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Different choices, divergent paths: Poland and Ukraine

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Different Choices, Divergent Paths: Poland and Ukraine

Thorvaldur Gylfason, Eduard Hochreiter and Tadeusz Kowalski



Different Choices, Divergent Paths:

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Abstract

We compare the economic growth trajectories of Poland and Ukraine since 1990 to try to understand the extent to which the observed growth differentials can be traced to increased efficiency in the use of capital and other factors (intensive growth), rather than to simple accumulation of capital (extensive growth). We stress the role of qualitative factors such as education, governance and institutions. We ask whether the EU perspective and NATO membership played a role. We discuss the closely related histories of the two countries and note the stark differences between them, including their different approaches to the EU vs Russia, full vs incomplete transition to a market economy, and democracy vs anocracy, as well as different initial conditions. We compare key determinants of growth and growth trajectories, using economic as well as social indicators, and trying to disentangle efficiency and accumulation and combine path dependence and the role and scope of creative destruction. While Poland had the shortest and mildest transformation recession among CEE countries, Ukraine has been stagnant, or in decline, since 1990. The statistics we report and the stories we tell suggest that both countries have a complex relationship with democracy and that the nearly threefold difference in per capita GDP at PPP in 2021 in Poland's favour, with the ratio of investment to GDP similar in both countries, can most plausibly be traced to: (a) Poland's more extensive and diversified exports, and fewer restrictions on trade, in addition to more comprehensive and quicker restructuring of the national economy inspired by the EU perspective; (b) Poland's more extensive and better-quality education; (c) Poland's greater democracy and longer experience of democracy, lower levels of corruption, better governance, and freer press; (d) Poland's smaller agricultural sector and greater emphasis on manufacturing; and (e) Poland's lower inflation and higher level of financial development. Furthermore, Poland built market-friendly institutions to EU specifications and joined NATO. Against all this, Ukraine had more economic equality and lower unemployment as well as, from the early 1990s, a lower initial level of income per person, but was hampered by political divisions, path-dependent corruption and poor governance. During the global Covid-19 pandemic, Ukraine apparently suffered fewer deaths than Poland, despite fewer vaccinations.

Keywords: Economic growth, Poland, Ukraine, Governance, Transition, Education, Economic reforms, Exports, European Union, Inflation, Labour markets

JEL classification: O11, O16, O19

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1. Introduction

In three earlier papers, two of us compared economic developments in each of the three Baltic countries (Estonia, Latvia and Lithuania) with developments in three regional peers (Georgia, Croatia and Belarus).¹ The results we reported were broadly similar across the three comparisons: the Baltic economies grew more rapidly than those of their peers during the first 20-30 years of their transition to a market economy. As was to be expected from the theory of economic growth as applied to country comparisons, the Baltics grew more rapidly because they placed more emphasis on investment, education and trade, as well as on good governance and institutions inspired by the European perspective (as illustrated by their determination to join the European Union at the earliest possible opportunity).

In this paper, we undertake a similar comparison of economic developments in Poland and Ukraine since the collapse of communism in Central and Eastern Europe, seeking to understand how and why Poland charged so far ahead of Ukraine. Among other things, we want to understand the extent to which observed growth differentials can be traced to increased efficiency in the use of capital and other resources (intensive growth), rather than to simple accumulation of capital (extensive growth).²

¹ Gylfason and Hochreiter (2009, 2011, and 2022).

² For background, see, e.g., Gross and Steinherr (1995), Campos and Coricelli (2002), and Wachtel (2021).

2. History and initial conditions

Sharing a long border of 535 km, Poland and Ukraine have long and closely related histories. For more than two centuries, the lands of western Ukraine were a part of the Polish-Lithuanian Commonwealth. Over time, the Commonwealth began to lose its power. At the end of the eighteenth century, the Commonwealth ceased to exist, after three separate partitions were enacted. Prussia annexed its western part. Its eastern territory, including Ukrainian lands, became a part of the Russian Empire. The south-eastern part, Galicia, inhabited mainly by people who would define themselves as Ukrainians, found itself under Habsburg Austria's reign (Snyder, 2003).

For 123 years, the multicultural peoples³ of the former Polish-Lithuanian Commonwealth lived under three different governance cultures. Prussia and Russia had military and bureaucratic foundations (Thompson, 1940). The modern German Reich, established by Bismarck in 1871, soon transformed itself into a well-organised and well-governed key European industrial superpower. In contrast, Imperial Russia continued its autocratic system, heavily relying on comparative advantages based on natural resources and a fairly late (and regionally and sectorally uneven) process of industrialisation.

The Austrian Empire, and later Austria-Hungary, was a diversified multicultural state with relatively high regional freedom of administration, a large agricultural sector and also a rather late movement towards industrialisation. Galicia itself remained a source of agricultural products and was an early location for oil and gas extraction. The Russian Empire and the German Reich followed Russification and Germanisation policies, respectively. The scope and depth of the past imprint – that is, path dependence – in the Polish and Ukrainian lands was a function of their time under these governance cultures and institutions.

The outcome of WWI greatly changed the map of Europe. In 1918, like several other European countries, Poland was re-created from its former territories and became an independent state until invasion and partition in 1939 by Nazi Germany and Soviet Russia. Western and parts of south-western Ukrainian lands, after 123 years, returned to the re-emerged Polish state. The rest of the Ukrainian lands continued to be controlled by Russia, which replaced tsarist autocracy with a Soviet dictatorship after the Bolshevik revolution.

After WWII, Poland's borders were redefined by the Allies. Its territory in the east was reduced, and Poland underwent a geographical shift to the west. All Ukrainian lands became formally integrated under the label of the Ukrainian Soviet Socialist Republic (Reid, 2022).⁴ The republic continued to be a part of a centralist, single-party-controlled Soviet Union deprived of market allocation mechanisms and principles of the rule of law and civil liberties. In 1945-1989 Poland was a part of Soviet-controlled Central Europe. Although the Soviet model was imposed on Poland, the country enjoyed more leeway in all respects than many Soviet satellite regimes in Central and Eastern Europe (CEE). In economic terms, what mattered most was the

³ Poles, Lithuanians, Ukrainians, Jews, Belarussians, Germans and many other minorities.

⁴ After the Bolshevik revolution, Crimea in 1921 became an autonomous Soviet Republic, which after WWII was reduced to an autonomous region. In 1954 jurisdiction and control over Crimea was granted to the Ukrainian Soviet Republic. The status of Crimea as an integral part of independent Ukraine was confirmed when the USSR was dissolved in 1991. See *Encyclopedia Britannica*, <https://www.britannica.com/place/Crimea/History> (accessed 17 August 2022).

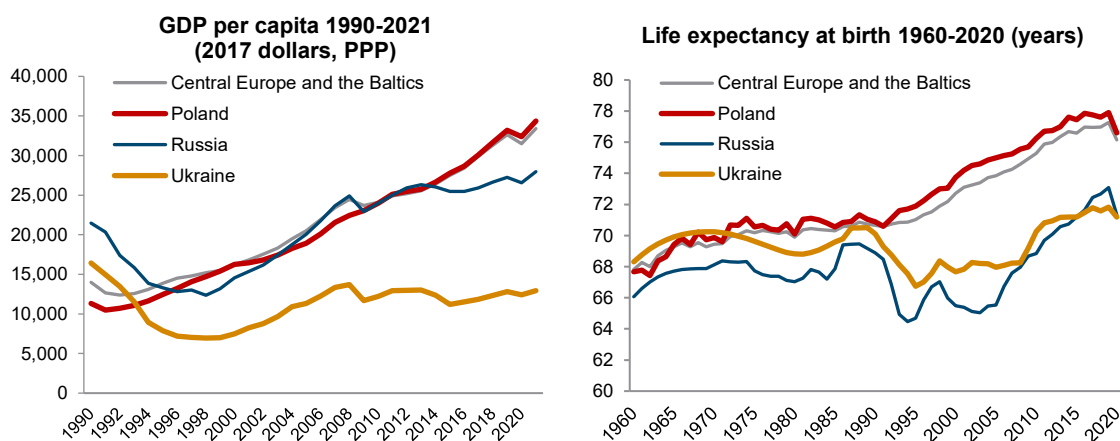
preservation of private ownership, including 70% of the arable land, the private small-business sector, and international academic and cultural relations, including greater freedom of thought and speech. These circumstances made it possible in Poland to build human and social capital. Individuals could climb the ladder outside the state and party ranks. Such specific conditions and the politically progressive Catholic hierarchy at that time were vital for developing a partly independent intellectual climate. To the extent that was possible, Poland became a Central European leader in at least partial opposition to the Soviet-imposed oppressive model of inefficient state-directed central planning.

Any comparative study of the transformation of Poland and Ukraine needs to consider their historical heritage. In the case of Ukraine, in the twentieth century – until 1991 – only the west had experienced a market economy and democracy, during the inter-war period, when this territory was part of Poland. After WWII, Ukraine and Poland (until 1989) functioned under distinct Soviet models.

All told, there emerged stark differences between the two countries, specifically their different approaches in relation to the following.

- (a) The EU vs Russia – in that Poland decided to join the EU as quickly as possible and did so in 2004, while Ukraine vacillated between conflicting plans to co-operate with the EU and Russia, culminating in the Maidan revolution of 2014, followed by Russian invasion later in 2014 and again in 2022.
- (b) Full vs incomplete transition to market economy – in that Poland developed quickly into a full-fledged market economy, while Ukraine's transition has been less complete and more volatile, and remains a work in progress.
- (c) Democracy vs anocracy – in that Poland became a full-fledged democracy, while Ukraine suffered setbacks and cannot yet be viewed as an unfettered democracy.

Chart 1 / GDP per capita and life expectancy



Source: World Bank, World Development Indicators, 2022.

After regaining independence during 1989-1991, the shape of the trajectory of per capita GDP was qualitatively similar across the CEE region. In each country, the trajectory was shaped like a sickle, but still with large quantitative differences. Owing to its close economic ties to Russia, Ukraine suffered the largest fall during the collapse, even deeper than that of Russia itself, whereas the output decline in Poland, as well as in the CEE region, including the Baltics, was much smaller (Chart 1, left panel). Ukraine is unique in that, even in 2021, its per capita GDP had not yet been restored to its 1990 level.

Sources do not agree on the initial levels of per capita GDP at purchasing power parity (PPP) in the two countries. The World Bank reports that per capita GDP at PPP was 45% higher in Ukraine than in Poland in 1990 (see Chart 1) and the Vienna Institute for International Economic Studies (wiiw) reports that it was 34% higher in Ukraine than in Poland in that year.⁵ In contrast, Kowalski (2013) reports that the figures for the two countries were about the same in 1989. Poland's experiment with shock therapy as described by Sachs (1993) produced the shortest and mildest transformation recession among CEEs. Poland has enjoyed stable growth since 1992, resulting in a more than threefold rise in real per capita GDP at PPP. By contrast, Ukraine's economy has been stagnant or in decline since 1990. The reliability of these comparisons is in doubt, however, owing to concerns about the quality of the data (in particular, for Ukraine).

Economic indicators tell only part of the story. The right panel of Chart 1 presents a corresponding comparison of life expectancy at birth. Life expectancy was similar in Poland and Ukraine in 1960 as well as in 1990. In Poland, after 1989, life expectancy declined by one year, compared with a decline of almost four years in Ukraine, a difference that has persisted as Poland's life expectancy exceeded that of Ukraine by more than five years in 2020 – 76.6 years in Poland against 71.2 years in Ukraine.⁶ The point of this comparison is that key economic and social developments tend to go hand in hand. The figures on life expectancy are not subject to the same concerns about accuracy as the data on GDP.

Since 1990, emigration has kept Poland's population stagnant at 38m. From 1990 to 2021, Ukraine lost about 15% of its population to emigration, from 52m in 1990 to 44m in 2021.⁷

The importance of the position of the two countries around 1990 goes far beyond the level of per capita GDP. Whether or not this was similar at that time, their conditions were quite different in many ways (Åslund, 2015, Ch. 1). Millions of Poles had visited Western Europe as tourists or temporary workers during the 1980s, and many spoke English, so in 1991 they were familiar with the West and how it functioned, and they wanted Poland to become more like the West. In contrast, hardly any Ukrainians had the same experience. In Ukraine, hardly anybody spoke English or had experienced any Western education. By 1989, Poland had for the most part freed itself from Russia and adopted the rule of law, but Ukraine had not. Poland gained competent leaders, including a liberal economic group centred on Leszek Balcerowicz, who had excellent knowledge of the structure and functioning of the market economies of the West and had worked for years on ways to change the economic system, but Ukraine did not. In Ukraine, put bluntly, nobody had a clue. They did not know what a market economy was, or that they needed it.

⁵ Source: <https://data.wiiw.ac.at/>

⁶ Notice also that Russia's average life expectancy of 69 years in 1989 was not restored until 2010.

⁷ These figures are approximate as the most recent population census in Ukraine was conducted in 2001.

Table 1 / Initial conditions and early transition policies

Specification	Ukraine	Poland
Programme launch	Nov. 1994	Jan. 1990
Monetary policy	Restrictive	Restrictive
Fiscal policy	Restrictive	Restrictive
Incomes policy	Mild	Restrictive
Exchange rate policy	Devaluation	Devaluation
Nominal anchor	Managed floating rate	Fixed exchange rate and wage control
Real anchor	Money supply and interest rate	Interest rate
Internal convertibility (for companies)	Yes	Yes
Internal convertibility (for households)	Restricted	Yes
External convertibility	Very restricted	Restricted
Main privatisation method	Coupon	Direct
Date of starting privatisation	1992/1995 ⁸	1990
Launch of stock exchange	1991	1991
Lowest level of GDP in year	1998	1991
Scale of decrease (1989=100)	36.6	82.2
Population in 1990 (m)	51.9	38.1

Source: Kowalski and Shachmurove (2018).

Given Poland's history as a previously independent state, it had all relevant state institutions as well as relevant (albeit outdated) laws to regulate its relatively large private sector. Ukraine had none of this. Poland had some rule of law, Ukraine did not. Ukraine had to break out of the unruly rouble zone, suffering disastrous hyperinflation, while Poland was less badly affected. In short, Poland was ready for new conditions, but Ukraine was not. Poland enjoyed all the international support it needed, with both financial and trade access, Ukraine did not.⁹ Ukraine became independent in a compromise between the old *nomenklatura*, who wanted to escape radical reforms à la russe, and Western Ukrainian nationalists who simply wanted independence. These divergences explain some of the differences catalogued in Table 1.

Tinbergen (1955) distinguished two kinds of economic policy: qualitative and quantitative.¹⁰ Any successful systemic transformation requires the design and implementation of a qualitative economic policy first. It must adjust the existing institutions and set up a framework of new institutions to replace the old structures accountable for unfavourable initial conditions.¹¹ A well-designed and implemented qualitative policy is only one of the necessary prerequisites. It must be accompanied by a bold and consistent quantitative economic policy to achieve a new path of sustainable development. Comparative analyses of cases of economic transformation, besides technicalities of both kinds of policies, need to consider the external and internal conditions. These determine the boundaries of socially and politically feasible solutions.

⁸ The privatisation law was adopted in 1992, but the necessary procedures were approved in 1995.

⁹ A founding member of the IMF and the World Bank, Poland rejoined the Fund and the Bank in 1986. Ukraine did not join until 1992.

¹⁰ In Tinbergen's terminology, qualitative economic policy is about changing certain qualitative aspects of economic structure. In contrast, quantitative policy means changing within the given qualitative framework, political parameters or political instruments.

¹¹ Acemoglu and Robinson (2012) discuss the importance of institutions to economic growth.

At the outset of politically feasible economic transformation, no theory was ready to be implemented. So, Poland's first cabinet, voted in by a new semi-freely elected parliament, had no choice but to experiment with an overhaul of the old system with a new one based on market principles.

In 1989 Poland was a pioneer of a full-fledged transformation. The reformers did not have to create a new legal environment from scratch, because some laws enacted before WWII were still valid.¹² The overhaul of the legal framework was vital for liberalisation of the economy, creation of a new financial system, and privatisation, which became a foundation for the new socioeconomic system. In other CEE countries, particularly those such as Ukraine which had been subjected to prolonged Soviet dominance, introducing a modern legal system based on the protection of property rights and freedom of entrepreneurship was a significant hurdle. Ukraine, launching its major reforms almost five years after Poland, was a latecomer and could base its transformation on the experience of the pioneers. Because of the initial gap and a lack of experts in Ukraine, this task slowed the pace of transformation and contributed to some pathologies, for example, in the process and outcome of privatisation.

The transition varied in the CEE countries because the process of rejecting state socialism differed among them. The long-lasting process of rejecting single-party rule started in Poland in 1956. Later, a series of protests (1968, 1970, 1976, 1980-1981) resulted in the establishment of the independent trade union 'Solidarity' movement, which, at its peak, claimed over 10m members. The economy became a battlefield of the powers wishing to preserve one-party rule and the democratic opposition representing revolted consumers. In 1989 the accrued social and political conflicts could finally be resolved at what were termed the Round Table Talks. The transformation in Ukraine was ignited by the implosion of the Soviet Union and was controlled by the progressive members of the then Ukrainian parliament.

In Poland, the economic situation at the end of 1989 was highly unfavourable. Hyperinflation and supply shortages had to be addressed first by the stabilisation policy package introduced in January 1990. The Ukrainian economy, meanwhile, was deeply integrated with the rest of the USSR. It started to deteriorate alongside disturbances stemming from the collapse of the centrally planned economy that a market-based system could not immediately replace.

A Polish stabilisation policy, based on fiscal, monetary and exchange-rate policies, aimed at overcoming internal and external disequilibria. The internal disequilibrium was represented by hyperinflation and supply shortages. The external disequilibrium was reflected in the lack of foreign reserves, a massive gap between official and black-market exchange rates, and inability to service foreign debt. Hard budget constraints, control of wage rates, attractive interest rates on Polish zloty deposits, and a steep devaluation of the zloty were implemented (see Table 1). After the mildest and shortest transformation recession among all CEE countries, this policy package was successful and put the economy on a new path of development. Fiscal, monetary and exchange-rate policies were fine-tuned in the following years. What mattered very much was that all changes implemented in the domains of qualitative, monetary, and fiscal policies were consistent with the EU's *acquis communautaire*.¹³

¹² A good example was the Commercial Code, in which significant parts were used in everyday practice (Gessel-Kalinowska, 2017).

¹³ In 1991 Poland had already declared its intention to join the EU.

Ukraine's fiscal, monetary and exchange-rate policies broadly followed those of Poland and some other early reformers, but they were hampered by deficiencies in qualitative policy and, in particular, the method and practice of privatisation, which in Ukraine led to the concentration of ownership and power. The oligarchs influenced both the design and implementation of industrial and fiscal policy, as well as the banking system. The similarity of Ukrainian quantitative policy was apparent; what mattered was the unfinished qualitative framework of economic policy and the burden of value chains and economic ties with the Russian Federation, which failed to create a modern state with functional markets and democratic institutions. Moreover, Russia's constant interference in Ukrainian internal matters worsened the situation, culminating in Russia's annexation of Crimea and eastern portions of Ukraine in 2014. The years 2014-2022 were marked by Ukrainian efforts to improve its institutions and the functioning of markets, despite adverse domestic and external economic conditions.

3. General methodological framework and determinants of growth

3.1. QUALITATIVE APPROACH

The systemic transformation triggered in Central and Eastern Europe around 1990 and its economic, social and political implications require a broad theoretical and methodological context. Any attempt at quantification of the path and outcome of transformation should be put into the qualitative context of the new institutional literature. For this comparative study, the concepts of path dependence and Schumpeterian creative destruction are particularly useful for understanding the qualitative dimension of systemic transformation.

The notion of path dependence was introduced and popularised by David (1994, 2001) and developed by Artur (1989). According to David (2001, p. 5), path dependence '*refers to a dynamic property of allocative processes. It may be defined either with regard to the relationship between the process dynamics and the outcome(s) to which it converges, or the limiting probability distribution of the stochastic process under consideration.*' A more specific definition was formulated by Hirsch-Kreinsen (2019, p. 5), who states that path dependence '*is understood as a transformative process that above all through positive feedback effects and the avoidance of incalculable risks follows a path largely predetermined by the given organizational, structure and personnel-related influences*'. Artur (1989) emphasises that there exists a special class of systems that might be *locked in* and thus unable to evolve.

The path-dependence concept became a part of literature that perceives development as a passive, history-determined, complex process. The idea reinforced studies on institutional persistence and evolution mechanisms of law and policy making (North, 1990; Helpman, 2008; Prado and Trebilcock, 2009). It became a background analytical framework in management science (Garud et al., 2010; Vergne and Durand, 2010; Hirsch-Kreinsen, 2019; Sydow, 2021), as well as corporate governance and finance (Clark and Wójcik, 2007; Samuelsson, Söderblom and McKelvie, 2021). Finally, it became an explanatory approach for studies on systemic transformation in Central European countries (Stark, 1991; Róna-Tas, 1997; Blum, 2011; Kowalski and Shachmurove, 2018; Barabash, Serdiuk and Steshenko, 2020; DeBardeleben, 2020).

To refine this perspective, Vergne and Durand (2010) perceived actors participating in complex processes and institutions as locked in by the existing rules of thumb and paths based on given initial conditions and contingencies. In their theory, any departure from the thus entrenched course might be triggered by exogenous shock. Garud et al. (2010) proposed an extension of the Vergne and Durand (2010) path-dependence framework by adding its path-creation component (see Table 2). It amends the initial concept of path dependence by purposeful actions of the participants involved. Both paths of dependence and creation establish a conceptual framework for studies of systemic transformation. Path dependence relies on the role of given initial conditions, with self-reinforcing mechanisms and randomness emphasising the burden of the past. In contrast, path creation offers an analytical framework for understanding the economic and political reforms aimed at overhauling the past. The

concept of path creation underlines active agents' roles to define and set new goals and design measures, and to mobilise other agents to reach them. This outlines an environment vital for a departure from the status quo embedded in the past path.

Table 2 / Path dependence vs path creation

Components	Path dependence	Path creation
<i>Initial conditions</i>	Given	Constructed
<i>Contingencies</i>	Exogenous and manifest as unpredictable, non-purposive, and somewhat random events	Emergent and serving as embedded contexts for ongoing actions
<i>Self-reinforcing mechanisms</i>	Given	Also strategically manipulated by actors
<i>Lock-in</i>	Adherence to a path or outcome, absent exogenous shocks to the system	Provisional stabilisations within a broader structural process

Source: Garud et al. (2010, p. 769), based on Vergne and Durand (2010).

The path creation stems from the original observation of the prevailing path dependence, but adds an explanation of the conditions for change and development and thus a possibility of departure from the path dependence. The parallel existence of past and creative paths had already been noted by Schumpeter (1942). His concept of creative destruction became a way to understand the roots and mechanisms of technological, social and political development. Even more importantly, it explains the emergence of winners and losers, which is vital to understanding any massive systemic transformation.

The objective social tensions accompanying any systemic overhaul were further magnified by globalisation, which speeded up in the mid-1980s. Its complex economic, political and cultural processes increased the interdependence between states and their economies (Kowalski, 2013, p.13). From an economic point of view, a specific sign of globalisation was the compression of time and space amplifying the outcomes of creative destruction founded on autonomous technological development. An equally important pillar of globalisation was its subjective component – reorientation in politics and economic practice, the common denominator of which was liberalisation (Deaton, 2020, pp. 64-67).

This shift to liberalisation originated in the United States, and it was followed by other countries (Deaton, 2020). Such a significant change stemmed from the needs perceived at the time. It received the democratic support of most voters in these countries. In a systemic sense, the form of globalisation that followed represented a de facto new stage in the evolution of capitalism. Its liberal content, expressed in the postulate of a reduction of the active role of the state, promotion of trade and capital flows, and expansion of the scope of autonomous market adjustments, was transmitted to less developed countries, especially to those in systemic crises. This was done through IMF programmes, which were usually conditional on implementation of deregulation reforms by the beneficiary countries (Deaton 2020; Temple, 2010; Williamson, 1997). Therefore, this became a dominant way of designing systemic transformation in Poland and some other CEE countries. They recognised the need for modernisation and in Poland, especially, the need to reject central planning and the single-party model. Even so, embracing path-creating policies does not imply that a country cannot revert to path dependence. This may also happen to a leader of economic and institutional transition. Since 2015 the Polish government has initiated a full range of policies of 'state capture', annulling in part the systemic transformation commenced in 1990-1991 (Kowalski, 2021; Sweeney, 2018). The path dependence of the distant past is back.

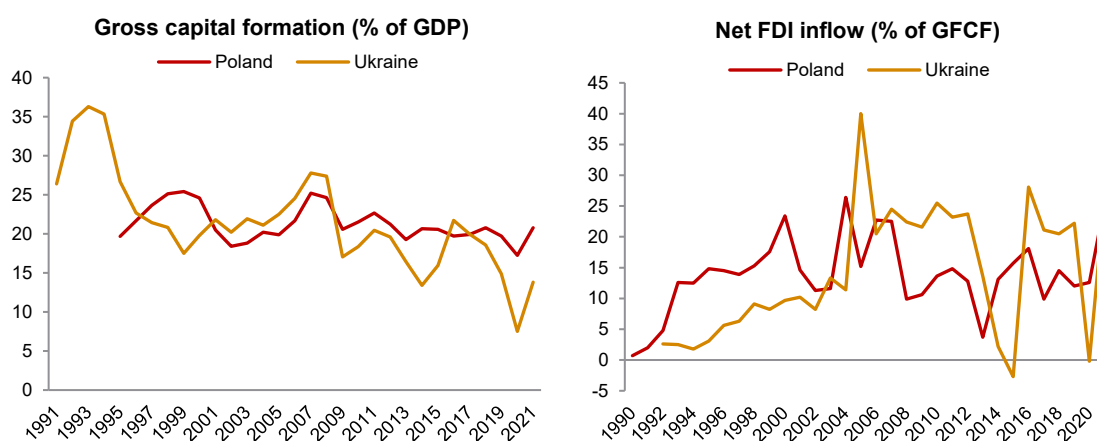
Globalisation and, subsequently, European integration presented both opportunities and threats. They contributed to intensified trade and capital flows. They facilitated indispensable modernisation and enhanced the supply side of transition economies. Trade and capital flows accelerated market adjustments and helped to increase consumption and welfare. Globalisation and, in 2004, EU membership, with its access to the Single European Market (SEM), strengthened the integration of the CEE countries with the core European countries but also reduced their scope and room for manoeuvre of national economic policies. Peripheral countries that remained outside the EU have more leeway in their use of instruments of economic policy, but are deprived of full access to the SEM, which constitutes a benchmark of the *acquis communautaire*.

3.2. QUANTITATIVE APPROACH

What can the theory of economic growth tell us about the reasons for the substantial differences in economic developments in Poland and Ukraine since transition began? The divergence is highlighted by the threefold difference in per capita GDP and a five-year difference in life expectancy. Our aim is to compare some key determinants of growth and growth trajectories, using economic and social indicators side by side and trying to disentangle efficiency and accumulation, and combine path dependence and the role and scope of creative destruction, and to ask what they can tell us about Poland and Ukraine since 1990. We realise that, to answer our question, statistics alone will not do. We also need a narrative to flesh out the skeleton we want to present.

We begin with investment, trade, and education.

Chart 2 / Domestic and foreign investment, 1990-2021

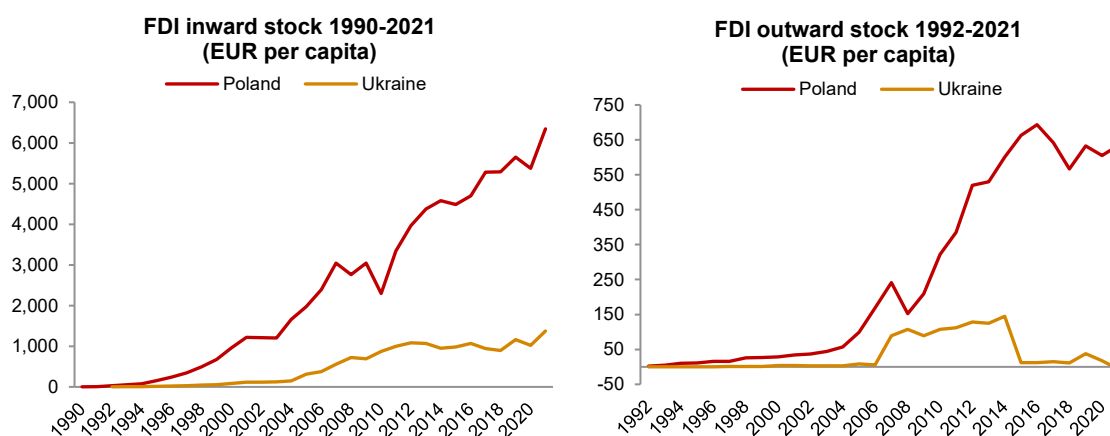


Sources: World Bank, *World Development Indicators*, 2022; wiiw database, <https://data.wiiw.ac.at/>

A. Investment, trade and education

Investment matters for growth. Both Poland and Ukraine invested about 21% of GDP on average in 1990-2021, a figure that is equal to the OECD average of recent decades, but far less than is needed in the two countries under review. Poland's investment ratio was less volatile, while that of Ukraine declined over time (Chart 2, left panel). Net foreign direct investment (FDI) inflows in both countries fluctuated widely and amounted to about 14% of gross fixed capital formation (GFCF) on average in 1990-2021 (Chart 2, right panel). FDI inflows accumulated into growing FDI stocks (Chart 3, left panel), as did FDI outflows, especially in Poland (Chart 3, right panel). In 1996 in Poland, according to the wiiw database, 72% of all FDI stock was domiciled in the EU15 countries.¹⁴ German, Dutch, French, British, Luxembourgian and Italian stockholders were the most active in Poland, where FDI contributed to the rapid modernisation of manufacturing and services and thus became a significant pillar of the country's competitiveness and trade expansion.

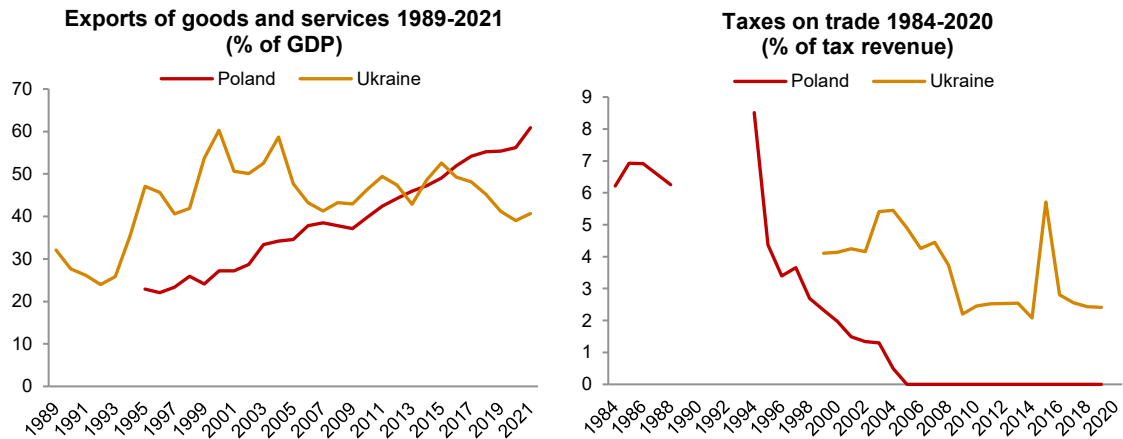
Chart 3 / Stocks accumulated through foreign direct investment, 1990-2021



Source: wiiw database, <https://data.wiiw.ac.at/>.

The EU15 countries were much less pronounced in Ukrainian FDI stocks. According to the wiiw database, the EU15 accounted for more than 44% of the FDI stock in 1994 (not shown). Thereafter, the ratio fluctuated along a downward trend, dropping to 35% in 2004. In 2005 the EU15-controlled FDI stock jumped to 57%, but the downward trend then began to prevail again, with the level stabilising at about 40%. In the 1990s US, German, Dutch and Russian corporations accounted for most of Ukraine's FDI stock. Cyprus was also represented; in 2000-2006 it became the second-highest FDI stockholder (after the US) and moved into first place thereafter. The Cypriot investors were, in fact, investment vehicles registered in Cyprus but fully controlled by key Ukrainian corporations (Yurchenko et al., 2021). Their primary aim was to obtain greater leeway in financial management. Unlike in Poland, inward FDI flows and stocks in Ukraine did not have a significant impact on the modernisation of the economy's supply side.

¹⁴ See <https://data.wiiw.ac.at/foreign-direct-investment.html>

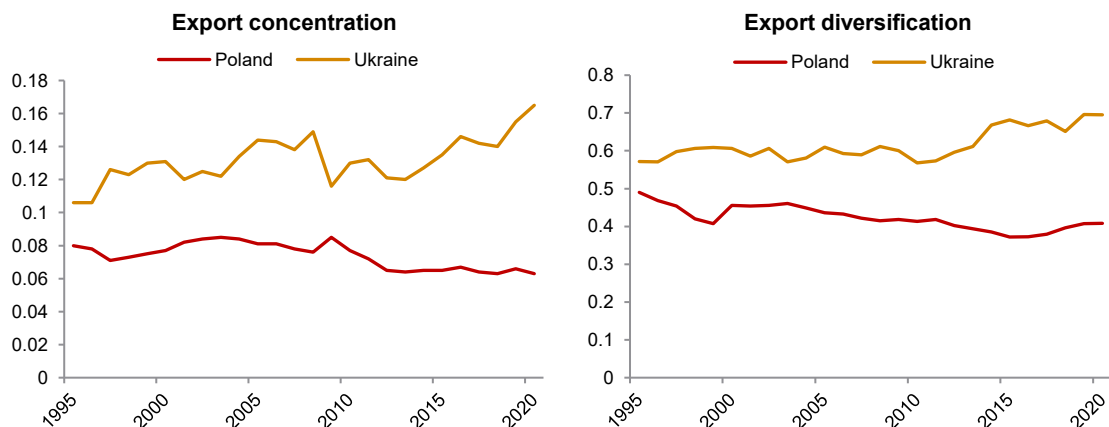
Chart 4 / Exports and taxes on trade

Source: World Bank, World Development Indicators, 2022.

Poland's exports amounted to 39% of GDP on average in 1995-2021, compared with 47% in Ukraine. Poland's export ratio grew steadily after 1995, while that of Ukraine, although subject to significant fluctuations, remained broadly unchanged (Chart 4, left panel). About three-quarters of Poland's exports go to EU countries, while China is Ukraine's largest foreign trade partner, followed by Germany, Poland and Russia. Import restrictions were phased out in Poland as required by EU membership, while Ukraine retains significant restrictions, including some remnants of currency control (Chart 4, right panel). Ukraine's trade faces many other hurdles, including frequent legal disputes concerning the determination of customs value. Poland's trade and investment were boosted by its accession to EU and NATO membership, in 2004 and 1999 respectively.

Chart 5 / Export concentration and diversification, 1995-2020

(indices from 0 to 1; higher values indicate more concentration and less diversification)

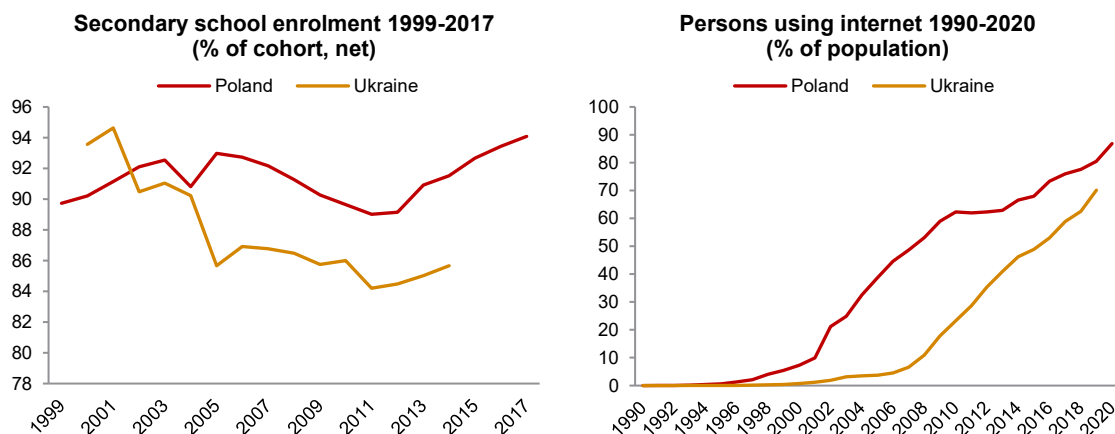


Source: UNCTAD.

Exports from Poland are less concentrated and more diversified than exports from Ukraine (Chart 5). This matters because economic diversification as an insurance strategy against macroeconomic risk is good for growth (Gylfason, 2017). Lower concentration signals more competition among exporters, just as greater diversification signals more pluralism among trade partners. Competition and pluralism are good for growth.

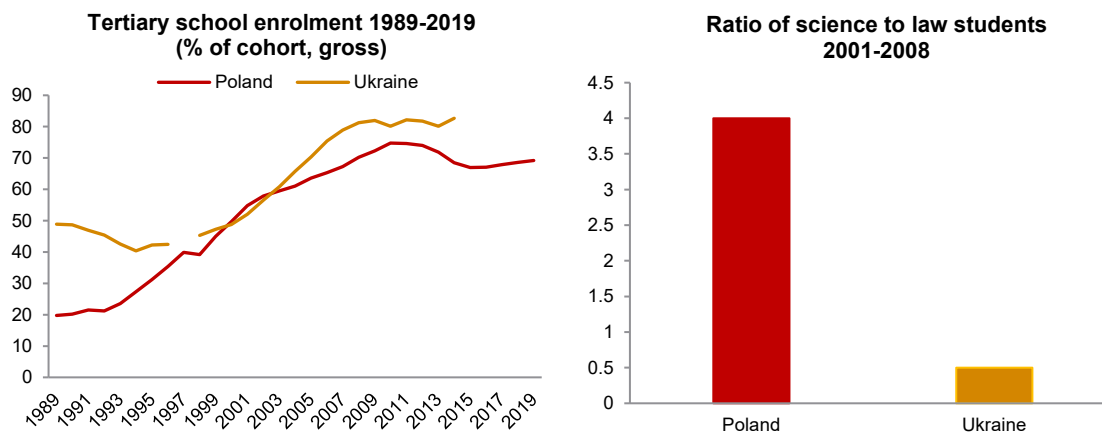
Since 1995 Poland has consistently scored higher than Ukraine in the Harvard Growth Lab's Country Rankings of countries' productive knowledge, according to the Economic Complexity Index (designed to show the number and complexity of the products they successfully export).¹⁵ Also, Poland is more globalised than Ukraine, according to the KOF Globalisation Index, which measures the economic, social and political dimensions of globalisation. On this index, Poland scored 80 in 2019, compared with Ukraine's score of 74 and Germany's 89 (Gygli et al., 2019).

Chart 6 / Education and internet use



Source: World Bank, World Development Indicators, 2022.

Chart 7 / Education and science



Sources: World Bank, World Development Indicators, 2022; Natkhov and Polishchuk (2019).

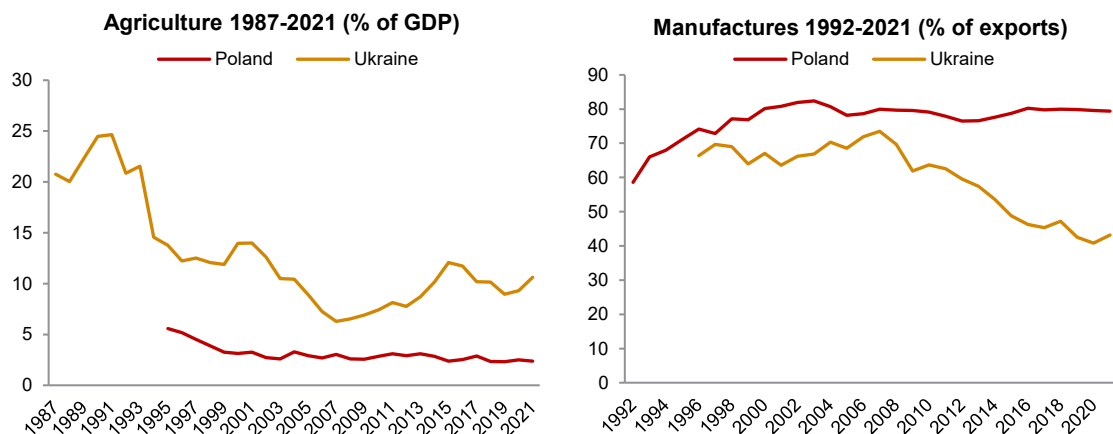
¹⁵ See <https://atlas.cid.harvard.edu/rankings>

As far as education is concerned, the evolution of net secondary school enrolment and internet use favour Poland, not Ukraine (Chart 6). School life expectancy is 16 years in Poland, against 15 years in Ukraine.¹⁶ Ukraine, however, has more students enrolled at the university level, but, with education as with exports, both levels and composition matter (Chart 7). Specifically, it matters not only how many students there are, but also what subjects they study. Natkhov and Polishchuk (2019) report a much higher ratio of law students to science students in Ukraine than in Poland, presumably a reflection of excessive rent-seeking in Ukraine at the expense of science.

B. Industrial structure

The share of agriculture in GDP has declined sharply in both countries (Chart 8, left panel), from 25% in 1991 to 11% in 2021 in Ukraine, a major exporter of wheat, and in Poland from 6% in 1995 to 2% in 2021, slightly above the EU average. Both countries are net exporters of food and agricultural products. Meanwhile, the share of manufactures in exports grew from about 60% to 80% in Poland in 1992-2021, but declined from 66% to 43% in Ukraine in 1996-2021 (Chart 8, right panel). As we described in Section II, Ukraine was unprepared for new conditions.

Chart 8 / Agriculture and manufacturing



Source: World Bank, World Development Indicators, 2022.

The World Bank reports that Poland places fewer restrictions on businesses than Ukraine, placing Poland in 40th place (out of 190 countries) in the Ease of Doing Business Index in 2020, far ahead of Ukraine, in 64th place. Poland is ranked ahead of other EU member countries such as Croatia (51st), Hungary (52nd) and Italy (58th), but behind France (32nd), Germany (22nd), Sweden (10th), the UK (eighth) and the US (sixth).

¹⁶ Source: UNESCO, see http://data.un.org/Data.aspx?d=UNESCO&f=series%3ASLE_1T6.

C. Democracy and governance

Both Poland and Ukraine have a complex relationship with democracy, notwithstanding the fact that the Polity IV project, originated at the University of Maryland (Marshall and Jaggers, 2001), the industry standard for democracy metrics, has awarded Poland a full score of 10 since 2002 on a scale from -10 to 10 (Chart 9, left panel).¹⁷ More recently, the V-Dem Institute at the University of Gothenburg awarded Poland a liberal democracy grade of 0.41 on a scale from 0 to 1 for 2021, down from about 0.8 in 1992-2015, ranking Poland in 80th place out of 179 countries in 2021. Ukraine's liberal democracy grade was 0.32 in 2021, about the same as in 1991-1992, corresponding to a ranking of 90th in 2021.¹⁸ Other related and relevant metrics include the following.

- (a) Freedom House awards Poland a democracy score of 81 out of 100 in 2022, down from 93 in 2016, while Ukraine scores 61, virtually unchanged from 2012 (Chart 9, right panel).
- (b) The Heritage Foundation ranks economic freedom in Poland 39th among 177 countries, compared with Ukraine's rank of 130.¹⁹
- (c) The World Justice Project awards Poland a higher score than Ukraine for the rule of law (Chart 10, left panel).²⁰
- (d) Reporters Without Borders awards Poland a higher ranking than Ukraine for press freedom (Chart 10, right panel).²¹
- (e) The World Bank assigns Poland higher scores for public governance than Ukraine by an increasing overall margin (Chart 11).
- (f) Poland is less egalitarian than Ukraine (Chart 12, left panel).²²
- (g) Transparency International considers Poland less corrupt than Ukraine, registering small improvements in Ukraine since 2013 and deteriorations in Poland since 2015 (Chart 12, right panel).
- (h) In the World Values Survey, Ukraine scores higher than Poland in terms of popular confidence in government as well as interpersonal trust, a result we report even though we find it hard to believe (Chart 13).
- (i) The Fund for Peace, which compiles the Fragile States Index,²³ considers Poland less fragile than Ukraine and both countries less fragile in 2022 than in 2006.

¹⁷ The Polity2 index in question does not reach beyond 2018.

¹⁸ Source: https://www.v-dem.net/documents/19/dr_2022_ipyOpLP.pdf

¹⁹ Heritage Foundation, <https://www.heritage.org/index/ranking>

²⁰ World Justice Project, <https://worldjusticeproject.org/our-work/research-and-data/wjp-rule-law-index-2021>

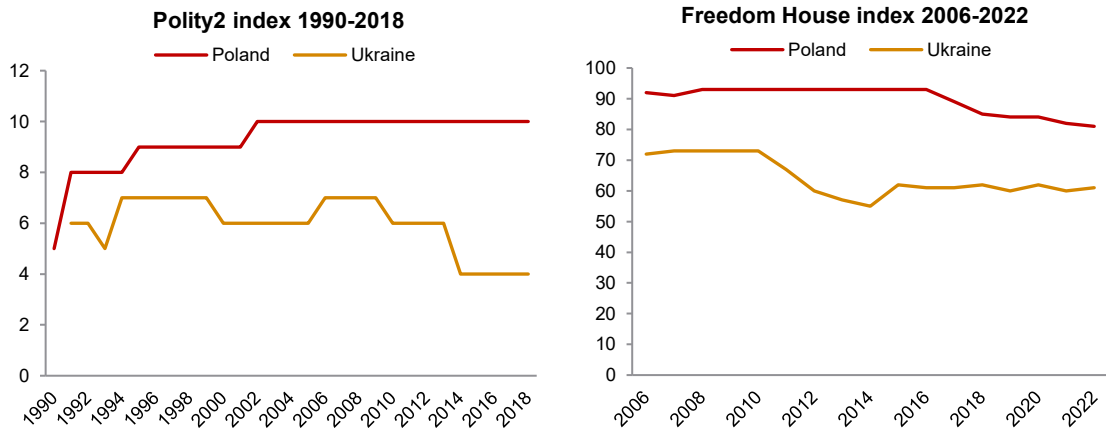
²¹ Reporters Without Borders, <https://rsf.org/en/index>

²² In 1992-2019 Ukraine's Gini index, as reported by the World Bank, was, disregarding the gaps shown in the left panel of Chart 12, on average similar to that of Sweden (27), but well below Germany (30), Poland (33), the UK (38) and the US (41).

²³ Fund for Peace, <https://fragilestatesindex.org/>

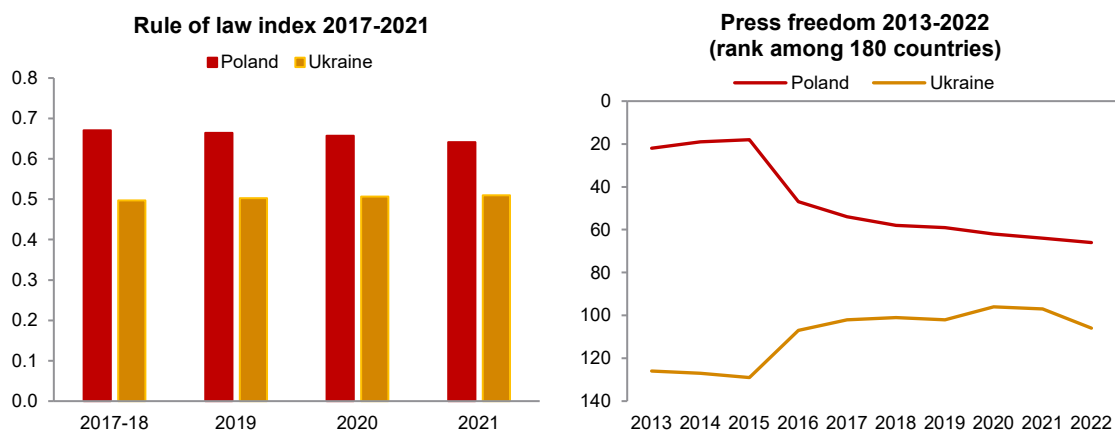
We offer some further comments on some of these charts.

Chart 9 / Democracy and freedom



Sources: Center for Systemic Peace; Freedom House.

Chart 10 / Rule of law and press freedom



Sources: World Justice Project; Reporters Without Borders.

Beginning with Chart 10 (left panel), both countries face significant challenges concerning the rule of law. In Poland, the government has been credibly accused of failing since 2015 to adhere to European and Polish constitutional law, creating a conflict – at home as well as vis-à-vis the EU – that remains unresolved. In Ukraine, reorganisation of the military, the Ministry of Finance and the Central Bank has moved those institutions outside the sphere of influence of the old elites, which in the past had earned Ukraine a reputation for pervasive corruption. In the judicial system, however, much remains to be done.²⁴

²⁴ See, e.g., Mauro (1995), Bardhan (1997) and Rose-Ackerman and Palifka (2016).

For Ukraine to be granted candidate status by the EU, the European Commission has made seven key recommendations, six of which concern judicial reform and corruption prevention as follows.²⁵

- › ‘Enact and implement legislation on a selection procedure for judges of the Constitutional Court of Ukraine, including a pre-selection process based on evaluation of their integrity and professional skills ...’
- › ‘Finalise the integrity vetting of the candidates for the High Council of Justice members by the Ethics Council ...’
- › ‘Further strengthen the fight against corruption, in particular at high level, through proactive and efficient investigations, and a credible track record of prosecutions and convictions; [and] complete the appointment of a new head of the Specialized Anti-Corruption Prosecutor’s Office through certifying the identified winner of the competition and launch and complete the selection process and appointment for a new Director of the National Anti-Corruption Bureau of Ukraine.’
- › ‘Ensure that anti-money-laundering legislation is in compliance with the standards of the Financial Action Task Force (FATF); [and] adopt an overarching strategic plan for the reform of the entire law enforcement sector as part of Ukraine’s security environment.’
- › ‘Implement the Anti-Oligarch law to limit the excessive influence of oligarchs in economic, political, and public life ...’
- › ‘Tackle the influence of vested interests by adopting a media law that aligns Ukraine’s legislation with the EU audio-visual media services directive ...’

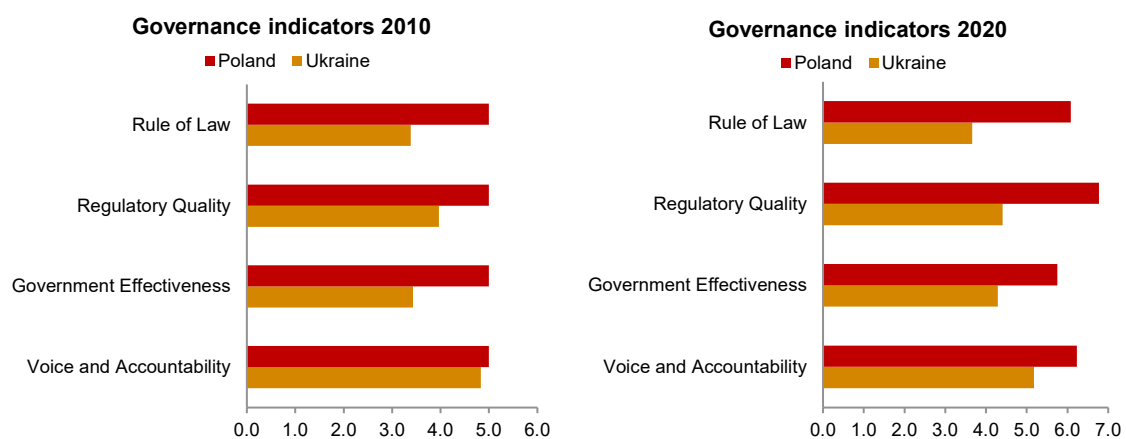
As shown in Chart 10 (right panel), Poland enjoys a much freer press than Ukraine, where mass media from the onset of systemic transformation became dependent on the money of oligarchs, who were interested in establishing their influence in the state apparatus, either by their own direct participation in state governance or indirectly through their representatives. The press and other media became a major tool in this respect. In Poland, the first independent national newspaper, *Gazeta Wyborcza*, was founded in 1989 to support the ‘Solidarity’ movement in its participation in the first semi-free election.²⁶ It still exists and has the highest circulation of all newspapers (both print and digital) in Poland. The number of digital subscribers, at 290,000, is among the largest in Europe. Despite the strong position of *Gazeta Wyborcza*, the Polish press is rather fragmented. The nationalistic and right-wing newspapers have a very low circulation. Since 2015, all advertisements of state-controlled enterprises and announcements such as on new Treasury bonds issuance have been redirected to the nationalistic and right-wing newspapers. Recently, a set of regional newspapers owned by HKM GmbH was bought by state-controlled oil company Orlen S.A. This followed a similar move in Hungary. The regional titles were assigned new chief editors and became partisan. Despite these developments, the media market in Poland remains efficient and free.

²⁵ Source: Commission Opinion on Ukraine’s application for membership of the European Union, 17 June 2022, https://neighbourhood-enlargement.ec.europa.eu/opinion-ukraines-application-membership-european-union_en

²⁶ *Gazeta Wyborcza* means ‘electoral newspaper’.

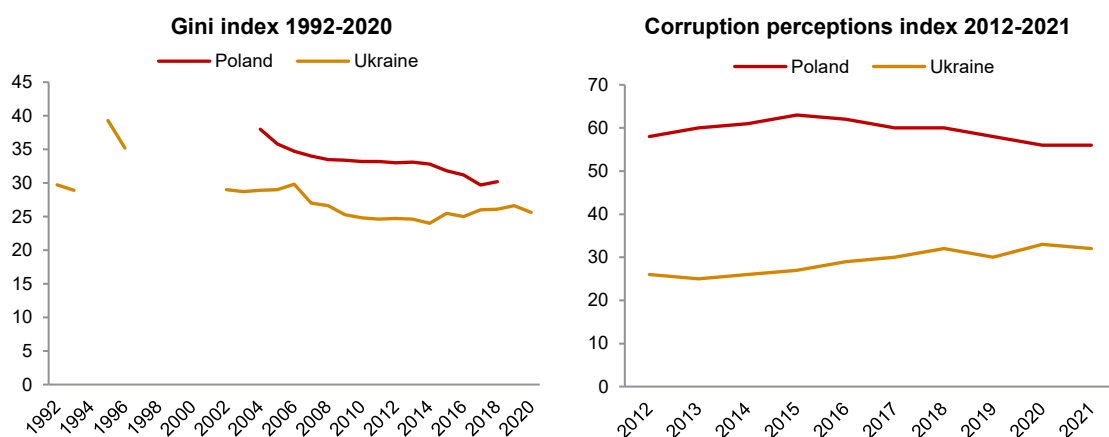
Like the rule of law and press freedom, good governance is good for growth, as Olson et al. (2000) and many others have argued. Poland scored higher than Ukraine in each of the four categories of governance reported by the World Bank in 2010 and 2020 (Chart 11). As already mentioned, after the 2015 election, the Polish government introduced a series of institutional changes that focused on the structure and governance of the judicial system, eroding judicial independence. The changes were contrary to the *acquis communautaire* and were opposed by the vast majority of rank-and-file judges (Kowalski, 2021). Poland is less egalitarian than Ukraine (Chart 12, left panel). This is relevant as equality tends to be an accompanying factor for growth, as well as for several other ingredients of social capital – democracy, transparency, trust, rule of law and low levels of corruption – that are also conducive to growth (Berg and Ostry 2017; Gylfason 2019).²⁷

Chart 11 / Governance, 2010 and 2020



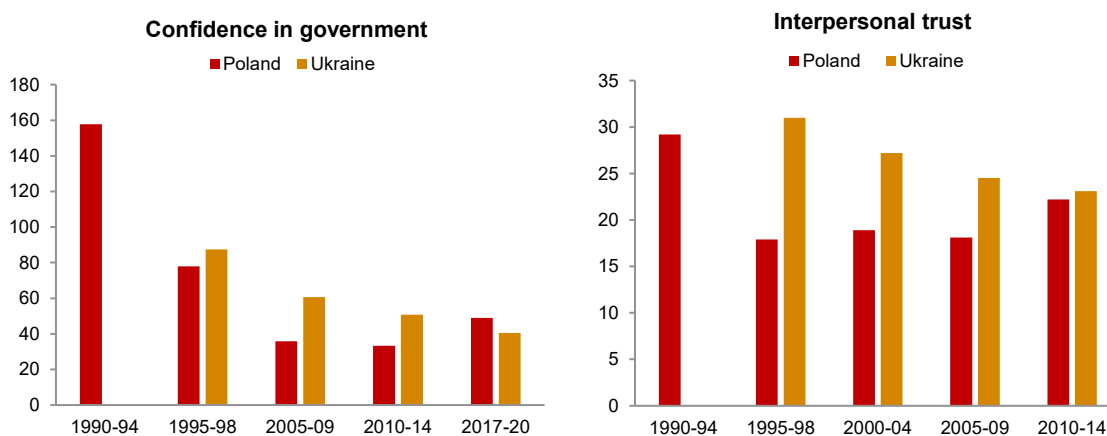
Source: World Bank, <https://info.worldbank.org/governance/wgi/Home/Reports>

Chart 12 / Equality and corruption



Sources: World Bank, *World Development Indicators*, 2022; Transparency International, 2022.

²⁷ According to UNICEF, the Gini index for Ukraine shot up from 23 in 1989 to 47 in 1995 before returning to 33 in 2002. Meanwhile, Poland's Gini index increased gradually from 28 in 1989 to 35 in 2002. Source: Household survey data retrieved from <https://www.wider.unu.edu/database/world-income-inequality-database-wiid>, attributed to UNICEF.

Chart 13 / Confidence and trust, 1990-2020

Source: World Values Survey.

When deserved, trust – both popular trust in institutions and the trust that citizens have in one another – is good for growth. Trust is an important ingredient of social capital, viewed as the glue that keeps society functioning smoothly and cohesively, without corrosive strife. Poland was included in five of the seven series of measurements ('waves') taken by the World Values Survey since 1990 and Ukraine was included in four (Chart 13). Among the questions asked in the surveys is whether respondents think that most people can be trusted, or whether they think they need to be careful in their dealings with others. From the answers we derive an index of interpersonal trust as follows:

$$\text{TRUST INDEX} = 100 + (\% \text{ Most people can be trusted}) - (\% \text{ Can't be too careful})$$

The index is above 100 in countries where trust outweighs distrust and less than 100 where the opposite holds. Note that Poland in 1990-1994 is the sole instance of the trust index exceeding 100 in either country.²⁸

D. Monetary and fiscal policy

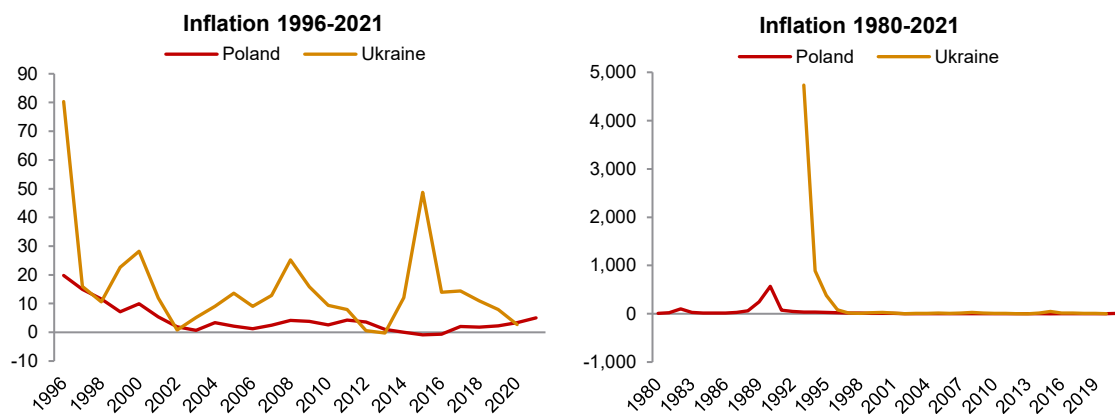
After an initial bout of hyperinflation as communism collapsed, both countries managed to bring inflation down (Chart 14). Poland reduced inflation to low single-digit figures from 2001. Ukraine had greater difficulties, registering 13% annual inflation on average in 1997-2021, compared with 4% in Poland. Both countries imposed fiscal and monetary restraint, coupled with massive currency depreciation. Until 2016, successive Polish governments ran rather conservative fiscal policies, regardless of their political orientation. Such an attitude stemmed from the recent history of hyperinflation and the determination to prepare the economy for EU membership. Overcoming inflation would not be possible without a conservative and independent central bank. In Central Europe, Poland was one of the pioneers of prudent fiscal policy (Green, Holmes and Kowalski, 2001). It was also reflected in the new constitution of 1997, which set out rules protecting the country from breaching the 60% threshold of public debt to GDP.

²⁸ Zoega and Phelps (2019) trace different growth trajectories in Eastern Europe in part to values as well as to institutions. See also Landesmann and Székely (2021).

Along with other CEE countries, Poland established a politically and functionally independent central bank (Hochreiter and Kowalski, 2000). Its independence was guaranteed in the 1997 constitution. Meanwhile, the Ukrainian economy suffered from the implosion of the Russian economy and struggled to establish its own currency. As already emphasised, the institutional framework for fiscal and monetary policy was not firmly developed. In the first years of independence, and also after 1994, Ukraine's central bank directly financed parts of the public sector borrowing requirement. Therefore, Ukraine's level of inflation reflected both real economic challenges and institutional deficiencies.

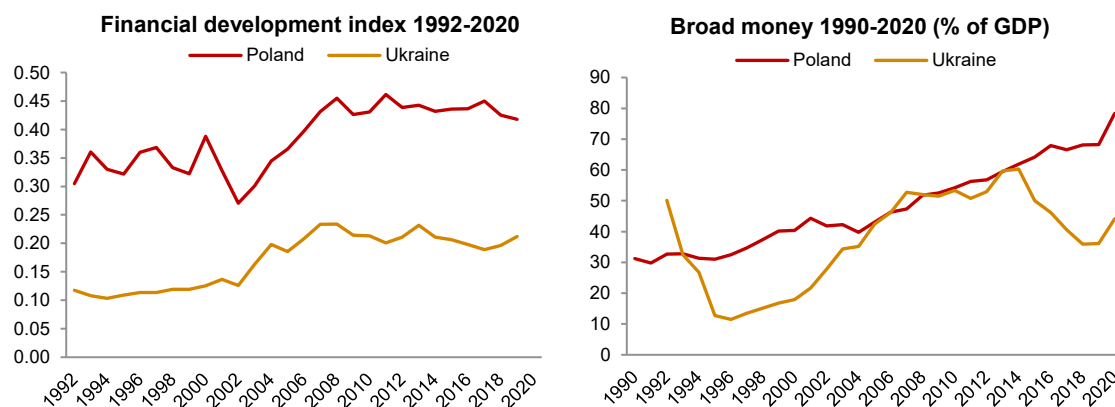
The IMF's financial development index for Poland²⁹ exceeds that for Ukraine, which is consistent with Poland's greater financial depth, as shown by the broad money/GDP ratio (Chart 15). Both countries pursued restrictive monetary and fiscal policies during the transformation from planned to market economy, but Poland was more consistent and started earlier, in January 1990, compared with November 1994 in Ukraine (as shown in Table 1). Likewise, privatisation began in Poland in 1990, but not until 1995 in Ukraine.

Chart 14 / Inflation (consumer prices, % per year)



Source: World Bank, World Development Indicators 2022.

Chart 15 / Financial development



Sources: IMF; World Bank, World Development Indicators, 2022.

²⁹ See Svirydzenka (2016).

The overhaul of the one-tier banking system in Poland began in 1987, with the separation of a universal bank, PKO – State Bank (PKO SB), which took over all deposits and building loan operations from the National Bank of Poland (NBP). With three other specialised state-owned banks, PKO SB had full control of the banking system by the end of the 1980s.³⁰ The two-tier banking system was sealed in February 1989, when nine state universal banks were carved out of the NBP. Representing about 40% of the Polish banking market, the banks were converted into joint-stock companies in 1991 and thus prepared for privatisation, which was preceded by twinning agreements with foreign partner banks to speed up their organisational and technological development.³¹ The association agreement obliged Poland to harmonise the law governing the financial sector, thus reducing institutional risk and triggering an inflow of foreign capital into the banking sector.

In mid-1994 the National Clearing House (NCH) was established. It provided a system of interbank clearing services in both Polish zloty and forex interbank markets. The NCH, together with efficient bid procedures on the primary market of T-bills, T-bonds, and NBP bills, created a financial infrastructure for NBP communication with market participants and a framework for monetary policy actions.

Although Ukraine achieved independence in 1991, its de facto systemic transformation began in 1994. Path dependence delayed both institutional overhaul and economic progress. Reformers could benefit from the delay, as this enabled them to study and learn from the successes and failures of Poland and other CEE countries, but Ukraine's situation was more complicated, owing to its close links with Russia.

Like other CEE countries, Ukraine had to create its monetary and financial policy framework from scratch. The implosion of the Russian Federation's economy, which sent shockwaves to all its trading partners, made this a challenging task. Ukraine did not have a consistent approach to creating a two-tier banking sector. There was a lack of domestic financial and banking expertise, and a lack of suitable conditions, unlike in Poland. For years the National Bank of Ukraine (NBU) kept monetising public debt, thereby contributing to persistently high inflation and currency substitution.³²

Ukraine modernised the financial sector by introducing revenue and expenditure fiscal policy instruments. Progress was hampered, however, by biased expenditure policy and the malfunctioning of tax collection.³³ Generally, rather than adopt transparent rules, the government pursued heavily discretionary fiscal policy amenable to influence by the newly established corporate lobbies. In practice, this produced a soft budget constraint for privileged corporations and sectors, thus reducing their incentives for risk-taking and innovation. The specific symbiosis of the new oligarch class and the state was further magnified by easy access to external funding.

³⁰ One of the banks, BGZ, was owned by the Ministry of Finance (51%) and more than 1,500 co-operative banks (49%). The co-op banks were local in nature and had low capitalisation. Some of them were founded in the 19th century.

³¹ The International Finance Corporation supported the process to promote openness and transparency of the financial system and the rapid adoption of international accountancy rules and financial reporting. Major foreign auditing firms were invited to systematically audit the balances and financial statements of the nine banks.

³² Mylovanov and Sologoub (2021, p. 59) note that, up to 1996, more than half of loans and credits for the corporate sector were provided by the NBU.

³³ The corruption in tax collection stemmed from path dependence and low salaries in the public sector.

E. Labour

Labour force participation among 15-64-year-olds has been higher in Ukraine than in Poland (Chart 16, left panel). Poland had higher and more volatile unemployment than Ukraine in 1992-2001 (11% vs 9% of the labour force, on average), but still managed to bring unemployment down from 20% of the labour force in 2002 to 3% in 2021, an impressive feat (Chart 16, right panel). Relatively low unemployment in Ukraine is partly a consequence of the stalling of restructuring in the manufacturing and mining sectors. As already emphasised, both main sectors of the Ukrainian economy were controlled by oligarchs who were able to shape legislation in such a way that they continued to extract profits without much effort to modernise their sectors. Moreover, many Ukrainian enterprises have switched to part-time work – two to three days a week, for example – which counts as full employment for statistical purposes.

Both countries used to have high migration levels. In earlier years, Ukrainian labour migrated to Russia and then to Poland. Before the 2022 invasion, there were more than 1m Ukrainians working in Poland. After 2004, Polish labour migrated to other EU countries.

Chart 16 / Labour force participation and unemployment, 1990-2020 (%)



Source: World Bank, World Development Indicators, 2021.

F. Covid response

Both countries suffered a modest contraction of GDP during 2020-2021, on account of the global pandemic. Of the two, Poland had the bigger drop in GDP. Ukraine benefited in this comparative respect from having attracted fewer tourists since 2014.

The macroeconomic countermeasures undertaken against the pandemic were broadly similar in both countries.³⁴ Even so, the medical statistics show significant differences. At the time of writing, 59% of Poles have received one vaccine dose, 60% are fully vaccinated (two doses), 39% have received an additional dose, and the death count traced to Covid-19 amounts to 3.1‰ of the population. Meanwhile, 36% of Ukrainians have received one dose, 34% are fully vaccinated, 2% have received an additional dose, and the death count is 2.7‰. Thus, Ukraine has suffered fewer deaths, despite fewer doses. To

³⁴ Source: IMF's Policy Tracker. See <https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responses-to-COVID-19>.

the extent that Covid patients did not seek medical help, however, the statistics may understate the incidence of Covid cases as well as mortality, especially in Ukraine.

Excess deaths, defined by the Centers for Disease Control and Prevention as the 'difference between the observed numbers of deaths in specific time periods and expected numbers of deaths in the same time periods',³⁵ offer another angle on the consequences of the pandemic for public health (Table 3). Bulgaria heads the list of countries by global excess deaths per 100,000 people caused by Covid-19, Russia is third and Lithuania is fifth. Poland, Ukraine and Belarus are 17th, 23rd and 32nd respectively.

Table 3 / Excess deaths since a country's first 50 Covid deaths (updated 22 September 2022)

Country	Time period	Covid-19 death toll	Excess deaths	Excess deaths per 100K people
Bulgaria	Apr 20th 2020-Jul 31st 2022	37,340	72,270	1,049
Russia	Apr 1st 2020-Jul 31st 2022	374,670	1,228,770	847
Lithuania	May 25th 2020-Jul 31st 2022	9,160	21,530	773
Poland	Mar 30th 2020-Aug 28th 2022	117,010	189,600	495
Ukraine	Apr 1st 2020-Jan 31st 2022	106,860	195,210	448
Belarus	Apr 1st 2020-Mar 31st 2021	2,250	33,690	352

Source: *The Economist*, <https://www.economist.com/graphic-detail/coronavirus-excess-deaths-tracker> (accessed: 27 September 2022).

G. Summary

To recapitulate, we have looked for explanations for the threefold difference between Poland and Ukraine in terms of per capita GDP at PPP in 2021. Investment was about the same in both countries relative to GDP, but too low in view of the need that had built up, owing to the poor quality of investments under central planning. Poland, unlike Ukraine, however, had growing and well-diversified exports and few restrictions on imports, having spent half the period since 1989 as a member of the EU. Thus, trade – rather than investment – seems likely to have contributed significantly to the growth differential between the two countries. We surmise that the rest of the growth differential must lie in differences in the evolution of human and social capital, as well as economic structure. Specifically, Poland started from more favourable initial conditions, having made preparations during the 1980s for its economic transformation after 1990. Poland has greater democracy, less corruption, better governance, a freer press, less agriculture, more manufacturing, lower inflation and greater financial development. Against all this, Ukraine has had greater equality and lower unemployment, as well as a lower initial level of income from 1993 onwards, which should have encouraged growth.

³⁵ See https://www.cdc.gov/nchs/nvss/vsrr/covid19/excess_deaths.htm

4. Conclusion

We have compared the economic growth trajectories of Poland and Ukraine since 1990 to try to understand the extent to which the observed growth differentials can be traced to increased efficiency in the use of capital and other factors (intensive growth), rather than to simple accumulation of capital (extensive growth). We have stressed the role of such qualitative factors as education, governance and institutions. We have asked: did the EU perspective and NATO membership play a role? We have discussed the closely related histories of the two countries and noted the stark differences between them, including their different approaches to the EU vs Russia, full vs incomplete transition to a market economy, and democracy vs anocracy, as well as different initial conditions. We have compared key determinants of growth and growth trajectories, using economic as well as social indicators, and trying to disentangle efficiency and accumulation and combine path dependence and the role and scope of creative destruction.

While Poland had the shortest and mildest (albeit quite painful) transformation recession among CEE countries, Ukraine has been stagnant or in decline since 1990. The statistics we have reported and the stories we have told suggest that both countries have a complex relationship with democracy and that the nearly threefold difference in per capita GDP at PPP in 2021 in Poland's favour, with the ratio of investment to GDP similar in both countries, can most plausibly be traced to: (a) Poland's more extensive and diversified exports, and fewer restrictions on trade, in addition to more comprehensive and quicker restructuring of the national economy inspired by the EU perspective; (b) Poland's more extensive and better-quality education; (c) Poland's greater democracy and longer experience of democracy, lower levels of corruption, better governance, and freer press; (d) Poland's smaller agricultural sector and greater emphasis on manufacturing; and (e) Poland's lower inflation and higher level of financial development.

Furthermore, Poland built market-friendly institutions to EU specifications and joined NATO. Against all this, Ukraine had greater economic equality and less unemployment as well as, from the early 1990s, a lower initial level of income per person, but was hampered by political divisions, path-dependent corruption and poor governance. During the global Covid-19 pandemic, Ukraine apparently suffered fewer excess deaths than Poland, despite fewer vaccinations.

Investment, exports and education are important pillars of economic growth around the world. In Poland and Ukraine, investment in machinery and equipment relative to GDP has been about the same since 1989, while Poland had more extensive and diversified exports and fewer import restrictions. Poland invested more in education, which shows up in one extra year of school life expectancy – 16 years in Poland, compared with 15 years in Ukraine. While Ukraine vacillated between co-operation with the EU vs co-operation with Russia and was invaded by Russia in 2014 and again in 2022, Poland was strongly motivated by the EU perspective, with accession to the EU materialising in 2004. This encouraged political and economic integration, including liberalisation of trade, restructuring of the economic system, privatisation of state assets, and construction of market-friendly institutions to EU specifications as well as membership of NATO. To the surprise of many observers after the 2015 elections, Poland experienced a negative institutional shock. The judicial system became the object of unconstitutional

changes that undermined its independence. These changes, along with significant state capture, meant regress in Poland's institutional development path.

Ukraine was hampered by political divisions, corruption, poor governance, halting democracy and an inconsistent stance on human rights. The political events of 2014 and the first Russian invasion of Ukraine triggered a new wave of institutional revival and economic policy reforms. In February 2022 they were thwarted by a full-scale Russian invasion. Ukraine's success in its fight for survival might also have a deep and sustained positive impact on institutions and economic structures.

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