“Post-crisis economic restructuring in the context of the EU migration crisis: The role of diverse economic models”

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POST-CRISIS ECONOMIC RESTRUCTURING IN THE CONTEXT OF THE EU MIGRATION CRISIS: THE ROLE OF DIVERSE ECONOMIC MODELS

Abstract

This study aims to examine how different EU economic models mediate the relationship between post-crisis economic restructuring and migration pressures by analyzing the co-evolution of immigration, public finance, social protection, and labor market indicators, and to identify which institutional configurations most effectively harness migration to support resilient and inclusive growth. The analysis employs a panel of EU member states, combining harmonized indicators (immigration, GDP per capita, at-risk-of-poverty rates, public finances, and labor market conditions) and two-way fixed-effects regressions with interactions for economic models (social market, neoliberal, and mixed) and predictive margins. The results indicate that immigration is associated with modest but statistically significant gains in GDP per capita in social market economies. A 1 percentage point increase in the share of immigrants corresponds to a rise of around 0.3–0.4% in GDP per capita ($p < 0.05$). The effect is smaller and only weakly significant in neoliberal economies, and approaches zero in mixed economies. The direct impact of immigration on at-risk-of-poverty rates is limited in all three models, with coefficients close to zero, and country-time effects explain the bulk of the variation in poverty. Neoliberal economies combine relatively higher average GDP with greater dispersion and higher poverty risks, whereas mixed economies exhibit lower GDP levels and more volatile poverty dynamics. The findings indicate that institutional design and welfare-labor market architectures condition whether migration supports resilient and inclusive post-crisis restructuring, implying that migration policy must be integrated with broader social, labor, and fiscal reforms.

Keywords migration, economic models, resilience, inclusion, welfare, labor markets, EU

JEL Classification F22, O52, J61, H55

INTRODUCTION

Post-crisis economic restructuring in the EU is underway amid overlapping shocks: the COVID-19 pandemic, Russia's full-scale invasion of Ukraine, the energy and cost-of-living crises, and persistently weak economic growth. The war has disrupted a fragile post-pandemic recovery, with EU GDP growth in 2023 significantly below expectations and inflation rising to historic highs due to energy prices and tighter monetary policy (Papunen, 2024). At the same time, the "Next Generation EU" plan and green–digital transition agendas seek not just to restore but to transform productive structures and resilience (European Council, 2024), creating a rare window for fiscal, industrial, and labor-market reforms while sharpening distributional questions over who bears the costs and who gains.

Within this context, migration is a central yet contested channel of adjustment. Immigration into the EU reached historic highs in 2022 and remained above pre-pandemic levels in 2023, with roughly two-thirds of net job creation between 2019 and 2023 attributed to non-EU citizens, while unemployment among EU nationals remained at record lows (Caselli et al., 2024). European Commission evidence shows foreign-born workers easing labor shortages in both high- and low-skill sectors and partly offsetting ageing workforces (European Commission, 2025). However, the European Parliament highlights persistent gaps in employment, job quality and earnings for migrants, especially refugees and non-European nationals, due to barriers in skills recognition, language, legal status and discrimination (Fasani, 2024). As a result, migration simultaneously stabilizes the labor supply and intensifies social and political tensions that any restructuring strategy must address.

The recent and ongoing migration-related challenges in Europe – including the surge in applications for international protection in 2015–2016 and the large-scale cross-border movements triggered by Russia's war against Ukraine – have become a lasting element of the EU's post-crisis context, rather than a short-lived episode. Ukrainians granted temporary protection or other legal statuses now constitute a significant share of persons in need of protection in Central and Eastern Europe, and projections suggest that their post-war decisions on return or longer-term stay could shift long-run GDP in the most exposed countries by several percentage points in either direction (Reuters, 2025). International assessments further emphasize that the region faces a "jobs challenge", with many newly created positions concentrated in low-skill segments and productivity growth remaining weak, which necessitates coherent migration, human capital, and investment policies to upgrade employment structures (Cusolito et al., 2025). Against this background, research on post-crisis economic restructuring in the context of these EU migration dynamics is particularly relevant, as it can reveal how different policy choices affect the economic and social outcomes of large-scale mobility and inform the design of more inclusive, growth-enhancing restructuring strategies.

There is a clear need for systematic empirical evidence on how different EU economic models mediate the relationship between post-crisis restructuring and migration pressures. Existing assessments tend to focus either on aggregate macroeconomic impacts or on the social and labor market outcomes of migrants, but rarely link these dimensions through the lens of neoliberal, social market, and mixed economies.

1. LITERATURE REVIEW

Post-crisis economic restructuring in Europe is shaped by shocks that have deepened inequality, reconfigured labor markets, and exposed structural differences between coordinated, social-democratic, and more liberal or peripheral models of capitalism. Evidence on global and regional inequality suggests that technological change, institutional design, and integration into global value chains significantly influence countries' ability to absorb shocks and share the benefits of growth (Bhowmik, 2024; Gondauri, 2024; Hara, 2024). Consequently, restructuring must be viewed not only as macroeconomic stabilization, but also as a broader reorganization of production, employment, and welfare regimes under intense geopolitical and migratory pressures (Dobrovolska et al., 2024a; Koilo, 2024; Zozulinskyy, 2024).

Post-crisis restructuring is closely tied to security and resilience. Evidence from Ukraine shows that full-scale war reshapes macroeconomic paths, trade and fiscal systems, forcing governments to redesign tax and budget policies to revive domestic growth drivers (Dobrovolska et al., 2024b; Tsymbal & Demediuk, 2025). Broader work on national security argues that recovery must jointly optimize socio-economic, environmental, and public-health dimensions, since health-expenditure gaps and low-quality care feed back into macroeconomic efficiency and human development, narrowing the scope for inclusive restructuring (Firstová & Vysochyna, 2024; Prokopenko & Filipov, 2024; Megbowon & Zehirun, 2025; Sheliemina, 2023). Human capital and financial structures are equally pivotal. In emerging economies, human capital accumulation and financial development shape growth and FDI attraction,

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while in European middle-income countries, FDI, remittances, emigration, and tourism generate complex feedback between external finance, domestic demand, and long-run growth (Djamal et al., 2023; Tsaurai & Aboagye Danquah, 2025; Mursalov et al., 2025; Nikšić Radić & Bogdan, 2024). Post-pandemic evidence for Europe confirms that institutional quality and policy frameworks largely determine how quickly and how fairly economies return to sustainable growth paths (Kuzior et al., 2024).

The EU migration crisis is viewed as both a humanitarian and structural economic challenge. South-North and East-West mobility is embedded in heterogeneous welfare and labor market systems, framed through security, defense and national-interest logics. It is marked by tensions between political narratives, legal frameworks, and labor market needs, which together expose persistent fragmentation between national models of capitalism (Lafleur & Stanek, 2017; Estevens, 2018; Hatton, 2020; Bannikova et al., 2023; Pacek, 2020). The crisis also reshaped intra-EU bargaining power. Some states leveraged forced displacement in financial and bailout negotiations, while post-crisis integration experiments introduced differentiated approaches to free movement, borders, and social rights. Comparative evidence from migration to Turkey underscores how macroeconomic conditions and public finances tightly condition migration dynamics and their economic impact (Tsourapas & Zartaloudis, 2022; Kushnir et al., 2020; Tutar et al., 2024).

Migration has become a key channel of post-crisis restructuring, reshaping human capital, labor markets, and innovation. Highly skilled migrants can drive the development of the digital economy and structural upgrading, but only where institutional conditions and economic systems are supportive (Bilan et al., 2025). Interlinked "education-migration-labor market" chains in individual countries and across Central and Eastern Europe highlight the need for integrated policies on education, mobility, and employment (Barvinok et al., 2023; Mukhtarova et al., 2024; Artyukhova et al., 2025). Evidence on social risks and employment attitudes shows that the gains from remittances and skills transfer are offset by brain drain, family disruption, weak social protection and highly context-specific integration outcomes shaped by welfare regimes, legal status, labor demand and sectoral vulnerabilities (Kuzior et al., 2020; Kochaniak et al., 2024; Hnatenko & Tanchyk, 2024).

The Russia-Ukraine war has sharpened demographic pressures, with demographic-risk and environmental-migration studies warning of lasting losses in human capital and territorial cohesion, and underscoring migration management as a strategic lever for national security and recovery (Didenko et al., 2021; Posheliuzhnyi, 2025). At the same time, the scientific diaspora and relocated universities illustrate how outward mobility and institutional displacement can be turned into assets for reconstruction, regional human capital formation, and territorial development, provided there are effective channels for knowledge transfer, collaboration, and innovation investment (Polishchuk, 2025; Finikov et al., 2025).

Labor market restructuring depends not only on shocks but also on policy design, working-time regimes, and firm-level practices. For example, active and passive labor market measures can soften crisis scarring (Knapińska & Woźniak-Jasińska, 2024; Bashynska et al., 2023). Emerging AI-based work patterns will reshape productivity and integration prospects for migrants (Kytsak & Ovsiannykov, 2025). Organizational tools such as evaluation systems and social commerce can either entrench or reduce labor-market inequalities and segmentation (Kuzior et al., 2022; Panakaje et al., 2025).

European economic models differ markedly in their capacity for regional modernization. Some EU territories upgrade into knowledge-intensive activities while others remain stuck in low-value paths, shaped by institutional quality, policy coordination, infrastructure, and innovation ecosystems, as shown for both EU regions and Ukrainian regions seeking to attract investment and skilled migrants after crises (Ladonko et al., 2022; Bashynska et al., 2022). Macroeconomic and energy impacts of Russia's invasion, together with evidence from Uzbekistan, underline that fossil-fuel dependence, energy mixes, and well-designed green industrial policies jointly determine the employment and distributional effects of shocks and the green transition (Koilo, 2024; Xolmurotov et al., 2025b). Complementary bibliometric and fore-

sight studies highlight a shift towards data-driven, sustainability-oriented innovation marketing, as well as the need for long-term skills planning, which is crucial for regions and firms in various models as they compete in post-crisis environments and integrate migrants into future-oriented sectors (Xolmurotov et al., 2025a; Surahman et al., 2025).

Public administration and governance frameworks influence how economic models manage post-crisis restructuring and migration, as state capacity relies on training systems, career paths, and institutional cultures within public administration (Nexhipi et al., 2025). The digitalization of HR through AI can improve efficiency and strategic workforce planning, but it also raises ethical and bias risks, especially for vulnerable groups such as migrants (Androniceanu, 2025; Prokopenko et al., 2025). Ethical leadership, population security assessments, and simulation-based migration modelling stress that governance must jointly address economic, social, and security risks using evidence-based tools (Prokopenko & Filipov, 2024; Prokopenko et al., 2025; Okhrimenko & Pakosh, 2024). Finally, business environments, infrastructure, and fintech are crucial in determining whether migration becomes a driver of inclusive growth or entrenches dual labor markets (Privara, 2025a, 2025b; Hnatenko & Tanchyk, 2024).

Literature consistently links migration, welfare regimes, and inequality, showing that disparities are driven by structural features of economic models and by how countries adopt and regulate new technologies, with direct implications for migrants' labor market positions (Gondauri, 2024; Bhowmik, 2024). Effective post-crisis strategies must jointly calibrate socio-economic, environmental, and security determinants, since poorly designed responses can deepen vulnerabilities among migrants and refugees and constrain human capital protection when health spending and care quality are weak (Firstová & Vysochyna, 2024; Prokopenko & Filipov, 2024; Megbowon & Zehirun, 2025; Sheliemina, 2023). Evidence on economic restructuring and migration assimilation in the EU further shows that different mixes of labor market flexibility, social protection, and industrial specialization shape both the speed and inclusiveness of adjustment. In contrast, prolonged shocks such as the Russo–Ukrainian war can permanently alter the parameters within which migration and restructuring occur (Yeremenko & Hrytsenko, 2025; Knapińska & Woźniak-Jasińska, 2024; Dobrovolska et al., 2024b; Zozulinskyy, 2024; Tsymbal & Demediuk, 2025). National and regional labor market experiences confirm that sustainable recovery and optimized security outcomes hinge on the interaction between migration, labor institutions, and welfare regimes (Bashynska et al., 2023; Firstová & Vysochyna, 2024; Kuzior et al., 2024).

Post-crisis economic restructuring in Europe emerges as a multi-dimensional process shaped by migration dynamics, human capital flows, institutional capacity, and specific national economic models. Migration crises and forced displacement interact with pre-existing differences in welfare states, labor markets, and innovation systems, generating heterogeneous outcomes in growth, inequality, and social cohesion (Estevens, 2018; Lafleur & Stanek, 2017; Yeremenko & Hrytsenko, 2025). Insights from non-EU contexts on human capital, FDI, renewable energy, labor markets and skills preparedness broaden this picture, showing how diverse economic models can deploy migration and restructuring to pursue sustainable development when backed by appropriate investment, industrial, and skills policies (Djamal et al., 2023; Hara, 2024; Mursalov et al., 2025; Surahman et al., 2025; Xolmurotov et al., 2025b).

At the same time, most studies examine migration governance, labor markets, security, or macroeconomic restructuring separately, and only a limited number analyze systematically how these dimensions interact within different European economic models under post-crisis conditions. This gap opens space for research that directly links varieties of capitalism, migration regimes, and post-crisis restructuring, with a focus on how human capital flows, institutional reforms, and sectoral change interact in the EU. Such work can clarify which combinations of economic models, migration policies, and restructuring strategies best support resilient, inclusive, and sustainable development after major crises.

The aim of this paper is to examine how different EU economic models mediate the relationship between post-crisis economic restructuring and migration pressures by analyzing the co-evolution of immigration, public finance, social protection,

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and labor market indicators, and to identify which institutional configurations most effectively harness migration to support resilient and inclusive growth.

2. METHODS

2.1. Data extraction

Data for this study are drawn from publicly available databases, including Eurostat and UK government data sources. We identify a range of economic and social variables relevant to the economic transition during the crisis and the transition in the EU. These variables include GDP, social security contributions (SCON), employment in the A10 sector or the concept of self-employment (A10_EMP), government debt as a percentage of GDP (GOV_D_P) and in millions (GOV_D_M), persistent-at-risk-of-poverty indicators (PSLM), foreign income migration (IM), new active migrants (RIMGANGA), indicators of the risk of poverty and exclusion (ILC_IW) and new workers (NEW_EMP). Each EU country is classified into one of three economic models based on the literature and existing models: neoliberal, social market, or hybrid. This classification is captured in the variable 'econ_model', which is used as a classifier in our analysis. Data for the period 2007–2023 are combined to create a comparable panel dataset with minor adjustments for null values.

2.2. Data analysis

To examine the relationship between these variables, we used correlation and regression analysis performed in Stata. Correlation analysis is used to measure the strength and direction of the relationship between variables using (1):

$$r = \frac{\sum\left(x_i - \bar{x}\right)\left(y_i - \bar{y}\right)}{\sqrt{\sum\left(x_i - \bar{x}\right)^2 \sum\left(y_i - \bar{y}\right)^2}}, \quad (1)$$

where r is the Pearson correlation coefficient; x_i and y_i are the individual data points; $\bar{x}$ and $\bar{y}$ are the means of x and y, respectively.

Regression analysis was performed using clustering methods to account for the longitudinal characteristics of the dataset in Stata 18.5. Based on the results of the Hausman test, we employed fixed effects (FE) and random effects (RE) models. The main regression methods (2) in Stata are:

$$Y_{it} = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \ldots + \beta_k X_{kit} + \alpha_i + \varepsilon_{it}, \quad (2)$$

where Y_{it} represents the dependent variable (e.g., GDP, newly employed individuals); Xk_{it} – the independent variables (e.g., government debt, immigration); α_i – unobserved individual effects specific to each country; ε_{it} – the error term.

To decide between fixed and random effects, the Hausman test was applied with the following hypotheses:

H_0: *Cov* (X_{kit}, α_i) = 0 *(choose RE model).*

H_1: *Cov* (X_{kit}, α_i) ≠ 0 *(choose FE model).*

If the *p*-value was less than 0.05, we reject H_0 and choose the fixed-income model. Otherwise, the random-effects model is used. In addition, robust standard errors can be used to adjust for heteroskedasticity and can be corrected.

By combining these approaches, we can study how key variables classified as economic systems interact with the context of economic change after crises and recessions.

3. RESULTS

EU economic models are far from uniform. Member states mix market regulation, state intervention, and social protection in different ways that can be grouped into three broad types: neoliberal, social market, and mixed economies. This typology is useful for analyzing policy responses to post-crisis restructuring and large-scale migration because it links institutional structures to how countries manage economic and social shocks. In the neoliberal model, seen in the Baltic (Estonia, Latvia, Lithuania), Ireland, and pre-Brexit United Kingdom, governments prioritize liberalization, privatization, low social spending, and highly flexible labor markets. This has supported rapid adjustment and growth but often at the cost of weaker social cohesion and incomplete migrant

Table 1. The EU countries with different economic models

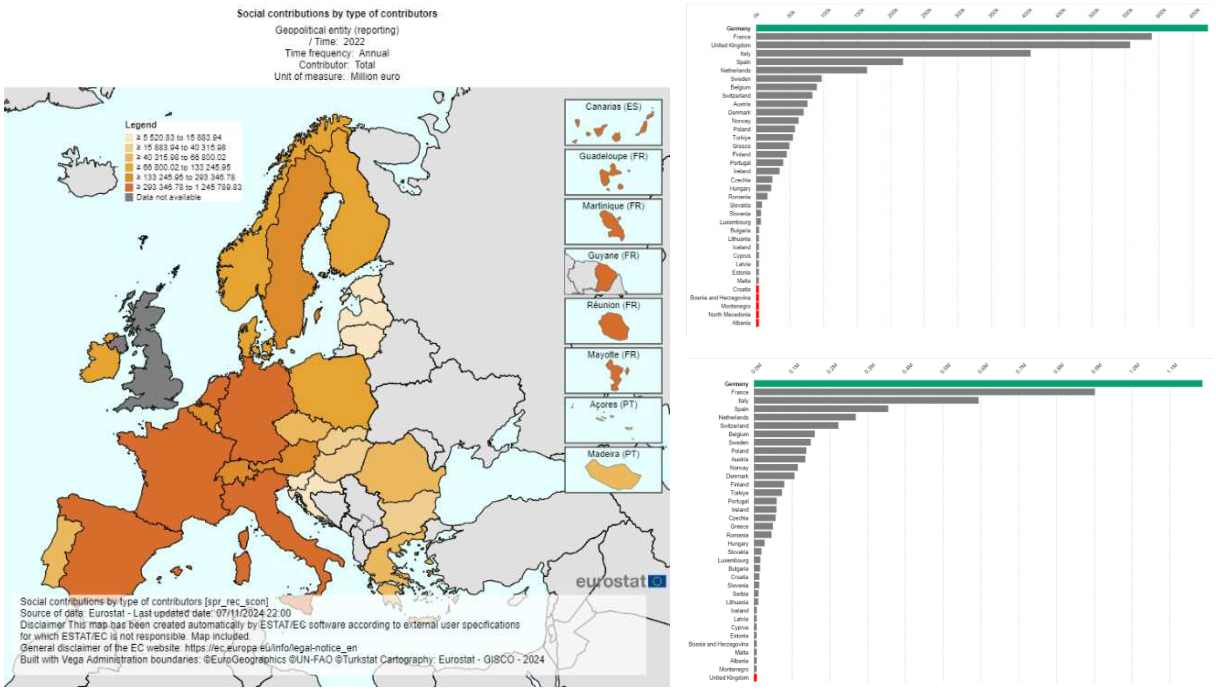
Neoliberal	Social Market		Mixed	
Estonia	Austria	Luxembourg	Bulgaria	Poland
Ireland	Belgium	The Netherlands	Croatia	Portugal
Latvia	Denmark	Norway	Czechia	Romania
Lithuania	Finland	Sweden	Greece	Slovakia
The United Kingdom*	France	Switzerland	Hungary	Slovenia
	Germany		Italy	Spain

Note: * (pre-Brexit).

integration; Latvia and Lithuania, for example, used aggressive fiscal cuts and tax hikes to meet Maastricht criteria, yet still show poverty or social exclusion rates above the EU average (Aidukaite, 2009; Sommers & Woolfson, 2014; Juska, 2024).

The social market model, exemplified by Germany, Austria, the Nordic countries (Denmark, Sweden, Finland, Norway), and states such as France and Switzerland, combines market competition with strong welfare systems and social dialogue. These countries stress social justice, universal benefits, and inclusive labor-market institutions, which support migrant integration but require high and carefully managed fiscal effort, as seen when they expanded welfare and direct support during COVID-19. Mixed economies in Southern and Central-Eastern Europe (e.g., Italy, Spain, Greece, Portugal, Poland, Hungary, Romania, Bulgaria) blend neoliberal and social market elements with family-based welfare and legacies of statist or corporatist systems. High public debt, reliance on family support, and exposure to irregular trade limit their ability to sustain growth and manage migration, as illustrated by Greece and Italy under austerity and migration pressure. Classifying EU countries into these three models (Table 1) helps explain cross-country differences in social contributions and social protection spending. Figure 1(a) shows the pattern of social contributions in 2022.

Source: Eurostat (2025).



a) b)

Figure 1. (a) Social contributions by type of contributors in 2022; (b) Expenditure on social protection in the EU by type of expenditure in 2007 and 2022

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Figure 1(b) traces social protection spending from 2007 to 2022, revealing how welfare funding has evolved under migration pressures and restructuring and how financial priorities shape integration, resilience, and inclusive growth.

Figure 1(a) maps public social contributions per capita in 2022 and shows sharp cross-country differences tied to economic structure, fiscal capacity, and welfare models. Germany, France, Italy, Spain, and the Netherlands sit at the top (above EUR 133,245.95), consistent with social market economies that pair strong welfare states with high spending on healthcare, pensions, and unemployment benefits, which also support migrant recovery and integration. The Nordics (Sweden, Finland, Denmark), Belgium, and Austria fall into the EUR 40,315.98–EUR 133,245.95 band, reflecting stable social values, equality-oriented policies, and solid institutions. At the lower end, Greece, Bulgaria, Romania, and the Baltic states (EUR 5,520.83–EUR 40,315.98) exhibit mixed or more fragile models, characterized by tighter budgets and weaker welfare systems, which limit protection and hinder migrant integration. Pre-crisis 2007 data already showed large gaps in social protection spending between social market states (Germany, the UK, Italy, and the Nordics) and Southern/Central-Eastern Europe (Romania, Bulgaria, and the Baltics). By 2022, Germany is expected to remain the leader, while France, Italy, and Spain are expected to join the top group, signaling a reinforced commitment to welfare in the face of pressures from migration and COVID-19. Labor-market flexibility further differentiates models: in neoliberal systems (Estonia, Latvia), high flexibility and weak safety nets leave migrants in low-wage, precarious jobs, whereas social market economies (Germany, Sweden, Denmark) offer broad services (language and vocational training, targeted programs) at the cost of more rigid labor markets and slower entry during downturns.

Stata results reinforce how these systems shape restructuring and integration. Table 2 shows a very strong correlation between social contributions (SCON) and GDP (r = 0.8752), indicating that more productive economies devote more resources to social support. The migration indicator RIMGANGA is only weakly related to contributions and public debt, suggesting migration pressure is not mechanically tied to fiscal effort, especially in neoliberal states where migrants often lack full access to welfare. Figure 2, which tracks GDP from 2005 to 2025, highlights clear model differences: social market economies (Germany,

Table 2. The correlation matrix between economic and social variables in the EU countries

Variable	Obs	Mean	Std. dev.	Min	Max
GPD	476	573485.5	807711.5	14132.5	4185550
SCON	476	149603.8	240640.5	0	1245790
A10_EMP_Q4	476	1261.909	1592.969	0	6790.2
GOV_D_P	476	–2.75063	3.586158	–32.1	5.3
GOV_D_M	476	–14068.29	32221.23	–207084.4	64668
PSLM	476	11824.07	15998.91	0	63930.6
IM	466	108527.8	206156.6	0	1943445
RIMGANGA	476	56.76303	27.27682	0	88.8
ILC_IW	473	12.39408	6.601307	0	32.7
NEW_EMP	476	14.67059	4.194294	0	27.3

Variable	GPD	SCON	A10_EMP_Q4	GOV_D_P	GOV_D_M	PSLM	IM	RIMGANGA	ILC_IW	NEW_EMP
GPD	1.0000	–								
SCON	0.8752	1.0000	–	–						
A10_EMP_Q4	0.7427	0.7217	1.0000		–					
GOV_D_P	–0.0979	–0.0548	–0.1898	1.0000			–	–		
GOV_D_M	–0.5199	–0.4723	–0.5158	0.4666	1.0000				–	–
PSLM	0.7598	0.7473	0.7982	–0.1238	–0.6153	1.0000				
IM	0.6556	0.7061	0.5589	–0.0074	–0.2377	0.5717	1.0000			
RIMGANGA	0.0031	0.0526	–0.0510	0.0354	–0.0195	–0.0442	0.0974	1.0000		
ILC_IW	0.2276	0.2807	0.3347	–0.0710	–0.3724	0.3418	0.2501	0.2272	1.0000	
NEW_EMP	–0.0024	0.0933	–0.1623	0.3658	0.0891	–0.0889	0.0384	0.3285	0.1321	1.0000

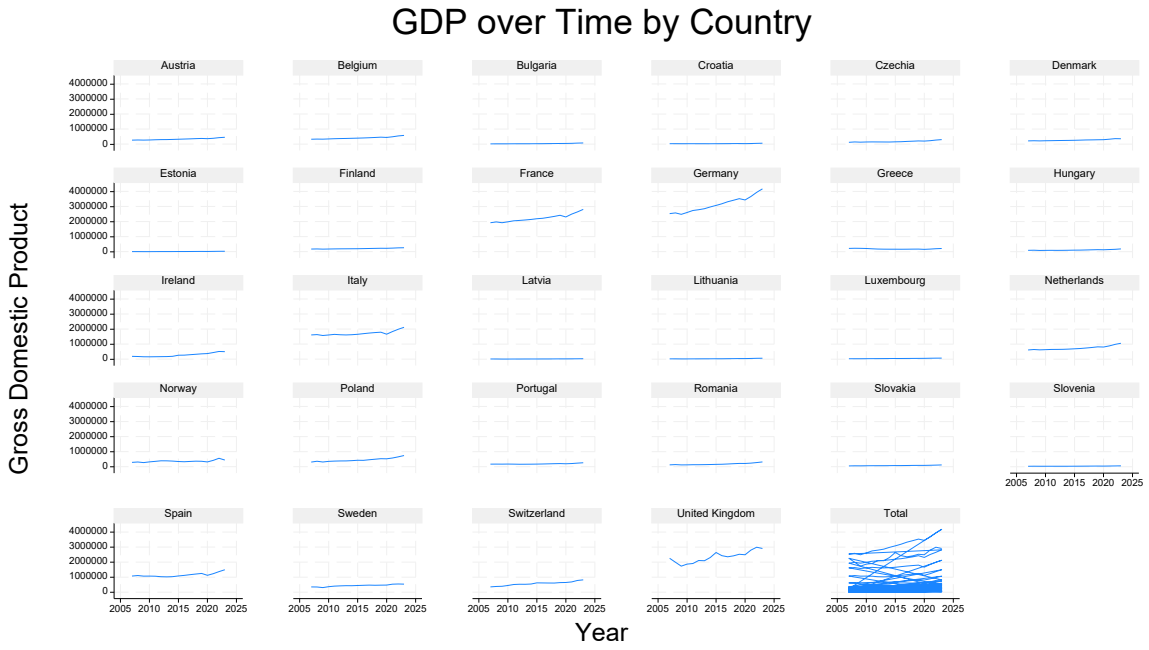

Figure 2. GDP trends over time by country

France, the Netherlands) exhibit stable or rising GDP, neoliberal economies (Ireland, Estonia) show greater volatility, and mixed economies (Greece, Romania) experience slower growth or stagnation. Grouped by model, social market economies have the highest and steadily increasing average GDP, neoliberal economies grow moderately from a lower base, and mixed economies show the lowest and weakest trajectories, underscoring the superior performance and resilience of social market models in the post-crisis period.

Differences in GDP trends across the three economic models underline how strongly institutions shape performance. Social market economies demonstrate that well-regulated markets, combined with robust welfare systems, can deliver both stability and sustained growth. Their GDP rises steadily, and their well-established institutions and fiscal capacity help them absorb shocks, such as the 2008 financial crisis and recent migration pressures, while maintaining social cohesion. Neoliberal economies, by contrast, grow more unevenly. High labor-market flexibility and limited state intervention support rapid adjustment and short-term gains, but lower average GDP levels and weaker safety nets make them more vulnerable in periods of uncertainty and less able to cushion downturns or support sustainable migrant integration. Mixed economies record the slowest growth and lowest GDP, revealing how hybrid and transitional systems struggle to stay competitive. Structural inefficiencies, fiscal constraints, and fragmented institutions slow reforms and limit investment in innovation, infrastructure, and social protection.

As a result, these countries are less able to respond effectively to external shocks, including migration and global economic swings. Overall, the pattern across models underscores that institutional design is central to shaping growth paths: social market systems illustrate how inclusive policies and effective governance can sustain resilience, while neoliberal and mixed economies require targeted structural reforms to strengthen their adaptability. Figure 3 further illustrates a strong positive association between GDP and public debt in social market economies, such as Germany and France, where borrowing is used to finance integration programs and growth-enhancing policies. In contrast, in mixed economies like Greece, high debt coincides with low GDP and restricts the scope for long-term reforms.

The relationship between GDP and migration is weaker but still positive (Figure 4): higher GDP tends to be associated with larger migration inflows, though the link is not very strong. This reflects multiple drivers of migration (labor demand,

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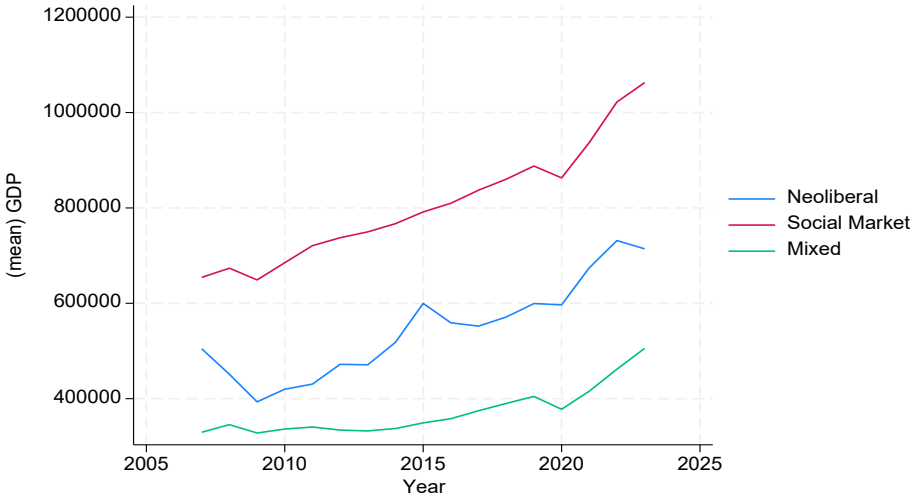

Figure 3. Mean GDP trends by economic model over time for each model type

social and welfare policies, and geopolitical factors). Neoliberal economies often rely on migrants to fill labor shortages. In contrast, social market economies attract migrants with generous welfare and integration systems, while mixed economies exhibit weaker links due to institutional constraints and less favorable conditions for newcomers.

Figure 5's boxplot of GDP by model shows that social market economies have both the highest median GDP and the smallest spread, signaling strong stability and institutional resilience. Their "middle way" of combining robust welfare with disciplined markets, along with solid institutions and fiscal capacity, enables them to use countercyclical policies and better absorb external shocks, including migration and demographic change. This stability supports long-term development while maintaining social balance and inclusion.

Neoliberal countries exhibit significantly more volatile GDP distributions, consistent with their heavy reliance on market forces and heightened exposure to global shocks. This model supports flexibility and fast adjustment, but makes GDP highly sensitive to swings in trade, capital flows, and foreign investment. As a result, these economies can grow quickly in good times but are more

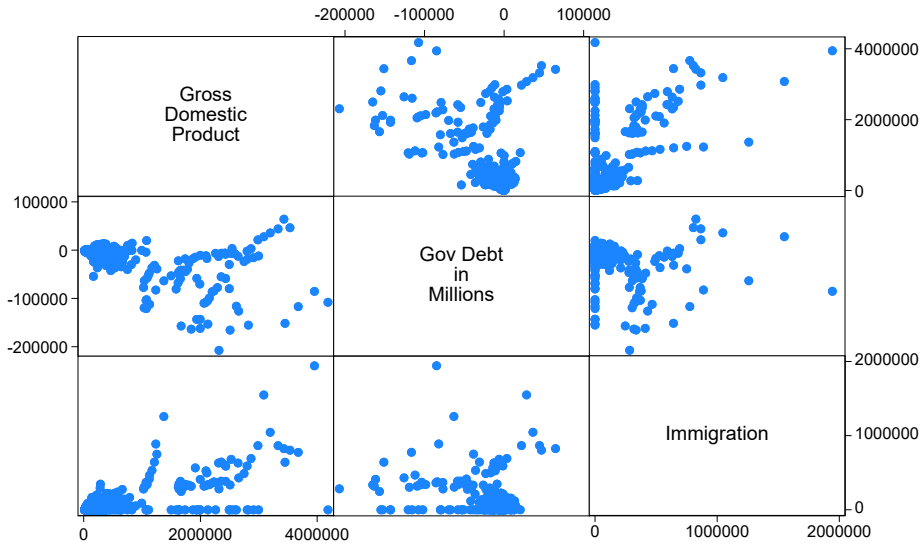

Figure 4. Pairwise scatter plots (GDP, government debt, migration)

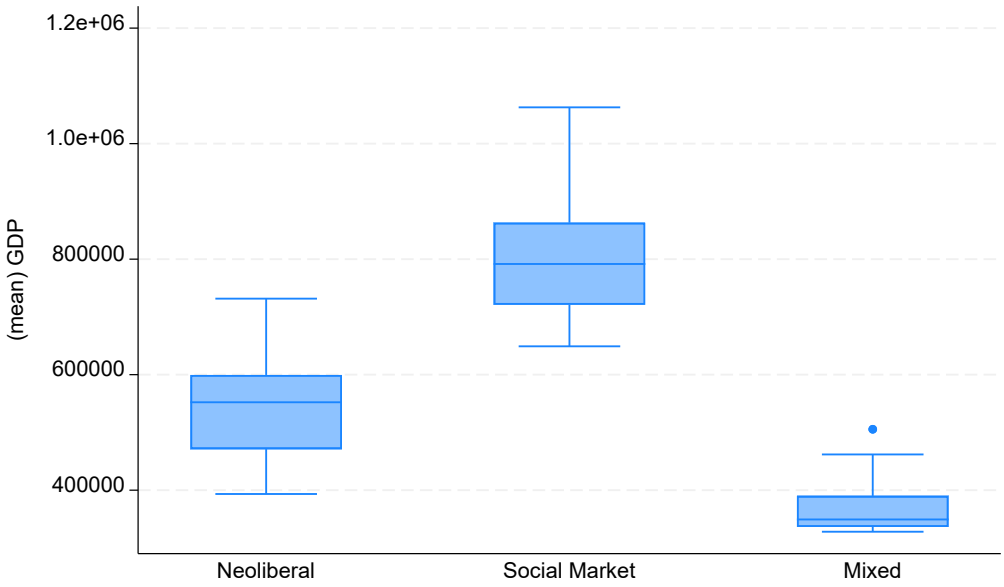

Figure 5. Box plot of mean GDP by economic model

vulnerable to deep downturns, reinforcing trade-offs between efficiency, resilience, inequality, and social integration.

Mixed economies, with their hybrid and transitional structures, have the lowest median GDP and the widest spread, signaling high vulnerability to both domestic and external disruptions. The wide range reflects big cross-country differences and specific structural problems, as illustrated by Greece's prolonged debt crisis. Limited fiscal space, institutional fragility, and political instability make it more challenging for these countries to implement consistent reforms, support long-term growth, and respond to global pressures. Overall, the boxplot highlights that institutional strength and coherent policy are key to performance: social market economies set the benchmark for combining stability and growth, while neoliberal and, especially, mixed economies require targeted reforms to reduce shock dependence and correct deep-seated inefficiencies.

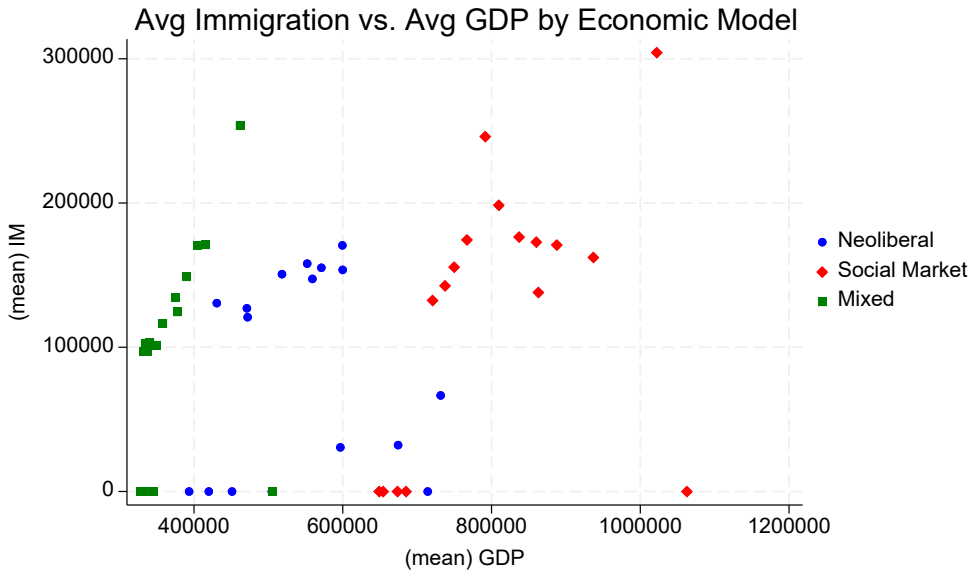

Figure 6. Average immigration vs. Average GDP by economic model

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Figure 6's scatterplot compares the average immigration and GDP across the three models, showing a clear pattern. Social market economies (red diamonds) combine high GDP with the highest immigration rates, reflecting their ability to pair economic growth with inclusive social policies. Neoliberal countries (blue diamonds) exhibit moderate immigration spread across a wide range of GDP, while mixed economies (green diamonds) cluster at low GDP and modest immigration, indicating a limited capacity to attract and integrate migrants.

Social market economies, such as Germany and Sweden, offer robust welfare systems, strong public services, and active integration measures, making them attractive destinations and better equipped to incorporate newcomers into the labor market and society. Neoliberal economies, such as Ireland and the pre-Brexit United Kingdom, attract migrants with dynamic job markets and flexible labor rules; however, weaker safety nets and targeted support often result in higher inequality and weaker long-term integration. Mixed economies (e.g., Greece, Romania) struggle most: lower GDP, fiscal constraints, and underdeveloped welfare and integration systems reduce both their attractiveness to migrants and their ability to support those who arrive.

The Figure 6 confirms that migration flows and integration outcomes are closely linked to economic

Table 3. Fixed-effects regression on GDP

Fixed-effects (within) regression	Number of obs = 466
Group variable: ctry_id	Number of groups = 28
R-squared:	Obs per group:
Within = 0.4759	Min = 12
Between = 0.4526	Avg = 16.6
Overall = 0.2349	Max = 17
–	F(19, 27) = 182.80
Corr(u_i, Xb) = -0.6274	Prob > F = 0.000

GDP	Coefficient	Robust std. err.	t	P > |t|	[95% conf.	interval]
econ_model	–	–				
Social Market	0	(omitted)	–	–	–	–
Mixed	0	(omitted)				
GOV_D_P	–1,145.013	4,267.774	–0.27	0.790	–9,899.709	7,610.684
IM	0.3204249	.084874	3.78	0.001	.1462779	0.4945718
A10_917_94	–113.3706	29.22824	–3.88	0.001	–173.342	–53.39921
year						
2008	2,334.275	11,308.07	0.21	0.838	–20,867.97	25,536.52
2009	–31,849.79	28,387.75	–1.12	0.272	–90,096.64	26,397.06
2010	–9,624.31	24,226.72	–0.40	0.694	–59,333.43	40,084.81
2011	–24,570.87	27,294.24	–0.90	0.376	–80,574.04	31,432.29
2012	–12,556.13	21,700.28	–0.58	0.568	–57,081.44	31,969.17
2013	–9,690.576	21,297.45	–0.46	0.653	–53,389.33	34,008.17
2014	5,075.625	17,078.44	0.30	0.769	–29,967.45	40,116.7
2015	23,427.56	21,109.34	1.11	0.277	–19,885.23	66,740.35
2016	31,789.23	16,749.39	1.90	0.068	–2,577.679	66,156.15
2017	48,032.2	21,085.64	2.28	0.031	4,768.034	91,296.37
2018	66,623.19	24,023.45	2.77	0.010	17,331.15	115,915.2
2019	85,566.5	28,090.09	3.05	0.005	27,930.4	143,202.6
2020	54,523.83	35,209.3	1.55	0.133	–17,719.68	126,767.3
2021	107,958.7	34,867.55	3.10	0.005	36,416.44	179,501.1
2022	143,218.1	39,459.89	3.63	0.001	62,253.12	224,183.1
2023	259,606.6	66,657.12	3.89	0.001	122,837.5	396,377.8
Cons	641,415.7	42,010.12	15.27	0.000	555,215.9	727,613.6
sigma_u	912,635.37	–				
sigma_e	108,072.76					
Rho	.98617127	(fraction of variance due to u_i)				

stability and access to social benefits; migrants tend to migrate to areas where they perceive jobs, security, and support. Social market systems strike this balance best, while neoliberal and mixed models face more trade-offs. Neoliberal countries may bounce back faster from crises, illustrated by Ireland and the UK after 2008, but this recovery pattern often reinforces structural gaps and vulnerabilities among migrant groups.

Mixed economies tend to follow weaker recovery paths due to structural inefficiencies and fragile institutions. They do, however, have scope for gradual improvement in migrant integration. Countries like Poland and Hungary have introduced labor-market measures to address skill gaps and aging populations and to use migration as a long-term growth resource, but these policies remain only partly effective because they are fragmented and not backed by a coherent institutional framework.

Social market economies occupy a middle ground, striking a balance between resilience and inclusiveness. Their ability to absorb external shocks while preserving social cohesion makes them a reference model for aligning recovery with sensible migration policy. However, this depends on sustained political support for inclusive governance and on welfare systems that can adapt to changing economic conditions. Time trends in social protection spending (2007 vs. 2022) further illustrate this resilience: shifts in outlays reveal how states adjust priorities in response to crises, demographic change, and immigration-related pressures.

The first regression (Table 3), with GDP as the dependent variable, includes government debt (GOV_D_P), immigration (IM), and sectoral employment (A10_EMP_Q4) as controls. Because of collinearity, the coefficients for the "Social Market" and "Mixed" model dummies are omitted, indicating that these categories are highly correlated with other predictors. This is consistent with the idea that the economic model operates as a structural backdrop that shapes debt, employment, and migration patterns rather than acting as an independent, free-standing driver in the regression.

In the first regression, immigration (IM) has a positive and highly significant effect on GDP ($\beta = 0.3204$, $p < 0.001$), indicating that higher immigration is associated with higher output, particularly in countries that promote labor market inclusion. By contrast, sectoral employment (A10_EMP_Q4) has a negative and significant coefficient ($\beta = -113.37$, $p < 0.001$), indicating inefficiencies or skill mismatches, particularly in mixed economies. Government debt (GOV_D_P) is not significant ($p = 0.790$), suggesting short-term changes in debt do not meaningfully predict GDP in this sample.

Strong time effects are also evident: GDP rises notably in later years, particularly after 2015, in line with post-crisis recovery efforts. The coefficient for 2023 is large and positive ($\beta = 259{,}606.6$, $p < 0.001$), capturing the cumulative impact of stabilization and policy reforms. Overall, the results highlight the significant role of immigration and labor market structure in shaping GDP, while the short-term impact of public debt appears to be limited.

The second regression, which uses the at-risk-of-poverty-or-exclusion rate (ILC_IW) as the dependent variable, sheds light on social outcomes. As in the GDP model, the "Social Market" and "Mixed" dummies are dropped due to collinearity, indicating that these models influence ILC_IW indirectly through institutions and welfare systems, rather than as standalone predictors.

Immigration (IM) has a very small coefficient that is close to statistical significance ($\beta = 3.70 \times 10^{-6}$, $p = 0.056$), suggesting a marginal but potentially favorable effect on poverty reduction, especially in countries with well-integrated migrants and strong welfare states. Government debt (GOV_D_P) is not significant ($p = 0.652$), and the PSLM16 variable is also insignificant ($\beta = -0.000645$, $p = 0.922$), suggesting that short-run debt changes and specific policy shocks have little direct impact on poverty in this sample.

Year dummies indicate a gradual improvement over time. For example, 2017 ($\beta = 3.1089$, $p = 0.015$) and 2023 ($\beta = 2.6159$, $p = 0.037$) are both significant, consistent with the cumulative effects of targeted social policies and post-crisis stabilization. Overall, the results emphasize that structural and institutional factors, as well as sustained policy efforts, are more significant for poverty risk than short-term fiscal movements.

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Table 4. Fixed-effects regression on the at-risk-of-poverty indicator

Fixed-effects (within) regression	Number of obs = 463
Group variable: ctry_id	Number of groups = 28
R-squared:	Obs per group:
Within = 0.0923	Min = 12
Between = 0.1352	Avg = 16.5
Overall = 0.0036	Max = 17
–	F(19, 27) = 5.70
Corr(u_i, Xb) = -0.2657	Prob > F = 0.000

(Std. err. adjusted for 28 clusters in ctry_id)						
ILC_IW	**Coefficient**	**Robust std. err.**	**t**	**P > |t|**	**[95% conf.**	**interval]**
econ_model	–	–				
Social Market	0	(omitted)	–	–	–	–
Mixed	0	(omitted)				
IM	3.70e–06	1.85e–06	2.00	0.056	–1.01e–07	7.50e–06
GOV_D_P	– .0422167	.092493	–0.46	0.652	– .2319966	.1475632
PSLM	– .0000645	.0006509	–0.10	0.922	– .0014001	.0012711
year						
2008	1.749436	.8366174	2.09	0.046	.0328393	3.466034
2009	1.346422	.6884152	1.96	0.061	– .0660895	2.758933
2010	1.712119	.7210001	2.37	0.025	.2327492	3.191489
2011	1.824712	.7802959	2.34	0.027	.2236769	3.425747
2012	2.096497	.6899339	3.04	0.005	.6808692	3.512124
2013	2.077974	.7275968	2.86	0.008	.5850692	3.57088
2014	2.189248	.9054717	2.42	0.023	.3313739	4.047123
2015	2.704978	.8864111	3.05	0.005	.8862129	4.523744
2016	2.48565	1.020822	2.43	0.022	.3910968	4.580202
2017	3.108924	1.199268	2.59	0.015	.6482303	5.569618
2018	3.231168	1.554612	2.08	0.047	.0413669	6.420969
2019	2.178858	1.404835	1.55	0.133	– .7036257	5.061341
2020	1.380365	1.185873	1.16	0.255	–1.052846	3.813576
2021	1.859038	1.493154	1.25	0.224	–1.204661	4.922737
2022	1.032385	1.261571	0.82	0.420	–1.556146	3.620915
2023	2.615982	1.192374	2.19	0.037	.1694332	5.06253
cons	10.74719	7.390726	1.45	0.157	–4.417332	25.9117
sigma_u	6.145823			–		
sigma_e	3.2389661					
rho	.78262624	(fraction of variance due to u_i)				

According to the regression results, predictive margins are a useful method for comparing GDP across the three economic models while holding other variables constant. They estimate the average expected GDP for each model, isolating the effect of structural differences. The estimates show clear gaps (Figure 7). Social market economies have the highest predicted GDP (Margin = 779,583.4, p = 0.012), reflecting the strength of their combination of growth, welfare systems, and institutional stability. Neoliberal economies have a lower, statistically weaker margin (Margin = 505,314.6, p = 0.266) and a wider confidence interval, consistent with greater exposure to market volatility. Mixed economies record the lowest expected GDP (Margin = 415,065.4, p = 0.027), in line with weaker institutions, tighter fiscal space, and hybrid structures.

These margins underscore the significant impact of economic models on both economic and social outcomes. Social market systems, with superior GDP performance, are best positioned to absorb shocks, support migrant integration, and align growth with social equity. Neoliberal economies benefit from flexibility and market dynamism, but struggle to strike a balance between efficiency and inclusion, which contributes to more variable growth, particularly during downturns. Mixed economies underperform due to structural weak-

Table 5. Predictive margins by economic models

Predictive margins — Number of obs = 466
Model VCE: Robust
Expression: Linear prediction, fixed portion, predict ()

Economic model	Margin	Delta-method std. err.	z	P > |z|	[95% conf.	interval]
econ_model	–	–	–	–	–	–
Neoliberal	505,314.6	454,537.3	1.11	0.266	–385,562.3	1,396,191
Social Market	779,583.4	310,557.8	2.51	0.012	170,901.2	1,388,266
Mixed	415,065.4	188,187.2	2.21	0.027	46,225.16	783,905.6

nesses, fragmented policies, and limited fiscal capacity, highlighting the need for targeted reforms to enhance resilience, reduce inequality, and improve their ability to manage economic restructuring and migration.

The regression results and predictive margins together indicate that economic models have a strong influence on post-crisis restructuring. Social market economies are the most effective at combining sustainable growth with reduced inequality, while neoliberal and mixed economies struggle to reach similar outcomes. This underlines the need to align economic and migration policies with each model's structural strengths and weaknesses, and to strengthen institutions and welfare systems. Hence, migration and fiscal policies have a greater impact.

Kernel density estimates provide a more detailed view of how GDP is distributed across models. Social market economies cluster at higher GDP levels, reflecting strong institutions, robust welfare states, and consistently high productivity. Neoliberal economies exhibit a flatter, more dispersed distribution, with peaks at lower GDP ranges, indicating weaker overall stability and greater sensitivity to global trade and market shocks, despite their policy flexibility.

Mixed economies, with their transitional and hybrid structures, tend to cluster at much lower GDP levels (peaking around EUR 350,000), reflecting persistent structural weaknesses, tight fiscal constraints, and limited institutional capacity. The skewed distribution shows that a few better performers do not close the gap with social market economies, underscoring their limited ability to absorb shocks and support sustainable migrant integration.

The kernel density results confirm large performance gaps across the three models, with social market systems consistently combining higher

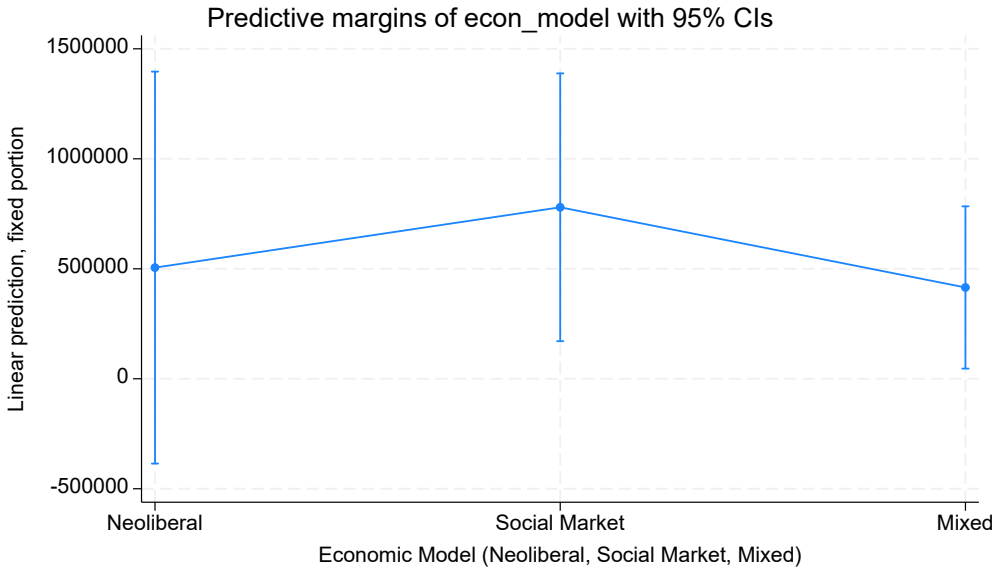

Figure 7. Predicted GDP by economic model (predictive margins)

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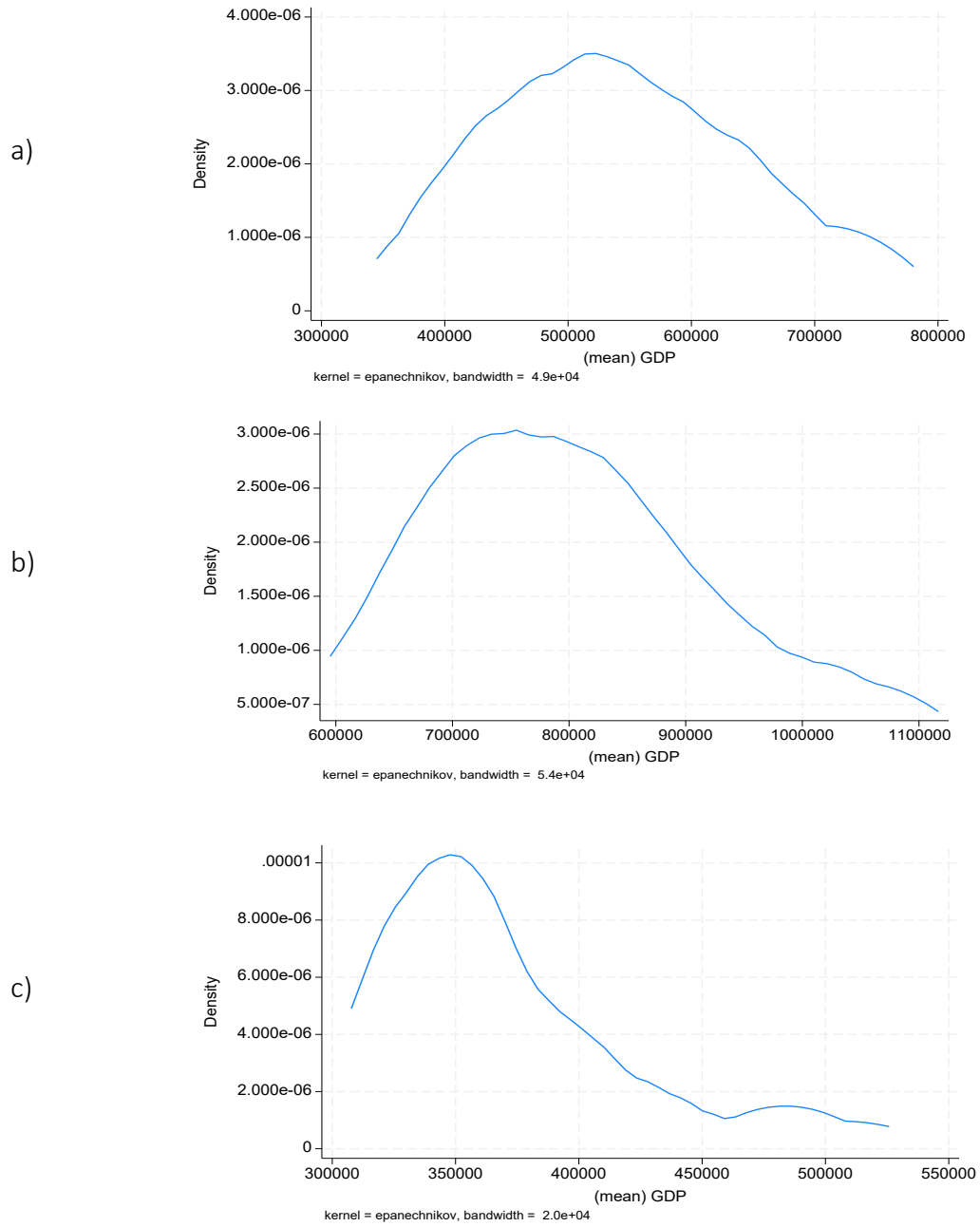

Figure 8. Kernel density estimate of GDP within (a) social market, (b) neoliberal, and (c) mixed economic models

GDP and stability. At the same time, neoliberal and, especially, mixed economies are lagging and facing deeper structural challenges.

The estimates indicate that the effects of immigration on growth and poverty are largely mediated by the economic model, rather than by migration alone. Country and time effects dominate, indicating that labor market institutions, welfare regimes, and fiscal capacity significantly shape outcomes, far more so than short-term flows. This requires model-specific and cross-cutting policy adjustments, summarized as follows and grounded in the empirical patterns documented in Figures 1, 2, 5-7 and Tables 2-5.

In social market economies, where social contributions and GDP are highest and most stable (see Figure 1 and Figure 5, and predictive margins in Table 5), these findings imply the following priorities:

- Preserve and fine-tune inclusive systems. Maintain comprehensive welfare and active labor market policies that already help turn migration into higher GDP and lower poverty.
- Guard fiscal sustainability. Adjust benefit design, contribution rates, and eligibility rules so inclusive systems remain financially viable as migration and aging pressures increase.
- Invest in targeted upgrading. Expand language training, skills recognition, and upskilling programs to enable migrants to transition more quickly into higher-productivity jobs.

In neoliberal economies, which exhibit more volatile GDP paths and wider dispersion (see Figures 2 and 5), and where immigration raises output but does not systematically reduce poverty (Table 3 and Table 4), policy priorities differ:

- Strengthen basic protection floors. Introduce or expand minimum income schemes, housing support, and health care access to reduce vulnerability among low-paid native and migrant workers.
- Reduce labor market dualization. Use in-work benefits, minimum wage policies, and enforcement of labor standards to limit segmentation between secure "insider" jobs and precarious "outsider" positions.
- Scale integration and skills policies. Prioritize targeted integration, vocational training, and recognition of qualifications so migration boosts productivity instead of reinforcing low-wage traps.

In mixed economies, which combine lower average GDP, more volatile poverty dynamics, and tighter fiscal space (see Figures 2, 6 and the kernel density estimates in Figure 8), reforms need to target institutional consolidation and public finance efficiency:

- Consolidate fragmented welfare systems. Simplify and unify social protection schemes to improve coverage, close gaps, and make support for migrants and natives more transparent.
- Improve public finance efficiency. Strengthen tax collection, reduce leakages, and shift spending toward productive investment and human capital.
- Use EU instruments strategically. Deploy EU cohesion, recovery, and resilience funds to modernize infrastructure, support regional development, and create quality jobs that can absorb migrant labor.

These cross-cutting implications follow from the combination of regression results on GDP and poverty (Tables 3-4), predictive margins (Table 5 / Figure 7), and descriptive evidence on social contributions and social protection (Figure 1):

- Integrate migration into broader reform packages. Treat migration policy as part of combined labor market, social, and fiscal reforms, not as a stand-alone lever.
- Focus on the quality of employment. Prioritize policies that raise job quality, productivity, and inclusion in sectors where migrants are concentrated.
- Monitor distributional effects. Use disaggregated indicators by skill, sector, and migration status to track who gains and who loses from restructuring, and adjust policies accordingly.

4. DISCUSSION

The empirical results show that immigration is strongly and positively associated with GDP, but has only a minor direct effect on poverty risk. The economic model significantly influences both links. In the fixed-effects regression, immigration enters GDP with a large, highly significant coefficient ($\beta \approx 0.32$, $p < 0.001$), while the at-risk-of-poverty rate responds only weakly ($\beta \approx 3.7 \times 10^{-6}$, $p \approx 0.06$). This pattern matches broader evidence that human capital inflows and migration-related financial and knowledge transfers support growth when they operate within strong institutional and productive structures (Djamal et al., 2023; Tsaurai & Aboagye Danquah, 2025; Bashynska et al., 2022; Bilan et al., 2025). Moreover, inequality and vulnerability are driven mainly by structural features of economic models, technological change,

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and welfare regimes rather than migration per se (Bhowmik, 2024; Gondauri, 2024; Bashynska et al., 2023; Knapińska & Woźniak-Jasińska, 2024).

Differences between social market, neoliberal, and mixed economies also align with comparative evidence on EU migration governance and varieties of capitalism. Kernel densities, boxplots, and predictive margins show social market economies concentrated at higher GDP with low dispersion, neoliberal economies with more volatile outcomes, and mixed economies persistently underperforming. These echo arguments that coordinated, welfare-intensive models are better at turning shocks, including migration shocks, into upgrading, whereas liberal and hybrid regimes are more exposed to volatility and segmentation (Lafleur & Stanek, 2017; Kuzior et al., 2020, 2024; Kochaniak et al., 2024; Hnatenko & Tanchyk, 2024). The fact that immigration boosts growth but does not systematically reduce poverty is consistent with research on EU migration and the economic crisis, which shows that similar inflows are filtered through diverse labor-market institutions, benefit systems, and political coalitions, generating divergent social outcomes (Estevens, 2018; Hatton, 2020; Bannikova et al., 2023; Pacek, 2020).

The findings empirically support the claim that different economic models, with distinct mixes of labor-market flexibility, social protection, and industrial specialization, shape both the speed and inclusiveness of restructuring and migrant incorporation (Yeremenko & Hrytsenko, 2025; Knapińska & Woźniak-Jasińska, 2024). The strong positive link between social contributions and GDP, and the superior GDP of social market economies, is consistent with studies of regional modernization, investment attractiveness, and post-crisis stability that view institutional quality and welfare capacity as assets in crisis management and migration governance (Ladonko et al., 2022; Bashynska et al., 2022; Kuzior et al., 2024). By contrast, weaker and more volatile outcomes in neoliberal and mixed economies echo evidence on heightened social and demographic risks from the Russo–Ukrainian war and the EU migration crisis in fiscally constrained, institutionally fragmented states (Dobrovolska et al., 2024; Zozulinskyy, 2024; Koilo, 2024; Tsymbal & Demediuk, 2025). Overall, the study adds a macro-quantitative layer showing that, even after controlling for country and time effects, economic models systematically condition how migration translates into growth and poverty, reinforcing calls for integrated, model-sensitive packages of migration, labor market, social, and fiscal reforms in post-crisis EU restructuring.

This study has several limitations. First, it relies on country-level, harmonized indicators of migration, public finances, social protection, and labor markets, which mask regional, sectoral, and group-specific differences, as well as irregular migration, informal employment, and unregistered activity. The results, therefore, describe broad macro-structural patterns rather than local labor market dynamics or the lived experience of migrants.

Second, the typology of EU economic models and the distinction between "crisis" and "post-crisis" periods are necessarily stylized. National systems are hybrid and evolving, and recent shocks overlap in time, so some country-specific nuances are unavoidably lost. Third, the empirical design is observational and cannot fully address endogeneity, reverse causality, or the influence of specific policy instruments. Future research should complement this approach with micro-level, subnational, and sectoral data, as well as richer institutional analysis and stronger causal identification strategies.

CONCLUSION

The aim of this paper is to examine how different EU economic models mediate the relationship between post-crisis economic restructuring and migration pressures by analyzing the co-evolution of immigration, public finance, social protection, and labor market indicators. It seeks to identify which institutional configurations most effectively harness migration to support resilient and inclusive growth.

The study uses a panel of EU member states in the post-crisis period, with harmonized country-level data on immigration, economic performance, social protection, public finances, and labor markets.

Countries are grouped into three stylized models (social market, neoliberal, and mixed) and analyzed with two-way fixed-effects panel regressions (with interactions), predictive margins, and kernel-density comparisons. This design captures both the average effect of immigration and its variation across different institutional regimes.

The data suggest immigration has small but real positive results on GDP per person, mostly in social market economies. The result is less strong in neoliberal systems and almost nonexistent in mixed economies. Across the board, immigration's direct effect on poverty is very small; country and time factors explain most differences. Neoliberal economies show more inequality and change, while mixed economies stay weak in structure. In general, how migration and institutional models work together, not just migration by itself, affects how things change after a crisis.

Policy implications are model-specific. Social market economies should preserve and refine inclusive welfare and labor market institutions to continue absorbing migrants without compromising fiscal sustainability. Neoliberal economies require stronger basic social protection and less labor market dualization, so that migrants are not trapped in low-wage, precarious jobs. Mixed economies require deeper reforms to consolidate social protection, enhance fiscal efficiency, and effectively leverage EU funds for productive investment and human capital development. In all three, aligning migration, labor, social, and fiscal policies is key to turning migration into a driver of resilient, inclusive post-crisis restructuring.

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