The political economy of immigration and welfare state reform: a collection of comparative political and economic essays on human mobility and social protection

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4 Intra-EU Labour Mobility and the Welfare State: An Empirical Analysis of Embedded Liberalism in the Context of Free Movement

Abstract

Freedom of movement is a fundamental principle of the European Union (EU) and yet this key pillar of European integration has become a topic of controversy as member states find their labour markets and social security systems under pressure. Despite heated public debates, empirical insight into the role of immigration in shaping contemporary welfare systems at the macro-level is rather limited, and so this article explores the extent to which intra-EU labour mobility leads to changes in social welfare provision. A key reason why this question remains unanswered is that a lack of specific indicators on intra-EU labour migration renders the relationship difficult to study. Thus, this article expands upon previous literature by utilising data from the EU-LFS in order to analyse this previously 'missing' population of interest. For the welfare state, we disaggregate social welfare effort into separate subdomains allowing us to capture specific programme-related changes across countries. Additionally, we complement spending data with replacement rates data on unemployment benefits and social assistance benefits. Our results show that intra-EU labour migration, in particular from Central and Eastern European (CEE) member states, is positively associated with several subdomains of social spending. This positive association is also represented in the unemployment and social assistance replacement rates, suggesting that CEE labour migration is linked with increasing generosity of welfare states across 16 European countries. We find evidence to support Embedded Liberalism, that governments in open economies expand the welfare state in order to insure citizens against the labour market risks incurred and conclude that European welfare states seem to be resilient in the face of increasing intra-EU labour migration.

Keywords: free movement, labour migration, welfare state, social policy, European Union

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4.1 Introduction

A long-standing assertion concerning immigration and the welfare state is that 'ultimately, national welfare states cannot coexist with the free movement of labour' (Freeman, 1986, p. 51). Nevertheless, under current European Union (EU) law, not only are EU citizens able to freely reside and work in other EU member states, but they are also entitled to equal treatment in their residing country's tax and benefit systems. Crucially, intra-EU workers (the focus of this article) are typically included in the social protection systems of their host nations from their first day of employment (Blauberger & Schmidt, 2014).[1] As a result, the argument that immigration is an important consideration in the development of contemporary European welfare states has become increasingly relevant in academic research. However, while the jury is still out on how immigration impacts the welfare state (Burgoon & Rooduijn, 2021; Finseraas, 2008; Gaston & Rajaguru, 2013; Soroka et al., 2016), the topic continues to become ever more politicised and polarised.

Part of the controversy is linked to a more general backlash against globalisation and everything that it entails. For example, as nations become increasingly connected through migration and trade, this raises fears around the erosion of longstanding traditions, cultural norms and values within the nation or of being economically 'left-behind' as labour markets change rapidly in light of increasing global competition. Intra-EU labour migration is tied up in the process of globalisation, as trade and capital flow more easily across borders, so do the migrants who fill the resulting gaps in European labour markets. By thinking of migration as the third key facet of globalisation, we borrow two key theories from the globalisation literature to better understand how immigration might affect the welfare state at the macro-level. First, the embedded liberalism thesis argues that in order for elites to maintain an open international economic order, governments need to provide a certain level of social protection to safeguard citizens from the risks brought about by globalisation (Ruggie, 1982).[2] Whereas, the efficacy hypothesis argues that due to fiscal pressures arising from globalisation, governments seek to reduce welfare state effort in order to reduce the fiscal burden and stay competitive globally. With these arguments in mind, we aim to examine how intra-EU labour mobility has affected welfare state effort and welfare generosity across European countries.

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1 EU citizens' cross-border access to social benefits and the welfare systems of their country of employment or residence are governed by a highly complex set of rules from various treaty agreements, secondary legislation, and case law that in certain cases can condition this access by requirements such as length of residence, work, and contributions etc.

2 While Ruggie's theory of 'Embedded Liberalism' was intended for the internationalisation of trade and capital, we argue it is generalisable to the globalisation of labour – i.e., international migration.

The increase in intra-EU labour mobility, in particular from Central and Eastern European (CEE) countries, might be seen as one of the most substantial structural changes in European welfare states in the past 20 years, but to the best of our knowledge, the association between intra-EU labour migration and welfare state effort has not yet been analysed. The current evidence on the association between migration and welfare state efforts is rather mixed (Fenwick, 2019; Gaston & Rajaguru, 2013; Lipsmeyer & Zhu, 2011; Römer, 2023; Soroka et al., 2016; Taschwer, 2021) and this paper seeks to contribute theoretically and empirically to this comparative political economy literature on migration and welfare states. We do so by building on evidence from Fenwick (2019) through narrowing the scope of this article to focus on intra-EU labour mobility and by disaggregating welfare state effort further. Specifically, we distinguish between Western European labour mobility[3] and Central and Eastern European (CEE) labour mobility[4], two previously unmeasured categories of movement, in order to ask: do these two groups of labour migrants[5] have differing effects on welfare state effort? In addition, welfare state spending is disaggregated into five component parts (old age, incapacity, family, active labour market policies, and unemployment spending) and complemented with two replacement rates (unemployment and social assistance). Our findings indicate that the type of movement is important for better understanding how immigration and mobility shape the boundaries of the welfare state. In particular, we find evidence in support of a compensatory effect in light of increasing mobility across the EU.

The rest of this paper is organised as follows. In the next section, we review the relevant literature and draw hypotheses regarding the effect of the two types of labour migration on the welfare state to test in the analysis. The third section presents our data and methodology for the empirical analysis, which is then followed by a discussion of the results. The final section concludes and reflects upon the implications of our findings.

3 For simplicity, we use the term Western European to refer to the original EU-15 member states plus European Free Trade Association (EFTA) countries.

4 For simplicity, we use the term Central and Eastern European to refer to the member states incorporated in the three successive enlargements of the EU (2004, 2007, and 2008).

5 We use the terms labour migration and labour mobility interchangeably in this article, as those moving internally within the EU can be both a mobile citizen as recognised by the EU and a migrant as recognised by their host nations.

4.2 Literature and Hypotheses

4.2.1 Embedded Liberalism, immigration, and the welfare state

Against a backdrop of increasing immigration and generous social policies, a crucial question in contemporary European countries is: does immigration lead to changes in social welfare provision? A significant body of research indicates that it may be difficult to reconcile generous welfare provision with a more open immigration regime because immigration can lead to pressure for retrenchment from concerns about fiscal viability at the macro-level, but also from reduced solidarity between citizens at the micro-level (Brady & Finnigan, 2014; van Oorschot, 2008; Schmidt-Catran & Spies, 2016). This challenge is often referred to as the "Progressive's Dilemma" (Goodhart, 2004), which argues that racial diversity and/or immigration undermines the welfare state through challenging the foundations of solidarity that a risk-pooling system – such as the welfare state – relies on, necessitating that progressives are faced with a trade-off of either supporting greater diversity or providing generous benefits.

In their seminal study, Alesina at. al. (2001) show that in the United States (US) a one percentage point increase in the probability of drawing two people who belong to different ethnic groups from a population is associated with a decrease of 7.5 percentage points in social spending as a percentage of GDP. Alesina and Glaeser (2004) expand their earlier study to 54 countries worldwide and reason that the countries with the most generous welfare states are also the most homogeneous, such as those found in Scandinavia. They argue that generous welfare states require a homogeneous society because they depend on solidarity between citizens, which comes from common linkages such as origin, language, and culture. Hence, Alesina and Glaeser state "if Europe becomes more heterogeneous due to immigration, ethnic divisions will be used to challenge the generous welfare state" (2004, p. 11) and that increasing immigration in Europe should be considered problematic for the future of European welfare states.

However, while it might be reasoned that ethnic diversity is a contributing factor to the lack of a developed welfare state in the US, these findings cannot necessarily be generalised to assert that increasing ethnic diversity in well-established welfare states will lead to their retrenchment. As Pierson (1996) argued in his discussion on the new politics of the welfare state, expanding and retrenching the welfare state are profoundly different processes and that by developing a welfare state, the politics around social policy is transformed. Evidence in Europe that immigration is detrimental to the sustainability of welfare states mostly relies on individual-level data that examines the attitudinal effects of increasing immigration on support for the welfare state (Burgoon, 2014; Burgoon & Rooduijn, 2021; Cappelen et al., 2025; Cappelen & Peters, 2018; Mau & Burkhardt, 2009) and not on

whether these changes in support involve changes in policy responses and thus necessary spending consequences at the country-level. Furthermore, while micro-level theories on attitudes may explain why anti-immigration attitudes and support for welfare state retrenchment are linked, most macro-level studies do not find evidence of clear reductions in social spending or the generosity of welfare states in Europe (Fenwick, 2019; Gaston & Rajaguru, 2013; Lipsmeyer & Zhu, 2011; Römer, 2023; Soroka et al., 2016).

A crucial theory at the macro-level is the embedded liberalism hypothesis which argues that governments will compensate citizens for accepting extra risk in the face of more open markets. It was initially coined by Ruggie (1982) to explain why governments committed to free trade would need to provide greater social protection to their citizens. However, the explanation can be extrapolated to also explain why governments may consider compensating those who are exposed to greater labour market risk as a result of increasing immigration and labour mobility. Rodrik (1998, 2011) follows this argument and argues that the only way to preserve the legitimacy of markets is to protect citizens from the risks that comes with them. Stating "if you want markets to expand, you need governments to do the same" (2011, p. 18). For immigration and supporters of more open or more liberal borders, these internationalist principles can arguably then be resolved through a commitment to greater redistribution and other social policies. In line with this reasoning, Naumann and Stoetzer (2018) found that people who are exposed to more labour market competition from immigrants also have stronger preferences for redistribution.

For European and other OECD countries, a few studies have sought to analyse this link between immigration and welfare state effort at the macro-level. These studies provide somewhat conflicting evidence, likely because they use different measures for welfare state effort and for immigration. The studies by Soroka et al. (2006) and Gaston and Rajaguru (2013) rely on total social expenditures. In an updated article, Soroka et al. (2016) go a step further and disaggregate expenditures into various welfare state programmes, likewise Röth et al. (2022) use spending on different programmes as their dependent variables. Fenwick (2019) takes a broader approach and uses two different measures to express welfare state effort, total social expenditures and a welfare state generosity index, and Römer (2023) adopts a similar approach by analysing both total social expenditures and generosity indices for unemployment benefits and pensions. In contrast, Lipsmeyer and Zhu (2011) provide a more specific analysis and focus solely on unemployment replacement rates, as does Taschwer (2021) who exclusively examines minimum income benefit replacement rates. Common ground in this group of studies is, however, that they all use aggregate indicators of migration even though different types of movement yield different economic, societal, and political impacts and can therefore be expected to contribute to welfare state reform in different ways.

In a comparative study of 18 OECD countries, Soroka et al. (2006) explore the effect of changes in stocks of foreign-born on changes in social welfare spending. They find that welfare spending grows less in countries with increasing immigration than in countries with smaller changes in immigration. In contrast, Gaston and Rajaguru (2013) find no evidence to suggest a negative association between immigration and social spending. Instead, they show that depending on the sample of countries chosen, immigration can increase social welfare spending. This resonates with Fenwick (2019), who shows that the proportion of foreign-born is positively associated with social spending. In contrast, Römer (2023) finds a negative association between net migration and social spending in the short term. On the other hand, she also finds a positive association between net migration and the generosity of unemployment benefits and pensions, concluding that there is little evidence that migration is undermining the generosity of the welfare state. Moreover, Lipsmeyer and Zhu (2011) show that domestic political pressures play a larger role than immigration for explaining variation in unemployment benefits and that the impact of immigration is conditional on union density and/or left-party strength. However, this may not be the case for minimum income benefits. Taschwer (2021) finds that migration is negatively associated with minimum income benefit levels and that this association is not affected by partisan politics.

In addition, the type of social protection programme – and whether it is contributory or non-contributory, targeted or universal – may also be relevant for assessing immigration's impact on welfare state effort. Theoretically, different types of programmes are built on different principles, and these principles can influence the way individuals may respond to immigration and redistribution (Boeri, 2010; Muñoz & Pardos-Prado, 2017). Based on previous research, it is probable that any association with welfare state effort could be programme specific. Boeri (2010) finds that immigrants, on average, tend to rely more on non-contributory social policies, such as social assistance, than their native counterparts. Whereas he finds the opposite for contributory benefits, such as pensions, and notes that immigrants are less likely to receive sickness and unemployment benefits than natives. Boeri (2010) argues that this 'residual dependency' depends on the skill composition of migrants and that migrants with lower educational attainment are associated with a higher fiscal cost to the welfare state. As such, programmes that migrants are expected to more heavily rely on may be more likely to be targets for retrenchment or welfare chauvinism. Likewise, in the case of contributory benefits for example, the relationship between contributions paid and benefits received is clearer and thus potentially less controversial as immigrants have arguably paid for their own benefits (Eick & Larson, 2022). However, as contributory benefits are based on prior contributions, this also makes them more vulnerable to welfare chauvinism as individuals are easier to exclude through measures such as a minimum number of years of contributions required.

Muñoz & Pardos-Prado (2017) find that targeted and means-tested social programmes exacerbate the negative association between immigration and public support for redistribution. Previous research supports this finding and argues that by defining boundaries and categories regarding who can and cannot benefit, a targeted programme becomes more vulnerable to controversy and conflict between groups than a universal one that benefits everyone (Crepaz, 2007; Afonso, 2015; Soroka et al., 2016; Jorgensen & Thomsen, 2016). Thus, a universal programme, or one with a broad base of support and buy-in across the income distribution, is less likely to face opposition and potential retrenchment. On the other hand, when looking at the difference between social compensation and social investment interventions, Bonoli et al. (2024) find that there is no difference between social programme types when it comes to whether or not natives believe that immigrants are deserving of welfare and argue that general exclusionary attitudes towards the out-group (migrants) are driven by in-group (natives) favouritism.

Taken together, these findings show that the association between immigration and welfare state effort is complex, and the results underline the relevance of including various programmes in the analysis.

4.2.2 Welfare state effort and differentiating between types of mobility

Another aspect which could explain the mixed results and conclusions in the existing literature is the way researchers choose to operationalise migration. Depending on the definition and data chosen to represent mobility, this can influence the results and interpretations of studies. Moreover, studies that use more general indicators such as 'foreign-born as a percentage of the population' or 'net migration' may miss some key nuances in the way immigration can reshape the boundaries of the welfare state. As such, we focus on two specific immigration indicators in this chapter – EU13 and EU15 intra-EU labour mobility – to help understand the evolution of welfare state effort within the EU in light of a very particular change in patterns of mobility within its borders.

Following research on how narratives around particular categories of mobility can alter public attitudes towards those specific groups, it is thus reasonable to expect that different groups may affect the welfare state in diverse ways (Blinder, 2015; Hellwig & Sinno, 2017; Hjorth, 2016; Jørgensen & Thomsen, 2016). Based on a survey experiment conducted in Germany, Norway, and Sweden, Goerres et al. (2020) find that respondents who were primed to think about costs generated by immigration are more concerned about the affordability of the welfare state than respondents who were part of a control group. This effect is significant for both non-western immigration and for intra-EU labour mobility, but the effect is less strong for intra-EU labour mobility. Hjorth (2016) undertakes a study to understand solidarity across borders within the EU in order to assess

if there is support for the development of a cross-border welfare rights. Using survey data from Sweden, they show that when a welfare recipient is mentioned as Bulgarian (an EU13 member state) vs Dutch (an EU15 member state), an individual's opposition to cross-border welfare rights increases by 6 percentage points. Similarly, Hellwig and Sinno (2017) argue that the public have group-specific concerns and associate different types of migrants with different types of threats. Using survey data from the United Kingdom (UK), they find that Muslim immigrants are more likely to trigger concerns regarding cultural change and security, while Eastern Europeans are more likely to prompt economic and crime related concerns. Jørgensen and Thomsen (2016) argue that "immigrant groups are positioned differently according to their status and perceived value for society" (p. 332) and as such we expect that the nationality of a welfare recipient could play a role in shaping public support for the welfare state and ultimately alter its previous levels of generosity by, for example, seeking to ring-fence benefits from certain groups (welfare chauvinism) or even overall retrenchment if this is not possible. However, EU labour migrants' right to equal treatment and non-discrimination in their host country is protected under EU law – Directive 2004/38/EC[6] – which enables EU mobile citizens access to the same social advantages as natives (Blauberger & Schmidt, 2014; European Commission, 2018a)[7].

In a macro-level analysis of the association between immigration and welfare state effort, the estimated association is ultimately a net effect of the positive and negative mechanisms which might play a role. To recall, a negative impact from immigration on welfare state effort can be expected because of concerns about fiscal pressure on the welfare state or because of reduced solidarity between groups or individuals. At the same time, a positive impact may be expected because higher job insecurity stemming from increased labour market competition results in a higher demand for compensation via welfare state programmes. For two reasons, we expect that the net effect of intra-EU labour mobility we will be more positive when compared to the net effect for immigration in general. First, because labour migration increases labour market competition more directly than migration in general, the demand for compensation through increased welfare state effort will be larger in the case of labour migration. In addition to the increase in regular labour market competition, intra-EU labour mobility could also create issues such as social dumping, i.e. when employers undermine collective agreements made with the native labour force by exploiting foreign labourers who are often willing to work longer hours for

6 Also known as 'The Citizens' Rights Directive'.

7 However, certain caveats and ambiguous concepts provide room for interpretation and member states aim to minimise the domestic impact of the law – for example, by increasing the burden of proof for EU citizens' rights to reside and access social protection (Blauberger & Schmidt, 2014).

lower wages (Brady & Finnigan, 2014; Jørgensen & Thomsen, 2016) thus also increasing the demand for a stronger social security net. Second, since labour market participation is higher among labour migrants than among migrants in general, the concerns among natives and policymakers about the pressure from labour migrants on the government's budget for social security will be lower. A recent study by Boffi et al. (2024) shows that in many European countries, the net fiscal position of intra-EU mobile citizens is greater than that of non-EU migrants. Based on our considerations regarding higher labour market competition and lower concerns about fiscal pressure, we expect that the net association between immigration and welfare state effort will be more positive in the case of intra-EU labour mobility than in the case of migration in general. However, it can be expected that this differential effect will be more pronounced in the case of benefit generosity than in the case of social expenditure, because of a mechanical effect in the latter case. Since the net fiscal position of non-EU migrants is relatively more negative, non-EU migrants may increase social expenditure because they receive more social transfers.

Finally, we explore whether the association between immigration and welfare state effort differs between migration from Central and Eastern European countries[8] and migration from Western-European countries[9]. Since the enlargement of the EU in 2004, the stock of labour migrants from CEE countries to WE countries has increased rapidly (see Table 4.2), unlike the stock of immigrants from Western European countries which has remained relatively stable (see Table 4.3). Therefore, it could be expected that increasing migration in recent years, especially from CEE countries, is responsible for perceived or observed increased labour market competition and subsequently the perceived labour market risk of individuals. As a result, we would expect that increasing CEE labour migration has increased the demand or the need for compensation through welfare state effort more than migration from Western European countries (as the stock of these migrants has remained more or less the same since 2004).

4.2.3 Economic, political, and institutional factors

Alongside the effects of EU labour migration, we expect a range of other factors to play a role in determining levels of social protection. First, the degree of economic openness of a country. Previous literature tends to argue in favour of one of two leading concepts, either the efficiency hypothesis

8 Bulgaria, Croatia, Cyprus, Czechia, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovakia, Slovenia.

9 Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Liechtenstein, Luxembourg, Netherlands, Portugal, Spain, Sweden, Switzerland, UK. This includes the 15 pre-2004 expansion countries. Plus, EFTA countries minus Norway as Norway was excluded from the EU-LFS data provided to us.

(governments reduce the tax burdens of domestic producers in light of international competition and the resulting budgetary pressure leads to reductions in social protection) or the compensation hypothesis (individuals demand compensation for the increased risks incurred by economic openness) (Rodrik, 1998; Swank & Steinmo, 2002). However, Iversen and Cusack (2000) reason that deindustrialisation rather than globalisation leads to economic insecurity and subsequently demand for greater compensation. We account for both globalisation and deindustrialisation in our model and expect that globalisation will have a larger influence because the sample covers the time period 2004-2013 when large-scale deindustrialisation is no longer prominent in Europe, but the economies of several countries become increasingly more open.

Second, domestic political and institutional factors are also expected to play a role. It is generally thought that left-wing governments favour more generous social protection programmes than governments that lean to the right (Allan & Scruggs, 2004). While this has been debated (Pierson, 1996), recent work shows that partisan theory is still often relevant (Swank, 2020). Similarly, strong trade unions are expected to be positively associated with welfare state effort as they tend to be key supporters of social insurance programmes (Afonso et al., 2020; Rueda, 2007; van Vliet & Wang, 2019). Finally, socioeconomic conditions such as the level of unemployment or GDP of a country are likely to affect the demand for social protection and a country's ability to provide extensive social protection schemes.

4.3 Data and Methods

4.3.1 Sample

The sample includes 16 European countries: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Portugal, Spain, Sweden, Switzerland, the Netherlands, and the United Kingdom (UK). Thus, the study includes the original EU15, plus Switzerland for the time period 2004-2017 during which the UK was still a member of the EU. The sample was selected because these states have experienced inflows of intra-EU labour migration and have well-established welfare states. Furthermore, the sample sizes that the created migration indicators are based on are large enough to be considered representative in these countries. Switzerland is included because it is a member of the Schengen Area, has a comparable economy and welfare state to the EU15, and is traditionally considered a country of immigration.[10] In the ideal case, our sample would

10 Under these criteria, we would have included Norway – however, the country was withheld from EU-LFS data on the grounds that the data on migrants in Norway is unreliable due to a large number of non-responses.

cover a longer period. However, the data is restricted for two reasons. First, the variables we created to express EU labour migration cannot precede 2004 because the anonymisation process of the EU-LFS prior to 2004 restricts access to information regarding the country of birth of migrants. Even if we had data before this period, theoretically, it would not make sense to include it because EU13 migration under the legal conditions of nominally equal access to the labour market only commenced following this date. Second, the EU-LFS data provided for the creation of the migration indicators end in 2016 and consequently we cannot extend the time frame beyond this point. A final point regarding the sample is that the social assistance replacement rate ends in 2013.

4.3.2 Dependent Variables

The "Dependent Variable Problem" has been a debated issue in the welfare state literature for some time now (Allan & Scruggs, 2004; Clasen & Siegel, 2007; Starke, 2006). In particular, Green-Pedersen (2004) argues that depending on how you theoretically conceptualise the welfare state, then the data chosen in order to operationalise it will impact the evaluation of welfare state change. With this in mind, we complement welfare state spending from the OECD's Social Expenditure (SOCX) Database (OECD, 2024b) – a traditional indicator used to measure 'welfare state effort' – with the OECD's unemployment replacement rate (OECD, 2024a) and a social assistance replacement rate updated from Wang and van Vliet (2016a; 2016b). Even though we control for the number of benefit recipients in the models of social expenditure, as will be discussed below, replacement rates are arguably better indicators of generosity than spending as they are not directly related to the number of beneficiaries, amongst other reasons (Iversen, 2001; Scruggs, 2006). In studies on migration, this might be even more relevant than in other welfare state research because according to the fiscal pressure argument, there might also be a mechanical link between immigration and social expenditure (Römer, 2023). Whether or not this is the case, and the extent to which migrants are net contributors to the welfare state, are debated in the literature (Boeri, 2010). Thus, the use of replacement rates to remove the direct link with number of recipients is useful additional tool. Additionally, Iversen (2001) argues that replacement rates are a good indicator of the extent to which risks in the labour market, such as becoming unemployed, are redistributed. By using a variety of dependent variables in order to operationalise welfare state effort, we aim to capture more dimensions of the welfare state and thus provide a more nuanced view of how immigration influences the welfare states of 16 European countries.

For welfare state spending we disaggregate it into five subdomains: old age, incapacity, family, active labour market policies, and unemployment.[11] Each category is measured as a percentage of gross domestic product (GDP). The data on replacement rates comes from two different sources. First, we use a net minimum income replacement rate from the Social Assistance and Minimum Income Levels and Replacement Rates Dataset (Wang & van Vliet, 2016a; 2016b). The indicator is based on data from the 'Social Assistance and Minimum Income Protection Dataset' (Nelson, 2013) and elaborates on the concept of net income replacement rates as used in the Unemployment Replacement Rates Dataset (van Vliet & Caminada, 2012). The replacement rate is an average of three household types (single person households, lone parent households with two children, and two parent households with two children).

The second replacement rate is a net unemployment benefit replacement rate, developed from the OECD's Tax-Benefit Models (OECD, 2017a, 2018) and updated data from the OECD (2024a). We use the initial period of unemployment and average across single person households and lone parent households with two children. Both replacement rates use the net average wage (AW) for the denominator. The sample time frame in which this study takes place (2004 – 2017), means that the AW is more appropriate as the methodology has been updated to represent a more modern average worker. For almost all countries, the unemployment replacement rate is greater than the social assistance replacement rate. The trends for replacement rates are more heterogeneous between countries than spending. Switzerland has the highest unemployment replacement rate, but the lowest social assistance replacement rate, while the United Kingdom has low levels for both, and Denmark has relatively high levels for both, Sweden has seen a considerable decrease in both replacement rates. Finally, Greece does not provide social assistance. Table 4.1 provides some descriptive statistics for the seven dependent variables.

11 Due to the re-categorisation of Denmark's unemployment spending from public to voluntary private by the OECD meaning public spending on unemployment appears as 0, we used spending data on unemployment from the 'Comparative Political Data Set 1960-2015' (Armingeon et al. 2017) and the Nordic Health and Welfare Statistics (NHWSTAT) (2024) for Denmark.

Table 4.1: Dependent Variables, European Countries, 2004-2017

Variable	*Measure*	*N*	*Mean*	*SD*	*Source*
Old Age Spending	Public spending on pensions, early retirement pensions, home-help and residential services as a percentage of GDP	224	8.65	2.76	OECD (2024b)
Incapacity Spending	Public spending on care services, disability benefits, benefits accruing from occupational injury and accident legislation, and employee sickness payments as a percentage of GDP	159	2.57	1.03	OECD (2024b)
Family Spending	Public spending on child allowances and credits, childcare support, income support during leave, and single parent payments as a percentage of GDP	224	2.38	0.92	OECD (2024b)
ALMP Spending	Public spending on employment services, training, employment incentives, integration of persons with disabilities, direct job creation, and start-up incentives as a percentage of GDP	224	0.75	0.37	OECD (2024b)
Unemployment Spending	Public spending on unemployment compensation and early retirement for labour market reasons as a percentage of GDP	224	1.34	0.80	OECD (2024b), Armingeon et al. (2017), NHWSTAT (2024)
Social Assistance Replacement Rate	Net social assistance benefits as a percentage of the net average wage	146	40.25	11.12	Wang & van Vliet (2016a, 2016b), Nelson (2013), OECD (2017a)
Unemployment Replacement Rate	Net unemployment benefits as a percentage of the net average wage	224	56.82	21.03	OECD (2024a)

4.3.3 Explanatory Variables – Measuring Intra-EU Labour Migration

In this study we aim to compare the effects of two types of labour mobility to 16 European countries:

1. Stock of EU15 & European Free Trade Association (EFTA) labour migration (as a prcentage of the labour force)
2. Stock of EU13 labour migration (as a percentage of the labour force)

A traditional indicator for immigration is 'foreign-born as a percentage of the population' (Burgoon et al., 2012; Burgoon, 2014; Gaston & Rajaguru, 2013; Fenwick, 2019; Mau & Burkhardt, 2009; Soroka et al., 2006; 2016) because it is easily defined, data on stocks of migrants tend to be more reliable than flows of migrants, and there is good cross-country coverage for a long period of time (de Beer et al., 2010; Fenwick, 2021). However, we use these two new indicators for immigration to build further on the arguments of previous researchers and provide a more nuanced view of migration and social protection.

The two indicators have been created using EU-LFS data. We use information on country of birth[12] and labour force status[13] to identify labour migrants from Western European and CEE countries. Weights provided in the survey data are used to make the sample nationally representative and population data is used to construct an absolute value, which in combination with data on the size of the labour force is then transformed into a percentage. We construct the variables as a percentage of the labour force for theoretical reasons; as we are interested in labour migration and its effects on labour insecurity, this is more clearly expressed by constructing labour migration as a percentage of the labour force. More detail on the development of these indicators can be found in Fenwick (2021).

Tables 4.2 and 4.3 provide the developments in EU13 and EU15 labour migration across countries and over time. The volume of migration varies quite considerably from country to country, however in most countries, stocks of Western European labour migrants stay reasonably stable – an exception is Portugal. For a number of countries, this type of labour migration is actually greater than CEE labour migration. Luxembourg and Switzerland should also be highlighted because of the exceptional size of the stock of labour migrants, which for both countries is over 20 percent of the labour force. In several countries, CEE labour migration is on the rise and each year makes up a larger proportion of the labour force. The United Kingdom especially has seen a steep increase in labour migration from CEE member states, most likely because the UK was one of only three EU countries that decided not to impose labour market restrictions on citizens from the 2004 EU enlargement countries.

There are some limitations to the indicators we have created. Unfortunately, we cannot extend the indicators before 2004 as the required data on country of birth is not available. As a result, the years available to us are from 2004 to 2016. Other restrictions are as a result of limitations of the EU-LFS and household survey data in general, e.g., the underrepresentation and non-response of migrants.

12 Country of birth is coded into broad regions – e.g. EU-15, EU-13, North America, Middle East, etc.

13 We use those who are recorded as either employed or unemployed in the EU-LFS.

Table 4.2: EU13 labour migration (as a percentage of the labour force)

Country	*2004*	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*	*2004-2016*
Austria	3.35	3.75	3.91	4.02	3.98	3.67	4.27	4.20	4.44	4.80	5.68	5.95	6.12	2.77
Belgium	0.45	0.57	0.64	0.74	1.04	1.27	1.67	1.89	1.92	2.17	2.38	2.61	2.63	2.18
Denmark	0.35	0.45	0.45	0.60	0.71	0.90	1.06	1.28	1.73	1.93	2.26	2.52	2.50	2.15
Finland	0.62	0.36	0.35	0.43	0.46	0.47	0.60	0.75	0.76	0.85	1.12	1.31	1.37	0.75
France	0.28	0.32	0.34	0.36	0.46	1.42	0.55	0.56	0.53	0.45	0.56	0.52	0.67	0.39
Germany	0.94	1.22	0.82	0.97	1.55	1.31	1.25	1.30	1.63	1.79	2.09	2.40	2.90	1.96
Greece	1.16	1.46	1.36	1.43	1.59	1.96	1.86	1.80	1.65	1.78	1.78	1.46	1.43	0.27
Ireland	.	3.33	6.99	9.74	10.33	9.81	9.22	9.25	9.34	9.35	9.42	9.42	9.41	6.08
Italy	.	1.23	1.57	1.77	2.48	3.04	3.37	3.54	3.59	3.88	3.92	4.04	4.27	3.04
Luxembourg	0.79	0.79	1.79	2.02	2.22	2.44	2.54	3.10	3.36	3.68	3.80	4.55	4.88	4.09
Netherlands	0.42	0.42	0.49	0.49	0.56	0.64	0.75	0.79	0.93	1.03	1.16	0.98	1.33	0.91
Portugal	0.15	0.21	0.27	0.31	0.33	0.27	0.39	0.37	0.39	0.42	0.40	0.32	0.28	0.13
Spain	1.75	2.34	2.81	2.98	3.06	3.02	3.57	3.60	3.21	3.26	3.41	3.26	3.53	1.78
Sweden	1.30	1.52	1.61	1.61	1.71	1.85	1.96	2.14	2.36	2.56	2.63	2.61	2.62	1.32
Switzerland	1.54	1.58	1.48	1.46	1.61	1.78	1.86	2.03	2.15	2.18	2.28	2.40	2.57	1.03
United Kingdom	0.59	1.02	1.52	2.25	2.64	2.62	3.26	3.50	3.47	3.74	4.43	4.73	5.35	4.76
Average	0.98	1.29	1.65	1.95	2.17	2.28	2.39	2.51	2.59	2.74	2.96	3.07	3.24	2.26

Table 4.3: EU15 labour migration (as a percentage of the labour force)

Country	*2004*	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*	*2004-2016*
Austria	4.11	3.18	3.05	3.35	3.41	3.80	3.99	3.97	4.13	4.36	4.50	4.73	4.79	0.68
Belgium	6.80	6.43	6.63	5.25	6.71	6.44	6.56	6.40	6.41	6.63	6.63	6.79	6.53	–0.27
Denmark	2.53	2.34	2.32	2.89	3.32	3.50	3.62	3.76	3.68	3.78	3.99	3.96	4.35	1.82
Finland	1.22	1.21	1.36	1.39	1.58	1.52	1.31	1.31	1.49	1.68	1.69	1.45	1.70	0.48
France	4.26	3.56	3.33	3.49	3.68	3.52	3.79	3.57	3.45	3.74	3.34	3.10	3.43	–0.83
Germany	3.16	3.30	2.39	2.37	3.15	2.89	2.75	2.68	3.02	3.16	3.14	3.16	3.39	0.23
Greece	0.80	0.82	0.66	0.61	0.75	0.86	0.81	0.75	0.67	0.62	0.75	0.73	0.66	–0.14
Ireland	.	7.71	9.19	9.08	9.14	9.42	9.50	9.72	9.60	9.62	9.20	8.54	8.54	0.83
Italy	.	1.90	1.91	1.89	1.85	1.77	1.78	1.83	1.82	1.79	1.85	1.81	1.80	–0.1
Luxembourg	47.31	47.10	45.34	48.15	48.79	48.52	50.26	50.94	50.97	51.29	50.98	50.34	48.67	1.36
Netherlands	2.76	2.78	2.60	2.75	2.65	2.65	2.47	2.51	2.56	2.48	2.50	2.68	2.57	–0.19
Portugal	1.70	1.71	1.78	1.59	1.82	2.12	2.14	2.17	2.30	2.61	2.90	2.90	2.81	1.11
Spain	2.30	2.24	2.34	2.48	2.58	2.44	2.80	2.82	2.84	2.76	2.75	2.71	2.62	0.32
Sweden	5.59	5.90	5.67	5.44	5.38	5.41	5.49	5.24	5.15	5.11	5.21	5.23	5.22	–0.37
Switzerland	15.82	15.81	15.63	15.55	16.21	17.29	16.91	17.57	18.05	18.72	19.37	19.95	19.61	3.79
United Kingdom	2.86	2.71	2.71	2.92	2.91	2.87	2.76	3.07	3.17	3.29	3.08	3.43	3.60	0.74
Average	7.23	6.79	6.68	6.83	7.12	7.19	7.31	7.39	7.46	7.60	7.62	7.59	7.52	0.29
*Average**	4.15	4.11	4.10	4.07	4.34	4.43	4.45	4.49	4.56	4.69	4.73	4.74	4.77	0.62

**excluding Luxembourg*

4.3.4 Other Explanatory Variables

Table 4.4: Independent Variables, European Countries, 2004-2013

Variable	*Measure*	*N*	*Mean*	*SD*	*Source*
EU13 labour migration	Labour migrants from EU13 countries as a percentage of the labour force	206	2.29	2.11	EU-LFS, 2017
EU15 labour migration	Labour migrants from EU15 countries as a percentage of the labour force	206	7.27	11.65	EU-LFS, 2017
Foreign-born	Foreign-born (those born abroad) as a percentage of the labour force	199	14.47	8.91	OECD (2017b)
Trade openness	Sum of exports and imports of goods and services as a share of GDP (divided by 100)	207	1.08	0.72	World Bank (2017)
Capital openness	Sum of net inflows and outflows of foreign direct investment as a share of GDP (divided by 100)	208	0.19	0.38	World Bank (2017)
Left-wing governments	Seat share in parliament of social democratic and other left parties in government, measured in percentage of the total parliamentary seat share of all governing parties, weighted by the number of days in office in a given year (divided by 100)	224	0.36	0.35	Armingeon et al. (2023a, 2023b)
Union density	Net union membership as a proportion of wage and salary earners in employment	218	33.97	19.59	Armingeon et al. (2023a, 2023b)
Deindustrialisation	100 minus the sum of manufacturing and agricultural employment as a percentage of the working age population	205	81.69	4.08	OECD (2017c)
Log of GDP per capita	GDP per capita, constant prices & OECD base year – 2010	208	10.61	0.27	OECD (2017c)
Unemployment rate	The share of the labour force that is without work but available for and seeking employment	208	8.41	4.74	World Bank (2017)
Old dependency ratio	The ratio of people older than 64 to the working-age population	208	26.26	4.05	World Bank (2017)
Disability rate	Persons who identify as suffering from sickness or disability as a percentage of the population	156	6.45	5.25	EU-LFS (2017) & Been and van Vliet (2017)
Young dependency ratio	The ratio of people younger than 15 to the working-age population	208	24.79	3.05	World Bank (2017)

The key measures and data sources of all other variables are presented in Table 4.4. The controls chosen are traditional variables used by previous comparative studies on welfare state reform (e.g. Brady & Young Lee, 2014; Iversen & Cusack, 2000; Wang & van Vliet, 2019). We use two variables to express two key facets of globalisation, trade openness and capital openness. To account for the role of partisan politics we use government composition operationalised as the relative power position of social

democratic and other left parties in government based on their seat share in parliament, measured in percentage of the total parliamentary seat share of all governing parties, weighted by the number of days in office in a given year (Armingeon et al., 2023a, 2023b). Also included is trade union density as a control for the bargaining power of domestic labour (Armingeon et al., 2023a; Visser, 2016). For deindustrialisation, we follow the method proposed by Iversen and Cusack (2000). The study accounts for differing GDP per capita and the fiscal pressure that can stem from unemployment. Finally, we account for the number of beneficiaries for each spending category using the unemployment rate, old and young dependency ratios, and the disability rate. As we only have data until 2013 for the disability rate, the time period for incapacity spending is limited to 2004 – 2014.

4.3.5 Method

To examine the relationship between immigration and welfare, this study utilises pooled time-series cross-sectional data for the analysis. The model employs panel-corrected standard errors (PCSE) with a Prais-Winsten correction for serial correlation and country fixed effects. Previous studies typically rely on the de facto Beck-Katz standard, which combines fixed effects with a lagged dependant variable, to account for serial correlation (Gaston & Rajaguru, 2013; Lipsmeyer & Zhu, 2011; Soroka et al., 2006; 2016). However, the lagged dependent variable, which is used to correct for serial correlation, can be a source of considerable bias known as Nickell bias (Nickell, 1981). The lagged dependent variable is highly correlated with the dependent variable and consequently causes bias in the standard errors. This is especially prevalent when t is smaller than 20, which it is in our study. Thus, we use PCSE with the Prais-Winsten correction to correct for panel-heteroscedasticity and contemporaneous spatial correlation, which is argued as the more appropriate method by Plümper et al. (2005). However, in our robustness section, we present the results of an error correction model for comparison, which does include a lagged dependent variable as well as the lagged level and change of each variable included in the main model specifications. As is conventional, we lag the explanatory variables by one year as it is theoretically reasonable to expect that changes in certain independent variables can take time to affect the dependent variable. For example, the policy process is often slow, and policy decisions will not be immediately reflected in levels of welfare spending. Methodologically, lagging the explanatory and control variables can help to mitigate endogeneity issues arising from reverse causality.

In addition to country fixed effects to address cross-sectional heterogeneity of the intercepts and omitted variable bias, we use three specific time dummies to control for when different EU countries lifted labour market restrictions on EU migrant citizens from the new member states. Consequently, we do not include additional time dummies, however we believe

the potential shock each country may undergo from the lifting of labour market restrictions is more important to account for in our model. Table 4.5 presents the years in which labour migration restrictions for each group of new member state countries were lifted by each EU country in our sample. Following the 2004 enlargement, the UK, Ireland, and Sweden were the only EU15 countries to immediately allow unrestricted labour market access to the new EU8 countries. Sweden is the only EU15 country to have allowed immediate labour market access to new member states following all three expansions. Switzerland, as an EFTA country, follows the same rules as the EU15.

Table 4.5: Lifting of Labour Market Restrictions

Country	*2004 EU enlargement: EU8*	*2007 EU enlargement: EU2*	*2013 EU enlargement: EU1*
Austria	May 2011	January 2014	1 July 2022
Belgium	May 2009	January 2014	July 2015
Denmark	May 2009	May 2009	July 2013
Finland	May 2006	January 2007	July 2013
France	July 2008	January 2014	July 2015
Germany	May 2011	January 2014	July 2015
Greece	May 2006	January 2009	July 2015
Ireland	May 2004	January 2014	July 2013
Italy	July 2006	January 2012	July 2015
Luxembourg	November 2007	January 2014	July 2015
Netherlands	May 2007	January 2014	1 July 2018
Portugal	May 2006	January 2009	July 2013
Spain	May 2006	January 2009¥	July 2015
Sweden	May 2004	January 2007	July 2013
Switzerland	May 2011	January 2014	1 January 2022
United Kingdom*	May 2004	January 2014	30 June 2018

Notes: * The United Kingdom officially left the EU on January 31, 2020.
¥ restrictions for Romania until August 2011
Source: European Commission (2018) and Kahanec et al. (2014)

4.4 Empirical Analysis

In this section, we present the results for the seven dependent variables, across 16 European countries for the period 2004-2017, as described in the previous section. We group together the results for spending and EU13 labour migration in Table 4.6 and the results for spending and EU15 & EFTA labour migration in Table 4.7. In Table 4.8, we show the results for the two replacements rates for both EU13 and EU15 labour migration. These tables include all control variables, including a control for foreign-born as a percentage of the labour force to ensure that our more specific labour migration variables are not acting as a proxy for general levels of immigration.

Table 4.6: EU13 Labour migration and Disaggregated Social Spending

Disaggregated Social Welfare Spending	*Old Age*	*Incapacity*	*Family*	*ALMP*	*Unemployment*
CEE labour migration$_{t-1}$	–0.01	0.08***	0.08**	0.01	0.05**
	(0.06)	(0.02)	(0.04)	(0.01)	(0.02)
Foreign-born $_{t-1}$	0.20***	0.01	0.04*	0.04***	0.12***
	(0.07)	(0.02)	(0.02)	(0.01)	(0.03)
Trade openness$_{t-1}$ (x10^{-2})	0.48	0.22	–0.31	–0.12	–0.02
	(0.42)	(0.20)	(0.20)	(0.09)	(0.19)
Capital openness$_{t-1}$ (x10^{-2})	–0.06	–0.08*	–0.02	–0.01	0.02
	(0.06)	(0.04)	(0.05)	(0.01)	(0.02)
Deindustrialisation$_{t-1}$	0.02	0.00	–0.03**	–0.00	–0.01
	(0.02)	(0.01)	(0.01)	(0.00)	(0.01)
Left seats$_{t-1}$ (x10^{-2})	–0.14	0.02	–0.05	0.16***	0.15**
	(0.14)	(0.06)	(0.04)	(0.04)	(0.05)
Union density$_{t-1}$	0.03	0.05***	–0.01	–0.01	0.05***
	(0.03)	(0.01)	(0.01)	(0.01)	(0.01)
Log of GDP per Capita$_{t-1}$	–1.57	–1.43*	–0.40	–2.01***	–3.14***
	(2.40)	(0.82)	(0.93)	(0.43)	(0.99)
Unemployment$_{t-1}$	0.02	–0.03***	0.01	–0.01**	–0.00
	(0.03)	(0.01)	(0.01)	(0.00)	(0.02)
Old dependency ratio$_{t-1}$	0.23***				
	(0.05)				
Disability rate$_{t-1}$		0.02*			
		(0.01)			
Young dependency ratio$_{t-1}$			–0.01		
			(0.02)		
2004 expansion restrictions lifted	–0.03	–0.01	–0.06	–0.00	–0.02
	(0.11)	(0.04)	(0.04)	(0.02)	(0.05)
2007 expansion restrictions lifted	0.02	–0.00	0.01	–0.00	0.06
	(0.10)	(0.05)	(0.05)	(0.02)	(0.04)
2013 expansion restrictions lifted	0.18	–0.01	–0.01	–0.01	–0.02
	(0.12)	(0.08)	(0.06)	(0.04)	(0.05)
Constant	15.40	15.59*	8.86	22.45***	31.26***
	(26.03)	(8.98)	(9.96)	(4.74)	(10.89)
Country fixed effects	YES	YES	YES	YES	YES
N	167	123	167	167	167
adj. R^2	0.95	0.96	0.95	0.88	0.85
Rho	0.52	0.35	0.31	0.35	0.33
RMSE	0.37	0.15	0.16	0.09	0.24

Standard errors in parentheses
* $p < .1$, ** $p < .05$, *** $p < .01$

Table 4.7: EU15 labour migration and disaggregated social spending

Disaggregated Social Welfare Spending	*Old Age*	*Incapacity*	*Family*	*ALMP*	*Unemployment*
WE labour migration$_{t-1}$	–0.00	0.03	0.05*	0.02	0.01
	(0.05)	(0.04)	(0.03)	(0.01)	(0.02)
Foreign-born $_{t-1}$	0.19***	0.04**	0.06***	0.04***	0.14***
	(0.06)	(0.02)	(0.02)	(0.01)	(0.04)
Trade openness$_{t-1}$ (x10^{-2})	0.46	0.21	–0.30	–0.12	–0.04
	(0.41)	(0.23)	(0.20)	(0.09)	(0.18)
Capital openness$_{t-1}$ (x10^{-2})	–0.06	–0.09*	–0.02	–0.01	0.02
	(0.06)	(0.05)	(0.05)	(0.01)	(0.02)
Deindustrialisation$_{t-1}$	0.02	–0.00	–0.03**	–0.00	–0.01
	(0.02)	(0.01)	(0.01)	(0.00)	(0.01)
Left seats$_{t-1}$ (x10^{-2})	–0.13	0.03	–0.05	0.14***	0.15**
	(0.13)	(0.06)	(0.04)	(0.03)	(0.05)
Union density$_{t-1}$	0.03	0.05***	–0.01	–0.01	0.05***
	(0.03)	(0.01)	(0.01)	(0.01)	(0.01)
Log of GDP per Capita$_{t-1}$	–1.58	–1.39	–0.35	–1.96***	–3.11**
	(2.38)	(0.88)	(0.97)	(0.42)	(1.34)
Unemployment$_{t-1}$	0.02	–0.03***	0.01	–0.01*	–0.00
	(0.03)	(0.01)	(0.01)	(0.01)	(0.02)
Old dependency ratio$_{t-1}$	0.23***				
	(0.05)				
Disability rate$_{t-1}$		0.02			
		(0.01)			
Young dependency ratio$_{t-1}$			0.01		
			(0.03)		
2004 expansion restrictions lifted	–0.03	0.01	–0.04	–0.00	–0.01
	(0.12)	(0.04)	(0.04)	(0.02)	(0.07)
2007 expansion restrictions lifted	0.02	0.00	0.00	–0.01	0.06
	(0.10)	(0.05)	(0.05)	(0.02)	(0.07)
2013 expansion restrictions lifted	0.18	–0.01	–0.00	–0.01	–0.01
	(0.12)	(0.09)	(0.06)	(0.04)	(0.11)
Constant	29.48	27.20**	1.91	12.14**	38.10***
	(20.64)	(6.02)	(8.50)	(5.61)	(8.43)
Country fixed effects	YES	YES	YES	YES	YES
N	130	126	130	126	128
adj. R^2	0.95	0.96	0.94	0.88	0.85
Rho	0.51	0.35	0.31	0.35	0.31
RMSE	0.37	0.15	0.15	0.08	0.20

Standard errors in parentheses
* $p < .1$, ** $p < .05$, *** $p < .01$

The results presented in Table 4.6 show that the association between migration and welfare state effort varies according to the social welfare programme and type of mobility. First, in line with our expectations, CEE labour migration is positively and significantly associated with the social spending subdomains of incapacity, family, and unemployment benefits. The coefficients range from an increase of 0.05 percentage points on unemployment spending to a 0.08 percentage point increase in family spending and incapacity as the percentage of CEE labour migrants in the labour force increases by one percent. The coefficients for old age and ALMP spending are not significant. For Western European labour migrants (Table 4.7), we do not find any significant results, except for family spending but this is only at the 10 percent level of significance. For other immigrants (Table 4.6 and 4.7), measured as foreign-born people, we find positive and significant results across almost all spending categories. This is consistent with Fenwick (2019). Overall, the results tend to indicate that immigration is predominantly positively associated with welfare state effort. This provides tentative evidence in favour of the compensation hypothesis as the prevailing mechanism, that is, native workers are compensated through certain social security programmes for the job insecurity labour migration. However, an important alternative explanation for this positive association could be a mechanical effect if migrants drive up social expenditures as beneficiaries of welfare state programmes.

Aside from the migration indicators, the results suggest that other structural economic changes have not played a substantial role in European welfare state developments since 2004. For trade openness, we do not find any significant results, for capital openness, there is only a statistically significant and negative association with incapacity spending, and deindustrialisation has only a negative association with family spending. Regarding the political variables, the results show that left-wing governments are positively associated with expenditures on ALMP spending and unemployment benefits, which is in line with classical expectations about partisan politics. However, for the other programmes, the results do not show significant coefficients for left-wing governments. As expected, union density is positively associated with incapacity and unemployment spending. It is likely that domestic institutions aim to prevent reductions in benefit levels of particular programmes, depending on their resources or agenda, and for unions that means focusing on work-related benefits for those already in employment.

GDP per capita is negatively and statistically significantly associated with predominately ALMP and unemployment spending, suggesting that as the economy grows there is relatively less spending on these particular welfare state programmes. Gaston and Rajaguru (2013) also find that GDP growth has a significant and negative association with social spending because in an economic downturn, the denominator (GDP) tends to grow more

slowly than the numerator (social expenditure). The unemployment rate is negatively associated with incapacity spending and ALMPs but is otherwise insignificant. The disability rate, our control for the number of beneficiaries for incapacity spending, is (weakly) positively associated with incapacity spending in Table 6. Finally, the young dependency ratio, the control for family spending, is not statistically significant in either model.

Table 4.8 presents the headline results for both indicators of intra-EU mobility on the unemployment and the social assistance replacement rates while Table 10 in the Appendix provides the full regression results. The results show that a one percentage point increase in the labour force of labour migrants from CEE member states is associated with a 1.73 point increase in the unemployment replacement rate and a 1.13 point increase in the social assistance replacement rate. In contrast, for Western European labour migrants there is no statistically significant effect on either the unemployment replacement rate or the social assistance replacement rate. Furthermore, foreign-born in general are only positively and significantly associated with social assistance replacement rates.[14] Overall, these results are in line with our expectations. Labour migration from CEE member states spurs the demand for compensation in the form of unemployment benefits and social assistance benefits more than labour migration from Western Europe and migration in general. Furthermore, in contrast to the results for social expenditure, these results for replacement rates cannot be driven by a mechanical effect from migrant-beneficiaries.

In addition, while we find variations across social programmes (neutral and/or positive effects), we do not find any particular patterns regarding programme design (contributory or non-contributory and targeted or universal). For example, we find positive associations between CEE labour migration and both unemployment spending and the unemployment replacement rate, which is typically a contributory benefit, but no association between either types of mobility with old age spending, a typical contributory benefit. In addition, for family spending, typically a universal benefit (for those with children) has a small, positive association, and social assistance, which is typically means-tested rather than universal, also has a positive association with CEE labour mobility. As such, the programme design does not appear to be systematically associated with EU labour migration. However, the main focus of this paper was not to assess programme design but rather the differences between types of mobility, this is a limitation of this particular analysis and would make a good avenue for future research.

14 Tables 11 and 12 in Appendix 2 show the same replacement rate regressions but for disaggregated family types. The results are driven by changes in lone person households and two parent, two children households.

Table 4.8: Immigration and the Welfare State- replacement rates

	Unemployment replacement rate	*Unemployment replacement rate*	*Social assistance replacement rate*	*Social assistance replacement rate*
CEE labour migration$_{t-1}$	1.73**		1.13***	
	(0.68)		(0.40)	
WE labour migration$_{t-1}$		0.36		–0.15
		(0.31)		(0.84)
Foreign-born $_{t-1}$	–0.33	0.51	0.13	0.78**
	(0.48)	(0.41)	(0.64)	(0.40)
Trade openness$_{t-1}$ (x10^{-2})	2.56	2.95	6.70*	6.66*
	(2.48)	(2.32)	(3.93)	(3.64)
Capital openness$_{t-1}$ (x10^{-2})	0.18	0.09	–0.76	–0.90
	(0.38)	(0.37)	(1.60)	(1.42)
Left seats$_{t-1}$ (x10^{-2})	4.89***	5.03***	1.61***	1.76***
	(1.26)	(1.26)	(0.59)	(0.58)
Union density$_{t-1}$	0.17	0.18	–0.03	–0.01
	(0.24)	(0.22)	(0.17)	(0.17)
Deindustrialisation$_{t-1}$	–0.29**	–0.36***	0.08	0.07
	(0.14)	(0.13)	(0.40)	(0.38)
Log of GDP per Capita$_{t-1}$	–37.91**	–41.31***	–23.83	–22.47
	(16.84)	(15.91)	(15.52)	(14.63)
Unemployment$_{t-1}$	–0.19	–0.18	–0.36	–0.35
	(0.22)	(0.22)	(0.23)	(0.23)
2004 expansion "restrictions lifted"	0.14	0.38	–0.00	0.07
	(0.47)	(0.51)	(0.49)	(0.34)
2007 expansion "restrictions lifted"	–0.46	–0.63	–0.48	–0.47
	(0.82)	(0.88)	(0.50)	(0.45)
2013 expansion "restrictions lifted"	2.12	2.20	–1.55***	–1.50***
	(1.30)	(1.35)	(0.44)	(0.39)
Constant	471.07**	504.77**	275.23	255.94
	(184.39)	(175.05)	(176.07)	(163.61)
Country fixed effects	YES	YES	YES	YES
N	167	167	121	121
adj. R^2	0.86	0.87	0.96	0.96
Rho	0.45	0.38	0.50	0.49
RMSE	5.05	5.20	1.67	1.75

Standard errors in parentheses
* $p < .1$, ** $p < .05$, *** $p < .01$

For the rest of the results in Table 4.8, the explanatory variables are reasonably similar between the two labour migration variables. Trade openness is insignificant for unemployment spending but positively and weakly statistically significant for social assistance and capital openness is insignificant in both models. Left-wing governments are positively and significantly associated with both the unemployment and social assistance replacement rates, as hypothesised. Union density is insignificant in both models, while deindustrialisation is significant and negatively associated with unemployment spending. Finally, unemployment has no statistically significant relationship with either social protection programme.

4.5 Robustness

To check the sensitivity of our results to the model specification employed above, we have chosen to run an Error Correction Model as a robustness check. Table 4.9 shows that there are no major changes in the key variables of interest and our assertion that the compensation hypothesis is a potential mechanism for the way that immigration may change the welfare state. However, the overall picture is slightly more mixed. While the lagged variable for CEE labour migration is still significant and positive for the change in unemployment spending, which is very much in line with the idea that increased risk in the labour market increases demand for compensation from the welfare state, we also find a small negative between CEE labour migration and the change in pension spending. For WE labour migration in Table 4.10, we find a negative association with incapacity spending (albeit on the edge of statistical significance), a link not found in our previous model specification in Table 4.7, and a positive one for family spending which is in-line with the previous model (Table 4.7).

Table 4.9: Disaggregated Social Spending and CEE Labour Migration – ECM

	Δ *Old Age*	Δ *Incapacity*	Δ *Family*	Δ *ALMP*	Δ *Unemployment*
Lagged dependent variable	–0.09*** (0.03)	–0.28*** (0.02)	–0.36*** (0.07)	–0.41*** (0.06)	–0.23*** (0.08)
Δ CEE labour migration	–0.04 (0.06)	0.06** (0.03)	–0.08** (0.03)	–0.01 (0.02)	–0.04 (0.04)
CEE labour migration$_{t-1}$	–0.07** (0.03)	0.03 (0.02)	–0.01 (0.02)	0.01 (0.01)	0.03** (0.02)
Δ Foreign-born	–0.08 (0.05)	0.00 (0.02)	0.05* (0.03)	0.01 (0.02)	0.01 (0.03)
Foreign-born$_{t-1}$	0.04 (0.02)	–0.00 (0.01)	0.03** (0.02)	0.03** (0.01)	–0.01 (0.01)
Δ Trade openness (x10^{-2})	–0.17 (0.24)	0.41*** (0.12)	0.21 (0.22)	–0.47*** (0.08)	–0.52** (0.22)
Trade openness$_{t-1}$ (x10^{-2})	0.07 (0.22)	0.14 (0.10)	–0.01 (0.15)	–0.31*** (0.07)	–0.29* (0.16)
Δ Capital openness (x10^{-2})	0.05 (0.04)	–0.05*** (0.02)	–0.03 (0.02)	–0.02** (0.01)	0.05 (0.03)
Capital openness$_{t-1}$ (x10^{-2})	0.05 (0.06)	–0.09*** (0.03)	–0.03 (0.04)	–0.04*** (0.01)	0.08 (0.05)
Δ Left seats (x10^{-2})	–0.09 (0.07)	0.01 (0.02)	–0.02 (0.05)	0.05 (0.03)	0.11* (0.06)
Left seats$_{t-1}$ (x10^{-2})	–0.06 (0.04)	–0.04*** (0.01)	0.00 (0.03)	0.10*** (0.02)	0.09*** (0.03)
Δ Union Density	0.06** (0.02)	0.03*** (0.01)	–0.01 (0.01)	0.01 (0.01)	0.03* (0.02)
Union density$_{t-1}$	0.01 (0.02)	0.03*** (0.00)	–0.01** (0.00)	–0.00 (0.01)	–0.01 (0.01)
Δ Deindustrialisation	–0.01 (0.01)	0.01 (0.01)	–0.01 (0.01)	–0.01*** (0.00)	–0.00 (0.01)
Deindustrialisation$_{t-1}$	0.00 (0.01)	0.01** (0.00)	–0.03*** (0.00)	0.00 (0.00)	0.00 (0.01)
Δ Log of GDP per capita	–8.00*** (0.56)	–2.91*** (0.38)	–4.22*** (0.59)	–0.89* (0.46)	–2.55*** (0.85)
Log of GDP per capita$_{t-1}$	–0.29 (0.47)	0.24 (0.40)	–1.03* (0.59)	–1.76*** (0.26)	–1.98** (0.79)

	Δ *Old Age*	Δ *Incapacity*	Δ *Family*	Δ *ALMP*	Δ *Unemployment*
Δ Unemployment rate	0.02	0.01	–0.02	–0.01	0.10***
	(0.02)	(0.01)	(0.01)	(0.01)	(0.02)
Unemployment$_{t-1}$	–0.01	–0.02***	0.00	–0.01***	–0.01
	(0.01)	(0.01)	(0.01)	(0.00)	(0.01)
Δ Old dependency ratio	0.13*				
	(0.08)				
Old dependency ratio$_{t-1}$	0.01				
	(0.01)				
Δ Disability rate		–0.01			
		(0.01)			
Disability rate$_{t-1}$		–0.02**			
		(0.01)			
Δ Young dependency ratio			0.03		
			(0.06)		
Young dependency ratio$_{t-1}$			–0.02*		
			(0.01)		
2004 expansion "restrictions lifted"	0.03	0.08***	–0.07**	–0.02	–0.00
	(0.03)	(0.02)	(0.03)	(0.02)	(0.03)
2007 expansion "restrictions lifted"	0.03	–0.01	0.04*	0.02	0.11***
	(0.05)	(0.03)	(0.02)	(0.03)	(0.04)
2013 expansion "restrictions lifted"	0.14**	0.06**	–0.03	–0.01	0.02
	(0.07)	(0.02)	(0.03)	(0.02)	(0.06)
Constant	3.37	–3.72	14.23**	19.01***	21.95***
	(5.85)	(4.37)	(640)	(3.06)	(8.56)
Country fixed effects	YES	YES	YES	YES	YES
N	162	121	162	162	162
adj. R^2	0.73	0.73	0.55	0.36	0.77
RMSE	0.19	0.08	0.11	0.08	0.12

Standard errors in parentheses
* $p < .1$, ** $p < .05$, *** $p < .01$

Table 4.10: Disaggregated Social Spending and WE Labour Migration – ECM

	Δ *Old Age*	Δ *Incapacity*	Δ *Family*	Δ *ALMP*	Δ *Unemployment*
Lagged dependent variable	–0.09**	–0.27***	–0.34***	–0.41***	–0.23***
	(0.04)	(0.02)	(0.08)	(0.06)	(0.08)
Δ WE labour migration	0.04	–0.02	0.03*	0.01	0.03
	(0.04)	(0.01)	(0.02)	(0.01)	(0.03)
WE labour migration$_{t-1}$	–0.02	–0.03*	0.04***	0.01	0.01
	(0.03)	(0.02)	(0.01)	(0.01)	(0.03)
Δ Foreign-born	–0.13***	0.03	0.04	0.01	0.02
	(0.04)	(0.02)	(0.03)	(0.02)	(0.03)
Foreign-born$_{t-1}$	0.00	0.02**	0.01	0.03***	0.01
	(0.02)	(0.01)	(0.01)	(0.01)	(0.02)
Δ Trade openness (x10^{-2})	–0.33	0.33***	0.43**	–0.43***	–0.36
	(0.22)	(0.10)	(0.21)	(0.08)	(0.22)
Trade openness$_{t-1}$ (x10^{-2})	0.02	0.07	0.16	–0.29***	–0.18
	(0.19)	(0.07)	(0.15)	(0.08)	(0.17)
Δ Capital openness (x10^{-2})	0.06	–0.04***	–0.04	–0.02**	0.04
	(0.04)	(0.02)	(0.02)	(0.01)	(0.04)
Capital openness$_{t-1}$ (x10^{-2})	0.07	–0.08***	–0.03	–0.04***	0.07
	(0.06)	(0.02)	(0.04)	(0.01)	(0.05)
Δ Left seats (x10^{-2})	–0.09	0.02	–0.03	0.05	0.11*
	(0.06)	(0.02)	(0.05)	(0.03)	(0.06)
Left seats$_{t-1}$ (x10^{-2})	–0.04	–0.02**	0.01	0.10***	0.09***
	(0.05)	(0.02)	(0.03)	(0.03)	(0.03)
Δ Union Density	0.06***	0.02***	–0.01	0.02	0.04**
	(0.02)	(0.00)	(0.01)	(0.01)	(0.01)
Union density$_{t-1}$	0.00	0.03***	–0.01***	–0.00	–0.01
	(0.02)	(0.00)	(0.00)	(0.01)	(0.01)
Δ Deindustrialisation	–0.01	0.01	–0.00	–0.01**	0.00
	(0.01)	(0.01)	(0.01)	(0.00)	(0.01)
Deindustrialisation$_{t-1}$	0.00	0.01***	–0.03***	–0.00	–0.00
	(0.01)	(0.00)	(0.01)	(0.00)	(0.01)
Δ Log of GDP per capita	–7.89***	–3.01***	–4.32***	–0.93**	–2.92***
	(0.54)	(0.38)	(0.61)	(0.46)	(0.82)
Log of GDP per capita$_{t-1}$	–0.39	–0.17	–1.14**	–1.79***	–2.31***
	(0.55)	(0.39)	(0.58)	(0.31)	(0.80)
Δ Unemployment	0.02	0.01	–0.01	–0.01	0.10***
	(0.02)	(0.01)	(0.01)	(0.01)	(0.02)
Unemployment$_{t-1}$	–0.01	–0.02***	0.00	–0.01**	–0.01
	(0.01)	(0.00)	(0.01)	(0.00)	(0.01)

	Δ *Old Age*	Δ *Incapacity*	Δ *Family*	Δ *ALMP*	Δ *Unemployment*
Δ Old dependency ratio	0.14 (0.08)				
Old dependency ratio$_{t-1}$	0.00 (0.01)				
Δ Disability rate		–0.00 (0.01)			
Disability rate$_{t-1}$		–0.01 (0.01)			
Δ Young dependency ratio			0.06 (0.05)		
Young dependency ratio$_{t-1}$			0.02 (0.01)		
2004 expansion "restrictions lifted"	0.01 (0.02)	–0.08*** (0.02)	–0.06*** (0.03)	–0.01 (0.02)	0.00 (0.03)
2007 expansion "restrictions lifted"	0.04 (0.05)	–0.01 (0.02)	0.03 (0.02)	0.01 (0.03)	0.11*** (0.03)
2013 expansion "restrictions lifted"	0.13* (0.07)	0.04 (0.03)	0.03 (0.03)	0.01 (0.02)	0.03 (0.06)
Constant	4.96 (6.53)	–3.07 (4.38)	14.79** (6.29)	19.45*** (3.48)	25.27*** (8.68)
Country fixed effects	YES	YES	YES	YES	YES
N	162	121	162	162	162
adj. R^2	0.73	0.73	0.54	0.36	0.76
RMSE	0.19	0.08	0.11	0.08	0.12

Standard errors in parentheses
* $p < .1$, ** $p < .05$, *** $p < .01$

The ECM models for replacement rates also show similar results to our previous model specification in Table 8. Table 4.11 shows that the lagged variable for CEE labour migration is positive, albeit weakly statistically significant for the change in the unemployment replacement rate and positive, and strongly statistically significant for the change in the social assistance replacement rate. A key change is a weak, negative association between WE labour migration and the social assistance replacement rate. This demonstrates that it is indeed possible that depending on the type of migration under study, the effects on the welfare state may vary.

Table 4.11: Immigration and the Welfare State – replacement rates – ECM

	Δ *Unemployment* replacement *rate*	Δ *Unemployment* replacement *rate*	Δ *Social assistance* replacement *rate*	Δ *Social assistance* replacement *rate*
Lagged dependent variable	–0.21** (0.11)	–0.17* (0.10)	–0.30** (0.09)	–0.29** (0.11)
Δ CEE labour migration	0.66 (0.93)		1.78*** (0.54)	
CEE labour migration$_{t-1}$	1.09* (0.63)		1.23*** (0.30)	
Δ WE labour migration$_{t-1}$		0.30 (0.42)		–0.45*** (0.12)
WE labour migration$_{t-1}$		0.26 (0.41)		–0.43** (0.28)
Δ Foreign-born	0.50 (0.84)	1.11 (0.81)	–0.30 (0.28)	0.49 (0.31)
Foreign-born $_{t-1}$	0.24 (0.30)	0.72** (0.29)	–0.39*** (0.09)	0.32**** (0.18)
Δ Trade openness (x10^{-2})	–0.26 (4.44)	1.37 (4.72)	1.26 (2.42)	0.55 (3.03)
Trade openness$_{t-1}$ (x10^{-2})	–3.65 (2.84)	–3.36 (3.16)	1.32 (0,82)	0.03 (1.06)
Δ Capital openness (x10^{-2})	–0.26 (0.52)	–0.36 (0.51)	–0.52** (0.25)	–0.59* (0.32)
Capital openness$_{t-1}$ (x10^{-2})	0.31 (0.76)	0.01 (0.78)	–1.03*** (0.34)	–1.16** (0.45)
Δ Left seats (x10^{-2})	2.85*** (0.83)	2.96*** (0.82)	0.63* (0.38)	0.73 (0.48)
Left seats$_{t-1}$ (x10–2)	3.42*** (0.66)	3.08*** (0.56)	0.48 (0.30)	0.44 (0.37)
Δ Union Density	–0.90** (0.37)	–0.84** (0.37)	–0.23* (0.13)	–0.33*** (0.12)
Union density$_{t-1}$	–0.17 (0.15)	–0.14 (0.14)	–0.05 (0.10)	–0.02 (0.10)
Δ Deindustrialisation	–0.01 (0.21)	0.05 (0.23)	0.61**** (0.10)	0.59*** (0.14)
Deindustrialisation$_{t-1}$	–0.30** (0.15)	–0.33** (0.16)	0.13 (0.10)	0.16 (0.10)
Δ Log of GDP per capita	–26.19 (18.46)	–26.96* (17.40)	–2.24 (5.07)	–4.06 (7.44)

	Δ *Unemployment* replacement *rate*	Δ *Unemployment* replacement *rate*	Δ *Social assistance* replacement *rate*	Δ *Social assistance* replacement *rate*
Log of GDP per capita$_{t-1}$	–41.88***	–41.57***	–3.29	–0.45
	(14.32)	(13.85)	(3.22)	(6.26)
Δ Unemployment	–0.45	–0.51	–0.15*	–0.28**
	(0.34)	(0.34)	(0.18)	(0.12)
Unemployment$_{t-1}$	–0.20*	–0.16	–0.09	–0.15
	(0.12)	(0.10)	(0.07)	(0.10)
2004 expansion	0.32	0.35	0.68**	0.78***
"restrictions lifted"	(0.43)	(0.46)	(0.29)	(0.27)
2007 expansion	–0.29	–0.19	–0.22	–0.38
"restrictions lifted"	(1.06)	(1.01)	(0.28)	(0.26)
2013 expansion	5.34***	5.69***	0.90***	0.82*
"restrictions lifted"	(0.80)	(0.76)	(0.34)	(0.45)
Constant	478.76***	471.67***	37.68	1.22
	(157.59)	(152.04)	(35.95)	(63.87)
Country fixed effects	YES	YES	YES	YES
N	162	162	120	120
adj. R^2	0.18	0.19	0.57	0.53
Rho	0.00	–0.03	–0.19	–0.15
RMSE	4.50	4.51	1.31	1.37

4.6 Conclusion

Milton Friedman famously once said: "you cannot simultaneously have free immigration and a welfare state" (1999). However, our results from a cross-country comparison of 16 European countries suggest that it may not be this black and white. All 16 countries are subject to EU freedom of movement laws and the results show predominantly positive associations between intra-EU labour mobility and welfare state effort. Our results show that particular aspects of EU labour migration are positively associated with several subdomains of social welfare spending, as well as for the unemployment and social assistance replacement rates. This indicates that EU freedom of movement and welfare state provision seem to be compatible and that European welfare states are resilient in the face of increasing immigration.

In the existing literature, immigration has been measured as an aggregate measure, the percentage of foreign-born or net migration for example. However, by conflating different immigrant groups, it is not possible to

disentangle how the influence of immigration on social protection may vary depending on who immigrates. Relying on indicators which explicitly measure intra-EU labour mobility, we find larger positive associations for mobile workers from Central and East European countries than for mobile workers from other Western-European countries and for immigration in general. This finding suggests that in the case of labour migration the increased demand for compensating increased labour market risks in the form of more generous unemployment and social assistance benefits is stronger than concerns about how immigrants put pressure on the fiscal sustainability of the welfare state. That this effect is more pronounced for immigration from CEE countries than for immigration from other Western-European countries probably reflects the rapid increase of labour mobility from CEE countries since 2004. Moreover, we do not find any coherent evidence to draw conclusions about whether the programme design of a particular social policy, such as whether a benefit is contributory or non-contributory/targeted or universal, alters the association between labour mobility and welfare state effort.

Moreover, even though our analysis of welfare state effort includes different programme-specific measures to control for the number of beneficiaries and we examine replacement rates in addition to social spending data, one limitation of our study is that we do not focus on other institutional dimensions such as the access to welfare state programmes. These dimensions could be of particular interest in the context of migration as welfare chauvinism mechanisms could play a role (Cappelen et al., 2025; Negash & van Vliet 2024; Röth et al., 2022). This could be an interesting avenue for future research, although the variation in the extent to which intra-EU migrants have access to welfare state programmes is very limited across EU countries. In addition, future research should aim to shed further light on disaggregated groups of immigration and their influence on welfare state reform, particularly as more detailed data on various forms of human mobility becomes available to researchers.