; Dobson & Ramlogan, 2002; Nakamura, 2001).

Convergence studies are insightful, yet the interpretation of results is fairly limited. The more common misconception is that growth convergence implies economic gaps are narrowing, which is not necessarily true (Friedman, 1992; Jenkins & Van Kerm, 2011; Nolan et al., 2011; Gluschenko, 2012).

The seminal work of (Acemoglu et al., 2014), is representative of a vigorous line of inquiry which links economic prosperity to the evolution of social democracies and finds the democratic process has indeed a significant impact on growth. This result is echoed by several other studies (Narayan et al., 2011; Eberhardt, 2022; Mathonnat & Minea, 2019; Madsen et al., 2015; Tavares & Wacziarg, 2001; Colagrossi et al., 2020).

Rule of law also has a significant and positive impact on income per capita (Ozpolat et al., 2016; Bhagat, 2020; Zaric & Babic, 2021; Ridley, 2021). Moreover, development and prosperity are contingent on the nature of institutions and the entrenchment of elites (Acemoglu & Robinson, 2008; Mathonnat & Minea, 2019).

To date, no one to our knowledge has incorporated GDP, TFP, indebtedness, and governance into a single framework to study the short- and long-term impact of European enlargement. It is this important knowledge gap we are addressing here. If EU membership is indeed beneficial, we should be able to document improvements on multiple dimensions after enlargement for the newly admitted countries, when compared to both existing member states, and countries that never joined the EU.

We expect that TFP drives GDP growth, yet GDP should also have a significant impact on TFP because a high GDP per capita is the telltale sign of a developed economy holding the potential for significant technological advances and innovation (Gehring et al., 2016; Siller et al., 2021).

As a country becomes wealthier, more individuals would arguably demand increased political power and representation, which could translate into better governance. Higher expectations of income redistribution and social justice could generate an increasing demand for public borrowing made possible by sustained prosperity.

Debt-to-GDP is thus bridging economic development and governance (Betz & Pond, 2023). A functional government, dedicated to improving income per capita and advancing social development will often borrow to finance infrastructure projects that will boost productivity and economic growth. Good governance and growth increase the credit rating of a nation and lowers its borrowing costs. On the other hand, a large public debt could act as a hard constraint on governance and hence entail improvements. If corporate debt can keep agency costs down and serve as a source of managerial discipline, the debt of a nation could also act as a device for containing the agency costs associated with the governance of

the country (Lasfer, 1995; A. S. Mello & Parsons, 1992; Kim & Sorensen, 1986; Harvey et al., 2004; Brockman & Unlu, 2009; Leland, 1998; Kaplan & Thomsson, 2017).

However, stagnant productivity, poor governance and dysfunctional politics can determine policymakers to keep borrowing in order to pay salaries to government employees and deliver privileges to entrenched political clients (Peev & Mueller, 2012). This can happen when the cost of effectively monitoring and disciplining managers, politicians, and bureaucrats become prohibitive (Canarella & Miller, 2022; Imaginário & Guedes, 2020; Streeck, 2014).

Based on all of the above, we hypothesize that economic development, productivity, overall indebtedness, political governance, and cultural characteristics are broad variables that act as a system, with multiple feed-back linkages, constantly influencing each other. Moreover, we hypothesize that after accession, the group of former communist countries show improvements in either GDP per capita, productivity, and governance when compared to the countries who never joined the EU, and even when compared to the countries already members of the EU:

H1. *GDP per capita, TFP, the governance index, and debt-to-GDP are cointegrated, exhibiting statistically significant long-run correlations.*

H2. *Compared to existing EU countries, ex-communist countries experienced post-accession improvements in some or all of the following variables: GDP per capita, TFP, and the governance index.*

H3. *Compared to non-EU countries, ex-communist countries experienced post-accession improvements in some or all of the following variables: GDP per capita, TFP, and the governance index.*

Overall, our analysis is aimed at uncovering meaningful changes associated with the enlargement process. We expect that the 12 countries that joined the EU in 2004–2007, plus Croatia in 2013, show improvements in growth, productivity, and governance when compared to both existing EU members and the remaining countries that never joined the EU. To this objective we turn our attention next.

3. Data and Methods

Data was collected for the entire population of 48 countries defined by the United Nations as part of the European continent (including Cyprus), for the period 1996 to 2023 (years 1996, 1998, 2000, and annually from 2002 to 2023). The variables collected subject to availability include: (i) Gross Domestic Product (GDP) per capita (current US\$) (ii) Gross Public Debt, as % of GDP (iii) Total Factor Productivity (TFP—based on Penn World Tables), at current PPP (USA = 1), and the six World Bank Worldwide Governance Indicators (WGI). For brevity, in Table 1, we present the variables used in our analysis.

The Worldwide Governance Indicators (WGI) is a World Bank initiative and is comprised of the following dimensions: (i) Voice & Accountability (ii) Political Stability and absence of Violence/Terrorism (iii) Government Effectiveness (iv) Regulatory Quality (v) Rule of Law and (vi) Control of Corruption.

After excluding four micro-states, the remaining 44 countries¹ were initially grouped into the following subgroups for comparative analysis: (a) The 13 EU member states joining the European Union (EU) starting with 2004 (b) The 14 EU member states already members of the EU prior to 2004, supplemented with: Iceland, Norway, Switzerland and the UK, that is, a total of 18 countries. (c) European countries according to the UN definition, which are not part of the European Union.

Table 1. Description of variables.

Variable	Description
GOV_PCI	The first principal component of six governance indicators
log(GDP)	The logarithm of GDP per capita
TFP	Total Factor Productivity
DEBT_GDP	The ratio of total debt to total GDP
XC_TEN	Dummy = 1 for the 10 countries that joined the EU in 2004
XC_TWO	Dummy = 1 for the 2 countries that joined the EU in 2007
POST_2004	Dummy = 1 for the years 2004–2007
POST_2007	Dummy = 1 for the years 2008–2023
D_2006	Dummy = 1 for the year prior to the 2007–2008 financial and economic crisis
D_2019	Dummy = 1 for the year prior to the COVID-19 pandemic
NON_EU	Dummy = 1 for the countries that never joined the EU

Our methods consist of Pooled Mean Group (PMG) and Dynamic Panel using the Generalized Method of Moments (GMM).

The six governance variables employed in this study show multi-collinearity, hence we take the first principal component as an index of overall governance. Initial statistical tests reveal most series are non-stationary. The Choi meta-tests reject the null hypothesis that all groups are stationary, and the GLS version of the Augmented Dickey-Fuller test fail to reject the null hypothesis of a unit root in the case of a majority of units and variables. For brevity we do not report the results here. Given that we have a mix of I(1) and I(0), we also perform cointegration tests and find strong evidence in its favor (Table 2).

Table 2. Cointegration test results.

Panel A. Results of Kao's Cointegration Test.				
	GOV_PCI	log(GDP)	TFP	DEBT_GDP
CONSTANT	−5.256 ***	10.638 ***	1.246 ***	54.085 **
GOVERNANCE_PCI	-	0.220 ***	0.050 ***	−7.407 ***
log(GDP)	0.364 ***	-	−0.034 ***	−71.712 ***
TFP	2.540 ***	−1.034 ***	-	6.447 ***
DEBT_GDP	−0.007 ***	0.004 ***	−0.001 ***	-
Residuals	0.681 ***	0.850 ***	0.706 ***	0.835 ***
Test for differing group intercepts	136.699 ***	14.011 ***	76.635 ***	74.695 ***
Panel B. Results of Pedroni's cointegration tests.				
Statistic	GOV_PC1	l_GDP	TFP	DEBT_IMF
nipanel	−7.0227 ***	−7.0792 ***	−7.0825 ***	53.4337 ***
rhopanel	6.6415	6.4473	6.3108	5.6207
tpanelnonpar	9.3193	7.1601	8.9516	5.1986
tpanelpar	−683.702 ***	−1353.114 ***	−22483.556 ***	16.7759

Table 2. *Cont.*

rhogroup	9.5064	8.7298	8.5846	8.1397
tgroupnonpar	12.1372	10.0854	10.1703	7.7270
tgrouppar	12.5628	11.0062	11.2690	8.1013

***: $p < 0.01$; **: $p < 0.05$.

Kao's test suggests multiple cointegration relationships among the four variables under investigation, but we have to be cautious because some series might in fact be stationary. Based on the panel-level statistics (nipanel and tpanelpar), Pedroni's test also suggests cointegration among the first three variables. Not surprisingly, group-level statistics are generally weaker, which is consistent with the literature and reflects heterogeneous dynamics across individual countries. This result narrows our choice of models in the next stages of the analysis.

4. Results

4.1. Pooled Mean Group Analysis

At first, we model the relationship among our four leading variables using the Auto-Regressive Distributed Lag Model (ARDL) in either Pooled Mean Group (PMG) or Mean Group (MG) form. ARDL is in fact an unrestricted variation of the Vector Error Correction Model applied to panel data when dealing with a mix of $I(1)$ and $I(0)$ series. The long-run coefficients are presented in Table 3. Because the results of the Pesaran tests indicate significant cross-sectional correlation (not reported here for the sake of parsimony), we also run a Common Correlated Effects (CCE) specification of the panel model, in order to account for unobserved common factors that might be responsible for cross-sectional dependence.

In the case of the ARDL model, all error correction coefficients are negative and significant at the 1% level, confirming once again the long-term relationships among the four variables. In the long-run, overall governance appears to be associated with higher GDP per capita, increased productivity, and a higher debt-to-GDP ratio. GDP per capita is strengthened by better governance and higher productivity. The relationship between TFP and GDP per capita in the second model is positive and significant as initially expected. Higher levels of indebtedness, however, appear inversely related to GDP per capita. TFP appears strengthened by better governance and weakened by a growing public debt burden, in the same vein as GDP per capita. The inverse relationship between GDP per capita and productivity in the third model is surprising and will be interpreted later, after correcting for short-term persistence in the dependent variables. A better overall governance seems to correlate with more borrowing, while a higher real GDP per capita results in a lower overall indebtedness. We also report an inverse relationship between TFP and Debt-to-GDP.

All Hausman test values are not statistically significant, suggesting the PMG model is preferable in all four instances. MG estimation allows for greater heterogeneity across short-term and long-term coefficients, but the estimates tend to be less efficient when this assumption does not hold. The former is more restrictive because it assumes all long-run coefficient to be similar across all countries and tends to be more efficient when this assumption holds. The results of the CCE panel specification are largely consistent with the PMG approach, albeit the statistical significance of some coefficients is somewhat weaker. Overall, these results confirm H1.

Table 3. Results of the panel ARDL and CCE specification models.

Panel A: Pooled Mean Group Regression Results Using the Pesaran-Shin-Smith Convention.				
	GOVERNANCE_PCI	log(GDP)	TFP	DEBT_GDP
GOVERNANCE_PCI	-	0.289 **	0.0227 **	13.131 ***
log(GDP)	0.322 ***	-	−0.177 ***	−6.000 **
TFP	6.479 ***	4.296 ***	-	−39.541 ***
DEBT_GDP	0.017 ***	−0.014 ***	−0.001 ***	-
Error correction coefficient	−0.376 ***	−0.096 ***	−0.253 ***	−0.167 ***
Hausman test on long-run coeff.	5.203	0.986	3.311	1.456
Panel B: Mean Group regression results using the Pesaran-Shin-Smith convention.				
	GOV_PCI	log(GDP)	TFP	DEBT_GDP
GOV_PCI	n/a	0.823	0.039	23.12 *
log(GDP)	0.126	n/a	−0.063	−61.334
TFP	0.613	3.872	n/a	−181.051
DEBT_GDP	0.000	−0.160	−1.33	n/a
Error correction coefficient	−0.674 ***	−0.39 ***	−0.67 ***	−0.38 ***
Panel C: Common Correlated Effects panel regression.				
	GOV_PCI_CCE	log(GDP)_CCE	TFP_CCE	DEBT_GDP_CCE
const	−4.786 **	10.408 ***	−0.098	0.567
GOV_PCI_CCE	n/a	0.074 **	0.005	1.005
log(GDP)_CCE	0.627 ***	n/a	0.090 *	−37.4116 ***
TFP_CCE	0.131 *	0.253 *	n/a	−7.924 ***
DEBT_GDP_CCE	0.001	−0.002 ***	−0.001	n/a
ADJ-Rsquared	0.05	0.16	0.03	0.1
F-value	3.95 ***	18.97 ***	0.85	10.161 ***

***, $p < 0.01$; **, $p < 0.05$; *, $p < 0.1$.

Under the PMG and CCE approach, however, all categorical variables are expunged from the model, hence we cannot perform a Diff-in-Diff analysis. In addition, there is a significant degree of persistence in all four variables considered above. This needs to be addressed before drawing stronger conclusions.

4.2. Dynamic Panel Analysis

The best way to address the issue of persistence in the outcome variables is to use a dynamic panel approach using the two-stage Generalized Method of Moments (GMM henceforth) with collapsed instruments and asymptotic standard errors. We are mindful of the cross-sectional dependence present in our data, but according to [Pesaran \(2006\)](#), our panel data has time and cross-sectional dimensions that are relatively manageable and entail a risk of bias and lack of consistency that is minimal. As it will be shown later, our results appear robust and consistent across various model specifications.

We are segregating the sample into several subsamples to be analyzed into what amounts to an adapted staggered Diff-in-Diff dynamic panel approach. We use the 14 countries already members of the EU, to which we add UK, Norway, Switzerland, and Iceland, as EU assimilated nations, representing the first control group. UK has been an active EU member between 1973 and 2020, hence economically, socially, and politically

is very much in step with the other European Union nations. Norway, Switzerland, and Iceland, although never EU members have shadowed EU policies and regulations, and enjoyed a level of economic development and social prosperity comparable to that of EU member countries. Norway has even been admitted to the EU in the early 1970s, but has declined membership, preferring to retain its political and economic autonomy, although otherwise very much aligned with European values and policies. Switzerland is a member of the Schengen area, like the vast majority of EU nations.

The treatment groups are represented by the 10 and respectively 2 countries—mostly ex-communist countries—that joined in 2004 and 2007. In order to avoid severe multicollinearity, we do not stagger the analysis in the case of Croatia, who joined in 2013, and whose GDP represents only 0.4% of the total EU GDP. We thus stagger the post-enlargement periods to start in 2004 and 2007. Another group is made of the remaining European countries that never joined the EU, for which we include the dummy variable *NON_EU*. We also include two yearly dummy variables: one for the year prior to the 2007–2008 financial crisis and the other one for the year prior to the COVID-19 pandemic. Given that Bulgaria and Romania share a common Eastern Orthodox cultural heritage, and the remaining 11 countries overwhelmingly share a common Catholic cultural heritage, the dummy variables used to differentiate between cohorts also represent proxies for cultural heritage. Results are presented in Table 4.

As expected, all four outcome variables have a very high degree of persistence, and their lagged values are among of the most important and significant predictors in our models.

In the first model, TFP has a positive impact on governance but the coefficient does not appear significant. Debt-to-GDP is also correlated to overall governance, but the relationship is inverse and statistically significant. The dummies for the countries that joined in 2004 and 2007 are not statistically significant. After enlargement, only one interaction shows a negative and statistically significant coefficient, in the case of the two countries that joined in 2007, that is, Bulgaria and Romania. The dummy for the year prior to COVID-19 appears positive and statistically significant, possibly suggesting that during the pandemic that ensued, the overall quality of political governance has declined across the board. The dummy for the non-EU countries is negative and significant at the 10% level.

In the second model, all predictors appear statistically significant, with the exception of *GOV_PC1* and the dummy for the year preceding COVID-19. The dummies for the countries who joined the EU in 2004 and 2007 show negative coefficients, yet their corresponding post-accession interactions show positive coefficients. The dummy for the year preceding the 2007–2008 financial and economic crisis is positive and significant. The dummy for the non-EU countries is negative and statistically significant.

In the third model, all predictors are significant at the 1% level. Again, we note the negative relationship between indebtedness and productivity. The dummies for the countries that joined the EU in 2004 and 2007 show negative coefficients. The post accession interaction in the case of the ten countries that joined in 2007 is positive, yet the one associated with the two countries that joined in 2007 is negative. The dummy for the year preceding the 2007–2008 financial and economic crisis is negative, and the one for the year prior to COVID-19 appears positive. The dummy for the non-EU countries is again negative and statistically significant.

In the fourth and last model, all predictors are significant at the 1% level. Only three predictors, that is, the lagged value of debt-to-GDP, GDP per capita, and the post-accession period interaction for the two countries that joined in 2007 show positive coefficients. At this point, we contend that both H2 and H3 are confirmed.

Table 4. Results of the dynamic panel analysis using a two-stage GMM with collapsed instruments.

	GOV_PCI	log(GDP)	TFP	DEBT_GDP
INTERCEPT	0.958	0.875 ***	0.108 ***	1.305
GOV_PCI	n/a	0.004	0.001 ***	−2.541 ***
GOV_PCI_1	0.951 ***	n/a	n/a	n/a
log(GDP)	−0.000	n/a	0.014 ***	1.644 ***
log(GDP)_1	n/a	0.913 ***	n/a	n/a
TFP	0.101	0.144 ***	n/a	−4.360 ***
TFP_1	n/a	n/a	0.998 ***	n/a
DEBT_GDP	−0001 **	−0.001 ***	−0.001 ***	n/a
DEBT_GDP_1	n/a	n/a	n/a	0.864 ***
XC_TEN	−0.049	−0.053 ***	−0.006 ***	−5.608 ***
XC_TWO	−0.115	−0.069 ***	−0.025 ***	−14.495 ***
XC_TEN × POST_2004	−0.01	0.079 ***	0.028 ***	−2.815 ***
XC_TWO × XC_POST_2007	−0.0045 **	0.049 ***	−0.022 ***	1.649 ***
D_2006	−0.026	0.005 **	−0.031 ***	−2.269 ***
D_2019	0.044 ***	−0.0139	0.005 ***	−2.549 ***
NON_EU	−0.248 *	−0.117 ***	−0.121 ***	−16.271 ***
Test for AR(2) errors	−0.349	−5.23 ***	0.185	−0.845
Hansen over-ident. Chi-square	24.613	30.917 *	28.54 *	30.69 *
Wald (joint) Chi-square	681,658 ***	864,705 ***	28,456 ***	86,312 ***

***: $p < 0.01$; **: $p < 0.05$; *: $p < 0.1$.

We are using a two-step estimation with collapsed instruments and asymptotic standard errors, and the test-statistic for AR(2) errors largely lack statistical significance in most cases. The Hansen overidentification test is a generalization of the Sargan test, and it is more appropriate for the two-step GMM procedure used here. All test estimates are statistically insignificant, or marginally significant at the 10% level (with one notable exception), indicating that by-and-large the instrumentation of our models is appropriate.

5. Discussion

We find that all four variables that stand for economic growth, economic efficiency, indebtedness, and political governance exhibit a very high degree of time persistence. They have significant momentum in the short term. Our results have been impacted by two major crises that occurred in the wake of the 2004–2007 wave of EU enlargement. The first crisis, that is, the subprime meltdown, started as a financial crisis in the fall of 2008, and quickly turned into an economic crisis that stretched over a couple of years (Fligstein & Habinek, 2017). The second major economic crisis was triggered by the COVID-19 pandemic. The 2020 crisis was atypical: It started with an abrupt decline in output, followed by a V-shaped recovery, accompanied by massive deficit spending and inflationary pressures that persist until today (Michie, 2020). Next, we summarize the findings we consider salient.

First, there is a direct two-way relationship between the overall quality of governance and TFP. Good governance makes for a predictable and stable political and social climate which in turn creates the conditions for improved productivity. Good governance enables

the emergence of economic efficiency. Improved productivity and efficiency create the economic conditions for further improvements in political governance. This probably owes to the emergence of a social strata with increasing economic power and autonomy, leading to a stronger need for political voice and representation, which in turn results in better governance (Fukuyama, 2014).

Second, growth in GDP per capita is associated with better governance and higher productivity (with one notable exception). Again, this result is robust and consistent with our expectations. It is nonetheless reassuring to confirm that governance indeed matters to economic prosperity.

Third, there is a significant two-way inverse relationship between the degree of indebtedness as measured by the ratio of debt-to-GDP on the one hand, and GDP per capita and TFP on the other hand. This relationship holds over both the short- and long-run, with one notable exception. It appears that over the short-run, higher levels of GDP per capita entail higher levels of indebtedness.

It could be that lower productivity leads to increased borrowing, perhaps in an attempt to compensate for lack of efficiency. At the same time, more debt probably results in higher interest rates depressing the influx of technology enhancing capital. The phenomenon of debt overhang is well documented in the economic and finance literature; (Dawood et al., 2024; Lo & Rogoff, 2015). Moreover, beyond a certain point, the costs of managing an economy on the verge of financial distress outweigh the benefits of borrowing.

Fourth, there is a significant two-way relationship between governance and the debt-to-GDP ratio. Over the long run this relationship appears positive, yet when adjusting for short-term persistence in a dynamic panel framework, it becomes negative and highly significant. Over the long run, improvements in governance might bring predictability, stability, and more responsibility, which in turn allow for a higher degree of indebtedness. The discipline and restrictions entailed by higher levels of indebtedness might lead to improvements in governance.

Over the short run, however, lapses in the quality of overall governance might be associated with reckless borrowing, perhaps in order to pacify the population, make up for reduced efficiency, and reward political cronies (Švarc, 2017; Kopecký & Spirova, 2011; Liargovas & Pilichos, 2022; Buti & Fabbri, 2023). A higher level of unsustainable borrowing might have a destabilizing political and economic impact. During a political and/or economic crisis the quality of governance has a tendency of getting worse before getting better (Malle, 2009). The crisis that engulfed Greece in 2015 is perhaps one of the best cases in point (Mavroudeas, 2016). The recent large deficits and worsening of financial standing in Romania represent another compelling example (Fitch Rating Report, 2025).

Fifth, over the long run, the PMG analysis reveals higher levels of real GDP per capita to be associated with lower productivity when in principle, stronger growth and the accumulation of wealth should create the conditions for further improvements in productivity. Although the CCE analysis casts doubts over the significance of this result, one might speculate that higher levels of prosperity generate economic surpluses that are subsequently spent on fringe social programs and in rewarding political clienteles. There is a parallel in the Free Cash Flow proposition in corporate finance, where the economic surplus not distributed to shareholders and not invested in value-increasing projects ends up squandered by the management on perks, private benefits of control, and vanity projects (Richardson, 2006; Jensen, 1986; Prescott, 2002; Fernald, 1999).

The sixth important finding is that the ex-communist countries of Eastern Europe are clearly poorer and less efficient than the rest of the EU, but after accession their growth in GDP per capita and productivity appear significant. This is not surprising given that they started from a lower overall level. Bulgaria and Romania who joined in 2007, show

a relatively poorer economic performance post accession, that could be due in part to the 2007–2008 crisis, in spite of the fact we have included a control variable for that event.

There was a significant gap at the beginning of the 1990s between the EU and ex-communist countries in terms of GDP per capita and TFP. After enlargement, however, the new member states saw the most rapid increases in wealth and productivity. When combining the various evidence on convergence that has emerged recently with our findings, we can conclude that we have perhaps witnessed a narrowing of the initial wealth and productivity gap existing in the early 1990s ([Irandoust, 2021](#); [Kozuń-Cieślak & Markowska-Bzducha, 2021](#); [Tabash et al., 2024](#)).

Our seventh finding shows the countries that joined the EU in 2004–2007 also witnessed significant improvements in per capita GDP and productivity when compared to the countries that remained outside the EU. This is perhaps one of the most telling results, since it settles to a certain extent the question of whether EU membership made a real difference.

Eighth, we have not found clear evidence in favor of improvements in political governance post-accession, for either the entire EU membership or the countries that joined as a group between 2004–2007. It appears as though there are no differences in the quality of governance between the main treatment group and other groups. There is one exception, in the case of Bulgaria and Romania who show a statistically significant negative coefficient during post-accession.

We have reasons to believe, however, that the quality of political governance was significantly lower among the 13 countries that joined in 2004–2007. Our data hints at an overall decline in the quality of governance across the board, yet the results are not statistically significant, with the exception of the COVID-19 pandemic, where we see a clear indication of decline in the quality of governance. There is also enough circumstantial outside evidence showing that since the mid-2000 most nations, including major industrialized nations, did indeed backslide in terms of democracy, rule of law, and/or political accountability ([Fukuyama, 2015, 2018](#); [Kapidžić, 2020](#); [Meier et al., 2019](#); [Marsh, 2013](#); [Plattner, 2020](#); [Keck, 2022](#); [Smolka, 2021](#)).

Countries such as the UK, France, Italy, Austria, Slovakia, Poland, Hungary, Romania, and even the Netherlands have either flirted with, or experienced a resurgence of authoritarianism, populism and majoritarianism. UK's exit from the European Union was fueled by right-wing populist sentiment. Hungary and Slovakia embraced authoritarian political figures and even illiberalism. France and Italy struggled and continue to struggle with the rise of right-wing populism. Romania and Poland struggled and continue to struggle with overt, authoritarian nationalism.

Ninth, the most dramatic borrowing occurred in the wake of the 2008 subprime meltdown, when most nations stepped up to reinforce their faltering financial systems. The ratio of debt-to-GDP has skyrocketed across all European nations to levels never seen since World War II. Massive deficits and more borrowing also occurred in the wake of the COVID-19 crisis, when virtually everyone rushed to stabilize their economies in response to the disruption caused by the pandemic.

Ex-communist countries, with an initial dismal economic efficiency and dubious creditworthiness, still have lower overall levels of indebtedness ([Yarashevich, 2013](#)). During transition, borrowing took off dramatically ([Campbell, 1995](#)). After accession, ex-communist countries still show lower overall levels of indebtedness, although they borrowed neck-to-neck with the other Western nations. Borrowing has been driven by the needs of structural adjustments, and the need to manage the two major crises mentioned earlier ([Paczoski et al., 2019](#)). Among the thirteen countries that joined the EU, Bulgaria and Romania appear to show a dramatic increase in the level of indebtedness.

Membership in the European Union allowed unparalleled access to financial markets and capital for the 13 countries under analysis, something that other nations, such as Russia, Serbia, Albania, or Belarus were not able to enjoy. The countries that joined the EU in 2004, while boasting a higher overall level of indebtedness when compared to non-EU countries, show a lower intercept in Table 4 after accession, most likely due to higher productivity and growth in GDP.

Last, but not least, cultural heritage plays a major role in shaping economic growth, economic efficiency, and political governance. The ten countries that joined in 2007 (and Croatia in 2013) have a predominantly catholic heritage, while Bulgaria and Romania, who joined in 2007 have an Eastern Orthodox cultural heritage. This cultural distinction might be ultimately responsible for explaining the observed differences among the 13 countries, and between them and the other Western European nations.

The cultural traditions of Eastern Orthodoxy and Catholicism combined with communism has resulted in a relatively lower level of per capita GDP, lower economic efficiency, weaker governance, and historically lower levels of indebtedness. After enlargement, GDP per capita and productivity experienced significant improvements, above and beyond those of other EU countries. At the same time, these countries engaged in massive deficit spending and significantly increased their debt-to-GDP burden.

Our research has several important limitations. In spite of controlling for the two major economic shocks, which occurred in 2007–2008 and 2020, we believe that the almost perfect overlapping between the former crisis and the accession of Bulgaria and Romania in 2007 resulted in underestimating the impact of enlargement. We were constrained in our econometric analysis by the need to ensure an optimal model specification, hence we opted for minimizing most known econometric issues. The staggered Diff-in-Diff analysis, in particular, raised several challenges, and we settled for the specification that strikes the best compromise among AR(2) errors, cross-sectional dependence, and multicollinearity.

Another important limitation pertains to the interpretation of some results, which at times becomes speculative. The interpretation of the relationship between indebtedness and the other major variables, in particular, relies on a great deal of circumstantial evidence, and corroboration with the results of other studies. It has become clear that the pursuit of this particular avenue should make the subject of future research, by extending the data set and the number of variables.

6. Conclusions

We are able to document a credible post-accession improvement in per capita real GDP and/or productivity for the newly admitted countries who joined the EU in 2004–2007—all of them with a Catholic or Eastern Orthodox cultural heritage—when compared to both the EU average, and the countries that remained outside the EU.

The most dramatic result, however, pertains to the level of indebtedness, as measured by the ratio of debt-to-GDP. Virtually all countries in Europe embraced deficit spending and saw their debt burden take off, in some cases, to levels never seen since WWII. The former communist countries of Eastern Europe started off with relatively low debt-to-GDP ratios, which translated into a significant unused borrowing capacity as soon as growth and productivity improved significantly. This borrowing capacity has been subsequently used to the fullest in order to address the structural adjustment needs associated with the transition process and the coping needs triggered by the two major crises discussed earlier.

It appears as though borrowing is not the result of a well-thought-out national growth strategy; rather, it is used as a stop gap measure, possibly with a populist flavor, in order to compensate for a lack of economic efficiency and administrative effectiveness.

Recent years have witnessed the rise of a strong anti-EU sentiment among the citizenry of member states, who embrace a populist narrative replete with globalist conspiracies. The European Union is no doubt facing many shortcomings and challenges, and arguably needs to reform its overbearing and byzantine bureaucratic system. But there is still at least one good news story to be told. This current research brings credible evidence in support of the contention that at least until now, joining the European Union has on balance resulted in positive economic outcomes for the former communist nations of Eastern Europe.

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Note

¹ We excluded 4 microstates, that is, Andorra, San Marino, Lichtenstein, and Monaco.

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