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Calibrating Ukraine's Growth Model: How Can Ukraine Emulate Poland's Growth?

Evelina Kamyshnykova   iD   https://orcid.org/0000-0003-1835-9786

Dr. of Economic Sciences, Professor, Max Planck Institute for the Study of Societies, Cologne, Germany, SHEI Pryazovskyi State Technical University, Dnipro, Ukraine, e-mail: kamyshnykova_e_v@pstu.edu

Abstract

This study provides a comparative analysis of the economic growth paths of Ukraine and Poland from a growth-model perspective and determines how to calibrate Ukraine's growth model to converge with Poland's booming economy. The methodology comprises an approach to operationalizing growth models for GDP growth decomposition into "import-adjusted" demand components, drawing on national input-output data from 2000 to 2019. I found that from 2000 to 2003, both European economies relied on a combination of exports and domestic consumption. Expanded trade integration and an FDI boost after Poland joined the EU in 2004 spurred the Polish growth model's shift to a distinctively export-led, FDI-driven strategy with accelerated GDP growth rates. In Ukraine, in the wake of the great financial crisis, I identified a transition to a consumption-led growth model that, along with a declining investment component of aggregate demand, led to fading growth rates. An analysis of sectoral contributions to GDP growth revealed that avoiding deindustrialization in Poland underpinned the country's export-led strategy, unlike Ukraine, which underwent a key sectoral shift from manufacturing to a commodities-based orientation after 2008. Both these economies demonstrated a high level of integration into global value chains, focusing on labor-intensive manufacturing and services, but Poland has outperformed Ukraine in terms of share of high value-added exports, which increased after EU accession. Following the Polish pattern, I propose that Ukraine's growth model should activate the FDI driver of economic growth, upgrading the export structure and moving up value chains to unlock the country's growth opportunities. The study represents the first comparison of Ukraine's and Poland's economic growth paths that traces the changes in dominant final demand components and macro-sectors in the two countries' economic growth profiles. This paper contributes to the comparative

political economy literature on the growth models of peripheral economies, providing insights that can inform policies for growth model transformation.

Introduction

When Ukraine first raised the issue of independence, its strategic goal on leaving the USSR was to attain the living standards of core European economies. The independence process culminated in 1991 but the ensuing severe decline of Ukraine's economy prevented this. Since the end of the 1990s, catching up with Poland, its nearest western neighbor with its own post-Soviet legacy, is the new aspirational program for Ukraine's economy. Similar economies in terms of starting conditions (large domestic market, access to medium-to-highly skilled labor, proximity to core European capitalism) and living standards took different growth trajectories, leading to decades of divergence.

The Polish economy is now ahead of all its former socialist neighbors, which preferred to transform with less resort to the "shock" doctrine. Since 1992, the Polish economy has grown steadily (except for 2020 as a result of COVID–19), and it had tripled its real GDP by 2021. According to the World Bank, even in the hardest year of 2009, at the peak of the global financial crisis, when the EU conomy fell by 4.3 percent, Poland's GDP grew by 2.8 percent. Since EU accession, Poland has been able to take advantage of European integration and is today among the six largest EU economies by nominal GDP. Acknowledging the Polish economy's progress and capital market infrastructure improvements, FTSE Russell (2018) upgraded the Polish economy's status from advanced emerging to developed in its annual market classification. Poland is the first post-socialist state in Europe to achieve developed market status. By catching up with the advanced Western economies, the booming Polish economy has established itself as a model to emulate for other emerging countries.

Ukraine's economy, by contrast, is a chronic "underachiever". The incomplete transformation into a market economy in the 1990s, with the increasing predominance of vested interests, disruption of economic ties, and hyperinflation, plunged Ukraine's economy into the abyss. In the first half of the 2000s, this trend was interrupted, but not for long. Global economic shocks, Russian military aggression, and the COVID–19 crisis hindered GDP recovery. In 2020, Ukraine's real GDP was only 63 percent of its 1990 value. The economy shifted from a focus on heavy manufacturing to a distinctly raw-material orientation. According to the World Bank, Ukraine was ranked the poorest country in Europe in 2020, with a per capita GDP of $3,540, only one-fifth that of Poland. Russia's escalation of its war on Ukraine only exacerbated this. According

to World Bank calculations, at a growth rate of 3 percent, it will take Ukraine fifty years to reach the Polish income level (Smits et al. 2019). The Ukrainian economy faces the major challenge of changing its growth strategy to catch up with the leading European economies, simultaneously overcoming exogenous shocks and endogenous contradictions.

Since the 1990s, a growing body of comparative political economy literature has attempted to explore the particular nature of Ukraine's growth path and highlight its divergence from other countries, including Poland. The traditional juxtaposition of two economies from a supply-side perspective, focusing on institutional differences and contrasting rates of structural transformation and successes in the initial phase of transition (Aslund 2013; Havrylyshyn 2017), neglects the demand-side context. A recent contribution by Baccaro and Pontusson (2016), who proposed the growth model perspective in comparative political economy, put the spotlight on the demand drivers of economic growth in political-economic analysis.

From a growth model perspective, Ukraine's growth path has received little attention in comparison with the other Central and Eastern European (CEE) countries from the post-socialist bloc. A comprehensive report prepared by the World Bank Group (Smits et al. 2019) represents the first analytical attempt to identify key growth drivers of Ukraine's economy from a growth model perspective. It claims that the old growth model based on "legacy industries dependent on cheap energy resources, commodity exports, and trade exclusively with the Commonwealth of Independent States (CIS) countries" cannot provide the accelerated growth needed to reach Poland's current income levels. To unleash its potential and achieve rapid, lasting, and inclusive economic growth, Ukraine requires a lot of structural reforms. Shepotylo et al. (2017) analyzed the Ukrainian economy at firm and sectoral levels in relation to the EU and offered both supply- and demand-side recommendations to boost exports and foster private sector-driven economic growth.

The Polish growth model has received far more attention from researchers. In studies of growth models on CEE's periphery by Hagemejer and Mućk (2019), Ban and Adascalitei (2020), and Vukov (2023), the Polish economy is classified as an export-led, FDI-driven model. Hein, Meloni, and Tridico (2021) and Akcay and Jungmann (2022) claim that, in line with European export orientations, after the global financial crisis, Poland transitioned from a domestic demand-led regime towards a weak export-led regime. In identifying crucial factors that impacted the transformation of Poland's growth regime, researchers commonly refer to the global economic crisis, with less focus on Poland's accession to the EU.

Because of the lack of previous research on the topic, this paper attempts to answer the following questions: Are the two countries similar or different in terms of their growth models and sectoral contributions to GDP growth? Did their growth

models change from 2000 to 2019? And if so, what critical factors impacted these transformations? What is the principal driver of Poland's successful growth model, and how can it be reproduced in Ukraine? The paper's main objective is thus to compare Ukraine's and Poland's economic growth paths from a growth model perspective and determine the direction of Ukraine's growth model to enable it to converge with the booming Polish economy.

To achieve this, I used Baccaro and Hadziabdic's (2023) methodology for operationalizing growth models based on calculating the import-adjusted contributions to GDP growth of consumption, government expenditure, investment, and exports. The results of analyzing sectoral contributions to GDP growth provided insights into the sectoral shifts that underpin changes in the growth model.

Statistical data from national input-output tables covering the period between 2000 and 2019, divided into four sub-periods, allows us to trace the changes in dominant final demand components and macro-sectors in the two countries' economic growth profiles.

The paper is organized as follows. Section 2 outlines the theoretical framework of changes in the countries' growth trajectories from a growth model perspective. Section 3 interprets the results of the growth model analysis for the two economies. Section 4 explains the role of FDI and participation in global value chains in Poland's successful economic development. Section 5 concludes.

Theoretical analysis of growth model changes

To investigate the particular nature of the two countries' growth paths, many scholars use the influential "varieties of capitalism" framework (Hall and Soskice 2001). This strongly emphasizes the institutional differences between economies and their continuity over time. The "varieties of capitalism" approach provides tools for comparing national political economies in terms of supply-side macroeconomics. Exploring trajectories in the economic development of post-socialist European states, Bilenko (2014) focuses on rapid economic liberalization, accompanied by the creation of effective new market institutions in eastern European countries, in contrast to piecemeal reforms aimed at transition to a market economy in post-Soviet states. In an important book, *The Political Economy of Independent Ukraine*, Havrylyshyn (2017) examines the Ukrainian transition story by comparing it with Poland's, concluding that Ukraine bore huge economic costs and social pains due to reforms that were "too late, too little, and too slow." Ari and Pula (2021) point to Ukraine's legal system as the area in which institutional quality is the lowest compared with Poland. The lack of strong and independent institutions and regulated markets in Ukraine, often monopolized by the state or oligarchs,

undermines incentives to accumulate capital and attract foreign investment. Hartwell (2016) traces Poland's success in developing both economic and political institutions in contrast to Ukraine's experience. Gylfason, Hochreiter, and Kowalski (2022), seeking to understand how and why Poland has charged so far ahead of Ukraine, focus in particular on its effective use of capital and other factors. Brintseva (2023) stresses the role of human capital investment when identifying priority directions for implementing the Polish experience in Ukraine. Pavlova et al. (2021) highlight the importance of European integration in shaping the strategic priorities for Ukraine's socio-economic development.

In contrast with the supply-side dominated macroeconomic backbone of the "varieties of capitalism" literature, a different research strand explains the divergence in national growth paths from the demand side. Baccaro and Pontusson (2016) proposed the growth model perspective, spotlighting the demand drivers of economic growth in their political-economic analysis. Within post-Keynesian theory, drawing on Kaleckian macroeconomics of demand regimes, the growth model perspective identifies diverse growth models, focusing on the role of aggregate demand in GDP growth and the dynamic relations between them. They found that due to the erosion of institutionalized wage bargaining that results from a declining wage share and depressed aggregate demand, the Fordist model of wage-led growth was exhausted. Countries responded differently to the challenge and replaced diminishing wage-led growth with a variety of post-Fordist growth models, differentiated by growth drivers. The foundational contribution of the growth model perspective in comparative political economy explains why some countries rely strongly on export-led growth while others are driven by consumption. Between the ideal types of export-led and consumption-led growth models, we find both balanced and unsuccessful models (Baccaro and Pontusson 2016).

I suggest that the growth model perspective is a promising analytical approach, shedding light on the dynamics of dominant growth drivers underpinning changes in a country's growth regime.

According to classic international regime theory, regimes cannot be static (Young 1983). Because "growth models are more numerous and more unstable than Hall and Soskice's varieties of capitalism" (Baccaro and Pontusson 2016), the theoretical approach to growth models may be able to explain instability and change within different national models. It provides a framework in which to explore the factors shaping growth regimes in different countries, comparability of growth paths, and changes in national growth models over time.

Bondy and Maggor (2023) claim that current empirical research focuses primarily on identifying existing national growth models and explaining their endurance. Shifts between growth models thus remain undertheorized.

Pressures on regime dynamics arise from endogenous or exogenous forces. According to Ban and Adascalitei (2020), a growth model changes "when its growth driver becomes so internally entrained and externally shocked that it can no longer finetune its endogenous socio-economic contradictions." Shifting from the usual emphasis on income distribution between wages and profits (Baccaro and Pontusson 2018), Behringer and van Treeck (2019) and Braun and Deeg (2020) modify the political economy of national growth models by focusing on income distribution between institutional sectors, generating financial imbalances. Spielberg and Voss (2022) consider debt dynamics to be the driver of growth model instability, promoting change in times of crisis. Another strand of research (Acemoglu and Robinson 2013; Regan and Brazys 2018; Bondy and Maggor 2023) deals with political mechanisms that weaken the political balance underpinning the structural transformation of national growth models.

The view put forward in this article is that both economic and political mechanisms underlie change in countries' growth models. National growth models have their own internal potential and "safety margin" based on the combined effects of economic growth drivers. In order to maintain a stable trajectory of economic dynamics, growth drivers must not be permitted to weaken. When their potential is exhausted, the role of current growth determinants should be reconsidered. Early readjustment or calibration of the growth model means reprioritizing by instigating new growth drivers to replace less effective ones to reboot growth dynamics.

Growth model analysis: Ukraine vs. Poland

I apply Baccaro and Hadziabdic's (2023) methodology for operationalizing growth models. This methodology is based on the growth decomposition of "import-adjusted" demand components, which include spending on domestically produced goods and services minus spending on imports induced indirectly by domestically produced goods and services. I use data from input-output tables to calculate the import-adjusted contributions of consumption, government expenditures, investment, and exports to GDP growth to identify the key growth drivers that determine the type of growth model. To classify growth models according to the largest growth contribution of demand components, I use the criteria that Baccaro and Hadziabdic (2023) use to distinguish between export-led or consumption-led growth models and models driven by a combination of demand components (balanced or demand-led). The economy is considered to be driven by the demand component if its relative contribution to GDP growth exceeds 40 percent.

To calculate the import-adjusted contributions of final demand components (K) to GDP growth, I apply the following formula:

$$\text{Growth contribution of } K_{imp-adj.} = \frac{\Delta K_{imp-adj.}}{GDP_0}. \tag{1}$$

Ban and Adascalitei (2020), Picot (2021), and Baccaro and Hadziabdic (2023), among others, distinguish between the pre- and the post-financial crisis periods to capture the change in countries' growth models under the strong impact of this exogenous factor. Taking into account that different endogenous and exogenous factors affect countries' growth drivers in different periods to explain the shift in growth models, I divide up the observation period into shorter periods when calculating the growth contribution of demand components. This approach allows us to identify the crucial points that condition growth model change in a specific country.

To measure the growth contributions of import-adjusted final demand components in Poland, I use data from the latest release of the OECD Input-Output Tables database for the period under analysis, i.e., from 2000 to 2018. Ukraine's State Statistics Service provides Input-Output Tables from 2000 to 2019. Data on the contribution of import-adjusted components to final demand growth in Ukraine are available only from 2010, which is explained by the lack of import matrix data in input-output tables before then. In order to measure the relative growth contributions of final demand components from 2000 to 2007, I use non-import-adjusted values for consumption, government expenditures, investment, and exports. The discrepancy in the applied methodology complicates the comparison of growth contributions of demand components and macro-sectors both before and after the financial crisis in Ukraine, but it underlies the identification of dominant demand drivers and, accordingly, the growth model in both periods.

Table 1. Average growth and average relative growth contributions
of import-adjusted aggregate demand components

Country	Period	GDP growth	Consumption	Government	Investment	Exports	Growth model
Ukraine	2000–2003	7.39%	20.53%*	7.69%*	36.24%*	35.54%*	Balanced
	2004–2007	7.66%	127.08%*	5.17%*	51.97%*	– 84.23%*	Domestic demand-led
	2010–2013	3.33%	43.60%	6.34%	39.67%	10.39%	Consumption-led
	2016–2019	3.01%	84.06%	28.64%	0.20%	– 12.90%	Very consumption-led
	2000–2007	**7.53%**	**74.78%***	**6.41%***	**44.25%***	**– 25.44%***	Very consumption-led
	2010–2019	**3.17%**	**62.79%**	**16.92%**	**20.94%**	**– 0.66%**	Very consumption-led

Country	Period	GDP growth	Consumption	Government	Investment	Exports	Growth model
Poland	2000–2003	2.69%	43.01%	23.78%	– 38.67%	71.88%	Export & consumption
	2004–2007	5.46%	14.99%	10.78%	32.55%	41.68%	Export-led FDI-driven
	2010–2013	2.91%	14.75%	12.87%	5.77%	66.61%	Very export-led
	2014–2018	4.12%	13.27%	13.30%	12.62%	60.81%	Very export-led
	2000–2007	**4.08%**	**24.24%**	**15.07%**	**9.05%**	**51.65%**	Very export-led
	2010–2018	**3.50%**	**13.81%**	**13.15%**	**10.15%**	**62.90%**	Very export-led

Note: * non-import-adjusted values.
Source: own elaboration based on data retrieved from OECD 2021; State Statistics Service of Ukraine 2023.

Table 1 presents the calculated growth contributions of import-adjusted aggregate demand components from 2000 to 2018 for Poland, and to 2019 for Ukraine. The period is divided into four subperiods with average growth contributions to eliminate annual fluctuations. Table 1 also presents aggregated averages from 2000 to 2007 (before the financial crisis) and from 2010 (the first year of growth after the financial crisis) to the last available year.

In the first time interval, from 2000 to 2003, Ukraine had a balanced growth model with a dominant investment component (36.24 percent) and a high export share (35.5 percent) in GDP growth. From 2004, the export growth contribution turned negative simultaneously with a boom in the consumption component of aggregate demand in total output growth. Since 2004–2007, Ukraine's orientation towards consumption-led growth has consolidated and intensified. The investment driver provided the largest contribution to Ukraine's GDP growth during the period from 2000 to 2003. This component of final demand was important for growth in all periods except 2016–2019, which is explained mainly by decreasing FDI inflows as a result of increasing military conflict in Ukraine.

Ukraine's average GDP growth rate halved in the post-financial crisis period (from 7.66 percent in 2004–2007 to 3.33 percent in 2010–2013). Decelerating economic growth can be attributed to the declining role of the investment demand component and a final shift to the consumption-led growth model.

Analysis of average demand component contributions to growth over a longer period indicates a very consumption-led growth model both before and after the financial crisis but does not make it possible to capture the shift in growth drivers. Dividing the period into four four-year subperiods accentuates the temporal shift from reliance on balanced growth driven by investment and exports

to the increasing importance of the household consumption component, accompanied by simultaneously falling relative growth contributions from investment and exports. The transition from a balanced (2000–2003) to a domestic-led growth model (2004–2007), subsequently replaced by consumption (2010–2013) and a very consumption-led model (2016–2019), took about two decades, with two exogenous crises in between. The 2008 global financial crisis and the start of Russia's war aggression in Ukraine in 2014 are crucial points in Ukraine's shifting growth model.

Table 1 depicts an important transition between different growth models in Poland forced by the redistribution of growth driver contributions. From 2000 to 2003, Poland's export- and consumption-led economy reoriented its growth profile to become export-led and FDI-driven in the following sub-period (2004–2007). In 2004, the country finalized EU accession and started to enjoy the benefits of membership. It enjoyed sound economic growth caused by early liberalization of trade that boosted exports and a spectacular increase in FDI inflows from the EU15 as major investors (Balcerowicz 2007). The record amount of foreign capital inflow turned the GDP growth contribution of the investment demand component positive and underpinned the shift to an FDI-driven export-oriented growth model. After the financial crisis started, the declining role of the investment component in generating GDP growth also contributed to falling economic growth rates. Boosting exports' relative growth contribution, the country moved further towards a very export-led growth model in the wake of the financial crisis. As a result, the importance of the domestic consumption component of final demand decreased significantly. As in the case of Ukraine, one can observe the change in the Polish growth model only by breaking up the pre- and post-financial crisis periods into sub-periods.

Sectoral shifts in the two economies underlay the modification of their growth models and predetermined growth dynamics.

First, I focus on the importance of manufacturing in generating value added in the two countries to characterize the changes in sectoral distribution in GDP.
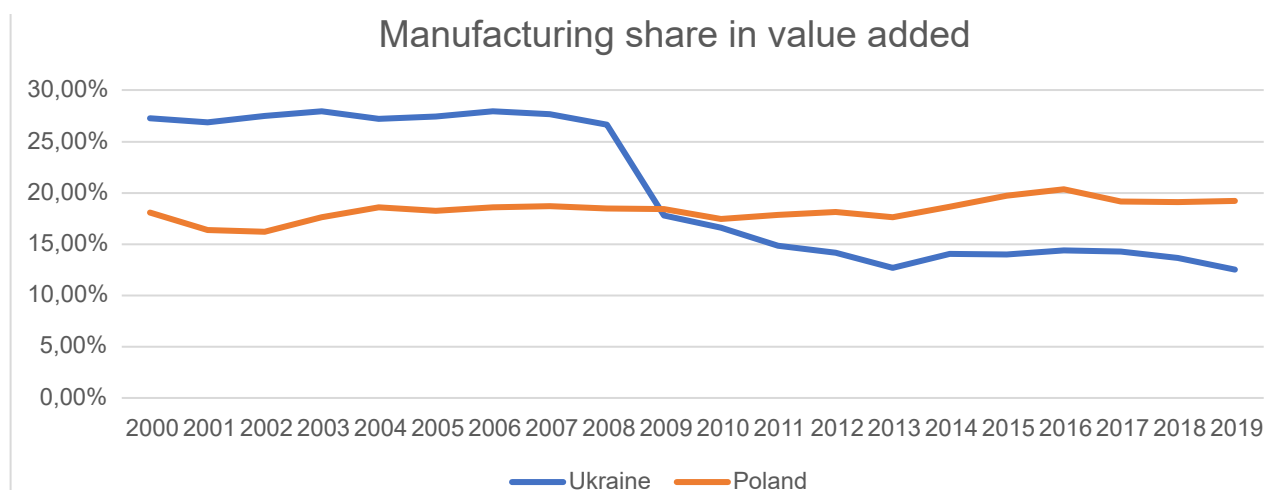
Manufacturing share in value added

Figure 1. Average sectoral share of manufacturing in value added

Source: OECD 2021; State Statistics Service of Ukraine 2023.

Figure 1 indicates important country differences. Poland managed to avoid deindustrialization and experienced slight growth in manufacturing's share in value added. After a marginal decline during 2000–2003, the indicator showed growth in 2004, the year of EU accession. Another growth spurt happened in 2016 when the manufacturing share of value added reached 20.34 percent. The results for Ukraine are more striking. From 2000 to 2008, the country maintained a strong manufacturing performance, providing 26–27 percent of value added. After the global financial crisis, this indicator fell significantly, as the manufacturing share in value added underwent a severe downturn, contracting by around half from 2008 to 2019.

Table 2. Average sectoral shares of GDP growth by value added and final demand perspectives (%)

Period	GDP growth	Manufac-turing	Low-end services	High-end services	Public adminis-tration	Education and health	Con-struction	Com-modities and energy
Ukraine								
2000–2003	Value added	29.53%	36.18%	13.09%	2.11%	4.93%	10.94%	3.22%
2004–2007	Value added	26.53%	34.27%	20.39%	1.27%	0.47%	12.43%	4.64%
2010–2013	Value added	– 20.99%	31.69%	23.27%	2.37%	6.56%	19.58%	37.54%
	Final demand	– 19.84%	28.92%	10.52%	7.68%	8.05%	15.24%	49.44%
2016–2019	Value added	2.02%	27.19%	22.10%	23.93%	6.93%	14.52%	3.31%
	Final demand	– 19.31%	16.99%	18.52%	15.91%	9.11%	28.07%	30.70%
2000–2007	**Value added**	**28.12%**	**35.28%**	**16.53%**	**1.71%**	**2.83%**	**11.64%**	**3.89%**
2010–2019	**Value added**	**– 10.07%**	**29.55%**	**22.71%**	**12.60%**	**6.74%**	**17.17%**	**21.28%**
	Final demand	**– 19.59%**	**23.26%**	**14.31%**	**11.58%**	**8.56%**	**21.32%**	**40.55%**

Period	GDP growth	Manufac-turing	Low-end services	High-end services	Public adminis-tration	Education and health	Con-struction	Com-modities and energy
				Poland				
2000–2003	Value added	2.90%	19.93%	38.60%	0.92%	38.76%	– 10.29%	9.17%
	Final demand	14.05%	21.13%	12.55%	3.24%	41.68%	11.74%	20.60%
2004–2007	Value added	23.67%	26.64%	17.17%	2.46%	5.22%	14.17%	10.67%
	Final demand	27.97%	12.87%	18.17%	5.67%	6.66%	26.71%	2.39%
2010–2013	Value added	10.93%	41.93%	9.77%	3.31%	9.29%	2.93%	21.83%
	Final demand	57.45%	26.97%	4.67%	4.64%	11.09%	5.04%	9.02%
2014–2018	Value added	26.76%	30.54%	19.66%	3.70%	7.51%	12.61%	– 0.79%
	Final demand	27.64%	35.95%	10.56%	4.34%	10.74%	11.29%	0.42%
2000–2007	**Value added**	**16.98%**	**24.48%**	**24.07%**	**1.97%**	**16.02%**	**6.29%**	**10.19%**
	Final demand	**23.36%**	**15.60%**	**16.31%**	**4.87%**	**18.26%**	**21.75%**	**8.42%**
2010–2018	**Value added**	**21.05%**	**34.65%**	**16.09%**	**3.56%**	**8.16%**	**9.11%**	**7.38%**
	Final demand	**38.45%**	**32.70%**	**8.42%**	**4.45%**	**10.87%**	**9.02%**	**3.54%**

Source: own elaboration based on data retrieved from OECD 2021; State Statistics Service of Ukraine 2023.

The dynamics of the manufacturing share in GDP growth are in line with its previously highlighted GDP share. Table 2 presents average sectoral shares in output growth for four subperiods from 2000 to 2019 for Ukraine and from 2000 to 2018 for Poland. Based on the original input-output tables out of 45 economic sectors, I created seven macro-sectors (manufacturing, low-end services, high-end services, public administration, education and health, construction, and commodities and energy) for this research. The prevailing skill level in each sector serves as the criterion to group macro-sectors. I use two different approaches to calculate the importance of macro-sectors in generating GDP growth, both traditional value added and the final demand approach proposed by Baccaro and Hadziabdic (2023).

To calculate the import-adjusted growth contributions of aggregated macro-sectors (S), I use the formula:

$$\text{Growth contribution of } S_{imp-adj.} = \frac{\Delta S_{imp-adj.}}{GDP_0}. \tag{2}$$

The final demand perspective for calculating a sector's contributions to growth is preferred to the value added perspective in an effort to reassess the role of sectors in which goods and services satisfy final demand, in particular manufacturing and construction. By contrast, the value added perspective leads to a clear

underestimation of these sectors' importance. Sectoral contributions to final demand growth in Ukraine are presented only from 2010. This is because of the availability of data in input-output tables from Ukraine's State Statistics Service.

The results are striking. From 2010, Ukraine experienced a downward shift in the share of manufacturing in GDP growth calculated from both the final demand and the value added perspectives. First, manufacturing was affected negatively by the financial crisis of 2008–2009 followed by the war in eastern Ukraine that started in 2014, as a result of which it lost part of its industrial base. At the same time, the commodities and energy sector's contribution to final demand growth rose sharply from 2010, rising to 50 percent. Second, the low-end services sector experienced a gradual decline from a final demand perspective. The contribution of the construction, public administration, education and health, and high-end services sectors to both final demand and value added grew significantly, which confirms the consumption-led growth model of Ukraine's economy. Between 2010 and 2019, the value-added perspective shows the contributions of low-end services (29.55 percent), followed by high-end services (22.71 percent), and commodities and energy (21.28 percent).

In Ukraine, the global financial crisis served as the starting point for crucial sectoral shifts. It entailed a transition from a manufacturing and low-end services-oriented economy to a commodity-based one.

The results of calculating sectoral contributions to GDP growth in Poland using both approaches show the strong dominance of manufacturing and low-end services, which increased their shares from 2000 to 2018. This is not surprising for an export-led economy. The exponential growth of the manufacturing sector started in 2004. The similar pattern of construction's contribution to economic growth in 2004–2007, calculated from both perspectives, points to the role of Poland's EU accession, with its subsequent increase in FDI inflows as the main catalyst of sectoral shifts. From 2010, one can observe a decline in construction's share in GDP growth. Education and health, which provided 41.68 percent of final demand growth in 2000–2003, fell to 6.66 percent after 2004. From 2014 to 2018, the commodities and energy sector's contribution to GDP growth declined sharply to 0.42 percent (compared with 20.6 percent in 2000–2003). Both from a final demand and a value added perspective, the share of high-end services fluctuated, with a declining trend during the period under observation. According to the value added approach, between 2010 and 2018, the top three sectors with the largest average shares in value added growth were low-end services (34.65 percent), followed by manufacturing (21.05 percent) and high-end services (16.09 percent).

Joining the European Union in 2004 incentivized the most significant sectoral shifts in Poland because of the growing importance of manufacturing, the declining education and health sector, and a short-term increase in construction's share in GDP growth.

The results indicate the stark contrast between the sectors' contributions to economic growth in the two countries. Since joining the EU, Polish manufacturing has contributed most to final demand, peaking at 57.45 percent in 2010–2013. These results are what one would expect, given the country's export-led growth model.

In Ukraine, the commodities and energy sector has enjoyed the highest average share in final demand growth since the global financial crisis, rising to 49.44 percent in 2010–2013. At the same time, the manufacturing contribution to GDP growth has declined. The growing importance of construction and low-end services has partly substituted for manufacturing in contribution to final demand. The current sectoral distribution underpins Ukraine's consumption-driven growth model with high commodity export potential.

An impulsive move in the direction of deindustrialization fostered the change in dominant growth drivers in Ukraine's economy, accompanying the transition from a balanced to a very consumption-led growth model. For a lower-middle-income country like Ukraine, premature deindustrialization can reduce growth (Rodrik 2016). Rodrik also found that a shrinking manufacturing sector can lead to increasing informality, shifting workers into low-productivity services. This threatens economy-wide productivity and fosters wage moderation. With the exception of a few resource-rich economies, successful growth, together with rapid convergence on the part of developing economies, has historically required industrialization.

FDI and integration into global value chains

Foreign direct investment (FDI) has become an important source of economic growth, development, and modernization for developing, emerging, and transition economies (OECD 2002). Both Poland (before 2017) and Ukraine can be categorized in this way.

FDI helps to fill the gap between savings and the required level of investment (Sabir and Khan 2018), attract new knowledge and provide technological transfer from developed to developing countries (Chenaf-Nicet and Rougier 2016), improve human capital skills and knowledge, reduce unemployment, boost productivity, enhance business competitiveness, and contribute to international trade integration. All these benefits increase a country's industrial and export potential, contributing to higher economic growth and social standards.

In the late 1990s, falling behind in terms of global competitiveness, post-socialist CEE countries "responded to external dynamics by competing with each other [by] institutionalizing an economic growth model that relied heavily on FDI" (Ban and Adascalitei 2020). As a result, the FDI-led growth regime replaced the wage-driven growth model with credit-based consumption (Grittersová 2017).

A number of research studies attribute successful Polish growth to its geographical proximity to Western European countries and the resulting FDI flow (Balcerowicz 2007; Breznitz and Ornston 2017; Ghodsee and Orenstein 2021). Recognizing the leading role of the Polish economy in CEE growth, Piatkowski (2014) proposed a new growth model to enable "New Europe" to converge with Western Europe, which he called the "Warsaw Consensus." This new growth model is based on ten pillars, including high domestic savings and investment, diversified exports, full integration in the EU market, and further EU enlargement.

In 2004, eight CEE countries, including Poland, joined the European Union. Poland took full advantage of its membership, receiving substantial subsidies, significant funds for large-scale infrastructure projects, and attracting more foreign investment.
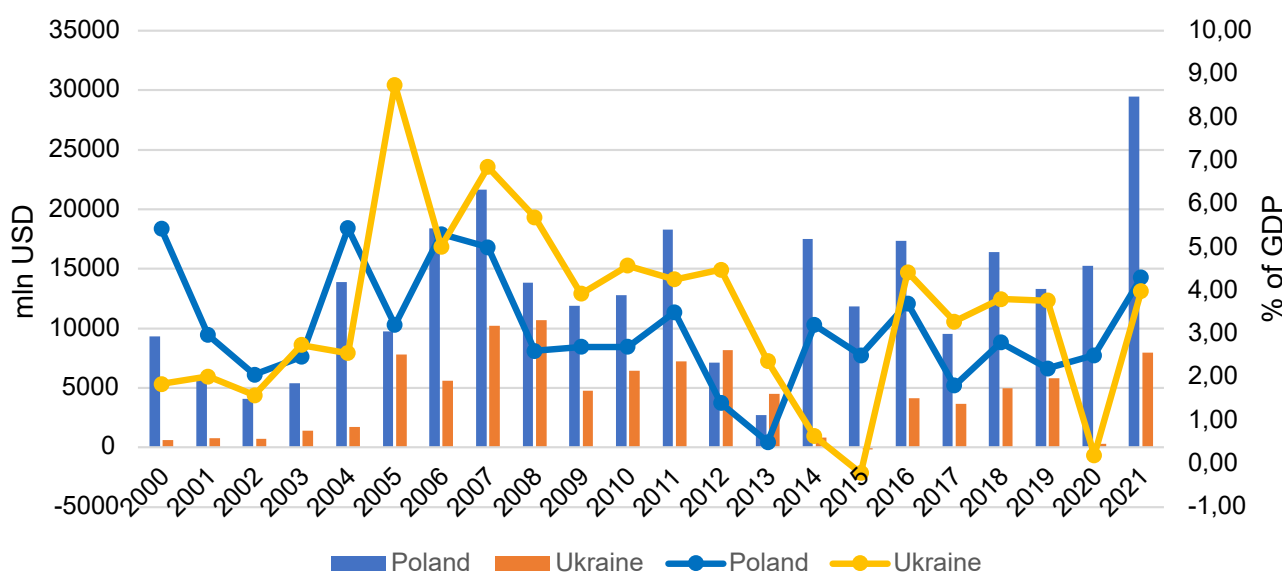

Figure 2. Foreign direct investment (net inflows)

Source: OECD 2023a; World Bank n.d.

Figure 2 shows that in the year of EU accession (2004), Poland experienced a two-and-a-half-fold increase in FDI compared with the previous year. In relative terms, the volume of FDI reached a peak of 5.4 percent of GDP. From 2004 to 2007, FDI inflows flourished in both absolute and relative terms, making the largest contribution of the investment component to GDP growth. In the following years, FDI inflows fluctuated but did not exceed this value. According to UNCTAD (2021), in 2020, Poland achieved US$24.3 billion of greenfield inflows, putting the country in fifth place in global rankings after EU leader Germany.

According to the OECD's international direct investment database, in 2021, Polish inward FDI flows were predominantly in manufacturing (36.2 percent), professional, scientific and technical activities (20.2 percent), wholesale and retail (16.2 percent), and real estate

(9.9 percent). In the manufacturing sector, the most attractive destinations for foreign capital were metal and machinery products (10.0 percent), vehicle manufacturing (6.9 percent), and chemical production (5.7 percent).

Like Poland, Ukraine experienced its highest FDI inflows from 2005 to 2008, during the global economic boom. During this period, significant investments flowed into the banking sector. After the 2009 recession, FDI recovered, but the beginning of the war in 2014 dealt a significant blow to investor confidence.

The National Bank of Ukraine (2023) reports that inward FDI was concentrated in manufacturing (55.2 percent), agriculture (15.4 percent), wholesale and retail (9.0 percent), and financial and insurance activities (8.8 percent). Comparing the FDI sectoral profiles in Ukraine and Poland, Ukraine's higher share of FDI inflows in manufacturing attracts attention. A more detailed view of FDI distribution by economic activity indicates Ukraine's low value added orientation, which attracts investment mainly in mining (23.6 percent) and metal production (13.8 percent).

Ukraine has been slow in attracting FDI. On average, the volume of FDI inflows in Ukraine is only 20 to 25 percent that of Poland.

A significant part of foreign investments in Ukraine is, in fact, "domestic" investments structured through foreign jurisdictions (based on the registration of holding companies). According to NBU estimates (National Bank of Ukraine 2023), during the period 2010–2022, "round-tripping transactions" used to redistribute FDI flows from the ultimate investing countries represented, on average, 28 percent of Ukraine's foreign direct investment inflow compared with only 5 percent in Poland. In 2021, round-tripping reached 68.5 percent of total FDI inflows. The largest volumes of round-tripping transactions were routed through Cyprus, the Netherlands, Switzerland and Austria, which are the top direct investing countries in Ukraine.

Investors use round-tripping through offshore centers to benefit from preferential tax treatment. Aykut, Sanghi, and Kosmidou (2017) stress that investments on this basis may result in tax revenue and welfare losses or illegal activities, such as corruption or money laundering. Such investments do not enhance the country's inclusion in value added networks or technology transfer. This maintains the current raw material-oriented export structure. In an institutionally distorted economy such as Ukraine's, round-tripping cements concentrated asset ownership. This sheds light on the volume of real FDI inflows, which are much lower after leaving out indirect transactions.

Poland's success in attracting FDI results from a number of factors, including a growing economy, a large domestic market, EU membership, a stable banking sector, and skilled labor at a competitive price. According to Eurostat, average hourly labor costs in Poland were estimated at €12.5 in 2022 compared with an average of €34.3 in the Eurozone as a whole.

An FDI focus promotes the embedding of national firms in global production networks, which serves to enhance economic development. The position of these firms in global value chains affects GDP growth. The theory of global value chains, combined with the concept of a "franchise economy," as set out by Schwartz (2021), determines the dominant organizational level occupied by domestic firms in global production networks and explains investment trends. Characterizing a shift from Fordism to a "Knowledge Economy," Schwartz highlighted the transformation of the old Fordist dual organizational structure into a tripartite structure, depressing investment and mass consumption. A three-tier "franchise industrial structure" comprises high-profit volume monopolies based on intellectual property rights (top layer), physical capital-intensive firms (second layer) and low-profit labor-intensive manufacturing and service production (third layer).

To characterize the two countries' position in the tripartite organizational structure, I analyze their level of integration into global value chains and their export structure in terms of product categories.

The foreign value added content of gross exports indicates the level of an economy's integration in global value chains. To characterize these measurements, I used the 2023 edition of the *Trade in Value Added* (TiVA) database from OECD Statistics and the World Trade Organization (WTO), which provide data on 76 economies (including Ukraine) over the period 1995–2020. The TiVA estimates are derived from OECD Inter-Country Input-Output tables. For this research, I used data for the two countries and aggregated statistics for the EU that cover the years 2000–2020.
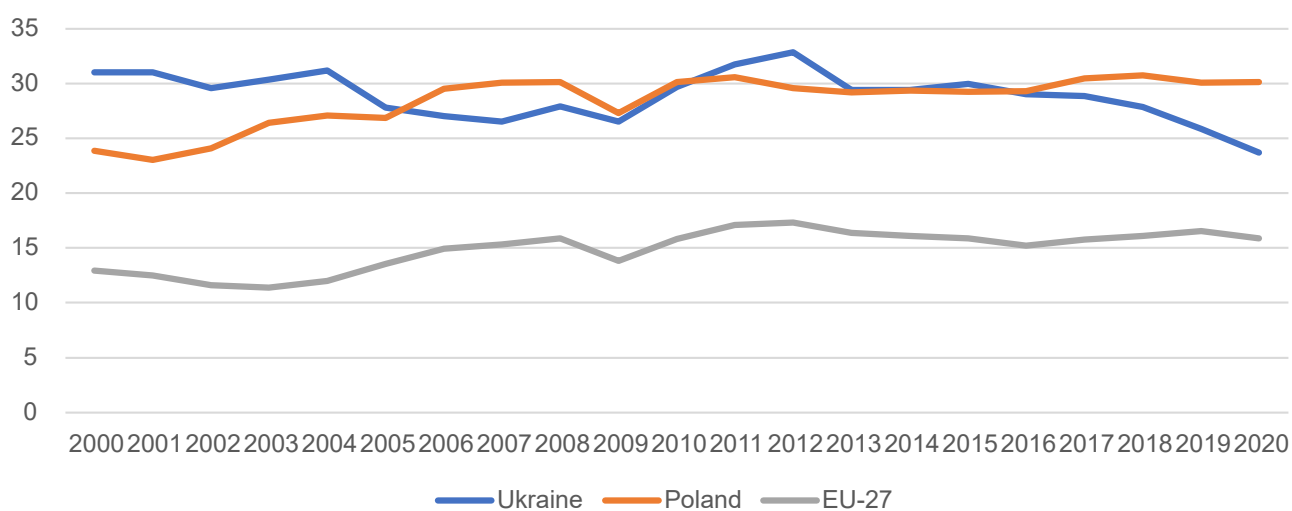

Figure 3. Foreign value added share of the countries' gross exports (backward participation in global value chains)

Source: OECD 2023b.

Figure 3 shows that Ukraine had a higher share of foreign value added in gross exports than Poland during the two subperiods (2000–2005 and 2011–2015). The EU's estimations are, on average, half the country-level values. Considering the dynamics of the share of imported semi-finished products, components, and materials in exports, one can observe Polish growth from 24 percent in 2000 to 30 percent in 2020, while Ukraine's rate trended downward from 31 to 24 percent over two decades. The growth of EU integration has contributed to increasing Poland's backward participation in global value chains.
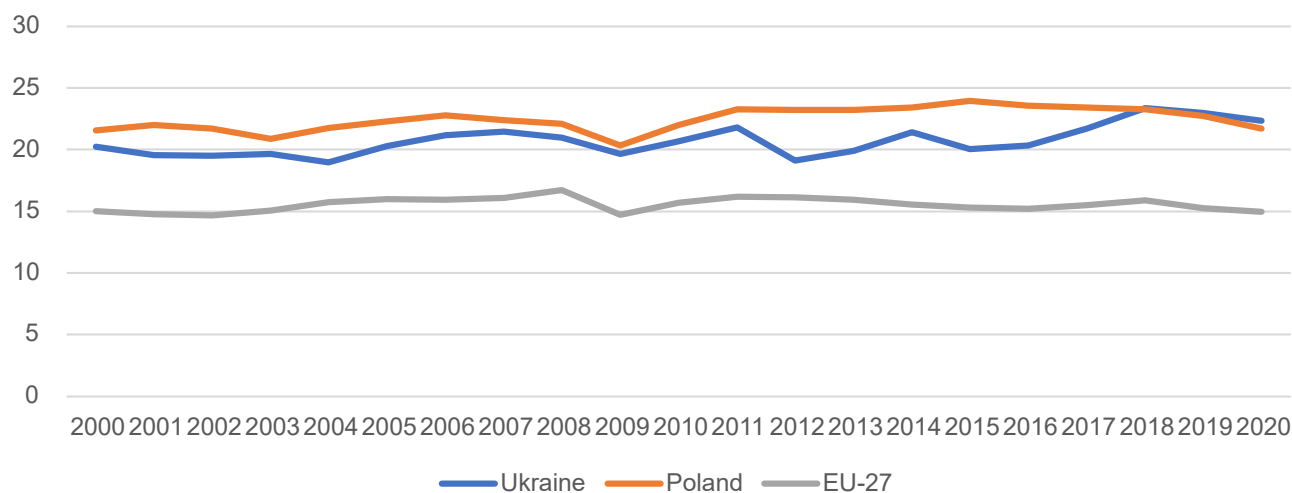

Figure 4. Domestic value added in foreign exports as a share of gross exports (forward participation in global value chains)

Source: OECD 2023b.

Figure 4 shows that Poland slightly outperforms Ukraine in terms of forward participation in global value chains during the whole period observed. Its share of domestic value added in foreign exports as a share of gross exports fluctuates between 20 and 24 percent, which is above the EU average.

A closer look at global value chains from the two countries' perspectives indicates their high level of integration in global trade. Market opening, together with EU accession, contributed to the growth of Poland's backward participation in global value chains, while Ukraine's foreign value added content of gross exports shrank at the end of the period under observation. This resulted in changes in the export product structure.
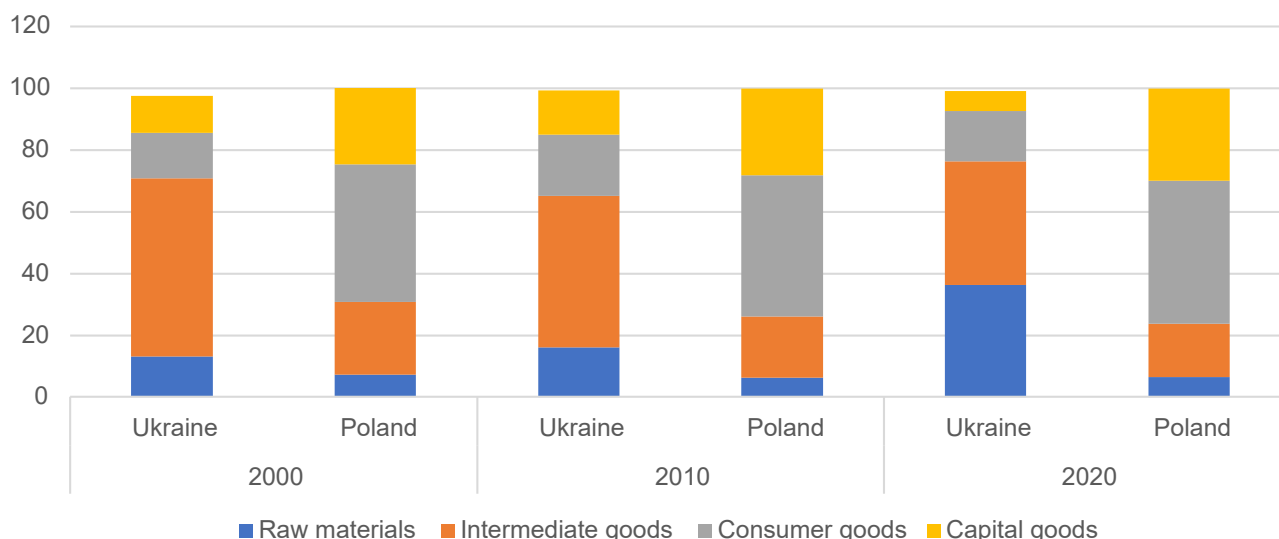
Figure 5. Export product share in Ukraine and Poland

Source: UN Commodity Trade Statistics Database n.d.

The distribution of exports between product categories presented in Figure 5 shows the increasing trend of commodity specialization in Ukraine. The percentage of raw materials in total exports grew from 13.1 percent in 2000 to 36.3 percent in 2020. Exports of intermediate goods declined in relative terms from a maximum of 57.8 percent to 40 percent in two decades. These two product categories accounted or 76 percent of total exports in 2020, determining Ukraine's focus on upstream participation in manufacturing activities in global value chains. The relative share of capital goods exports shrank from 12 percent in 2000 to 6.5 percent in 2020. According to Ukraine's State Statistics Service, agriculture, forestry and fisheries, extractive industry, metallurgy, food production and other low value added industries accounted for the largest share of exports in Ukraine in the past decade.

Poland's export product structure is completely different. Figure 5 shows the substantial growth in capital goods in relative terms from 24.6 percent in 2000 to 30 percent in 2020 and a moderate increase in the share of consumer goods from 44.6 percent in 2000 to 46 percent in 2020. Exports of intermediate goods dropped by 6 percent in relative terms over the past two decades to reach 17.3 percent in 2020, which is 2.5 times less than Ukraine's value.

Figure 1 and Table 2 present evidence that in Poland, manufacturing's share of GDP growth is higher than its sectoral share of GDP. This confirms the increasing complexity of manufacturing in general and its exports in particular. According to the UN Commodity Trade Statistics Database (n.d.), in Poland, the share of high-technology exports increased from 4 percent in 2007 to 9 percent of manufactured exports by 2021, although it still lags behind the EU average of 15 percent. In Ukraine, this indicator was

5 percent in 2021. In Ukraine, the share of the commodities and energy sector in GDP and GDP growth has been increasing, constituting the bulk of exports.

The results confirm that Ukraine is highly integrated in global value chains as a supplier of intermediate goods. For most industrial and high-tech goods, Ukraine occupies the left (or lower) part of value chains, ranging from being a supplier of raw materials to a producer of semi-finished products and components. Accelerating GDP growth requires increasing exports of goods and services, which provide higher value added growth (Venger, Romanovska and Chyzhevska 2022). Given that manufacturing, like any other sector of the economy, is capable of building complex and deep value chains, broad deindustrialization hampers a country's efforts to climb up value chains.

In accordance with the country's three-tier economy, Ukrainian companies predominantly occupy the niche of labor-intensive manufacturing and services within the industrial structure, de facto controlled by top-level foreign firms (Schwartz 2021). The third layer has a weak investment propensity caused by the hyper-exploitation of labor, which results in low productivity. Focusing on low-profit, labor-intensive manufacturing and services in global value chains preserves the country's FDI-deficit status and hinders growth opportunities.

As in Ukraine, most Polish companies belong to the third layer. Gołębiowska (2017) asserts that Poland participates in global value chains through the import of foreign technologies and raw materials, using them in labor-intensive sectors that generate the lowest value added. The transition to the physical capital-intensive organizational level in the commodity chain is hindered by an investment barrier to entry. Although Poland outperforms Ukraine in terms of share of high value-added exports, it still lags far behind Germany, which has a distinct second-layer economy with dominant physical capital-intensive firms.

Despite the success of the Polish growth model and the country's escape from the "middle-income trap," after moving from middle to high-income status, Poland still faces the risk of stagnant economic growth. The deceleration of total factor productivity growth and a weak innovation system are expected to make it difficult for Poland to maintain its growth pace (Breznitz and Ornston 2017).

Upgrading the export structure and moving up value chains are challenging for both the Ukrainian and the Polish economies but promising in terms of national development. Boosting research and development to come up with capital-intensive products requires significant growth in funding and enhancement of the policy framework for research and technological development.

At the same time, in intra-regional competition Poland has taken advantage of regional value chains and provides the largest basis for German manufacturing, which is

Europe's major direct investor. According to Eurostat data, Germany has become Poland's biggest trading partner, accounting for 27.8 percent of Poland's export value and 20.2 percent of total imports in 2022. Services trade with Germany shows a similar picture. The Polish economy has benefited from integration into global value chains with increasing value added of its exports, shifting to a distinctive export growth model that has conferred the status of the EU's growth champion.

Against the background of international companies moving industrial sites from China and Russia to other regions after the war is over, Ukraine will gain additional opportunities to receive relocated facilities and create new ones. Proximity to European markets, developed transport and energy infrastructure, relatively cheap qualified workers, and a highly developed information and communication technology sector are among the factors enabling Ukrainian industrial companies to enter European value chains.

Conclusion

The paper represents the first attempt to provide a comparison of Ukraine's and Poland's economic growth paths, tracing the changes in dominant final demand components and macro-sectors in the two countries' economic growth profiles.

Taking its inspiration from the burgeoning growth-model literature, the paper looks at the benefits of switching growth drivers to restart Ukraine's economy by emulating Polish growth.

The presented results of country-level analysis of the relative contributions of various aggregate demand components to GDP growth led to the following conclusions.

First, having started the transition from similar growth models at the beginning of the 2000s, Ukraine's and Poland's growth paths diverged. Differing in the speed and depth of their structural transformations from 2000 to 2003, the two European post-socialist economies relied on both exports and domestic consumption drivers. Subsequent years saw a cleavage between the distinct export orientation of Polish growth and the consumption-led model of Ukraine's economic growth.

Second, rather than the global financial crisis, Poland's EU accession in 2004 impacted the shift of the Polish growth model from both consumption and exports to a distinctive export-led FDI-driven model. As a new EU member, Poland experienced a considerable increase in FDI, which was concentrated predominantly in manufacturing. Combined with expanded trade integration in the EU, the growth of FDI stock fostered the country's export orientation. The global financial crisis promoted further redistribution of growth drivers towards the enhancement of exports,

accompanied by a declining relative contribution of investment and consumption components to final demand that confirmed the country's shift to a very export-led growth model in the post-financial crisis period. The crucial changes in the country's growth model were observed by dividing the pre- and post-financial crisis periods in Poland into sub-periods within the framework of GDP growth decomposition to demand components.

Third, the declining role of the investment driver in economic growth and a shift from a balanced to a consumption-led growth model in Ukraine resulted in decelerating GDP growth. From 2000 to 2003, investment was the major determinant of the country's economic growth. From 2004 to 2007, it was succeeded by consumption, followed by the investment component of aggregate demand. After the global financial crisis, the underuse of the investment driver of GDP growth, along with a rising consumption-led orientation, led to fading growth rates in Ukraine. Unlike Poland, with its booming manufacturing share in GDP growth, after the world financial crisis and war in the industrialized eastern part of the country, Ukraine went through tough deindustrialization, cementing its focus on the commodities and energy sector. Unsurprisingly, therefore, this sectoral shift underpinned the economy's transition to a consumption-led growth model.

Fourth, Poland outperforms Ukraine in terms of the share of high value added exports. Focusing on low value-added exports means that Ukraine is left behind as regards the distribution of the fruits of capitalism and maintains the country's FDI deficit status. This hits its growth opportunities.

These findings are a contribution to the comparative political economy literature on the growth models of peripheral economies, providing insights that can inform policies for growth model transformation. Drawing on the Polish growth model's success, I proposed activating the FDI driver of Ukraine's economic growth in the direction of upgrading its export structure and moving up value chains to unlock the country's growth opportunities. Ukraine is on track towards EU accession, which could push the changing Ukrainian growth model towards boosting the investment component of final demand.

The study has some limitations. Due to data availability, I calculated the contribution of import-adjusted demand components and aggregated macro-sectors to final demand growth in Ukraine only from 2010. I did not employ a quantitative framework to estimate the relative importance of the different factors that determine FDI inflows. Furthermore, the impact of institutional quality in general and of the different components of FDI inflows on growth-model change could be investigated in subsequent studies.

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Kalibracja modelu wzrostu Ukrainy. Jak Ukraina może powtórzyć sukces rozwojowy Polski?

Niniejsze opracowanie prezentuje analizę porównawczą ścieżek wzrostu gospodarczego Ukrainy i Polski z perspektywy modelu wzrostu i określa, w jaki sposób należy skalibrować model wzrostu Ukrainy, aby był zbieżny z dynamicznym rozwojem gospodarki polskiej. Metodologia obejmuje podejście do operacjonalizacji modeli wzrostu w celu dekompozycji wzrostu PKB na komponenty popytu „skorygowane o import", na podstawie krajowych danych dotyczących nakładów i wyników z lat 2000–2019. Zauważono, że w latach 2000–2003 obie gospodarki europejskie rozwijały się w oparciu o eksport i konsumpcję krajową. Rozszerzona integracja handlowa i wzrost BIZ po przystąpieniu Polski do UE w 2004 r. przyspieszyły przejście polskiego modelu wzrostu w kierunku strategii opartej na eksporcie oraz BIZ z przyspieszonym tempem wzrostu PKB. Na Ukrainie, w następstwie wielkiego kryzysu finansowego, zaobserwowano przejście w kierunku modelu wzrostu opartego na konsumpcji, który wraz ze spadającym komponentem inwestycyjnym zagregowanego popytu doprowadził do zaniku stóp wzrostu. Analiza wkładu poszczególnych sektorów gospodarki we wzrost PKB wykazała, że zapobieganie deindustrializacji w Polsce stanowiło podstawę strategii eksportowej tego kraju, w przeciwieństwie do Ukrainy, która przeszła po 2008 roku kluczową zmianę sektorową z produkcji na orientację opartą na sprzedaży towarów. Obie te gospodarki wykazały wysoki poziom integracji z globalnymi łańcuchami wartości, koncentrując się na pracochłonnej produkcji i usługach, ale Polska wyprzedziła Ukrainę pod względem udziału eksportu o wysokiej wartości dodanej, który wzrósł po przystąpieniu do UE. Podążając za polskim wzorcem, zaproponowano, aby model wzrostu Ukrainy pobudził siłę napędową wzrostu gospodarczego poprzez polepszenie struktury eksportu i zwiększenie łańcuchów wartości, aby odblokować możliwości wzrostu tego kraju. Opracowanie to jest pierwszym porównaniem ścieżek wzrostu gospodarczego Ukrainy i Polski, które śledzi

zmiany dominujących komponentów popytu końcowego i makrosektorów w profilach wzrostu gospodarczego obu krajów. Niniejszy artykuł stanowi wkład do literatury porównawczej z zakresu ekonomii politycznej na temat modeli wzrostu gospodarek peryferyjnych, dostarczając spostrzeżeń, które mogą stanowić podstawę polityki transformacji modeli wzrostu.

Słowa kluczowe: model wzrostu, wzrost gospodarczy, produkcja, BIZ, Ukraina, Polska