


# What explains immigrant-native gaps in European labor markets: The role of institutions

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## Abstract

The understanding of how institutional and policy contexts affect immigrant integration is essential for any effort to foster a sustainable and effective migration and integration policy framework. Immigrant-native labor market gaps may arise not only due to differences in human capital or other socio-economic and demographic characteristics, but also due to differentiated impacts of institutions and policies on otherwise similar immigrants and natives. Different integration policy approaches are needed to close the gaps arising through these different mechanisms. This article exploits the variation across Europe to study the institutional and policy determinants of immigrant-native gaps in host labor markets. Using the EU Labor Source Survey as the primary source of data and a novel analytical approach, we study immigrant-native gaps in labor force participation, unemployment, low-skilled employment and temporary employment, and measure the contribution of institutional and policy contexts to the part of these gaps that cannot be explained by immigrant-native differences in characteristics. Our findings confirm that institutional and policy contexts play a significant role in immigrant integration, and highlight the importance of tailoring policy approaches with regard to the causes of immigrant-native gaps.

**Keywords:** decomposition, discrimination, immigrant integration, institutions, varieties of capitalism

## 1. Introduction

Immigrant-native labor market gaps can be viewed as an outcome of the imperfect adjustment of immigrants and natives in globalized labor markets as well as a challenge that

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may threaten cohesion in receiving societies. The European Union alone is home to over 50 million foreign-born people.<sup>1</sup> It is therefore an important task for scientists as well as policymakers to better understand the determinants of immigrant-native gaps in host labor markets.

This topic has received much scholarly attention, starting with seminal works by Chiswick (1978) and Borjas (1985), who looked at immigrant adjustment in the USA. Several studies, including Zimmermann (2005), Kahanec and Zaiceva (2009), Kahanec, Zaiceva and Zimmermann (2011), Zimmermann et al. (2012), focused on European labor markets, finding labor market gaps between immigrants and natives that vary across outcome variables, immigrant groups, receiving countries, and time. Although there is evidence that some of these gaps decline with time spent in the receiving country, the studies show that they often do not disappear fully and that some of them are transferred across generations of immigrants, while some may even increase in subsequent generations (Kahanec and Zimmermann 2011).<sup>2</sup>

The literature has identified a number of determinants of immigrant-native labor market gaps. The first set of factors relates to the process of immigration, including years since migration (Chiswick 1978; Borjas 1985; Kahanec, Zaiceva and Zimmermann 2011), year of arrival or the cohort effect (Borjas 1985), country of origin (Adserà and Chiswick 2007; Bratsberg et al. 2018), or lack of citizenship rights (Constant and Zimmermann 2005; Fougère and Safi 2009; Kahanec and Zaiceva 2009). The second group of factors is linked to personal characteristics, including lower returns to human capital (Van Ours and Veenman 1999; Aeberhardt et al. 2010; Guzi and Mikula 2021), gender (Adserà and Chiswick 2007), differences in social capital (Kahanec and Mendola 2009; Huber and Mikula 2019), or differences in ethnic identity (Constant and Zimmermann 2008; Gorinas 2014). There is also evidence that discriminatory attitudes toward immigrants pose barriers to their labor market integration (e.g. Constant, Kahanec and Zimmermann 2009; Becker 2010; Rooth 2014). Another set of factors relates to structural factors, such as labor market segmentation and unfavorable labor market allocation (Kogan 2004; Felbo-Kolding, Leschke and Spreckelsen 2019).

Although immigrant-native labor market gaps have been extensively studied in the literature, there is little evidence about how macro-level institutional and policy contexts affect these gaps. While a few studies have focused on the roles of several institutional variables separately (e.g. Kahancová and Szabo 2015; Sarvimäki and Hämäläinen 2016; Ulceluse and Kahanec 2018), in practice, different institutional variables interact and jointly constitute a complex environment in which immigrants and natives realize their labor market outcomes. It would, therefore, be useful to adopt a comprehensive approach covering key institutional factors to examine whether and how various institutional contexts contribute to gaps in labor market outcomes between immigrants and natives. To the best of our knowledge, no study has attempted to provide such a comprehensive account.

The Varieties of Capitalism (VoC) literature (see Hall and Soskice 2001) systematizes institutions and their complementarities and, as such, lends itself to serve as a framework for a study of how different institutional variables and their interactions matter for societal outcomes. The purpose of this study is to measure institutional and policy contexts as factors contributing to immigrant-native labor market gaps and provide encompassing

evidence on their joint and relative importance for such gaps in the European Union and the UK. As this area is undertheorized in the literature, our study is exploratory in that it is the first effort to comprehensively empirically map the relationships between immigrant-native labor market gaps and institutional contexts as identified in the VoC literature (see also Guzi, Kahanec and Kureková 2014). By doing so and identifying which of these relationships are statistically significant, we hope to motivate and provide a stepping stone for further theoretical and empirical research on this highly relevant topic.

In this article, we distinguish two sources of immigrant-native labor market gaps: the *explained* gap and the *unexplained* gap. The *explained* gap reflects immigrant-native group differences that arise outside of the labor market and mainly concern socio-demographic aspects, including immigrant selection or factors related to education and work experience. On the other hand, the *unexplained* labor market gaps reflect differences in how individual characteristics affect immigrants' and natives' labor market outcomes, including the unequal treatment of immigrants and natives in the labor market, or behavioral differences between these two groups, which possibly may also be affected by institutional determinants. The main sources of such gaps include unobserved differences in and returns to human, social or ethnic capital (e.g. access to specific skills); institutional integration (e.g. representation and access to state-funded welfare provisions or different levels of representation of interests by unions); or forms of discrimination in the labor market.

Distinguishing between these two sources of immigrant-native gaps is important because the policy challenges and implications of reducing the differences in the characteristics of immigrant and native populations differ from those aiming to close the gaps between natives and immigrants who share comparable characteristics. For example, while education and immigration policies are the key factors affecting human capital gaps between natives and immigrants, anti-discrimination and equal treatment policies are primary tools for addressing the discrimination that engenders gaps in labor market outcomes. In light of this, the study asks two key research questions:

- a. *Which institutions interact with labor market gaps in the outcomes and quality of employment (beyond what is explained by differences in observed population characteristics) of immigrants vis-a-vis natives in the EU, and in what way?*
- b. *Can we identify any variation in the effect of institutions on immigrant sub-groups conceptualized as insiders and outsiders?*

By shedding light on these questions, this paper contributes to our understanding of which institutional parameters provide a more level playing field for observationally similar immigrants and natives, and which result in wider gaps in labor market outcomes between them.

We investigated whether institutions matter in accounting for immigrant-native labor market gaps, which would help us understand the gaps that arise between observationally similar immigrants and natives. We examined the variation in how different institutions affect immigrant-native labor market gaps, as well as the variation in how they matter across VoC regimes. Importantly, we also explore how they matter for immigrant sub-groups characterized by varying distance from the labor market, conceptualized as insider and outsider groups in the host country based on their country of origin and the length of stay.

In the remainder of the article, we proceed as follows: the Section 2 maps the theoretical underpinnings and the literature about the relationship between institutions and immigrant-native labor market outcomes and develops hypotheses based on the relevant theoretical and empirical works to date. In the Section 3, we operationalize the institutional variables used. We then develop an empirical model to test the institutional determinants of labor market gaps between observationally similar immigrants and natives. Finally, we report and interpret our results and draw conclusions and highlight policy implications.

## 2. Theoretical underpinnings and literature review

### 2.1 Institutions and immigrant integration

The VoC theory and its later extensions ([Hancké, Rhodes and Thatcher 2007](#); [Nolke and Vlieghhart 2009](#)) propose the theoretical as well as the empirical notion of institutional complementarities evident in prototypical regimes, distinguishing coordinated market economies (CMEs), emerging market economies (EMEs), liberal market economics (LMEs), and mixed market economies (MMEs).<sup>3</sup> In this article, we adopted a holistic approach and engaged with the VoC framework as a heuristic tool to characterize the institutional regimes and their metrics for the studied countries. This makes our work remarkably different from other studies that have looked at the role of institutions in accounting for immigrant labor market outcomes or which have engaged with regime typologies.

First, while there is a fast-growing body of research about the role of institutions in influencing immigrant integration, the existing studies tend to look at selected institutions, typically taking those related to the labor market. For example, [Kahancová and Szabó \(2015\)](#) and [Meardi et al. \(2012\)](#) reviewed the limited evidence about the role of industrial relations in immigrants' integration outcomes. Other works such as [Dustmann and Frattini \(2011\)](#), [Sá \(2011\)](#), [D'Amuri and Peri \(2014\)](#), [Migali \(2018\)](#), and [Ulceluse and Kahanec \(2018\)](#) focused on employment protection legislation; while [Sarvimäki and Hämäläinen \(2016\)](#) and [Butschek and Walter \(2014\)](#) analyzed the role of active labor market policies. [Bisin et al. \(2011\)](#) analyzed minimum wage, employment protection legislation (EPL) index, and union density to account for the negative labor market outcomes for immigrants, controlling for their ethnic identity and generational specificities. We carefully reviewed this literature and used it in formulating expectations about the role of different institutions in immigrant labor market integration, but extended it in considering various institutions together.

Second, scholars have argued for relatively strong institutional complementarities between minimalist welfare arrangements, open migrant admission policies, and underdeveloped integration policies (e.g. [Bommes and Geddes 2000](#); [Menz 2003](#); [Ruhs 2011](#)). This strand of research analyses the link between socio-economic regimes or their elements, and selected aspects of labor migration (e.g. the skills structure of immigrants or migration policy). For example, [Menz \(2009\)](#) studied the link between social partners' preferences for migration policy and the skill specificity of respective economies, but does not look at immigrant labor market outcomes. He argues that gradual innovation and

concentration on high-value-added production in CMEs will induce actors in these economies to be interested in migrants with specific skills and the LME employers rather than seeking migrants that have general and transferable skills that are able to respond more readily to flexible corporate strategies. [Fellini \(2018\)](#) analyzed patterns of immigrant incorporation in the context of the economic crisis in the South European migration model, focusing on Italy and Spain, but does not empirically investigate other socio-economic regimes. While our study broadly speaks to the literature that has proposed and tested the existence of two broad models of immigrant incorporation—the Northern and Continental migration model, and the Southern European migration model ([Reyneri and Fullin 2011a,b](#); [Fellini 2018](#); [Guetto 2018](#))—we go beyond the coverage of Western European countries to include several ‘new’ EU Member States which, in the VoC typology, would fall into the EME category. A comprehensive approach is taken by [Pichler \(2011\)](#), who considered the role of welfare regimes and other macro-level factors on immigrant labor market attainment, finding that immigrants perform the worst in Southern and Eastern European welfare regimes.

Third, we differ from the existing literature in how we operationalize our dependent variables, i.e. by looking specifically at immigrant integration outcomes measured as *immigrant-native labor market gaps* in labor market participation (employment and unemployment) and in job quality (low-skilled jobs and temporary jobs) between observationally similar immigrants and natives. Relying on Esping-Andersen welfare regime typology ([Esping-Andersen 1999](#)) rather than a broader VoC framework, [Kogan \(2006\)](#) undertook similar analysis using EU Labor Force Survey (LFS) data to study the employment prospects of third-country immigrants, disentangling the relative importance of individual immigrant characteristics and structural features of the receiving societies. She found that immigrants’ labor market entry is easier in labor markets for low-skilled workers and for male immigrants in liberal welfare states with flexible labor markets, weak and decentralised industrial relations and market-based insurance. [Fellini \(2018\)](#) considers the probabilities of unemployment and the chances of medium and high-skilled jobs (but not gaps) in her analysis of immigrant incorporation in Spain and Italy running logit regressions. Similar to our study, she also considers the origin of the different groups of immigrants while controlling for individual characteristics of immigrants and natives. [Devitt \(2011\)](#), perhaps the conceptually closest to our work, argues that socio-economic regimes have an impact on the levels and the composition of migration, but she does not investigate the aspect of labor migrant incorporation as an outcome of regime typology.

In sum, to the best of our knowledge, this study breaks new grounds by offering a systematic measurement of the role of institutional contexts on immigrant-native labor market gaps in the European Union and the UK, and is unique in its operationalization of institutional variables in measuring gaps in labor market outcomes between observationally similar immigrants and natives, and in the broad country coverage going beyond Western European countries to include several EU Member States from central-eastern Europe.

## 2.2 Building hypotheses

In this section, we review in greater detail relevant research about specific institutional variables inspired by the VoC framework and hypothesize their effect on the labor market

incorporation of immigrants. As mentioned above, since the literature does not offer an encompassing theory about the relationship between the VoC framework and immigrant integration, our effort in this section is exploratory, offering tentative hypotheses based on the available literature. In building our empirical approach, we systematize institutional contexts along the four institutional regimes proposed by the VoC and select the corresponding indicators as follows: (1) *labor market regulation regime* measured by employment protection indicators related to regular and temporary contracts, including industrial relations parameters, such as union density and the coverage of collective bargaining agreements; (2) *skill regime* proxied by the share of students enrolled in vocational education and training (VET) in secondary education; (3) *welfare state regime* proxied by expenditure on social protection and spending on active labor market policies; and (4) *production regime* measured by the sectoral composition of the economy and exports as a share of gross domestic product (GDP). In operationalizing our empirical analysis and in framing the expected effect of institutions, we review studies looking at specific aspects of the institutional framework (i.e. specific indicators rather than regimes as a whole) and try to extrapolate expectations that a particular institutional aspect could have on immigrant-native labor market gaps.

We refine our approach to exploring the role of institutions on immigrant-native labor market gaps by following the seminal conceptualization of labor market activity developed by Lindbeck and Snower (1989), which has been adapted to categorize immigrants into insider and outsider immigrant groups. By means of this approach, we acknowledge that immigrants of different origins and lengths of stay are likely to have varying legal status, degree of adjustment in the receiving country, and differing social and cultural norms linked to their countries of origin, which influence their distance to the labor market. The insider group, represented by intra-EU and long-term immigrants, has relatively extensive country-specific social and human capital, as well as more favorable migration status, and can be expected to have easier access to the labor market and better chances of integration (see also Kogan 2004). Natives constitute the archetypal insider group. The outsider group includes immigrants from third-world countries or recent immigrants who have not yet developed country-specific human capital and have less favorable migration status. As a result, their access to the labor market and integration is likely to be more difficult for them compared to the insider group.

We abstain from theoretical predictions and, similar to Österman et al. (2019), acknowledge that the multidimensionality of national institutional regimes proposed by the VoC framework makes any strong theoretical predictions difficult. We also acknowledge that the interaction between national institutional regimes and migrant integration, especially when compared to natives, is currently undertheorized and also very complex (Afonso and Devitt 2016). We, therefore, suggest that our research is seen as an *exploratory* analysis in order to see which set of institutions appear to have a stronger role in accounting for more or less equal labor market outcomes between observably similar immigrants and natives, and between immigrant sub-groups with varying distance to the labor market, conceptualized as insiders and outsiders.

**2.2.1 Labor market regime.** We characterize labor market regimes by employment protection strictness (permanent and temporary contracts) and by industrial relations

characteristics (union density and collective bargaining coverage). First, we incorporate the EPL of temporary and permanent contracts in the empirical analysis, as these regulations are developed hand-in-hand and create a careful balance of labor market stability and flexibility. The effect of the overall employment protection on immigrant-native labor market gaps is complex, whereas a stricter regulation of permanent employment might be compensated by a looser regulation of temporary contracts, and *vice versa* (Svalund and Berglund 2018). For example, D'Amuri and Peri (2015) using composite EPL index find that less rigid labor markets increase immigrant-native gaps in participation rates, but possibly at the cost of a higher incidence of temporary or low-skilled employment among immigrants. This is because immigrants might lack the knowledge of how to cope with more complex regulations, but also due to the fact that less rigid labor markets typically favor easier job entry but also job exit. With respect to permanent EPL, Sá (2011) found that strict employment protection may result in a comparatively higher chance of employment for immigrants than the natives, as immigrants are less aware of their rights and less likely to claim them, effectively dumping their labor at lower standards and comparatively lower costs. However, employers in countries with strict permanent employment regulations might use temporary contracts as means of numerical flexibility and a buffer to protect core (permanent and often native) workers, relying on flexible immigrant workforce. Hence, less rigid temporary contracts regulation might often have negative consequences on stability and quality of jobs of immigrant workers (Reyneri and Fullin 2011b; Barbieri and Cutuli 2016). There are also studies that show that the effect of employment protection regulation on immigrant integration varies depending on the length of stay in the host country or the country of origin supporting the insider–outsider gradient (Sá 2011; Reyneri and Fullin 2011a; Geis et al. 2013).

Second, in order to operationalize labor market regime, we also used indicators of social dialogue related to trade union membership and the coverage of collective agreements. There are currently fewer studies looking at the impact of industrial relations on immigrant integration than those evaluating employment protection impact, and their findings are inconclusive (Guzi, Kahanec and Kureková 2014). Aleksynska and Tritah (2013) analyzed the role of host country employment protection policies and that of trade union coverage in explaining occupational inequalities between immigrants and natives in 22 EU countries, using ESS data. They found no effect of EPL on the probability of over- or undereducation of immigrants. However, they found that in countries with a stricter EPL, natives face a higher chance of being undereducated. The authors explained their findings by proposing that more rigid labor markets are also characterized by more on-the-job training as a substitute for a formal qualification, hence allowing noneducated natives to gain higher level positions if they show desired worker characteristics. Higher trade union coverage increases the relative risk of overeducation of immigrants, suggesting protective stances of unions towards national workers (Pichler 2011; Andrijasevic and Novicz 2020).

We anticipate that stronger trade unions may be able to set minimum standards and ensure equal employment conditions for all workers, immigrants included, and hence decrease the immigrant-native gap. However, those with less favorable characteristics may, due to their lower productivity, find it more difficult to meet the minimum standards for employment. In the case of noninclusive trade unions, immigrants might be pushed into



the secondary labor market where they disproportionately occupy less skilled and less stable jobs (for a detailed discussion of these arguments, see Guzi, Kahanec and Kureková 2014).

**2.2.2 Skill regime.** Another dimension of the VoC analytical framework is skill regime, which affects the nature of labor supply and competition in the labor market. Theory differentiates between general skill regimes and specific skill regimes, which are sustained by different education and training systems (Crouch et al. 1999; Atzmüller 2012). General skills are easily transferable across firms and even different industries, and are primarily produced in public education systems. Industry-specific skills are gained in a system that combines on-the-job training with education in a public institution ('dual systems'). Looking particularly at the relative unemployment risk of young non-Western European migrants, Lancee (2016) found a higher risk in countries with a higher share of vocational education because young immigrants lack specific skills that employers require.

According to the VoC framework, skill regimes complement national product market strategies and sectoral composition. We hypothesize that immigrants' integration in the labor market may be easier in general skill regimes because they put less emphasis on formal education and skill certification, as opposed to specific-skill regimes (dual education regimes), where qualification requirements and licensing are more formalized (see Ballarino and Panichella 2015). Such conditions pose particular barriers to the recognition of qualifications from the countries of origin and put additional costs on gaining receiving-country-specific skills, leading to higher unemployment rates, placement in the secondary labor market and, thus generally lower quality jobs. Insider-group immigrants are likelier to integrate into host countries than their outsider-group counterparts.

**2.2.3 Welfare state regime.** Welfare systems directly or indirectly affect the functioning of labor markets. Access to welfare, either in the form of services (education, health care) or social insurance (unemployment benefits, sick-leave benefits, disability benefits), is regulated. The ability to draw on social rights is a function of a number of factors, such as the length of activity in the labor market, the history of contributions, age, marital status, or citizenship. Advanced economies often restrict immigrants' access to welfare (Kureková 2013; Koning 2019), although they do not seem to do this as a response to past immigration (Giulietti et al. 2013). These restrictions determine what barriers migrants and their families face across countries and over time (Hemerijk et al. 2013). The VoC framework argues that more generous welfare and social policy have a positive effect on the functioning of the markets by providing insurance and assistance in labor market transitions, effectively improving labor market outcomes, especially for natives, but possibly also for insider-group immigrant. Duman, Kahanec and Kureková (in press), in their longitudinal study of immigrant incorporation in Western democracies, found that higher welfare inclusiveness contributes to better labor market outcomes of immigrants compared to natives in terms of higher labor market participation and lower unemployment rates.

Active labor market policies (ALMPs) are a particular aspect of welfare systems affecting immigrant-native labor market gaps. ALMPs generally target unemployed, inactive individuals



and various disadvantaged groups of natives as well as immigrants. ALMPs may foster the knowledge of the receiving country's official languages, which is a key factor to success in the labor market. Several studies have documented that the participation of immigrants in active labor market positively contributes to their labor market inclusion prospects, which is much less convincingly shown to be the case for natives (Clausen et al. 2009; Heinesen et al. 2013; Butschek and Walter 2014; Sarvimäki and Hämäläinen 2016). We found only one study by Kogan (2016) that does not find strong evidence of the positive role of labor market training and counseling on immigrant integration. We hence hypothesize that higher spending on ALMPs improves immigrants' participation in the labor market, thereby decreasing immigrant-native gaps in unemployment, temporary employment and low-skilled jobs. [Supplementary Fig. S1](#) presents social expenditure and ALMP spending time series and reveals the different welfare instruments that different countries prioritize over time.

We hypothesize that more generous welfare systems provide advantages for natives (and possibly to some degree also for insider immigrants) and are likely to increase immigrant-native gaps. This could be the case if access to employment or other welfare benefits and services is simpler and easier for natives than for immigrants. However, we recognize that generous welfare provisions may have disincentivizing effects on activities and investment in the labor market, which may fall disproportionately on immigrants.

**2.2.4 Product market regime.** Several structural variables characterizing the various VoC types may affect supply and demand conditions and hence immigrant workers' integration prospects in European labor markets. The relative size and dynamism of the sectors of the economy can affect demand for certain profiles among economic immigrants and thus impact their labor market prospects (Lancee 2016; Devitt 2018). Given this, we hypothesize that countries with higher value-added in services and agriculture are likelier to provide a broader range of employment opportunities for immigrants compared to natives, but given the character of the sectors, these are likely to be temporary and prevalently low-skilled. Provided that industry-specific skills are gained (e.g. in the case of naturalized migrants or intra-EU migrants), the industrial sector can also provide opportunities for immigrants, especially where skill gaps and imbalances exist (Guzi, Kahanec and Kureková 2014, 2018). The country's openness to international trade is another potentially important factor. Whereas the standard Heckscher–Ohlin model posits that migration and international trade are substitutes, its extensions, more recent trade theories and empirical evidence suggest that they are complements (Krugman 1995; Markusen et al. 1995; Venables 1999; Ghatak et al. 2009). While immigrant networks might reduce trade-related transaction costs and stimulate trade, by sending remittances or returning home, immigrants might stimulate the home country's development and hence reduce pressures for imports, and hence improve the country's trade balance (Jansen and Piermartini 2009). A country's openness may influence the demand for immigrant labor, and hence immigrants' integration prospects. We hypothesize that more open economies will provide more favorable conditions to immigrant labor market participation, but no effect is expected in terms of the quality of employment.

**2.2.5 Hypotheses.** The arguments laid out above provide some guidance as to whether respective institutional variables are likely to increase or decrease immigrant-native labor

market gaps. We summarize the hypothesized effects in [Table 1](#). The interpretation of the effect depends on the labor market outcome. A decrease in the labor market participation gap implies that the respective institution is likely to disadvantage immigrants over natives, while an increase in the labor market participation gap positively impacts the employment outcomes of immigrants over natives. Likewise, an increase in unemployment, low-skilled employment, and temporary employment gaps indicate that an increase in the respective explanatory variable is associated with an increase in the immigrant-native gap in the respective variable, a situation that disadvantages immigrants but not natives. ‘No effect’ indicates that based on the arguments discussed above, no specific effect can reasonably be expected or that to date, the scholarship has not established robust evidence. Ambiguous effect on labor market gaps means that different studies plausibly identified both directions of effect (increase or decrease in gaps). [Table 1](#) presents hypotheses only with respect to average effects of institutions, as literature is much thinner and less systematic about specific effects of various institutions on immigrant sub-groups characterized as insiders and outsiders (heterogeneity effects).

### 3. Data and operationalization of variables

#### 3.1 Immigrant-native labor market gaps

Our approach to measuring immigrant-native labor market gaps follows the methodology outlined in related papers by [Guzi, Kahanec and Kureková \(2014, 2018\)](#), [Kahanec \(2014\)](#), and [Huber \(2015\)](#). The empirical analysis employs the 2004–2016 waves of the EU LFS to construct four dependent variables to assess the position of immigrants in the labor

**Table 1.** Labor market gap vis-à-vis institutional changes: Hypotheses

		Participation	Un employment	Low-skilled job	Temporary contract
Labor market regime	Union density	Ambiguous	Increase	Decrease	Decrease
	Collective bargaining coverage	Increase	Decrease	Decrease	Decrease
	EPL—regular	Increase	Increase	No effect	No effect
	EPL—temporary	Increase	Increase	Increase	Increase
Skill regime	The share of VET	Decrease	Increase	Increase	No effect
Welfare regime	ALMP % GDP	Increase	Decrease	Decrease	Decrease
	SOEX % GDP	Ambiguous	Ambiguous	No effect	No effect
Product market regime	Export as % of GDP	Increase	Decrease	No effect	No effect
	VA in services	Increase	Decrease	Increase	Increase
	VA in agriculture	Increase	Decrease	Increase	Increase

Source: Authors.

market, including immigrant-native gaps in (1) labor force participation, (2) unemployment status, (3) the incidence of low-skilled jobs, and (4) the type of contract (temporary or permanent).<sup>4</sup> Labor force participation measures natives' and immigrants' *access* to the labor market, unemployment status measures their labor market *outcomes* (i.e., chances of getting a job), and the last two variables gauge the *quality* of jobs that immigrants and natives are able to get. Following AQ[ILO's definition, we consider labor force as people of working age (15–64 years) who are either employed or unemployed (i.e., those who have no job but are actively looking for and can take one). Low-skilled jobs are defined as elementary occupations consisting of simple and routine tasks in the ISCO-9 group. Temporary contracts are identified as work contracts of limited duration. The sample includes 21 countries with sufficient observations on immigrants in the EU LFS: Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, the Netherlands, Portugal, Slovakia, Spain, Sweden, and the UK.<sup>5</sup>

We define insider and outsider immigrant groups based on two criteria. First, several studies documented that country of origin is a significant factor affecting immigrant integration and that its effects are persistent (e.g. Kahanec and Zimmermann 2011; Aleksynska and Tritah 2013). Second, the year of arrival for immigrants has been shown to significantly affect their integration (e.g. Borjas 1985; Kahanec and Zaitseva 2009; Kahanec and Zimmermann 2011; Kahanec et al. 2011; Pichler 2011). To account for possible differential effects of countries of origin and time since arrival on the relationship between institutional contexts and immigrant-native labor market gaps, i.e. heterogeneity effects, we performed Oaxaca–Blinder decompositions separately for different groups of immigrants. Specifically, we distinguished immigrants by origin (EU15, EU12, (the rest of) Europe, Asia, and Africa), and years since migration (YSM 1–5, YSM 6–10, YSM 11+).<sup>6</sup> Insider immigrants are then intra-EU immigrants (EU15, EU12) and those who have lived in the host countries for 11 or more years (YSM 11+). Outsider immigrants are defined as those originating from the rest of Europe, Asia, and Africa and have resided in the host countries for up to 5 years and 6–10 years (YSM 1–5, YSM 6–10). This is in line with Aleksynska and Tritah (2013), who distinguished cohorts of immigrants according to the time of arrival in the same way we do.

Table 2 presents descriptive characteristics of natives and immigrants from different origins calculated based on a sample including approximately 27.3 million individuals aged 15–64 years. In general, all the groups are nearly gender-balanced, except for EU12 immigrants, among whom females are more notably overrepresented. Compared to natives, immigrants are overrepresented among 25- to 44-year olds and underrepresented in the two other age groups (15- to 24- and 45- to 64-year olds). With regard to the share of people with post-secondary or higher education, immigrants from the EU12 are more educated than the natives, while all the other immigrant groups are less educated: EU15, Asia, Africa, the rest of Europe. The share of university graduates is the highest among EU15 and Asian immigrants; immigrants from Africa and the rest of Europe are most often found among primary and lower secondary educated. The share of immigrants with post-secondary or higher education has been gradually increasing in more recent immigrant cohorts.

The bottom panel of Table 2 compares the labor market outcome variables for natives and immigrants. The participation rates of immigrants born outside the EU are lower than those pertaining to the natives; the opposite holds for immigrants from the EU12 and EU15. In general, unemployment rates and the share of workers in low-skilled or temporary employment are higher for immigrants than natives. The largest participation and unemployment gaps are documented for immigrants from European countries outside the EU and Africa (and Asia for participation rate), whereas the largest low-skilled and temporary employment gaps are observed for immigrants from the EU12, the rest of Europe and Africa. More established immigrant groups with a long history in the host country are generally better integrated into host labor markets than their more recent counterparts.

Table 3 compares the characteristics of immigrants and natives across VoC types by considering relative shares. Numbers higher than 1 in the table indicate the overrepresentation of immigrants compared to natives, while numbers less than 1 indicate their under-representation. In general, immigrants are overrepresented among 25- to 45-year-olds and underrepresented among those younger (15- to 25-year olds) and older (45- to 64-year-olds). Interestingly, in EMEs, immigrants are significantly over-represented in the older and university-educated groups compared to natives.<sup>7</sup> The comparison further reveals that the immigrants are more educated in EMEs and LMEs while immigrants with lower education dominate in CMEs and MMEs. These differences in observable characteristics between immigrants and natives are controlled for in the analysis that follows below, constituting the explained part of immigrant-native labor market differentials.

In Table 4, we report labor market outcome variables for immigrants and natives across the four studied VoC types. Several salient observations emerge: participation rates are generally lower for immigrants than natives in CMEs and LMEs and vice versa in EMEs and MMEs. In general, unemployment rates and the share of workers in low-skilled or temporary employment are higher for immigrants than natives, and the gaps are narrowest in EMEs and LMEs. The largest participation and unemployment gaps are documented in CMEs, whereas the largest low-skilled and temporary employment gaps are observed in MMEs.

### 3.2 Institutional variables

This section presents indicators and descriptive statistics for variables motivated by the VoC framework to measure institutional regimes.

**3.2.1 Labor market regulation regime.** We mapped labor market regulation regimes using two sets of measures. First, labor market regulation measured by the EPL gauges labor market rigidities. The EPL indicators are published by the OECD and measure 21 different aspects of employment protection regulation.<sup>8</sup> We considered two indices, one measuring the protection of regular employment and another one measuring the regulation of temporary forms of employment, in order to capture both regular employment and the more flexible forms of employment through which migrants often enter the labor market. The former is based on a broad set of indicators, such as the period of notice before dismissal, severance pay, and the difficulties associated with worker dismissal. The

**Table 2.** Descriptive statistics—key characteristics and labor market outcomes

Immigrant groups	Natives	Migrants EU15	Migrants EU12	Migrants other Europe	Migrants Africa	Migrants Asia	YSM 1–5	YSM 6–10	YSM 11+
<b>Personal characteristics</b>									
Female	0.50	0.51	0.56	0.52	0.48	0.52	0.53	0.53	0.51
Age 15–24	0.18	0.10	0.14	0.16	0.12	0.13	0.24	0.14	0.07
Age 25–44	0.41	0.46	0.62	0.52	0.51	0.56	0.64	0.69	0.44
Age 45–65	0.41	0.44	0.24	0.32	0.37	0.30	0.12	0.16	0.49
ISCED 1 + 2 lower secondary	0.08	0.12	0.06	0.18	0.22	0.11	0.12	0.13	0.15
ISCED 3 upper secondary	0.23	0.21	0.21	0.31	0.23	0.27	0.21	0.25	0.25
ISCED 4 post-secondary	0.42	0.34	0.49	0.33	0.30	0.31	0.35	0.35	0.34
ISCED 5 university	0.27	0.33	0.25	0.18	0.25	0.31	0.32	0.27	0.25
<b>Labor market outcomes</b>									
Participation rate	0.73	0.74	0.78	0.67	0.68	0.68	0.67	0.74	0.73
Unemployment rate	0.08	0.08	0.13	0.16	0.20	0.10	0.16	0.17	0.13
Low-skilled job	0.08	0.10	0.26	0.24	0.21	0.18	0.26	0.25	0.17
Temporary contract	0.13	0.13	0.20	0.17	0.21	0.13	0.30	0.23	0.13

*Source:* Authors' calculation based on EU-LFS, 2004–2016.

*Note:* The sample is limited to individuals aged 15–64 years. Population weights are applied.

**Table 3.** Characteristics of immigrants compared to natives across VoC types

	CME	EME	LME	MME
Female	1.03	1.06	1.03	1.05
Age 15–25	0.80	0.34	0.72	0.73
Age 26–45	1.30	0.86	1.40	1.27
Age 46–65	0.81	1.49	0.73	0.83
Education (primary and lower secondary)	2.98	0.42	0.83	1.17
Education (upper secondary)	1.48	0.74	0.74	0.94
Education (post-secondary)	0.71	0.85	0.91	0.96
Education (university)	0.84	1.67	1.31	0.90

*Source:* Authors' calculation based on EU-LFS, 2004–2016.

*Note:* The sample is limited to individuals aged 15–64 years. Numbers higher than 1 indicate the over-representation of immigrants compared to natives, while numbers less than 1 indicate their under-representation. Population weights were applied.

latter measures restrictions on fixed-term contracts in the labor market, such as the maximum number or duration of successive contracts and the type of work eligible for temporary employment contracts. Both indicators were measured on a scale between 1 and 6, with higher values corresponding to higher labor market rigidities (i.e. less flexibility and more protection). [Supplementary Fig. S2](#) shows that the employment protection variables vary across countries and also over time.

Second, we also used indicators of social dialogue related to trade union membership and the coverage of collective agreements based on the ICTWSS database version 6.0 ([Visser 2019](#)). The former measures the extent of unionization as the share of workers who are members of a trade union and also is an indicator of trade union strength (referred to as union density). The latter tells us about the unions' influence and bargaining power, measuring the proportion of all wage and salary earners in employment whose pay and/or conditions of employment are determined by a collective agreement. It is important to include both of these indicators in the analysis, as they may complement labor market outcomes. For example, in some countries, trade union density rates may be comparatively low, yet the degree to which wages and working conditions are regulated by collective agreements may be high (or vice versa).

[Supplementary Fig. S3](#) shows a large variation in levels of union membership over time and across countries, ranging from around 70 per cent of employees in Finland, Sweden, or Denmark, to less than 10 per cent in Estonia and France. As with union density, the coverage rates vary across countries and over time, although in several countries, the coverage rate is constant. The coverage rate is traditionally very high (above 80 per cent) in Austria, Belgium, France, Italy, the Netherlands, Portugal, Spain, and all Scandinavian countries. In contrast, the coverage rate is low (below 40 per cent) in Eastern European countries and the UK.<sup>9</sup>

**Table 4.** Natives' and immigrants' labor market outcomes by VoC type

	CME	EME	LME	MME
<b>Immigrants</b>				
Participation rate	0.69	0.74	0.74	0.73
Unemployment rate	0.13	0.10	0.08	0.18
Low-skilled job	0.18	0.12	0.13	0.26
Temporary contract	0.18	0.07	0.08	0.25
<b>Natives</b>				
Participation rate	0.77	0.69	0.78	0.68
Unemployment rate	0.06	0.09	0.06	0.11
Low-skilled job	0.07	0.08	0.09	0.09
Temporary contract	0.13	0.07	0.05	0.17
<b>Immigrant-native difference</b>				
Participation rate	−0.08	0.05	−0.04	0.04
Unemployment rate	0.07	0.01	0.02	0.07
Low-skilled job	0.11	0.04	0.05	0.17
Temporary contract	0.04	0.00	0.03	0.08

Source: Authors' calculation based on EU-LFS, 2004–2016.

Note: The sample is limited to individuals aged 15–64 years. Population weights are applied.

**3.2.2 Skill regimes.** We used the share of students with VET enrolled in the lower and upper secondary education as the measure of skill regime, where a higher share of VET indicates specific skill regimes.<sup>10</sup> [Supplementary Fig. S4](#) depicts the variation in VET student share over time and across countries. As also shown by VoC scholarship, skill-specific countries include mainly dual education systems, such as Austria, Belgium, the Netherlands, as well as selected Central European countries (the Czech Republic, Slovakia). Ireland, the UK, Baltic countries, and Southern European countries approximate general skills economies.

**3.2.3 Welfare state regime.** We measured welfare state generosity at the aggregate level by the share of social protection expenditure in GDP ([Supplementary Fig. S1](#)).<sup>11</sup> We also measured ALMPs by expenditure as a percentage of GDP.<sup>12</sup>

**3.2.4 Product market regime.** We measured different product market regimes by value added (VA) in agriculture, services, and industry<sup>13</sup> sectors in the percentage of GDP in our analysis.<sup>14</sup> [Supplementary Fig. S5](#) reveals relatively stable within-country developments in their sectoral composition, measured as VA in percent in GDP. The analysis also shows that while service is the prevailing sector across Europe and that agriculture has become marginal, differences still exist in the importance of industry across countries and



over time. Industry sector has a relatively large share in GDP in some skill-specific economies, including Austria, the Czech Republic, and Slovakia. In the empirical analysis, we also inputted the share of exports on GDP to measure countries' openness as a factor of immigrant employment (not displayed in descriptive data).<sup>15</sup>

**3.2.5 Structural variables.** Additional evidence shows that migrant networks affect the size, selection and concentration of immigrant populations and, hence, their integration prospects due to the so-called 'diaspora effect' (e.g. [Beine et al. 2010](#)). To capture the role of the immigrant network, we included the relative size of the immigrant population from different origins on the total immigrant population in respective countries. Additionally, we included the number of immigrants per 1,000 of the population to control for the size of immigration.<sup>16</sup> Finally, the per capita GDP and the unemployment rate were included in the analysis to control for additional supply and demand factors driven by the business cycle.

## 4. Empirical strategy

We adopted a two-stage empirical strategy.<sup>17</sup> In stage one, we performed a Blinder–Oaxaca decomposition ([Blinder 1973](#); [Oaxaca 1973](#)) of the immigrant-native gap. The procedure uses an econometric model explaining individual labor market outcomes, which is estimated separately for immigrants,  $m$  ([Equation 1](#)) and natives,  $n$  ([Equation 2](#)):

$$Y^m = \alpha^m + X^{m'}\beta^m + \mu^m, \quad (1)$$

$$Y^n = \alpha^n + X^{n'}\beta^n + \mu^n, \quad (2)$$

where  $Y$  represents the outcome variable,  $X$  is the vector of observable individual characteristics,  $\alpha$  is the intercept,  $\beta$  is the vector of coefficients, and  $\mu$  is the error term. The gap between natives and immigrants in the outcome variable  $Y$  can then be decomposed into a gap explained by differences in characteristics between immigrants and natives; that is, the difference between the counterfactual outcome in which migrants are treated as natives and the natives' outcomes; and a gap due to differences in coefficients; i.e. the difference between the immigrants' outcomes and the counterfactual situation mentioned above. We performed a Blinder–Oaxaca decomposition of the immigrant-native gap  $\Delta_{kt}$  for each country  $k$  and year  $t$  separately:

$$\Delta_{kt} \equiv \underline{Y}_{kt}^m - \underline{Y}_{kt}^n = \left( \underline{X}_{kt}^m - \underline{X}_{kt}^n \right)' \hat{\beta}_{kt}^n + \underline{X}_{kt}^m \left( \hat{\beta}_{kt}^m - \hat{\beta}_{kt}^n \right) + \hat{\alpha}_{kt}^m - \hat{\alpha}_{kt}^n \equiv \Delta_{kt}^e + \Delta_{kt}^u. \quad (3)$$

where  $\underline{X}^m$  and  $\underline{X}^n$  are vectors of the means of the explanatory variables for immigrants and natives, respectively, and  $\hat{\beta}^m$  and  $\hat{\beta}^n$  are the estimated coefficients from regressions (1) and (2). The gap due to the different characteristics of immigrants and natives  $\Delta^e$  denote the *explained* gap  $(\underline{X}^m - \underline{X}^n)' \hat{\beta}^n$  and the gap due to differences in coefficients  $\Delta^u$  (including the constant terms catching the effects of all unobserved variables) remains the *unexplained* gap  $\underline{X}^m (\hat{\beta}^m - \hat{\beta}^n) + \hat{\alpha}^m - \hat{\alpha}^n$ . We adopted a nonlinear decomposition

technique described by Yun (2004) to perform the decomposition outlined above on binary dependent variables.

This procedure yields data with a panel structure (with dimensions  $k$  and  $t$ ) spanning 21 European countries over the period 2004–2016 for *explained* ( $\Delta_{kt}^e$ ) and *unexplained* ( $\Delta_{kt}^u$ ) immigrant-native gaps in each of the outcome variables: labor force participation, unemployment status, incidence of low-skill jobs, and type of contract (temporary or permanent).

In stage two, the following model using the OLS estimator is estimated to identify the association of institutional variables and unexplained labor market gaps (i.e. gaps between immigrants and natives with similar observable characteristics):

$$\Delta_{kt}^u = \alpha + V_{kt}'\delta + W_{kt}'\gamma + \mu_k + \eta_t + \varepsilon_{kt}, \quad (4)$$

where matrix  $V_{kt}$  represents key explanatory institutional variables from the VoC literature and matrix  $W_{kt}$  includes the contextual control variables. We estimated a fixed-effects panel model which identifies the studied relationships based on longitudinal rather than cross-sectional variation, thereby controlling for the cross-sectional variation due to unobserved time-invariant country-specific factors. Country- and year-specific fixed effects are captured by  $\mu_k$  and  $\eta_t$ , respectively, while  $\varepsilon_{kt}$  is the error term. Population weights were applied. Coefficients  $\delta$  and  $\gamma$  in this approach measure the relationship between within-country changes in the variables included in, respectively,  $V$  and  $W$ , and immigrant-native gaps. As the literature reviewed above suggests that immigrant adjustment in the receiving countries varies across immigrant groups from different source countries as well as with the varying duration of stay in their host country, we performed Oaxaca–Blinder decompositions separately for immigrant sub-groups, distinguishing them by origin (EU15, EU12, (the rest of) Europe, Africa, and Asia) and years since migration (up to 5 years since migration (YSM 1–5), 6 to 10 years since migration (YSM 6–10), and 11 or more years since migration (YSM 11+)). In all the decompositions, natives constituted the reference group.

There are two potential methodological issues that must be mentioned here. First, the institutional variables in Equation (4) included in  $X$  and  $V$  may be endogenous. We understand that institutions may be shaped by actors responding to structural changes driven by globalization and competitive pressures, for example (Deeg and Jackson 2007; Hall and Thelen 2009). Although we cannot exclude the possibility that there exist some mechanisms through which immigrant-native labor market gaps affect institutions, we argue, in line with the literature (Bassanini and Duval 2009; Arpaia and Mourre 2012), that such effects are second order when compared to the primary channel through which institutions shape immigrant integration and labor market outcomes. Second, selection into migration and out-migration may correlate with institutional contexts; hence it might be one of the channels through which institutions may affect immigrant-native labor market gaps. Such selection is partially mitigated by accounting for individual-level characteristics. We acknowledge both as limitations of this study and interpret our results with them in mind.

## 5. Results

The results from the regression model (4) measuring the association of institutional variables and immigrant-native labor market gaps are presented in [Table 5](#) for all immigrants taken as a whole (average effects) and in [Table 6](#) separately for immigrant sub-groups (heterogeneity effects); full results are presented in [Supplementary Tables S1–S5](#). We recall that a negative coefficient in the model with labor force participation indicates that an increase in the respective explanatory variable is associated with a higher probability of participation of natives than immigrants, and, in that sense, disfavors immigrants. Negative coefficients in the models for unemployment, low-skilled employment, and temporary employment indicate that an increase in the respective explanatory variable is associated with a decrease in the gap in the respective variable, thereby favoring immigrants but not the natives.

The findings confirm that institutions matter for immigrant-native labor market gaps and explain a significant part of the variation that is beyond what can be explained by differences between immigrants' and natives' characteristics. The key result observed in [Table 5](#) is that with the exception of the effect of union density and the share of VET on the unemployment gap and of employment protection on the low-skilled job gap, all the studied institutional variables favor immigrants in that they decrease immigrant-native gaps by reducing the parts that cannot be explained by differences in individual characteristics.

[Figure 1](#) visualizes the effect of VoC institutional context on the size of unexplained immigrant-native gaps compared to the gaps measured for CMEs. In particular, using the coefficients estimated in the second stage (model (4), see [Supplementary Table S1](#)), we predicted the size of the immigrant-native gap for each VoC type using the average values of institutional variables in a given type of VoC (LME, MME, EME) vis-à-vis the size of the gap using the average values of institutional variables in CMEs. The horizontal line at zero in [Fig. 1](#) hence represents the baseline corresponding to CMEs, and the bars represent the size of the effects of institutional contexts in LMEs, MMEs, and EMEs when compared to the CME baseline. We found that in terms of access to employment opportunities (higher participation rate and lower unemployment), the most favorable for immigrants are the institutional contexts in EMEs and MMEs, but they are also the most unfavorable in terms of job quality (temporary and low-skilled employment). The institutional contexts in LMEs are the most favorable to immigrants in terms of job quality and lower unemployment. However, they also imply a slightly lower participation rate compared to CMEs.

While some patterns emerge with respect to the VoC institutional types, we identified several empirical patterns demonstrating that institutions matter differently for different immigrant groups (heterogeneity effects). The results are presented in [Table 6](#). First, with respect to *labor market regime*, we found that perhaps the most salient pattern is that institutions with stronger industrial relations and stricter protection of employment contracts benefit a range of immigrant groups as concerns the employment quality. Some immigrant groups (EU12, Europe outside the EU, Africa, and YSM 1–5) are disadvantaged by employment protection of regular contracts, which increases their relative risk of having a low-skilled job. In the area of labor force participation, a higher collective bargaining

**Table 5.** The association of institutional variables and immigrant-native labor market gaps (average effects)

Institution variable	Labor participation	Unemployment	Low-skilled job	Temporary contract
Labor market regime				
Union density		Increase	Decrease	
Collective bargaining coverage	Increase			
EPL—regular contract			Increase	
EPL—temporary contract			Increase	
Skill regime				
The share of VET		Increase		
Welfare regime				
ALMP % GDP			Decrease	Decrease
SOEX % GDP	Increase	Decrease		
Production regime				
Export as % of GDP		Decrease		
VA in service	Decrease			Decrease
VA in agriculture				

*Note:* The sample size varies between 190 and 201 observations. Reported results are significant at the 5 percent level, results are significant on 10 percent statistical level are in italics, and cells left empty to indicate nonsignificant results.

coverage is advantageous to some immigrant groups (Africans and those with six or more years since migration), whereas a higher union density is beneficial to them (those from Europe outside the EU and those with 6 to ten years since migration).

Second, *skill regime* is shown to have strong impacts on several immigrant groups, but the results are mixed. We found that countries moving towards skill-specific regimes with a higher share of VET provide for higher labor force participation among long-term (YSM 11+) and African immigrants but lower participation of European immigrants outside EU and Asian immigrants. A higher share of VET decreases the risk of recent immigrants (YSM 1–5) being unemployed but raises the risk of unemployment for EU15 and YSM 6–10 immigrants. In terms of job quality, skill-specific regimes seem to favor immigrants from Europe (non-EU) by reducing their risk of having a low-skilled job and, on the other hand, pushes some immigrant groups into temporary contracts (Asia, YSM 1–5), unlike the natives.

Third, *welfare regime* also appears to intervene in labor market outcomes. In particular, higher spending on ALMPs and larger social expenditure improve the quality of employment for insider immigrant groups (EU12 and YSM 11+), but disfavor African and Asian

**Table 6.** Summary of significant estimates of second stage regression analysis for immigrant sub-groups (heterogeneity effects)

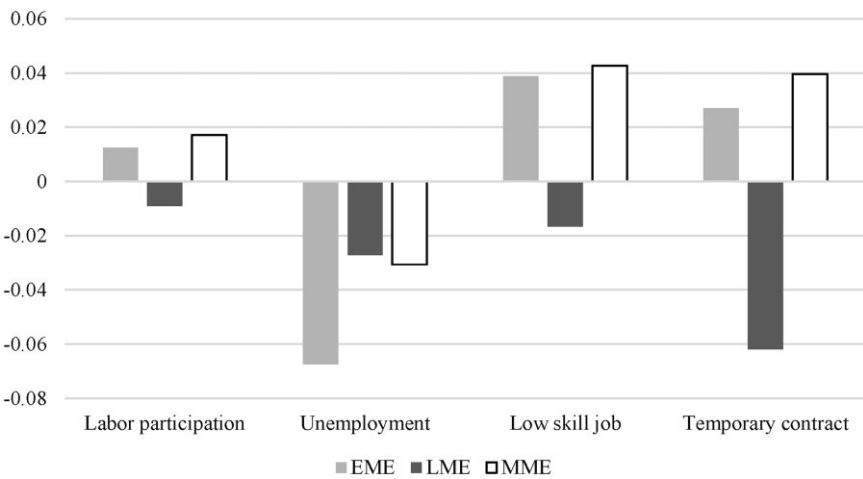
	Institution variable	Effect on gap	Labor participation	Unemployment	Low-skilled job	Temporary contract
Labor market regime	Union density	Increase				Ysm 6–10
		Decrease	Europe, Ysm 6–10	EU12, Ysm 1–5	EU12	
	Collective bargaining coverage	Increase	Africa, Ysm 10, Ysm 11 +			Europe
		Decrease	Asia			EU15, Asia, Ysm 11 +
Skill regime	EPL—regular contract	Increase			EU12, Europe, Africa, Ysm 1–5	EU15, Asia
		Decrease				Europe
	EPL—temp. contract	Increase		EU12, Ysm 1–5		
		Decrease		Asia		EU15, Asia, Ysm 1–5
Skill regime	The share of VET	Increase	Africa, Ysm 11 +	EU15, Ysm 6–10		Asia, Ysm 1–5
		Decrease	Europe, Asia	Ysm 1–5	Europe	

*Continued*

Table 6. Continued

	Institution variable	Effect on gap	Labor participation	Unemployment	Low-skilled job	Temporary contract
Welfare regime	ALMP % GDP	Increase				Africa
		Decrease		Europe, YSM 6–10, YSM 11+	EU12, YSM 11+	
Production regime	SOEX % GDP	Increase	Europe, Africa, YSM 6–10		Europe	Asia
		Decrease		YSM 11+		EU12
	Export as % of GDP	Increase				
		Decrease		EU15	Asia	Asia, YSM 1–5, YSM 6–10, YSM 11+ YSM 6–10
	VA in service	Increase				
		Decrease			EU15, Europe, Africa, YSM 11+	
	VA in agriculture	Increase	YSM 1–5		Europe	
		Decrease		YSM 11+		

*Note:* The table summarizes significant estimates from models for immigrant groups of different origins (EU15, EU12, other Europe, Africa, Asia) and years since immigration (YSM 1–5, YSM 6–10, YSM 11+). Results are significant on 1 or 5 percent level, those significant on 10 percent statistical level are in italics, and cells left empty indicate results are not significant. The sample size varies between 110 and 206 observations. Full results are available in [Supplementary Tables S2–S5](#).



**Figure 1.** The effect of VOC institutional context on the size of unexplained immigrant-native gaps compared to institutional contexts in CME. *Source:* Authors.

*Note:* We predicted the size of the gap for each VoC type using VoC institutions as well as using the average values of institutional variables in CMEs instead of VoC institutions. The horizontal line at zero represents institutional contexts in CME, while the bar represents the size of VoC institutional effects.

immigrants, which increases the risk of temporary employment. The effect of social expenditures on labor force participation of several outsider immigrant groups (Asia, YSM 6–10, Europe outside the EU) is positive, as higher social spending is correlated with higher immigrant-native gaps in labor force participation. The welfare regime favors immigrants originating from European countries outside the EU, but larger social expenditures increase the risk of low-skill employment for them.

Fourth, with respect to *product market regime*, larger export, service, and agricultural sectors favor several groups of immigrants with regard to their risk of unemployment and low-skilled jobs (excepting immigrants from Europe outside the EU) or temporary contracts (excepting YSM 6–10). The results for labor force participation deliver no effect, except that the higher share of agriculture in the economy favors immigrants with less than five years of residency.

Fifth, looking at the different groups of immigrants, our results across empirical approaches indicate that, when compared to natives, the factors affecting immigrants' labor market outcomes include the segmentation of the labor market between insiders and outsiders (insider–outsider labor market), a corresponding segmentation along peoples' social status, and immigrant adjustment as proxied by the length of stay in their host country.

Finally, in Table 7, we provide a summary of our findings with regard to the theoretical expectations outlined above in relation to average effects. It turns out that our findings on the role of the institutional variables included in this study are, for the most part, consistent or partly consistent with the theoretical expectations. A notable exception is the role



of employment protection legislation, where our results differ from what we expected based on the theoretical arguments. The variation across immigrant groups from different origins and with different lengths of stay in the host country underscores the importance of the insider–outsider gradient for immigrant labor market integration. The variation across institutional variables and labor market outcomes also shows that additional research is needed to understand how different institutions interact with different immigrant groups in shaping their labor market outcomes when compared to natives. Clearly, our analysis also reveals that more conceptual and theoretical work about how institutions affect immigrant integration in host labor markets is needed. In particular, it would be desirable to extend the VoC framework to provide theoretically justified hypotheses about the role of institutions for labor market disparities between immigrant groups with varying distance from the labor market.

## 5. Conclusions

Although immigrant integration opportunities and challenges are in many respects similar across countries, there may be a number of important differences due to the variation in a range of areas such as industrial relations, labor law, education and training system, social policies, and structural conditions. The literature on comparative capitalisms which deals with VoC as inspired by [Hall and Soskice \(2001\)](#) offers a systematic framework of socio-economic regimes for advanced economies. This strand of research proxies the institutional conditions that may be relevant for immigrant integration. However, the question of how the various VoC regimes enable or hinder immigrant integration in host labor markets has not been encompassingly addressed theoretically nor empirically in the literature.

In this article, we explored the significance of a range of contextual institutional variables motivated by VoC studies for immigrant-native labor market gaps in an effort to provide the first comprehensive empirical mapping of the relationships between immigrant-native labor market gaps and institutional contexts as identified in the VoC literature. Specifically, we performed an Oaxaca–Blinder decomposition to separate the part of immigrant-native labor market gaps that can be explained by differences in characteristics between these groups from the part that remains unexplained by such differences. We also studied the role of the institutional variables underpinning the VoC framework on the unexplained part of labor market gaps between immigrants and natives.

Our findings are two-fold. First, we have shown that VoC regimes systematically differ in how they enable or prevent immigrant integration, which broadly supports the notion of institutional complementarities and the existence of systematic differences in the organization of labor markets across advanced economies in Europe. In line with previous studies (typically studying only a selected migration regime and/or VoC type), we confirm that, except CMEs, all the other regimes enable labor market participation of immigrants vis-à-vis the natives. Our results also indicate that in terms of job quality MMEs and EMEs are less favorable to immigrants, but contrary to other studies, immigrants do relatively better in LMEs than in any other regime.

**Table 7.** Immigrant-native labor market gap vis-à-vis institutional changes: Theoretical expectations and empirical evidence

	Theoretical expectations for average effects			Empirical evidence: Results compared to theory	
	Labor part.	Un empl.	Low-skilled job	Temp. contract	Two-stage framework
Labor market regime					
Union density	A	I	D	D	Partly consistent: Higher union density lowers unemployment for selected immigrant groups. It improves the job quality of insider immigrants but contributes to lower LM participation of outsider immigrant groups.
Collective bargain-ing coverage	I	D	D	D	Partly consistent: The extension of collective agreements improves labor participation and reduces regular employment for insider and outsider immigrants. No effect was found on unemployment and low-skilled jobs.
EPL—regular	I	I	NE	NE	Inconsistent: Stricter regulation of regular employment contracts has no effect on access to employment and pushes immigrants to lower quality jobs.
EPL—temporary	I	I	I	I	Partly consistent: Stricter regulation of temporary contracts has no effect on the participation gap. It increases unemployment and reduces temporary jobs for diverse immigrant groups.
Skill regime					
The share of VET	D	I	I	NE	Partly consistent: More skill-specific regimes seem to impact outsider and insider immigrant groups

*Continued*

Table 7. Continued

		Theoretical expectations for average effects		Empirical evidence: Results compared to theory	
Welfare regime				differently in terms of labor market outcomes and job quality.	
ALMP % GDP	I	D	D	D	Consistent: Higher spending on ALMPs improves the quality of employment for diverse immigrant groups and lowers the unemployment gap. No effect was found on LM participation.
SOEX % GDP	A	A	NE	NE	Consistent: More generous welfare systems reduce the quality of employment and improve LM participation for outsider immigrants. Insider immigrants benefit from employment and regular employment contracts.
Product market regime					
Export as % of GDP	I	D	NE	NE	Partly consistent: Open economies favor insider groups (low unemployment) and seem to contribute to better job quality of diverse immigrant groups.
VA in services	I	D	I	I	Partly consistent: Higher share of services pushes different immigrant groups out of low-skilled employment and increases temporary contracts for outsider immigrants.
VA in agriculture	I	D	I	I	Consistent: Agricultural sector offers higher LM participation for outsider immigrants, reduces unemployment of insider immigrants, and pushes outsider immigrants to low-skilled employment.

*Note:* A—ambiguous, I—I—increase, D—decrease, NE—no effect. No effect indicates that according to theoretical expectation, no effect can be expected on the basis of the reviewed studies.

Second, our empirical findings reveal significant roles of specific institutions analyzed jointly on labor market gaps between observably similar immigrants and natives. The estimated roles of institutions vary across immigrant groups of different origins and lengths of stay in the host country and point to the importance of the insider–outsider gradient for immigrant integration in host labor markets. This underscores the need to address the challenge of immigrant-native labor market gaps with due attention to institutional contexts and immigrants’ characteristics. The role of institutions remains significant even after controlling for various macro variables, including the business cycle and diaspora effects from immigrant populations present in the host country. For most institutional variables, our findings are consistent or at least partly consistent with our theoretical expectations about the relationship between countries’ institutional framework and immigrant-native labor market gaps. Employment protection legislation is an exception, as the results associated with it largely differ from our expectations. This might be due to the fact that most studies we had reviewed engaged with the overall EPL index while we focused on two aspects of the index—permanent and temporary employment protection regulation—separately. We hope that our findings and the lack of encompassing theoretical and empirical research will inspire further research on this highly relevant topic.

As for the limitations of our study, we recall that some institutions may respond to immigrant-native labor market gaps and may drive selection into inward and outward migration of observably but also unobservably different groups of migrants. We interpreted our results with these limitations in mind, as endogeneity of institutions and the selection of unobserved variables into in- and out-migration might contribute to the estimated patterns.

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## Supplementary data

[Supplementary data](#) is available at *Migration Studies* online.

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## Notes

1. Eurostat, March 2019. Available at: <https://ec.europa.eu/eurostat/web/products-eurostat-news/-/DDN-20190315-1>.
2. In addition to the studies which take a pan-European perspective, there are numerous country studies, including [Clark and Drinkwater \(2014\)](#) for the UK, [Amuedo-Dorantes and de la Rica \(2007\)](#) for Spain, or [Biavaschi and Zimmermann \(2014\)](#) for Germany.
3. In particular, the 19 EU countries included in this study are grouped as follows: CMEs include Austria, Belgium, Germany, Denmark, Finland, Luxembourg, the Netherlands, and Sweden; EMEs include the Czech Republic, Estonia, Hungary, and Slovakia; LMEs include Ireland and the UK; and MMEs include France, Greece, Italy, Portugal, and Spain.
4. Migrant status is based on country of birth except for Germany, where information on country of birth was unavailable, so we use information on nationality instead. The choice of immigrants' country of origin was given in the data and includes EU15 (immigrants born in one of the EU15 member states but residing in another one), EU12 (immigrants born in states which joined EU in 2004 and 2007), the rest of Europe (European countries outside the EU15 or EU12), Africa (Africa and Middle East), and Asia. Immigrants born in Americas, Australia and the rest of Oceania were not included because the group is very small.
5. Samples for Bulgaria, Poland, and Romania include less than 0.4 percent immigrant population, which is too low for analysis, and so were excluded. We also excluded Croatia, Cyprus, Malta, and Slovenia, because the data for these countries were incomplete.
6. EU15 includes Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, and UK (which in the meantime left the EU); while EU12 includes Bulgaria, Czech Republic, Estonia, Cyprus, Latvia, Lithuania, Hungary, Malta, Poland, Romania, Slovakia, and Slovenia).
7. This might be driven by senior managers moving to EME countries tied to the inflows of FDI.
8. The OECD indicators of employment protection, strictness of employment protection legislation—individual and collective dismissals. For more information, see [www.oecd.org/employment/protection](http://www.oecd.org/employment/protection). The indicators are not available in the period after 2013; therefore, we used 2013 values in the following years. Indicators for Estonia,

- Latvia, and Lithuania during 2004–2009 are complemented from Muravyev (2014) who used the OECD approach to calculate EPL index in the transition countries. In later years, the OECD published the EPL index as well for these countries.
9. Indicators of trade union density or collective bargaining coverage need to be interpreted. However, that must be done in the context of the prevailing industrial relations framework and labor market characteristics.
  10. The share of enrolment into secondary vocational on total enrolment (vocational and general secondary) is calculated from UNESCO database Statistics on Education—Enrolment by program orientation, see <http://data.uis.unesco.org/>.
  11. We used data from Eurostat: Total expenditure on social protection (table *spr\_exp\_sum*). Data covers social benefits (in cash or in kind transfers to households and individuals), administration costs, and other miscellaneous expenditure on social protection schemes.
  12. We used data from Eurostat: Labour Market Policy Database—the provision of active labor market policies (table *lmp\_expsumm*). The latest value for ALMP expenditure in the UK is from 2011, which we also used for the following years.
  13. Including mining, manufacturing, construction, electricity, water, and gas.
  14. Data from World Bank database on value added in agriculture (table *NV.AGR.TOTL.ZS*), industry (table *NV.IND.TOTL.ZS*), and services (table *NV.SRV.TETC.ZS*), expressed as a percentage of GDP.
  15. Data from World Bank database on exports of goods and services expressed as a percentage of GDP (table *NE.EXP.GNFS.ZS*).
  16. We used EU-LFS to calculate the size of immigrant network distinguishing five origins (i.e., EU15, EU12, rest of Europe, Africa, Asia) on total immigrant population. Data on the total number of long-term immigrants arriving into the reporting country during the reference year is taken from the Eurostat (table *tps00176*).
  17. We also performed a decomposition using the pooled sample to confirm our results. We preferred the two-stage approach because the coefficients of individual characteristics (i.e. the role of age, gender, and education) are allowed to vary across countries and over time; hence our preferred approach reported in this article is less restrictive. The results from the pooled model corroborate the importance of institutions for immigrant-native labor market gaps and are available upon request.

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