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Paul J.J. Welfens / Tian Xiong / David Hanrahan

Economic, Institutional and Power Perspectives on EU Income Redistribution and a Ukraine Enlargement

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EUROPÄISCHES INSTITUT FÜR INTERNATIONALE WIRTSCHAFTSBEZIEHUNGEN (EIIW)/
EUROPEAN INSTITUTE FOR INTERNATIONAL ECONOMIC RELATIONS
Bergische Universität Wuppertal, Campus Freudenberg, Rainer-Gruenter-Straße 21,
D-42119 Wuppertal, Germany
Tel.: (0)202 – 439 13 71
Fax: (0)202 – 439 13 77
E-mail: welfens@eiiw.uni-wuppertal.de
www.eiiw.eu

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Summary:

The analysis looks into European Union income redistribution policies and also places a focus on certain theoretical, institutional and empirical aspects of a future enlargement of the EU to admit Ukraine as a member; while suggestions for policy reforms in the EU and for a transition process for new member countries are also presented. Moreover, the role of the Banzhaf power index in terms of the intra-EU allocation of EU grants and loans under the Recovery and Resilience Facility (part of the Next Generation EU plan) as well as EU transfers to regions/national institutions in EU countries are considered – within a cross country analysis. As independent variables in the regression analysis for the grant/loan ratio on the one hand and the EU transfers/GDP of recipient countries we consider the relative per capita income (in purchasing power parity figures) of recipient countries, Corona death ratios and related indicators as well as the Banzhaf power index (for the European Council) which has changed after BREXIT and which would also change in the context of an EU-Ukraine enlargement. The Banzhaf power index measures power in the context of weighted majority decisions in the European Council. The regressions show several significant variables – but the Banzhaf power index is insignificant for the grants-to-loans ratio of recipient EU countries; and we even can state a new Banzhaf index paradox. The regression analysis for the grant loan ratio is the first to date in the literature. There is considerable potential for a new X-EXIT in the context of a Ukraine enlargement where lessons from BREXIT should be carefully considered if one is to avoid further such disintegration cases. As prior to previous enlargements, topics such as the role of redistribution and fiscal competences at an EU level in relation to revenue-raising and spending have been raised, one can assume that these issues will be to the fore once again if the prospect of a Ukraine-enlargement becomes more likely. One lesson to be drawn is that Ukraine should get lower EU transfers per capita than was the case for Poland in 2005. The required reforms in the EU are pointed out on the one hand, on the other hand politico-economic reflections suggest that the implementation of such reforms will be rather difficult; not least in the context of the fast aging of societies in Germany, Italy and Spain after 2025 – with the caveat that strong immigration from Ukraine could slow down the greying of societies particularly in Germany and Italy, so that anti-EU sentiments could become weakened under certain conditions. An EU enlargement to admit Ukraine is finally considered in a scenario perspective.

Zusammenfassung:

Die Analyse befasst sich mit der Einkommensumverteilungspolitik der Europäischen Union und legt einen Schwerpunkt auf bestimmte theoretische, institutionelle und empirische Aspekte einer zukünftigen Erweiterung der EU um die Ukraine als Mitglied; außerdem werden Vorschläge für politische Reformen in der EU und für einen Übergangsprozess für neue Mitgliedsländer vorgestellt. Darüber hinaus wird – im Rahmen einer länderübergreifenden Analyse – die Rolle des Banzhaf-Power-Indexes in Bezug auf die EU-interne Zuteilung von EU-Zuschüssen und -Darlehen im Rahmen der Aufbau- und Resilienzfazilität (Teil des NextGenerationEU-Plans) sowie die EU-Transfers an Regionen/nationale Institutionen in EU-Ländern betrachtet. Als unabhängige Variablen in der Regressionsanalyse für das Zuschuss-/Darlehensverhältnis einerseits und die EU-Transfers/BIP der Empfängerländer berücksichtigen wir das relative Pro-Kopf-Einkommen (in Kaufkraftparitäten) der Empfängerländer, die Corona-Sterbeziffern und verwandte Indikatoren sowie den Banzhaf-Machtindex (für den Europäischen Rat), der sich nach dem BREXIT verändert hat und sich auch im Kontext einer EU-Ukraine-Erweiterung verändern würde. Der Banzhaf-Machtindex misst die Macht im Zusammenhang mit den gewichteten Mehrheitsentscheidungen im Europäischen Rat. Die Regressionen zeigen mehrere signifikante Variablen – aber der Banzhaf-Machtindex ist nicht signifikant für das Verhältnis von Zuschüssen zu Krediten der EU-Empfängerländer; und wir können sogar ein neues Banzhaf-Index-Paradoxon feststellen. Die Regressionsanalyse für das Verhältnis von Zuschüssen zu Krediten ist die erste in der Literatur bisher. Es besteht ein erhebliches Potenzial für einen neuen X-EXIT im Zusammenhang mit der Erweiterung der Ukraine, bei dem die Lehren aus dem BREXIT sorgfältig berücksichtigt werden sollten, wenn man weitere derartige Desintegrationsfälle vermeiden will. Da vor früheren Erweiterungen Themen wie die Rolle der Umverteilung und die fiskalischen Kompetenzen auf EU-Ebene in Bezug auf Einnahmen und Ausgaben angesprochen wurden, kann man davon ausgehen, dass diese Fragen erneut in den Vordergrund treten werden, wenn die Aussicht auf eine Erweiterung der Ukraine wahrscheinlicher wird. Eine Lehre daraus ist, dass die Ukraine niedrigere EU-Transfers pro Kopf erhalten sollte, als dies 2005 für Polen der Fall war. Einerseits wird auf die notwendigen Reformen in der EU hingewiesen, andererseits deuten wirtschaftspolitische Überlegungen darauf hin, dass die Umsetzung solcher Reformen eher schwierig sein wird; nicht zuletzt vor dem Hintergrund der raschen Alterung der Gesellschaften in Deutschland, Italien und Spanien nach 2025 – mit dem Vorbehalt, dass eine starke Zuwanderung aus der Ukraine die Ergrauung der Gesellschaften insbesondere in Deutschland und Italien verlangsamen könnte, so dass die Anti-EU-Stimmung unter bestimmten Bedingungen schwächer werden könnte. Eine EU-Erweiterung um die Ukraine wird schließlich in einer Szenarioperspektive betrachtet.

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Paul J.J. Welfens, *Jean Monnet Professor for European Economic Integration; Chair for Macroeconomics; President of the European Institute for International Economic Relations at the University of Wuppertal, (EIIW), Rainer-Gruenter-Str. 21, D-42119 Wuppertal; +49 202 4391371), Alfred Grosser Professorship 2007/08, Sciences Po, Paris; Research Fellow, IZA, Bonn; Non-Resident Senior Fellow at AICGS/Johns Hopkins University, Washington DC.*

welfens@eiiw.uni-wuppertal.de, *www.eiiw.eu*

Tian Xiong, *Research Associate at the Chair for Macroeconomic Theory and Policy and Research Assistant at the European Institute for International Economic Relations (EIIW) at the University of Wuppertal, Rainer-Gruenter-Str. 21, 42119 Wuppertal, Germany.*

xiong@eiiw.uni-wuppertal.de *www.eiiw.eu*

David Hanrahan, *Research Associate at the Chair for Macroeconomic Theory and Policy and Research Assistant at the European Institute for International Economic Relations (EIIW) at the University of Wuppertal, Rainer-Gruenter-Str. 21, 42119 Wuppertal, Germany.*

hanrahan@eiiw.uni-wuppertal.de *www.eiiw.eu*

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1. Introduction

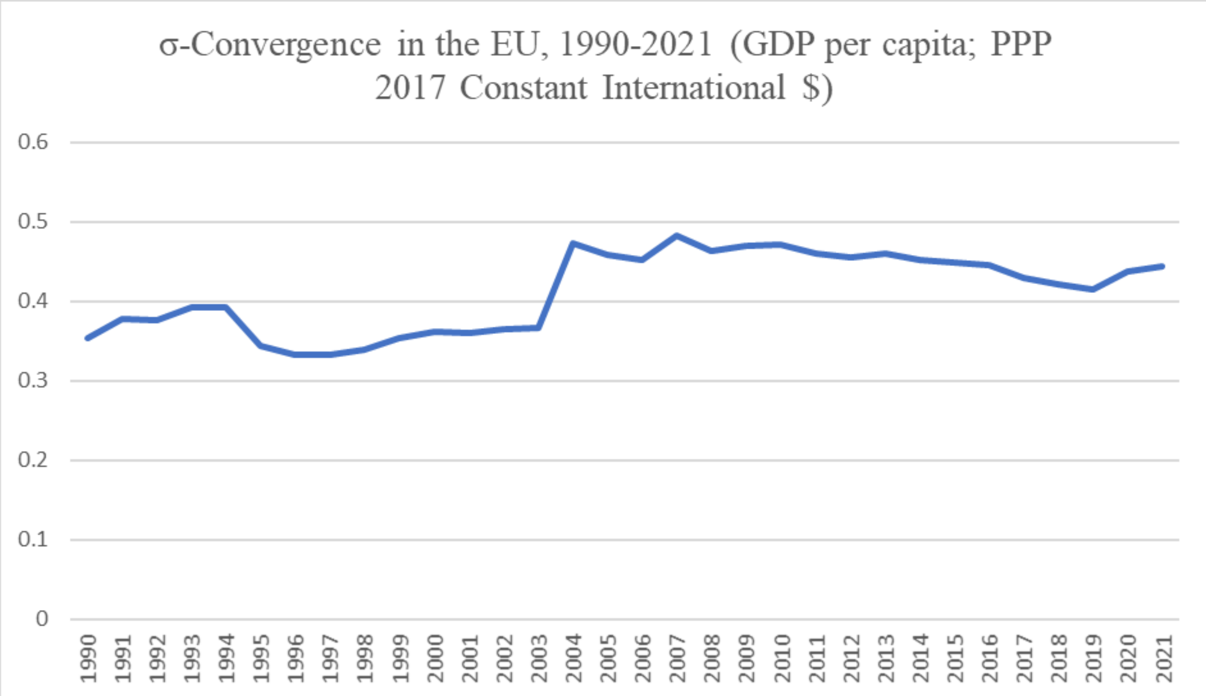
Traditionally, the European Union (EU) has been responsible for and has managed considerable levels of intra-EU income redistribution – mainly under the heading of regional and structural funds. On top of this comes EU redistribution in a national framework, namely for EU countries (namely, the "cohesion countries") in which the per capita Gross National Income is below 90% of the EU average. The goal of such redistribution is to raise per capita income figures in relatively poorer regions, and to decrease the Gross Domestic Product (GDP) per capita gap between the most and least developed regions. Cohesion investments during the 2014-2020 budgetary period resulted in the GDP per capita of less developed regions increasing by up to 5% and the GDP per capita gap between the most and least developed regions decreasing by circa 3.5% by 2023 (European Commission, 2022a).

As regards the efficiency of regional EU redistribution policies, doubts have been raised as to whether most of such activities are indeed efficient, i.e. contributing to an economic catching-up process (Becker, Egger and Ehrlich, 2010); a lack of institutional modernization and the level of skills in recipient regions are major problems with regard to efficient redistribution. One key question with respect to EU redistribution concerns what the main drivers of this redistribution actually are. For example, the per capita income gap between recent EU accession countries and the EU per capita average in purchasing power parity (PPP) terms could be one element which could influence intra-EU redistribution. Thus, debate about redistribution policies, EU competences in fiscal perspective and the framework of EU budgetary mechanisms have frequently arisen prior to enlargements taking place, as it is argued that traditionally policymakers on the one hand are hesitant to grant the EU extended revenue-raising powers (such as the ability to raise taxes directly), while on the other hand are also concerned about the fiscal burden represented by acceding countries, particularly those who would fulfill the criteria of being cohesion countries and thus require significant levels of EU funding and support – diverting spending away from other member states (see Caesar 2001, 2002). Such concerns can lead to political conflicts at an EU level, and as decisions concerning the budget (for the next approximately 7-year period) are reached on a unanimous basis, countries have significant leverage during the negotiations.

Such tensions are likely to persist as long as the countries of the European Union show per capita income gaps, while there is also significant heterogeneity with regard to gross and net EU budget contributions (i.e., gross contributions to the EU budget, off-set by EU spending from the EU budget).

The eastern European enlargements (2004, 2007 and 2013) and the cohesion countries (which included 'older' member states such as Ireland, Spain, Portugal and Greece for many years) are interesting cases in the area of intra-EU income redistribution. As regards the Next Generation EU plan, the EU has created a new approach – crucially with joint funding – for a system of grants (i.e., non-repayable financial supports) and loans (repayable credit facilities) in the context of the Corona pandemic crisis, with a special focus on policies in the areas of the green transition (i.e., climate change and its effects) and digitalization. In the long run, a major challenge with regard to income redistribution could also emerge through an EU enlargement to admit Ukraine. As the EU has an expenditure-GDP ratio of only 1% – transitorily higher if one considers also the Next Generation EU funding – there is rather limited room to maneuver in the field of income redistribution; moreover, BREXIT has exposed critical limits in the willingness of certain EU countries to come up with rather high net contributions on a per capita basis (for more on the debate in the UK on gross versus net contributions, see Welfens, 2017). A brief look at sigma convergence dynamics in per capita GDP across the EU from 1990 to 2021 shows some interest patterns (see Figure 1) whereby a rising indicator reflects divergence, and a falling indicator convergence.

Figure 1: Sigma Convergence in Per Capita Incomes in the EU, 1990-2021 (on the basis of GDP PPP in 2017 Constant International $)



Note: *Member countries are included in the data from the year of accession, i.e. the sample enlarges in 1995 (from 12 to 15), 2004 (15 to 25), 2007 (25 to 27) and 2013 (27 to 28). The UK is included throughout.*
Source: *Own calculations on the basis of data available from the World Bank, World Development Indicators*

One can see from Figure 1 that prior to 1993 and the coming into effect of the EU's Single Market, there was some degree of divergence (rising indicator) between per capita incomes across the then 12 EU member countries. However, with the EU Single Market and the enlargement to admit Sweden, Finland and Austria from January 1, 1995, incomes converged (falling indicator) before a starting to diverge again for almost a decade whereby the introduction of the Euro in 1999 may have slowed the pace of divergence slightly. Significant divergence is visible with the first eastern enlargement in 2004 and again divergence can be seen in 2007 with the accession of Romania and Bulgaria. Having reached a peak in 2007, convergence was again the dominant dynamic until 2020 when the effects of the Coronavirus Pandemic affecting certain countries relatively more than other (e.g., countries with economies strongly dependent on tourism, travel and services such as Italy, Spain, Portugal, Greece). While countries have been included in the sample from the year of accession, one caveat to highlight would be the role of convergence prior to accession as countries sought to meet the Copenhagen criteria of membership of the EU and the Maastricht criteria, related to economic conditions which member states must fulfill prior to adopting the Euro. Further enlargements of the EU to admit lower income countries will lead to increased σ-divergence across the Union.

On June 23rd, 2022, the European Council declared Ukraine to be an official candidate country for EU membership; the main driver behind this move of the European Council was to express solidarity with Ukraine following the invasion launched by Russia in February 2022. Thus, Ukraine has joined several other countries, including e.g. Turkey, Moldova, Albania and Serbia, which enjoy the same status. To be considered for EU membership the country, from an EU perspective, must fulfill the so-called "Copenhagen criteria" which include certain economic and political requirements, including the ability to withstand the adjustment pressure from joining the EU Single Market and to guarantee respect for and the protection of minorities; moreover, the existing EU member states should also be able to absorb the new member country.

As regards Ukraine, it is a country with about 44 million inhabitants (if one includes the population of Crimea, the occupied Donbas regions and those who fled the Russian invasion) which had a higher per capita income as Poland (in PPP figures) in 1991 while the ratio of Poland's per capita income to Ukraine's real per capita income in 2003 – the year prior to EU accession – was roughly 2:1 and in 2021 it was almost 3:1 (see Table 7 and Figure 2 in Appendix 1). Both a systemic transformation and the introduction of institutions compatible with a market economy and a rather adequate monetary and fiscal policy mix as well as (post-2004) EU membership have helped Poland to achieve a rather favorable economic development; not only were Poland's firms becoming part of the EU Single Market as of May 1st, 2004, but Poland and other eastern European accession countries have also benefited from EU regional transfers as well as from the early opportunity for migrant workers to find employment in the United Kingdom, Ireland and Sweden already in 2004 as these three countries - in contrast to Germany, France and Italy plus other high-income EU countries – were the only EU states to allow full, free labor mobility from the very first day of membership of the countries in the eastern enlargement in the context of a rather high labor demand in their countries.

Ukraine has also made some, albeit more modest, economic progress over time as it adopted a step-by-step transformation process and, after 2000, also benefitted from growing trade with the EU plus rising foreign direct investment inflows from OECD countries. When the envisaged EU-Ukraine Association Agreement could not be realized in 2013, the Euromaidan protests erupted in Kyiv erupted in the winter 2013/14 and these ended – after frequent violent clashes between protesters and police - with the pro-Russian Ukrainian President Viktor Yanukovych leaving Ukraine and fleeing to Russia. Opinion polls in Ukraine since 2014 have shown considerable support for EU membership, particularly in the Western parts of Ukraine (see, e.g., Pew Research Center, 2015) – whereby, support has been less obvious in the Donbas region with its majority of Russian-speakers. The Ukrainian parliament changed the country's constitution in 2019 in at least one important respect, namely it indicated a willingness of the Ukrainian people to join the North Atlantic Treaty Organization (whether or not this constitutionally unusual clause was really reflective of a broad political consensus in Ukraine cannot be discussed here).

With the Russian invasion of Ukraine on February 24th, 2022, the European and global security map changed dramatically and as long as there is no stable long run peace between Ukraine and Russia, there could be ongoing warfare in Europe for several years to come. The perspective of EU membership for Ukraine obviously encourages the Ukrainian people as well as the government of Ukraine to resist Russia's military pressure and improves economic and political perspectives of Ukraine for the medium term. As regards the EU27, an enlargement to admit

Ukraine clearly stands for a considerable challenge in economic and political terms where some of the key issues will be addressed subsequently.

Part of the institutional changes in Ukraine between 1991 and 2021 were indicative of progress towards a market economy as was emphasized, for example, by the EBRD (2021); however, the IMF (2021) Article IV report on Ukraine also noted that there still are institutional deficits in several fields, including the legal framework which is important for the scope of market transactions. As regards government institutions and the low remuneration of employees and civil servants in the public sector in Ukraine, there is a structural corruption problem in the country. Interestingly, corruption does not necessarily have a negative impact on foreign direct investment (FDI) flows (Zander, 2022), namely if the difference in corruption between the source country of FDI and the host country of FDI is rather small; however, the level of corruption in host countries in Europe and OECD countries, respectively, has a negative impact on FDI inflows. Hence, if most OECD countries are working on reducing corruption, while corruption remains rather high in Ukraine, this disparity will have a negative impact on FDI inflows and therefore on international technology transfers, capital accumulation and the level of output per capita in Ukraine.

The analysis presented herein places a focus on certain theoretical and institutional aspects of Ukraine’s systemic transformation and economic development (Section 2) as well as basic EU power balance aspects related to the concept of the Banzhaf power index (Section 3); in the latter section, the links between the power of EU member states and grants/loans obtained from the EU’s Resilience and Recovery Fund is discussed from an empirical perspective. The issue of BREXIT as a possible blueprint for further X-EXITs in the context of a future EU-Ukraine enlargement is discussed in Section 4. Finally, suggestions for policy reforms in the EU and for a transition process for new member countries are presented in Section 5. It is indeed interesting to consider the role of the Banzhaf power index in terms of the intra-EU allocation of EU transfers/grants and loans; within a panel data analysis, one gets interesting results. Moreover, it is crucial to consider the potential changes in that power index with regard to existing EU countries in the context of an EU enlargement should Ukraine become a full member.

At the bottom line, there is considerable risk of potential new X-EXIT events in the context of such an EU enlargement whereby the lessons from BREXIT should be carefully considered if one is to avoid any new disintegration events. The necessary reforms in the EU are pointed out on the one hand, on the other hand politico-economic reflections suggest that the implementation of required reforms will be rather difficult, not least in the context of the fast aging of societies in Germany, Italy and Spain after 2025 – with the caveat that strong immigration from Ukraine could slow down societal aging particularly in Germany and Italy, such that anti-EU sentiments could become weakened over time. An EU enlargement to admit Ukraine is finally considered in a scenario perspective with regard to the potential changes in the EU-Russia economic and political relations.

2. Institutional Perspectives on Income Redistribution: Traditional Redistribution Dynamics and the Next Generation EU Fund

Redistribution at an EU level is primarily carried out via the European Union's own budgeting mechanism. Historically, the EU's long-term budgeting plans usually cover timeframes of 5 to 7 years. Recent multi-annual financial programs include the Financial Perspective (2007-2013) and the Multiannual Financial Framework (MFF; 2014-2020). The current Multiannual Financial Framework, is also seven-year framework with lays out the EU's annual budget, with the current MFF covering the period from 2021 to 2027. Previous budgeting periods have earmarked spending and commitments representing approximately 1% of EU GDP. Agreeing a long-term budget has become a greater challenge over time as the EU has increasingly been tasked with acting in new fields and policy areas (Becker, 2019). New responsibilities require increased funding, and achieving a consensus on developing a long-term budgeting framework amongst 27 EU member states is a difficult procedure. Negotiations on the next package begin some years before the next framework period is set to begin. Each MFF package is comprised of two main parts

- Firstly, a regulation on the multiannual financial framework itself, which lays out how much the EU can spend in the next budgetary framework period;
- secondly, an own resources decision – which sets out how the EU can raise necessary revenues.

The process of developing an MFF begins with the European Commission presenting a proposal for the next MFF two to three years before it is due to begin. The General Affairs Council (GAC) – i.e., a meeting of the Council of the European Union composed of the ministers with responsibility for European affairs, or foreign ministers - is the body tasked with preparing what is known as the 'negotiating box' on the basis of the Commission's proposals. The negotiating box identifies specific areas within the proposal which are deemed to be those most likely to require political direction and priority-setting from EU governments. The findings of the General Affairs Council are used to prepare draft conclusions on behalf of the President of the European Council (which is comprised of the heads of state or government of all EU member states) who tables the GAC's findings to the European Council. The European Council, in turn, then exerts political guidance with regard to key areas of the long-term budget, ultimately allowing the European Council to arrive at an agreed position on the MFF. Having agreed the MFF, it is passed into European law by means of a special legislative procedure between the main EU institutions. To pass the Council Regulation on the MFF requires the unanimous consent of the European Council as well as the consent of the European Parliament (whereby the Parliament has the power to approve or reject the Council's position. In turn, the second element of the MFF, the own resources decision, requires a unanimous agreement for adoption in the Council, an opinion from the European Parliament, as well as ratification by every member state according to each state's constitutional requirements before it can enter into force. The MFF stipulates the maximum amount of spending to be undertaken in accordance with the EU budget each year under broad policy area headings, instituting an overall annual ceiling on payment and commitment appropriations.

Negotiations over the proposed MFF are thus often as lengthy, complex and characterized by disagreement between member states. The EU is comprised of states with traditionally want to increase spending, while other states tend to be more fiscally prudent, even frugal. Reaching unanimity between member states with different approaches to domestic and EU spending requires accommodating different priorities, making concessions in some areas and pressing for concessions in others. Here, areas of conflict often emerge between net contributors and net recipients of EU funding.

For the current MFF (2021-2027), the European Commission made its proposal on May 2, 2018 (European Council, 2022). Under the Presidency of Finland, the negotiating box was published in December 2019, with the European Council agreeing to the budget in July 2020 (European Council, 2020). Following political negotiations between the Council and the European Parliament, the Parliament gave its consent to the MFF on 16 December 2020, with the Council passing the regulation on the MFF for 2021-2027 two days later (Council of the European Union, 2020). The negotiations for the MFF 2021-2027 were made even more difficult by two challenges: Firstly, the United Kingdom's decision by referendum in June 2016 to leave the European Union. The UK had been a large contributor – despite its rebate - to the EU budget, meaning an increase in the tensions between countries in relation to (re-)distribution of EU funds. Thus, from mid-2016 to early 2020, a large share of the EU's institutional and political capital was invested in the BREXIT process, while in 2019/2020 the Coronavirus pandemic was high on the agenda.

In the end, agreement was reached and the Council Regulation detailed the extent of the MFF 2021-2027 at a total of €1,074.3 billion in 2018 prices (or about 1.1% of EU27 GDP). Secondly, the economic effects of the Coronavirus (Covid-19) pandemic required a massive spending and investment boost to assist member states to recover from the pandemic. The EU developed the Next Generation EU (NGEU) plan to operate alongside the MFF between 2021 and 2026, with the European Council also adopting the NGEU in December 2020. The NGEU is comprised of non-repayable grants to countries as well as a loan facility totaling €750 billion, meaning the longer term spending by the EU will reach €1.8 trillion (in 2018 figures) in the coming years (or approximately 13% of the EU27 – excluding UK – GDP in 2018).

There are seven main fields under the MFF and NGEU, with allocations to 40 different spending programs in these areas (see Table 1)

Table 1: Breakdown of Spending under the Multiannual Framework and the Next Generation EU fund, 2021-2027

2021-2027 Expenditures under MFF and NGEU (in € billion)					
	Spending area	**% MFF**	**MFF**	**NGEU**	**Total area**
1	Single market, innovation and digital	14.7	132.78	10.60	143.38
2	**Cohesion, resilience and values**	**34.5**	**377.77**	**721.90**	**1,099.67**
3	Natural resources and the environment	29.7	356.37	17.50	373.87
4	Migration and border control	2.7	22.67		22.67
5	Security and defence	2.1	13.19		13.19
6	Neighbourhood and the world	9.6	98.42		98.42
7	European public administration	6.7	73.10		73.10
	Total expenditure	**100.0**	**1,074.30**	**750.00**	**1,824.30**

Source: *Own representation on the basis of 2018 prices; data available from* *https://www.consilium.europa.eu/media/47567/mff-2021-2027_rev.pdf*

As can be seen in Table 1, the largest share of funding (standing for 34.5% of the MFF and 96% of the NGEU) are allocated to Heading 2, namely "Cohesion, resilience and values". The main sub-fields of that spending area (apart from the Recovery and Resilience Facility) are the European Regional Development Fund, the Cohesion Fund, the European Social Fund+, but it also includes spending allocated for measures such as the EU Civil Protection Mechanism (i.e., response to natural disasters etc.), Erasmus+, the European Solidarity Corps amongst others (Sapala, 2021).

The largest regional fund pot is the European Regional Development Fund (ERDF) which is aimed at improving economic, social and territorial cohesion across the EU by addressing imbalances between its regions whereby programs to be funded are chosen by the member states themselves, who are also responsible for administering the funding and managing the projects (European Commission, 2022b). The efficacy of such spending has been called into question in the literature (Becker, Egger and von Ehrlich, 2010). Those authors found that EU regional funds are not always spent in ways which are efficient or which generate positive economic effects. The authors estimate that about half of the EU structural funds invested in the regions show no positive economic effect in the recipient regions. An inflow of funding could even have potential negative effects by inducing corruption or being earmarked for projects which are environmentally damaging (see Welfens, 2015). In order to realize the full benefits of such funding, one can point to the need for an availability of sufficient and appropriate human capital (which may require training/re-training) and a stable institutional setting whereby institutions in recipient regions or countries may require support (including financial support) but also knowledge transfers and the sharing of best practices etc. More recently, Mendez and Bachtler (2022) have also questioned the effectiveness of EU funding, while other challenges also remain in relation to fraud and oligarchic structures (Kowald, 2022). The second large field of EU funding is the Cohesion Fund. Under the Cohesion Fund financial support is provided to those member states of the EU with a gross national income (GNI) per capita below 90% of the EU27 average with the goal of strengthening the economic, social and territorial cohesion of the EU and encouraging catching-up and beta convergence. Under the 2021-2027, the eligible countries for funding under the Cohesion Fund are Bulgaria, Czechia, Estonia, Greece, Croatia, Cyprus, Latvia, Lithuania, Hungary, Malta, Poland, Portugal, Romania, Slovakia and Slovenia. Other funds include funding for agriculture, fisheries, marine and aquaculture, and funds to support a transition to a greener economy and intensify digitalization.

The nature of the budgetary process and the involvement of national governments mean that a certain amount of conflict is to be expected, as member states seek to extract the maximum commitments for their own country and regions, respectively. The relative power between member states is thus crucial to understanding dynamics on the budget and allocation of funds across countries.

3. Banzhaf Power Index Changes in the European Council Post-Enlargement and Intra-EU Redistribution Pressure in an Empirical Perspective

In the European Union, the Lisbon Treaty requires that under qualified majority voting procedures in the European Council – concerning the respective Council of Ministers and the European Council in the form of the heads of states or government – there must be a double majority: At least 55% of member countries representing at least 65% of the EU's population in order to achieve a qualified majority; majority voting is possible in all fields of policy except in relation to tax, foreign policy and military matters. Based on the latter minimum majority criterion of 65% of the population, one can construct the so-called Banzhaf power index which is based on the following idea:

- Each country X with its respective number of votes – under weighted majority voting in the EU – is classified in a way which basically indicates the percentage of all minority coalitions (amongst EU member countries, excluding the country under consideration) in which the joining of the minority coalition by country X transforms the existing coalition in a way that it becomes a majority coalition. Thus, the relative power of, for example, Luxembourg with its small number of votes is rather small while that of Germany or France and some other countries is relatively large; if several small countries would form a stable voting coalition, their combined Banzhaf power index score could also be relatively large.

The Banzhaf power index of an EU member state thus is reflective of how often the vote of that member state is decisive in determining the outcome of qualified majority votes in the European Council by converting a 'losing' or minority coalition to a 'winning' or majority coalition, i.e. how often that particularly member state can change the voting outcome as long as all other votes remain the same (see Kirsch, 2016a, 2016b). A Banzhaf power index of 100% would mean that the respective member state would have complete control over the voting results with a decisive vote every time, while a Banzhaf power index of 0% would indicate that the respective member's vote is never decisive in determining the outcome of the vote.

More formally, one can describe the Banzhaf power index as applicable to the European Council as follows: Firstly, one can consider all groups M of EU member states. Member state P is 'decisive' for M, if by the fact of P belonging to M, the coalition of M have a valid majority to assure an affirmative decision according to the qualified majority voting rules, but they would lose this majority if P would instead vote against the position of M.

The number of coalitions of EU member states for which P is decisive is the (unnormalized) Banzhaf Power b(P). The Banzhaf power index B(P) is the ratio of b(P) and the sum of b(Q) over all member states Q, as can be seen in the following formula:

$$b(P) = \#\{M;\ P \in M,\ M \text{ is winning, but } M \setminus \{P\} \text{ is losing}\}$$

$$B(P) = \frac{b(P)}{\sum b(Q)}$$

The following two tables show at first how the Banzhaf power index has changed through BREXIT (Kirsch, 2016b) and which EU27 countries recorded relatively large gains in power in this case; the second table shows, based on Kirsch (2022), how power positions of EU countries would change in the case of an EU enlargement to admit Ukraine – assuming that majority voting requirements would not change.

The main findings from BREXIT with respect to power changes is that Germany and France are among the winning countries, but the largest relative power changes in percentage terms benefit Poland and Spain. One possible implication of this finding is that in large EU budget negotiations, the positions for these two countries should be particularly favorable. The EU's Next Generation EU Recovery and Resilience Facility which consists of non-repayable grants and repayable loans to individual member countries as a means to help them overcoming the Corona economic crisis is a welcome testing ground for the relevance of the Banzhaf power index.

As regards the Banzhaf power index post-BREXIT, the following Table 2 (Kirsch, 2016b) has to be considered:

Table 2: Banzhaf Power Index Before and After BREXIT; Countries Ranked by Relative Change in Index

	EU with UK; Population	Banzhaf Power Index	EU without UK; Population	Banzhaf Power Index	Relative Change
Poland	7.50%	5.10%	8.60%	6.60%	28.80%
Spain	9.20%	6.20%	10.50%	7.70%	23.30%
France	13.00%	8.40%	14.90%	9.90%	18.00%
Italy	12.00%	7.90%	13.70%	9.20%	17.10%
Germany	15.90%	10.20%	18.30%	11.90%	16.60%
Romania	3.90%	3.80%	4.50%	4.00%	5.70%
Netherlands	3.30%	3.50%	3.80%	3.70%	5.60%
Belgium	2.20%	2.90%	2.50%	3.00%	4.00%
Greece	2.20%	2.90%	2.50%	3.00%	3.90%
Czechia	2.10%	2.80%	2.40%	2.90%	3.70%
Portugal	2.10%	2.80%	2.40%	2.90%	3.60%
Hungary	1.90%	2.80%	2.20%	2.90%	3.40%
Sweden	1.90%	2.70%	2.20%	2.80%	3.30%
Austria	1.70%	2.60%	1.90%	2.70%	2.70%

Bulgaria	1.40%	2.50%	1.60%	2.50%	1.90%
Denmark	1.10%	2.30%	1.30%	2.30%	0.80%
Finland	1.10%	2.30%	1.20%	2.30%	0.70%
Slovakia	1.10%	2.30%	1.20%	2.30%	0.60%
Ireland	0.90%	2.20%	1.00%	2.20%	0.00%
Croatia	0.80%	2.20%	1.00%	2.20%	-0.30%
Lithuania	0.60%	2.00%	0.70%	2.00%	-1.50%
Slovenia	0.40%	2.00%	0.50%	1.90%	-2.40%
Latvia	0.40%	2.00%	0.50%	1.90%	-2.40%
Estonia	0.30%	1.90%	0.30%	1.80%	-3.20%
Cyprus	0.20%	1.80%	0.20%	1.80%	-3.80%
Luxembourg	0.10%	1.80%	0.10%	1.70%	-4.10%
Malta	0.10%	1.80%	0.10%	1.70%	-4.30%
United Kingdom	12.70%	8.30%			

***Source**: Own representation of Kirsch (2016b) Tables 1 and 2, pages 3 and 4, CEPS Paper https://www.ceps.eu/ceps-publications/brexit-and-distribution-power-council-eu/*

The hypothesis tested subsequently, using a cross country regression analysis approach, is that the ratio of grants to loans obtained should be positively influenced by the Corona infection index, negatively by the relative ratio of per capita GDP to the EU average (all in purchasing power parity figures) and positively by the size of the Banzhaf Index; the latter influence suggests that countries with higher intra-EU political power can influence respective EU partner countries to gain support for a relatively favorable distribution of EU funds. In reality, the disbursements of grants and loans from the EU Recovery and Resilience Facility will be realized over several years, but the empirical approach in equation (1) indeed looks at the cumulated EU grants and loans (using the hypothetical maximum loan amount) for EU member countries; while both the European Parliament and the European Commission have to give a green light for the allocation of funds from the EU Recovery and Resilience Fund, the final green light necessary has to come from the European Council, i.e., the summit of the heads of government or state of EU member countries, respectively. The larger the post-BREXIT Banzhaf power index rating is, the higher should be the ratio of EU grants/EU loans in the EU's RRF of roughly €725 billion which will have to be financed by the EU and which should also be repaid by the European Union in the long run.

One could also consider the alternative hypothesis for the endogenous variable (grants plus loans in the RRF)/GDP of member country where the exogenous variables for the EU27 countries are the same as in the first equation. Finally, the same set of exogenous variables could be used to explain the ratio of EU funding (e.g., regional and cohesion funds) obtained by the member country to the respective country's GDP.

The results are summarized for the EU27 countries in the following statistics and regression tables (summary statistics and correlations shown subsequently).

Table 3: Summary statistics and correlation matrix

	Variable	Obs	Mean	Std. Dev.	(1)	(2)	(3)	(4)	(5)	(6)
(1)	Grants to loans ratio	27	0.55	0.45	1.000					
(2)	EU funds as % 2019 GDP	27	12.74	10.5	0.821*	1.000				
(3)	per capita GDP to the EU average GDP	27	1.05	0.43	-0.706*	-0.706*	1.000			
(4)	Banzhaf index (%) incl. the UK	27	3.70	2.78	-0.110	-0.280	-0.040	1.000		
(5)	Banzhaf index (%) excl. the UK	27	3.40	2.22	-0.120	-0.280	-0.030	0.997*	1.000	
(6)	Corona indicator	27	2080.28	1033.45	0.591*	0.708*	-0.508*	-0.030	-0.030	1.000

In the subsequent analysis, the following set of variables is used where the first two variables are the respective endogenous variables considered. The standard expected sign of the regression parameter for the exogenous variables are indicated in the last column. To the best of our knowledge, the subsequent regressions are the first to explain the endogenous variables indicated.

Table 4: List of selected variables

Variables	Abbreviation	Description	Source	Expected sign
Grants to loans ratio	rt_gra_loa	2020 Ratio Grant/Max Loan	Own calculations based on data available from the European Commission	
EU funds as % 2019 GDP	pc_eu_fund gdp	EU fund as percentage rate of 2019 EU GDP	Own calculations based on data available from the European Commission	
Corona indicator	total_deaths_per_million	2021 Covid fatality rate	OWID	+
per capita GDP to the EU average GDP	rt_gdppc_euavg	2019 per capita GDP / Avg EU GDP (PPP)	World Bank, World Development Indicators	-
The size of the Banzhaf Index per country	banzhaf_index		Kirsch (2016b)	+

The EU fund variable is the sum of EU funding in the next budgetary period (i.e., under the MFF 2021-2017) on a per country basis under the following headings:

- European Agricultural Guarantee Fund

- European Agricultural Fund for Rural Development (EAFRD)
- European Regional Development Fund (ERDF)
- Cohesion Fund
- European Territorial Cooperation (Interreg)
- European Maritime, Fisheries and Aquaculture Fund
- Just Transition Fund
- Recovery Assistance for Cohesion and the Territories of Europe (REACT)

all expressed as % 2019 EU GDP.

The following regression results in Table 5 consider different specifications for explaining a) the grant to loan ratio in the context of the Next Generation EU program which was largely designed to help countries affected relatively strongly by the Corona pandemic shock; b) as an additional dependent variable, we consider intra-EU transfers (mostly regional and structural funds for EU member countries, but also payments for the agricultural sector and some other items) for the new budgetary period of 2021-27.

Given the economic approach of the EU to help relatively poorer EU member countries in their respective catching-up process, it is straightforward to assume that the relative per capita income or per capita GDP – in purchasing power parity figures – will have a negative effect on the grant to loan ratio: Countries with a high per capita income ratio require less non-repayable grants and soft EU financing, respectively, than countries with a lower per capita income.

The Corona-related deaths per million is taken here as a broader health shock indicator (not much different in some countries to the relative Corona mortality indicator); the indicator is used as a proxy for the Corona health shock. The basic idea of EU solidarity could mean that EU countries and the EU, respectively, are willing to support countries facing high mortality ratios which stand for individual, social and economic shocks to the respective countries.

As regards the Banzhaf Index, it is not clear whether or not this index is indeed relevant since one has to point out that qualified majority voting in the European Council is very rarely used, however even in cases where unanimity is required, the relative power of countries is likely to play a role in reaching consensus. Looking at the Banzhaf Index two variants are considered here, namely the Banzhaf Index with the UK and without the UK (post-BREXIT). The negotiations on the Next Generation EU fund took place in an institutional setting where the UK still was an EU member country, but given the outcome of the 2016 referendum all governments were most likely already anticipating that the UK would leave in the near future so that the post-BREXIT Banzhaf index seems to be an adequate (or preferred) as an independent variable potentially explaining the grants to loan ratio of EU27 countries according to the power logic that a higher Banzhaf Index should be reflected in a more favorable grants to loan ratio. As regards the dependent variable, namely the grants to loan ratio, there could be a problem with respect to the loans which could be obtained by EU member countries from the EU; for countries with a very favorable credit rating, the choice to indeed request an EU loan is rather unattractive since the financing costs would be higher than in the case that the respective EU member country takes up the loan in the capital market directly. The explanation that the Banzhaf Index – in both versions (pre-BREXIT and post-BREXIT) is not significant – suggests that the political relevance of weighted voting in the European Council is not as important as many observers may think.

As regards per capita intra-EU transfers, the ratio of GDP per capita in PPP terms of the recipient country (relative to the EU average) is highly significant and has a negative sign as one would expect from a theoretical perspective. The total death rate per million is positive which reflects the mortality resulting from the Corona pandemic: It seems that there is a kind of an intra-EU echo effect of the redistribution of EU funds, namely that the ordinary EU budget negotiations in Brussels (between the European Commission and EU member countries) – certainly taking place in 2020 under the impression of the Corona shock – have brought a kind of Corona bonus element for decisions about the allocation of regional and structural funds. The Banzhaf Index is highly significant, but negative. This is a political paradox and suggests that the smaller EU countries which have a considerable Banzhaf Index score and political power, respectively, so far are unwilling or unable to exploit their relative power in way which would translate political decision-making power in the European Council into an economic advantage. This hypothesis is in line with the finding for the US that income redistribution among US states is relatively larger (as a percentage of states which are in a net recipient position) than in the EU (in 2018, 10 of 28 EU member states were net contributors (36%; European Commission, 2022c), while the same year in the US only 9 US states paid more to the federal budget than they received from it (18%; Rockefeller Institute of Government, 2022)).

At the bottom line, the empirical analysis presented is an important contribution to the debate about intra-EU redistribution and EU solidarity; and one gets new insights on the role of the Banzhaf Index and the new "Banzhaf lack of power paradox in the EU." R-squared statistics are quite satisfactory and are in the range of 0.59 to 0.75, where the intra-EU redistribution's R-squared is higher than the approach for explaining the grants-loan ratio.

Table 5: Regression results on grant-loan ratios for EU countries and traditional intra-EU redistribution (Corona shock period vs. normal EU budget period 2021-27)

Variables	**(1)** **rt_gra_loa**	**(2)** **rt_gra_loa**	**(3)** **pc_eu_fund_gdp**	**(4)** **pc_eu_fund_gdp**
rt_gdppc_euavg	-0.5780**	-0.5772**	-11.9214***	-11.8625***
	(0.2166)	(0.2152)	(3.8518)	(3.8043)
banzhaf_index_in_uk	-0.0203		-1.0612***	
	(0.0135)		(0.2807)	
total_deaths_per_million	0.0001*	0.0001*	0.0046***	0.0046***
	(0.0001)	(0.0001)	(0.0010)	(0.0010)
banzhaf_index_ex_uk		-0.0267		-1.3511***
		(0.0158)		(0.3586)
Constant	0.9558***	0.9704***	19.5920***	20.1705***
	(0.3279)	(0.3259)	(5.4624)	(5.4389)
Observations	27	27	27	27
R-squared	0.5873	0.5889	0.7420	0.7446

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

In the case of an EU-Ukraine enlargement, the Banzhaf power index would change in accordance with the following table (Kirsch, 2022):

Table 6: Banzhaf Power Index for EU Countries in the Case of Ukrainian EU Membership; Countries Ranked by Banzhaf Power Index (BI) in an EU28 (EU27 plus Ukraine)

Country	Pop. (mio.)	BI: EU27	BI: EU27+UA	Rel. Diff.
Germany	83.2	12.09%	10.83%	-10.41%
France	67.7	10.08%	8.89%	-11.80%
Italy	59.2	8.88%	7.83%	-11.86%
Spain	47.4	7.66%	6.65%	-13.29%
Ukraine*	***41.4***		***5.96%***	
Poland	37.8	6.41%	5.54%	-13.55%
Romania	19.2	3.95%	3.73%	-5.49%
Netherlands	17.5	3.75%	3.56%	-5.11%
Belgium	11.6	3.05%	2.95%	-3.35%
Czechia	10.70	2.95%	2.86%	-3.01%
Greece	10.68	2.95%	2.86%	-3.00%
Sweden	10.4	2.91%	2.83%	-2.88%
Portugal	10.3	2.90%	2.82%	-2.84%
Hungary	9.7	2.83%	2.76%	-2.59%
Austria	8.9	2.74%	2.68%	-2.23%
Bulgaria	6.9	2.50%	2.47%	-1.12%
Denmark	5.8	2.37%	2.36%	-0.43%
Finland	5.53	2.33%	2.33%	-0.24%
Slovakia	5.46	2.32%	2.32%	-0.18%
Ireland	5.0	2.27%	2.27%	0.13%
Croatia	4.0	2.15%	2.17%	0.86%
Lithuania	2.8	2.00%	2.04%	1.98%
Slovenia	2.1	1.92%	1.97%	2.69%
Latvia	1.9	1.90%	1.95%	2.92%
Estonia	1.3	1.83%	1.89%	3.54%
Cyprus	0.90	1.77%	1.85%	4.06%
Luxembourg	0.63	1.74%	1.82%	4.39%
Malta	0.53	1.73%	1.81%	4.55%
Decision probability		13.2%	11.36%	

Note*: Population figure for Ukraine is on the basis of Eurostat data with has removed the population figures for Crimea and the occupied territories in the Donbas region, lowering Ukraine's overall population by approx. 2.6 million.*
Source*: Own representation on the basis of Kirsch (2022), Table 1*

If the EU28 – read the EU27 plus Ukraine – would not change the required minimum conditions for a qualified majority vote at the European Council, the relatively largest losers of political power in the enlarged EU (which again would have as many countries in this hypothetical context as prior to BREXIT) would be Poland, Spain, Italy and France as Table 6 shows. Accordingly, those countries stand to expect the largest reductions in regional EU transfers and it is not fully clear that eastern European EU countries in particular would accept such a redistribution of EU funding; a similar logic would apply in the case that the EU would create - under specific circumstances of a serious economic or health shock (e.g., pandemic) another similar Recovery and Resilience Fund. It should be emphasized here that a new EU28 – with

Ukraine as the newest member country – would not restore the old EU28 (prior to BREXIT) in any way, since Ukraine is a country with only a bit more than half of the UK's population while Ukraine's per capita income in PPP figures in 2016 were as low as a quarter of the per capita income in the UK that year.

If one would want to mitigate the potential loss of EU funding for most eastern EU countries, the main absolute and relative contributors to the EU budget would obviously be expected to increase their annual contributions to the EU28+ (EU27 plus Ukraine - plus other new countries accepted as EU member countries). This will hardly be possible unless one would want to accept a considerable increase of voting shares from extremist (mostly right-wing) parties at national elections in EU27 member countries. Under such circumstances, there would be a considerable risk that the next X-EXIT from the EU would happen; if France, Italy or Germany would leave the European Union, this would probably stand for the end of the EU as an integration project so that one might then say that Putin would ultimately have achieved one of his implicit political goals, namely to destroy the EU. Thus, the EU-Ukraine enlargement could destabilize the European Union in a dangerous way and Europe might then move back to a situation of political rivalries after the EU disintegration reminiscent of those that were observed between the leading powers in Europe in the late 19th century.

To avoid such a situation, it would be necessary to change the Treaty of Lisbon and to raise the required minimum for a majority of votes in the European Council in such a way so that post-Ukraine enlargement of the EU, the Banzhaf power index would be roughly the same for the EU27 countries as before the enlargement. Such a solution would in turn imply that Ukraine would obtain a lower share from the EU budget in the year of membership in the EU than, for example Poland – with a comparable – population number had obtained in 2005. A compromise could be that the EU27 countries prior to enlargement would allocate a special fund for the reconstruction of Ukraine after peace has been concluded and Ukraine would accept the position of having rather low EU transfers which in turn might slow-down real convergence amongst EU28 member countries; therefore, one would also have to expect a relatively high immigration of Ukrainian workers over a rather long period (after the EU enlargement; on some general key EU convergence aspects see Crespo Cuaresma, Ritzberger-Grünwald and Silgoner, 2008; Strielkowski and Höschle, 2016; Borsi and Metiu, 2015). There are two more points that have to be taken into account as a lesson from BREXIT which will be covered in the next section.

4. Economic and Institutional Perspectives of a Ukraine-Enlargement of the EU

The economic growth rate of Ukraine in 1990-2021 has been much lower than in Poland which has a similar population to Ukraine (see Table 7). Over the period, Ukraine has indeed achieved some measure of macroeconomic progress, such as maintaining low inflation rates and seeing a decline of the deficit-GDP ratio. In 2022, the year of the major Russian invasion, the deficit-GDP ratio has, of course, strongly increased and real GDP has strongly contracted as the IMF World Economic Outlook – in the July 2022 update – have shown (IMF, 2022). The number of refugees, mainly comprising of women, children and the elderly, has strongly increased in the first half year of 2022 where a large share of Ukrainian refugees have also effectively been migrant workers to certain EU countries. Several years before the Russo-Ukrainian war, Poland had already absorbed more than one million migrant workers who have made a considerable contribution to Polish output growth in the period 2013-2018 (Strzelecki, Growiec and Wyszynski, 2022). The authors found that an influx of Ukrainian workers into Poland was increased the effective labor supply over the period between 2013–2018 by 0.8% per annum. Imputing this additional labor supply in a growth accounting model, the authors also found that the contribution (which had previously been unaccounted for) of Ukrainian migrants/workers in Poland amounted to about 0.5 percentage points per annum, or circa 13% of Poland's GDP growth over the period of 2013–2018.

Table 7: Real GDP Per Capita in Ukraine, Poland, Czechia, Slovakia, Germany, Italy and France; PPP in Constant 2017 International $, ranked according to highest to lowest in 2021

	1990	1995	2000	2005	2010	2015	2020	2021
Germany	36,699.48	39,366.09	42,928.18	43,949.29	46,999.24	51,159.30	51,423.24	52,930.81
France	33,732.01	35,177.66	39,732.28	41,643.99	42,147.67	43,345.79	42,320.52	45,187.45
Italy	36,585.68	38,947.20	43,053.93	44,260.83	42,664.36	40,247.83	39,071.02	41,937.21
Czechia	23,585.18	22,758.60	24,976.51	30,384.45	33,483.14	36,168.42	38,511.27	39,777.79
Poland	11,314.96	12,459.67	16,257.65	18,937.48	23,996.14	27,797.06	32,398.70	34,363.02
Slovakia		13,254.53	15,666.54	20,079.91	25,528.75	28,719.86	30,509.77	31,498.13
Ukraine	16,428.48	7,906.96	7,496.81	11,319.51	12,221.44	11,216.12	12,407.79	12,943.61
Ratio Poland/ Ukraine	**0.69**	**1.58**	**2.17**	**1.67**	**1.96**	**2.49**	**2.61**	**2.65**

Source: Own representation based on data available from the World Bank https://data.worldbank.org/indicator/NY.GDP.PCAP.PP.KD?end=2021&start=1990 (accessed 20.09.2022)

The breakdown of EU recipient countries with respect to refugees from Ukraine in the first half of 2022 is quite interesting since a certain share of those refugees can be expected to effectively become immigrant workers in those respective EU host countries (see Table 8). There is, of course, a difference between refugees and migrant workers. However, a comprehensive analysis for the case of the US – with a focus of refugees and immigration from many countries, respectively – has shown that refugees have some similarity to immigrant workers (Cortes, 2004): With some delay the per capita income has almost matched that of 'regular' immigrant workers. It seems that one of the relevant factors for the delay is related to the rather long time refugees require to learn the language of the host country.

Table 8: Selected Recipient Countries' Absorption of Ukrainian Refugees on 13 September 2022 (recorded by UNHCR)

Poland	1,379,470
Germany	1,003,029
Czechia	431,462
Italy	159,968
Türkiye	145,000
Spain	141,486
United Kingdom	122,900
France	101,369
Slovakia	93,384
Moldova	90,745
Romania	81,158
Hungary	29,170

Source: 'Refugees from Ukraine recorded in country' on September 13th, 2022, data available from https://data.unhcr.org/en/situations/ukraine (accessed 20.09.2022)

One explanation for the emigration of Ukrainian workers to Poland and other countries before 2022 was related to the rather low relative per capita income in Ukraine (in PPP terms) compared to EU countries and Russia plus some other countries. The relatively low per capita income of Ukraine – particularly compared to Poland and other eastern European EU accession countries – as well as to Germany, Italy and France (to include a few important Western EU destination countries as well) – has several causes.

- The rather slow institutional modernization towards a modern market economy with an effective competition policy plus broad and deep financial markets and privatized banks.
- The strong role of oligarchs in the economy – albeit playing a somewhat smaller role than in Russia – implied that there could be a crucial role of massive lobbying by a select few firms in key sectors; one particular risk from an economic perspective in certain sectors (e.g., telecommunications, electricity or banking) was regulatory capture: That is, the major players in the respective sector could effectively lobby for rules adopted by the government which would facilitate those big firms to achieve high rates of return on equity and which would make market entry rather difficult for challengers. Hence innovation dynamics in certain sectors could remain rather weak.
- Corruption in the institutional setting of Ukraine was a significant problem from the early 1990s to 2021, even though the World Bank, the European Bank for Reconstruction and Development (EBRD) and the International Monetary Fund (IMF) as well as the EU and in particular Germany (see, e.g., IMF, 2015; Olearchyk, 2018; Williams and Polityuk, 2020) have tried to help the Ukrainian government and the Ukrainian parliament to introduce new laws and strengthen institutions which would reduce corruption strongly in the long run.

As regards statistics on corruption in a comparative international perspective, Transparency International (2021) has indicated that Ukraine has been facing serious corruption problems – with the indicator value in 2021 (see Tab. 9) close to the weak position of Russia – and one may add that part of the corruption situation is linked to the rather strong role of oligarchs in Ukraine.

Table 9: Corruption Perception Index, 1995, 2000, 2005, 2010, 2015, 2020

Country / Territory	Rank 1995	Rank 2000	Rank 2005	Rank 2010	Rank 2015	Rank 2020
Germany	13	17	16	15	11	9
Japan	20	23	21	17	18	19
France	18	21	18	25	23	23
USA	15	14	17	22	16	25
Poland	N/A	43	70	45	29	45
Italy	33	39	40	69	61	52
South Africa	21	34	46	56	61	69
China	40	63	78	78	83	78
India	35	69	88	91	76	86
Indonesia	41	85	137	116	88	102
Ukraine	N/A	87	107	146	130	117
Russia	N/A	82	126	154	119	129
No. of countries surveyed	41	90	159	178	168	180

***Note**: The rankings shown here, are the relative ranking of each country in relation to the total number of countries surveyed in each year, i.e. in 1995 Germany ranked 13th out of the 41 countries included in the same, in 2020 Germany ranked 9th out of 180 countries included in the sample. Ranking are based on the indicator scores per year, with a higher ranking (i.e. higher score) indicating higher transparency and lower levels of perceived corruption, and a lower ranking (and thus score) indicating lower transparency and higher levels of perceived corruption.*
***Source**: Own representation of data available from Transparency International Corruption Perceptions Index, 1995-2020; https://www.transparency.org/en/cpi/2021*

It is rather unclear how Ukraine could overcome the massive problems involving corruption rather quickly. During wartime, corruption could indeed even increase for various reasons – not least as many people - men, women and children - want to flee from Ukraine; men below the age of 60 are expected not to leave the country, rather they should be available to fight against Russia (there are exceptions for members of the clergy of various religious communities who could obtain permission under certain circumstances to leave the country). Once the war has ended, there will be several hundred billion euro which will have to be invested in reconstruction of the country (Becker et al., 2022). In such a situation, and possibly also in a macro setting of high inflation and high taxation plus new regulations, the incentives for an expansion of the shadow economy and of corruption are likely to be considerable.

Given the enormous level of industrial assets which were owned by the new Ukraine after it became independent in 1991, one should indeed expect that quasi-rents from different uses of privatized assets vary considerably so that there is a strong pressure for corruption. Moreover, the strong role of the shadow economy in newly independent Ukraine and in other post-socialist countries (see Schneider, 2022) is a crucial challenge in many post-socialist countries. The shadow economy could also be a strong driver of corruption since suppliers in the shadow economy are sharing part of their respective profits with civil servants in the government bureaucracy and police personnel who could - in principle - prevent much of the illegal activity in the shadow economy if they really wanted to.

As regards the institutional adjustment requirements for Ukraine to be able to join the EU, there are typically 35 chapters or fields of negotiation which a new prospective member country has to consider – with certain EU standard requirements to be fulfilled. However, the Association Agreement between Ukraine and the EU established prior to the 2022 invasion required institutional modernization in at least some of the critical fields already so that in the context of future EU-Ukraine accession negotiations some chapters may be expected to be finalized rather quickly (as the Association Agreement already covers significant parts of the EU's *acquis communitaire*, see Lippert, 2022). It is not excluded that at some point Ukraine and Russia could find a lasting peace agreement, possibly with the result of a divided Ukraine – with the Crimea and parts of the Donbas region effectively being controlled by Russia; this would be a similar predicament to some extent to that which faced the Federal Republic of Germany after the Second World War; until the reunification in 1989 brought about a new situation in which the former socialist German Democratic Republic (controlled by the Soviet Union in 1949-1989) joined the Federal Republic of Germany.

Thus, Ukraine could in principle join the EU – somewhat similar to the Federal Republic of Germany creating/joining the EU (beginning with the European Coal and Steel Community) along with the other founding member countries, France, Italy, the Netherlands, Belgium and Luxembourg in 1957. The setting in the second decade of the 21st century is more demanding since the EU is characterized by the EU Single Market which took effect on January 1st, 1993 and the Lisbon Treaty, of course, is also more complex than the founding texts of European integration in 1957. Finally, in 2016, the EU28 experienced a kind of political set-back in the British EU referendum when a rather small majority of 52% in favor of BREXIT (compared to 48% for Remain) gave the signal for the UK to leave the European Union after more than 40 years of membership.

One of the key challenges facing the EU, in order to avoid another BREXIT-type scenario in the case of an EU enlargement to admit Ukraine, is for the accession and transition regimes to be drafted very carefully - namely in such a way as to represent a clear framework geared at avoiding the next X-EXIT in the EU27 after Ukraine has joined the European Union. This, in turn, requires a clear understanding of the reasons which were the main drivers of BREXIT; and the EU and its member countries would have to draw adequate conclusions for a consistent reform agenda which would be a step towards a framework which could help to avoid the next X-EXIT. The following points indicate certain crucial points of BREXIT without going into much detail – the interested reader is referred here indeed to the second edition of An Accidental BREXIT (Welfens, 2022b).

5. New X-EXIT Risks in the Context of an EU Enlargement

So far it has been emphasized that a further EU eastern enlargement to admit Ukraine as a full member of the EU could bring about a potential special financial stress situation for the EU27 and could even contribute to another case of BREXIT in the EU28 (post-enlargement). There are, however, more aspects to be considered in this context – some of which are indeed related to BREXIT dynamics. One key driver of the BREXIT majority in the British EU referendum of 2016 was the issue of "excessive EU immigration". The UK had decided not to impose any restrictions on the free movement of labor from eastern European accession countries during a transition period; between 2004 und 2008 up to 50% of emigrant workers from these countries went to the United Kingdom, which initially did not present a major political problem. However, with the serious recession in the UK – in the context of the 2007/08 Transatlantic Banking Crisis – the interest of the British government in receiving more immigrants from the EU27 countries diminished strongly. Prime Minister David Cameron pointed out in numerous speeches that the UK had become a favored destination country for many immigrants who thus become (under the heading of EU immigrants) a scapegoat for many of the economic and social problems becoming visible in the United Kingdom. The UK recession of 2009/10 – with budget deficit ratios around 12% even until 2011 – brought enormous pressure on the Cameron government to cut the deficit-GDP ratio through changes in government policy.

A key problem in the 2016 British EU referendum as perceived by voters supporting leave were the enormous budget cuts under the Cameron governments particularly over the period from 2010-2015 when cuts in national transfers to local authorities reached a cumulated 5% of UK's gross domestic product; thus an under-provision of local and regional services occurred – with local budget cuts of over 20% in the county of Oxfordshire (Hudspeth, 2015; Welfens, 2022b) – and dissatisfied British voters asked themselves who was to blamed? The simplistic answer was not in line with the basic economic insight that the high deficit-GDP ratio of the UK, slightly above 10% in 2009 – being the result of the Transatlantic Banking Crisis and the underlying excessive deregulation in the US (less so in the UK) – had to be reduced in line with the Conservative Party's own manifesto, rather British voters were repeatedly told that there were too many EU immigrants - which in turn was an answer emphasized with respect to many problems in speeches of the Prime Minister David Cameron himself and many other leading politicians (Welfens, 2017; 2022b).

Thus, immigration as well as the financing problems faced by the National Health Service became a major topic in the British EU referendum, as well as cuts to social welfare and other services at the local and regional level (Fetzer, 2019). A part of the perceived excessive EU immigration pressure in the UK was obviously linked to the UK's decision to implement no transition period for labor immigration from the first wave of EU eastern enlargement in 2004 and the subsequent Transatlantic Banking Crisis of 2008/09 with the associated strong recession in 2009/10 in the UK. In that recession, there was clearly no need for further immigration in a tight UK labor market, but with the exception of the UK, Sweden and Ireland, all other EU countries had opted for a transition period regarding free labor movements from EU eastern accession countries of 2004. The concentration of eastern European immigrants on the UK after 2008/09 continued for several years while anti-EU immigrant sentiments continued to grow; UKIP (the United Kingdom Independence Party), an anti-EU party, increased its voting share strongly and even became the largest British party in the European Parliament elections of 2014.

In principle, a similar problem could emerge in the case of an EU-Ukraine enlargement if transition rules for labor mobility would not be changed through reforms in the EU and in EU countries in an adequate way (Welfens, 2022a):

- One key reform option would be for countries with no or rather short transition periods concerning full labor market mobility for workers from new member countries to have the right to use a new ‘escape clause’ which would allow them to limit immigration numbers from EU partner countries to less than a quarter of the average of the previous three years.
- Such an escape clause should be a policy option for recipient countries until all EU countries – or maybe at least 90% of the “old” group of EU countries – had fully liberalized their labor markets with respect to free migration. The main idea here is to avoid a strong concentration of emigration from new member countries to just one or two destination countries in the EU which could destabilize the EU.

Analysis of the British EU referendum votes have shown (British Election Study, 2017) that those who voted in favor of BREXIT to a large extent were also people who have the impression that they have little control over their own respective lives. From this perspective, “taking back control” – by shifting power from Brussels back to the British Parliament and the British government via BREXIT may have been an attractive slogan to that group of voters: One may still think that one has little influence over one’s own life, but the political influence over national government via national elections could bring at least indirectly a feeling of greater power and influence to that voter group – compared to the political indirect influence one seems to have via the EU institutions in Brussels whose decision-making processes are often difficult to understand. Thus, the question of how much influence one has - directly or indirectly (via political channels) - is also likely to be quite relevant when one takes a second look at the well-known finding that a clear majority of elderly voters also voted for BREXIT.

As people grow older, and ultimately become pensioners, their self-perception often will switch to a feeling of having less and less control over one’s own life which reflects age-related health problems as well as the fact that one is no longer active in professional life which normally gives some opportunities for “voice” (to pick up one of Albert Hirschman’s three reaction options of individuals: Exit, voice and loyalty (Hirschman, 1970)). With the ongoing aging of societies in many EU countries, above all in Italy, Germany and Spain after 2025, there is likely a natural tendency for more anti-EU voting in the future and also for more populist and nationalist voting patterns in future national and EU elections. In such a new setting in the EU27, an EU-Ukraine enlargement could destabilize the European Union in a decisive way.

Since no serious critical discussion about the dynamics in the run-up to the British EU referendum and BREXIT, respectively, seems to have taken place in the EU27 in the period 2016-2022, it could be rather difficult to convince politicians in Brussels to adopt such important reforms. Without such reforms, however, an EU-Ukraine enlargement would bring a high risk of the next X-EXIT in the EU28+; Ukraine is a relatively large economy with a population of over 40 million people and one would have to indeed anticipate high emigration numbers from Ukraine after an EU enlargement and liberalization of labor movement for workers from Ukraine.

6. Required Reforms in the European Union and Perspectives on Ukraine and Russia

Based on the above analysis, one may present several conclusions which basically point to the necessary reforms at an EU level – read in the Lisbon Treaty – and at the policy layer of EU member countries. An EU-Ukraine enlargement stands for considerable political risks at both the EU and the national policy layer of EU27 countries. The EU might have some economic and political gains in the long run as would Ukraine from an EU enlargement, but this should be only expected if three serious reforms would be adopted:

- The financial benefits from EU membership for Ukraine should be smaller – relative to GDP - than for countries of the eastern EU enlargement rounds I (ten countries in 2004) and II (Bulgaria and Romania in 2007), as otherwise the implied increase of EU contributions by major net contributing countries such as Germany, Sweden, France, Italy and the Netherlands might be reflected in an increased share of anti-EU voters in a post-enlargement setting: Populism and political radicalism within the EU could increase strongly in the long run. Ukraine might complain that such a financial regime would be unfair, but it is also clear that Ukraine cannot gain much if its accession to the EU would undermine the European Union's own political stability in a critical way. It is the responsibility of political leaders in the EU to adopt a basic decision for such a reduced economic benefit for Ukraine – e.g., in terms of regional EU transfers and other EU transfer payments – before the latter joins the European Union. This does not rule out that the EBRD could support the institutional transformation process in Ukraine relatively more than it did with respect to the post-socialist transformation of Poland, for example.
- For the EU27 countries to avoid a rather strong loss of political power in terms of the Banzhaf power index after an EU-Ukraine enlargement, it would be important to raise the minimum level of majority requirements as regards the share of the EU population represented in a majority political coalition of countries at the European Council; e.g., instead of 65% as a minimum for the population represented, a raised minimum of 75% might be adequate. Such a change would also imply that post-enlargement, the relative power of EU27 countries would not decline much.
- As regards the issue of free labor mobility after an EU enlargement to admit Ukraine, a transition period of about a decade for workers from Ukraine should be the default rule for all EU27 countries; if, however, some countries would want to open up rather early for free labor immigration from Ukraine, there should be the option of an escape clause which would allow to strongly restrict labor inflows from Ukraine if macroeconomic circumstances change. The escape clause would end if all EU countries had switched to free labor mobility – or possibly at last 90% in terms of the EU28's gross domestic product. From this perspective, more intra-EU trade of the EU27 with Ukraine and more Ukrainian FDI inflows, plus a higher domestic investment-GDP ratio in Ukraine after EU accession as well as productivity-enhancing education reforms in Ukraine would be the primary drivers of real economic convergence and economic catching-up of Ukraine vis-à-vis the EU27 countries.

In relation to the Banzhaf power index, the findings suggest that countries are not fully exploiting their respective power position in the European Council. This could suggest that the big countries somehow dominate the decision-making process regardless of the Banzhaf index; it could also mean that the rise of the majority requirements in the case of an EU enlargement to admit Ukraine or countries in the Western Balkans should take place, on the one hand in order to avoid a self-blocking of the enlarged EU in crucial policy fields. At the same time, the changes in the Banzhaf Index associated with an EU enlargement might not affect the intra-EU redistribution policy of the EU. It is rather unclear whether or not EU countries would all support a rise of redistribution – relative to EU GDP – in the long run and thereby would allow the EU to become more similar to the US in this policy field.

It is obvious that only in adopting these three reforms at the EU level and the national policy layer of EU27 member countries can the next X-EXIT case in the European Union be avoided. If Ukraine would become a member country of the EU, there would be – most likely – continuing political conflicts between Ukraine with Russia; and the EU and the EU27 member countries would become directly or indirectly involved in such tensions. From this perspective, the EU should require from Ukraine to accept long run political support from the EU on the one hand, on the other hand Ukraine should also be required to establish a stable diplomatic initiative to solve conflicts with Russia in political negotiations. EU28 countries could gradually try to restore some long run economic and political relations with Russia while giving clear signals that rising EU-Russia trade and FDI flows to Russia could only be expected if Russia's foreign policy course would clearly change in favor a peaceful, reliable partnership. This approach should include reinforcing international organizations and to anchor Russia – and China – firmly in these institutions, which would help to maintain the rule of law in international economic relations worldwide.

References

Becker, P. (2019), A new budget for the EU: negotiations on the multiannual financial framework 2021-2027, Stiftung Wissenschaft und Politik, SWP Research Paper, 11/2019, https://doi.org/10.18449/2019RP11

Becker, S.; Egger, P.; von Ehrlich, M. (2010), Going NUTS: The effect of EU Structural Funds on regional performance, *Journal of Public Economics*, 94, 9-10, 578-590 https://doi.org/10.1016/j.jpubeco.2010.06.006

Becker, T. et al. (2022), A Blueprint for the Reconstruction of Ukraine, London: CEPR Press https://cepr.org/sites/default/files/news/BlueprintReconstructionUkraine.pdf

Borsi, M.T.; Metiu, N. (2015), The evolution of economic convergence in the European Union. *Empirical Economics*, 48, https://doi.org/10.1007/s00181-014-0801-2

British Election Study (2017), Brexit Britain: British Election Study Insights from the post-EU Referendum Wave of the BES Internet Panel, British Election Study Wave 9, available at https://www.britishelectionstudy.com/bes-resources/brexit-britain-british-election-study-insights-from-the-post-eu-referendum-wave-of-the-bes-internet-panel/#.Yv4hVd9CRPY (last accessed 18.08.2022)

Caesar, R. (2001), An EU tax?--Not a good idea, Intereconomics, 36(5), 231-233, https://dx.doi.org/10.1007/BF02928976

Caesar, R. (2002), Haushalts- und Steuerpolitik in der EU / Budget and Tax Policy in the EU, Jahrbücher für Nationalökonomie und Statistik, 222 (1), https://doi.org/10.1515/jbnst-2002-0110

Cortes, K. E. (2004), Are Refugees Different from Economic Immigrants? Some Empirical Evidence on the Heterogeneity of Immigrant Groups in the United States?, *The Review of Economics and Statistics*, 86, 465-480 https://doi.org/10.1162/003465304323031058

Council of the European Union (2020), Multiannual financial framework for 2021-2027 adopted, Press Release, available at https://www.consilium.europa.eu/en/press/press-releases/2020/12/17/multiannual-financial-framework-for-2021-2027-adopted/ (last accessed 22.09.2022)

Crespo Cuaresma, J.; Ritzberger-Grünwald, D.; Silgoner, M.A. (2008) Growth, convergence and EU membership, *Applied Economics*, 40, 5, https://doi.org/10.1080/00036840600749524

EBRD (2021), Transition Report 2020-2021, The State Strikes Back, Country Assessment: Ukraine, London: EBRD

European Commission (2022a), Cohesion in Europe towards 2050 - Eighth report on economic, social and territorial cohesion, European Commission, Publications Office of the European Union: Luxembourg

European Commission (2022b), European Regional Development Fund, https://ec.europa.eu/regional_policy/en/funding/erdf/ (last accessed 29.09.2022)

European Commission (2022c), EU Spending and Revenue 2014-2020 https://ec.europa.eu/info/strategy/eu-budget/long-term-eu-budget/2014-2020/spending-and-revenue_en (last accessed 09.11.2022)

European Council (2020), Special European Council, 17-21 July 2020, https://www.consilium.europa.eu/en/meetings/european-council/2020/07/17-21/ (last accessed 29.09.2022)

European Council (2022), Long-term EU budget 2021-2027 and recovery package, https://www.consilium.europa.eu/en/policies/the-eu-budget/long-term-eu-budget-2021-2027/ (last accessed 29.09.2022)

Fetzer, T. (2019), Did Austerity Cause Brexit?, *American Economic Review*, 109(11): 3849–3886 https://doi.org/10.1257/aer.20181164

Hirschman, A. (1970), Exit, Voice and Loyalty: Responses to Decline in Firms, Organizations, and States, Cambridge, Massachusetts: Harvard University Press

Hudspeth, I. (2015), Letter to David Cameron responding to the latter's letter of 14th September 2015, dated 22nd September 2015 full letter, available online at https://www.oxfordmail.co.uk/resources/files/35654 (last accessed 30.08.2022)

IMF (2015), Ukraine Staff Country Report No. 15/69, March 2015, International Monetary Fund: Washington DC

IMF (2021), Ukraine Staff Country Report No. 21/250, November 2021, International Monetary Fund: Washington DC

IMF (2022), World Economic Outlook, July 2022 Update, International Monetary Fund: Washington DC

Kirsch, W. (2016a), A mathematical view on voting and power, in König, W. (Ed.) Mathematics and Society European Mathematical Society, EMS Press https://doi.org/10.4171/164-1/14

Kirsch, W. (2016b), Brexit and the Distribution of Power in the Council of the EU, 25th November 2016, CEPS Policy Brief, https://www.ceps.eu/ceps-publications/brexit-and-distribution-power-council-eu/

Kirsch, W. (2022), The Distribution of Power within the EU: Perspectives on a Ukrainian Accession and a Turkish Accession, *International Economics and Economic Policy*, 19, https://doi.org/10.1007/s10368-022-00541-w

Kowald, K. (2022), Protecting EU funds against oligarchic structures, European Parliament Research Service, https://www.europarl.europa.eu/RegData/etudes/ATAG/2022/729325/EPRS_ATA(2022)729325_EN.pdf

Lippert, B. (2022), The EU's next Eastward enlargement will be complicated and expensive: Accession negotiations, association and new formats should be coordinated, SWP Comment, No. 46/2022, Stiftung Wissenschaft und Politik (SWP), Berlin, https://doi.org/10.18449/2022C46

Mendez, C.; Bachtler, J. (2022), The quality of government and administrative performance: explaining Cohesion Policy compliance, absorption and achievements across EU regions, s, *Regional Studies*, https://dx.doi.org/10.1080/00343404.2022.2083593

Olearchyk, R. (2018), Ukraine approves corruption court to meet IMF demand, in Financial Times online edition, published June 7th 2018 https://www.ft.com/content/e612672e-6a4f-11e8-b6eb-4acfcfb08c11

Pew Research Center (2015), Ukrainian Public Opinion: Dissatisfied with Current Conditions, Looking for an End to the Crisis, Report June 10th 2015 https://www.pewresearch.org/global/2015/06/10/3-ukrainian-public-opinion-dissatisfied-with-current-conditions-looking-for-an-end-to-the-crisis/

Rockefeller Institute of Government (2022), Who Gives and Who Gets? Explore the Balance of Payments between States and the Federal Government, Dashboard, https://rockinst.org/issue-areas/fiscal-analysis/balance-of-payments-portal/ (last accessed 09.11.2022)

Sapala, M. (2021), Cohesion, resilience and values - Heading 2 of the 2021-2027 MFF, European Parliament Briefing Paper, 2021-2027 MFF, European Parliamentary Research Service https://www.europarl.europa.eu/RegData/etudes/BRIE/2021/690542/EPRS_BRI(2021)690542_EN.pdf

Schneider, F. (2022), New COVID-related results for estimating the shadow economy in the global economy in 2021 and 2022, *International Economics and Economic Policy*, 19, 299–313 https://doi.org/10.1007/s10368-022-00537-6

Strielkowski, W.; Höschle, F. (2016), Evidence for economic convergence in the EU: the analysis of past EU enlargements, *Technological and Economic Development of Economy*, 22, 4, https://doi.org/10.3846/20294913.2014.890138

Strzelecki, P., Growiec, J., Wyszynski, R. (2022), The Contribution of Immigration from Ukraine to Economic Growth in Poland, *Review of World Economics*, 158, 365–399 https://doi.org/10.1007/s10290-021-00437-y

Welfens, P.J.J. (2015), Soziale Marktwirtschaft als lohnende Zukunftsinvestition der EU, in von Alemann, U., Heidbreder, E., Hummel, H., Dreyer, D. and Gödde, A, (Eds.), Ein soziales Europa ist möglich Grundlagen und Handlungsoptionen, Wiesbaden: Springer Fachmedien

Welfens, P.J.J. (2017), An Accidental BREXIT, London: Palgrave Macmillan https://doi.org/10.1007/978-3-319-58271-9

Welfens, P.J.J. (2022a), Russia's Invasion of Ukraine: Economic Challenges, Embargo Issues and a New Global Economic Order, London: Palgrave Macmillan (forthcoming)

Welfens, P.J.J. (2022b), An Accidental Brexit: New European and Global Perspectives, 2nd enlarged edition, London: Palgrave Macmillan (forthcoming)

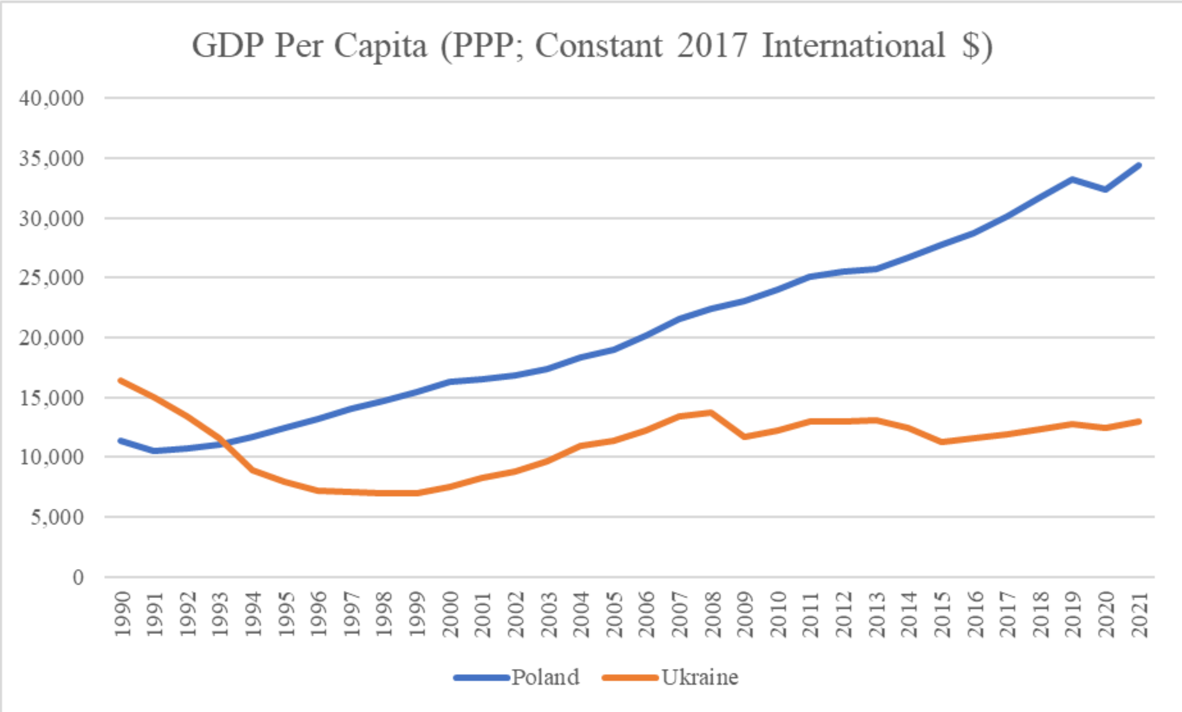
Williams, M.; Polityuk, P. (2020), EU funds to Ukraine hinge on constructive work with IMF: Borrell, Reuters, Published September 22nd, 2020 https://www.reuters.com/article/ukraine-eu-idINL5N2GJ4TU

Zander, T. (2022), FDI Flows and the Effects of the Shadow Economy: Evidence from Gravity Modelling, EIIW Discussion Paper No. 322, https://eiiw.wiwi.uni-wuppertal.de/fileadmin/eiiw/Daten/Publikationen/Gelbe_Reihe/disbei322.pdf

Appendix

Annex 1: Economic Development of Poland and Ukraine, 1990-2021

Figure 2: Real GDP Per Capita in Purchasing Power Parities of Poland and Ukraine, 1990-2021



***Source**: Own representation based on data available from the World Bank https://data.worldbank.org/indicator/NY.GDP.PCAP.PP.KD?end=2021&locations=PL-UA&start=1990 (accessed 20.09.2022)*

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