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# The effectiveness of restrictive immigration policies: the case of transitional arrangements

Magdalena Ulceluse<sup>1</sup> and Martin Kahanec<sup>2</sup>

## Abstract

The paper contributes to the on-going debates concerning the effectiveness of immigration policies, by investigating the case of the transitional arrangements implemented during the European Union enlargement rounds of 2004 and 2007. It has been argued that instead of deterring immigration, the arrangements rather altered the channels of entry. The hypothesis is that, as self-employed workers were not subjected to the transitional arrangements, these migrants used self-employment as a strategy to circumvent restrictions. Our results suggest that this might indeed have been the case post-2007, but not post-2004. We argue that in the latter case, migrants did not need to use self-employment as a strategy, because of alternative, restrictions-free destinations like Ireland and the UK. Our results point to the importance of immigration policies in shaping destination choices and have implications for future EU enlargement rounds.

## Acknowledgements

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## 1. INTRODUCTION

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Immigration is a central issue in the contemporary policy and political debates. Although many studies have repeatedly found that labour mobility produces economic benefits for both the receiving and sending countries, oftentimes greater than those resulting from liberalizing trade (see Rodrik 2002), it also affects the distribution of these gains and any associated costs within and between sending and receiving countries. Such redistributive effects may generate tensions and escalate fears from competition, populist and nationalistic views, or security concerns.

Recent developments, including the successive European Union enlargements and what has been labelled the ‘European migration crisis’, have sparked vehement calls for more restrictive immigration policies across Europe. As a consequence, European Union (henceforth EU) member states, which have become increasingly open to the free movement of goods, capital and services, have become more reluctant when it comes to the free movement of people and have upped the regulation and control of migration, committing significant resources and efforts to this end (Geddes and Scholten 2016).<sup>3</sup>

However, even restrictive immigration policies may include loopholes that allow migrants to enter the country and supply the much needed demand for labour in developed countries (see Mayda 2010; Freeman 1995, 2002). The paper investigates one such loophole, namely, the self-employment channel available during the 2004 and 2007 EU enlargement rounds, when a series of labour market measures (transitional arrangements, henceforth TA) were implemented to prevent an inflow of EU8<sup>4</sup> and EU2<sup>5</sup> nationals to the labour markets of the incumbent EU member states. Several authors have argued that because self-employed individuals were not subjected to the labour market restrictions the transitional arrangements imposed, EU8 and EU2 nationals used

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<sup>3</sup> With third country nationals.

<sup>4</sup> Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia, Slovenia

<sup>5</sup> Romania and Bulgaria

self-employment to circumvent them. According to this hypothesis, instead or in addition to any effect on the volume of immigration, the transitional arrangements altered the channels through which EU8 and EU2 nationals have entered the receiving EU countries.

This paper contributes to the existing debates concerning the effectiveness and effects of immigration policies, by investigating the case of the transitional arrangements implemented during the European Union enlargement rounds of 2004 and 2007. Our results suggest that self-employment might have been a strategy employed by EU2 migrants to avoid labour market restrictions, but not by EU8 migrants. A potential explanation might be the availability of free-labour market-entry countries, like the UK, Ireland or Sweden, which did not implement TA. This immigrant group, therefore, did not need to turn to self-employment to avoid restrictions, rather it switched from migrating to traditional destinations like Germany or Austria, to the UK or Ireland, instead.

The paper makes several significant contributions to the existing literature on the effect of immigration policies. To begin with, it is the first study to systematically investigate the effect that transitional arrangements have had on migrant's self-employment rates, and in conducting a comparative analysis across the EU15<sup>6</sup> member states. By extending the focus of the analysis to a multitude of origins and destinations we can test the robustness and broader validity of the results found. The European Union offers a rare opportunity to study the effect of policies and policy changes over time and across countries in a longitudinal approach, which is not possible in most other contexts. Second, the paper exploits a unique policy change that applied the same policy measure to two groups of migrants (EU citizens from the EU2 and EU8), shifting their regulation away from national rules to free movement, which was implemented across a set of EU member

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<sup>6</sup> EU15 includes Austria, Belgium, Denmark, Finland, France, Greece, Germany, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, the United Kingdom.

states similarly but at different points in time (sometimes even gradually). Third, our findings make an empirical contribution to the current debates on the effectiveness of immigration policies in curbing immigration.

Moreover, we aim to add value to the current literature by investigating a case in which, while there is free mobility between sending and receiving countries, there is a spectrum in terms of access to the labour market. For instance, in the case of EU2 nationals, Sweden did not implement TA, Austria has a list of 65 skilled professions with a shortage of workers which were opened for Romanians and Bulgarians, while the Netherlands required work permits for all types of jobs, including seasonal (Groenendijk et al. 2012). This allows for a more nuanced view on the effect and effectiveness of immigration policies and enables inferences about other pull factors (for instance, the overall attractiveness of the receiving country, labour demand, or cultural differences). Lastly, our results have broader research and policy implications, revealing the importance of considering the effect immigration policies have in shaping migrants' labour market trajectories and subsequent economic activities.

The structure of the paper is as follows. Section 2 provides a review of the literature on the effect and effectiveness of restrictive immigration policies in general and then zooms in on the nexus between immigration policies and self-employment. Section 3 presents an overview of the effect of transitional arrangements implemented during the EU enlargement rounds in 2004 and 2007 and some of their implications. Section 4 presents the data and methodology employed, while section 5 examines the results. Section 6 discusses the theoretical and policy implications of our findings.

## 2. THE EFFECTIVENESS OF RESTRICTIVE IMMIGRATION POLICIES

Immigration policies regulate the conditions under which migrants enter a country and the degree of access to key social institutions, such as the labour market and the welfare state (Geddes and Scholten 2016). They are usually implemented as a way to influence the behaviour of a target population, for instance, highly skilled migrants, in an intended direction (Czaika and de Haas 2013).

Recent developments, including the successive EU enlargements and what has been labelled the ‘European migration crisis’, have sparked vehement calls for more restrictive immigration policies. In Europe, countries have declared their intention to regulate labour immigration more strictly since at least the 1970s, although they have continued to accept migrants to various degrees (Geddes and Scholten 2016).

The effects of immigration policies, as well as their objectives and criteria of success, have been however greatly questioned in recent times (see Czaika and de Haas 2013; Czaika and Hobolth 2016). There are at least two sides to this debate. A number of authors have argued that immigration policies have been mostly effective and that it has become more difficult for individuals to enter host countries due to restrictive visa policies and sophisticated border control systems (Carling 2002; Bonjour 2011; Geddes and Scholten 2016). Strikwerda (1999), for instance, suggests that the major decline in immigration flows to the US after the implementation of the language test in 1917 and the quota system in 1921, points to the decisive power of the state to control migration and, by extension, the direction of economic development itself. In Europe, Guzi, Kahanec, and Kureková (2018) find that migration policies affect how migrants responded

to labour shortages across occupations, sectors and countries, with more restrictive migration policies hampering their responsiveness in comparison to natives.

Other authors disagree and insist that we are experiencing a control crisis and people circumvent restrictions and migrate through irregular means (Bhagwati 2003; Castles 2004). Hollifield et al (2014), for instance, argue that the gap between the objectives and the outcomes of immigration policies is becoming increasingly wider in many receiving countries, which provokes greater public hostility towards immigrants and puts pressure on political parties and policy-makers to adopt even more restrictive policies. The question seems to remain, thus: do restrictive immigration policies actually deter migrants from entering a country?

Recent empirical literature suggests they do, at least to some extent. Ortega and Peri (2013) find that when a traditional immigrant destination, such as the USA, Canada, or Australia, tightens its laws regulating entry, immigration flows decline. More specifically, the introduction of measures that restrict the entry of immigrants to these countries reduces immigration by about 6 percent within the same year. Similarly, Czaika and de Haas (2016) find that visa policies significantly decrease immigration, although the net effect is diminished by the decline in outflows of the same migrant group. They also find that inflows decline incrementally after the introduction of restrictions but increase almost immediately after the restrictions are removed. They conclude that restrictions tend to decrease circulation and encourage long-term settlement, which in turn reduces the responsiveness of migration to economic fluctuations. Several studies, including Hatton (2005), Mayda (2010) and Beine et al (2011) corroborate these findings and document that immigration policies affect the magnitude of immigrant flows.

Restrictions, however, do not stop immigration altogether, and they can affect both the quantity and quality of the inflows. Sometimes they do not reduce the number of immigrants

entering the country, but instead affect the channels people choose to enter (Czaika and de Haas 2013).<sup>7</sup>

Immigration policies in most EU member states are rather restrictive, which would mean that immigration flows should be severely reduced. Nevertheless, restrictive immigration policies are often characterized by loopholes that leave enough room for potential migrants to take advantage of the existing economic incentives (Mayda 2010). One such loophole was to be found in the case of the transitional arrangements implemented by the incumbent member states during the EU enlargement rounds in 2004 and 2007, investigated in this paper.

### 3. TRANSITIONAL ARRANGEMENTS – AN OVERVIEW

Transitional arrangements are a series of labour market measures the incumbent EU member states have implemented to restrain the inflow of immigrants from the EU8 and EU2 accession countries. The restrictions themselves were not new – a series of coordinated restrictions have also been implemented when Greece, Spain and Italy accessed the EU. The difference this time was that the new member states were jointly relatively populous and significantly diverged in terms of economic development and wage earnings from the incumbent member states, which constituted a powerful, if only potential, pull factor. Moreover, this time around, the decision on the implementation and the type of restrictions was left up to the national Governments to decide, with a 2+3+2 rule. The rule meant that Member States could impose a transitional period for 2 years, then decide to extend it for an additional 3 years, and only if there was

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<sup>7</sup> Restrictions raise the costs associated with migrating, thus for a positive migration decision the returns from migration must be high enough to make up for the increased risks and costs that it incurs under a more restrictive regulation.



proof that labour from new member states was seriously disruptive to the market, the period could be extended 2 additional years<sup>8</sup>. Table 1 presents the year when transitional arrangements were lifted by the EU15 Member States for the two country groups.

Table 1. End of transitional arrangements by country, for each enlargement round

End of transitional arrangements					
Country	EU-8	EU-2	Country	EU-8	EU-2
Austria	2011	2014	Italy	2006	2012
Belgium	2009	2014	Luxembourg	2007	2014
Denmark	2009	2009	Netherlands	2007	2014
Finland	2006	2007	Portugal	2006	2009
France	2008	2014	Spain	2006	2009/2011*
Greece	2006	2009	Sweden	2004	2007
Germany	2011	2014	United Kingdom	2004	2014
Ireland	2004	2014			

\* Spain lifted restrictions for Romania and Bulgaria in 2009, but reintroduced them briefly for Romania in 2011

All EU15 member states except for Sweden, Ireland and the United Kingdom implemented TA for up to seven years for the first enlargement round, and apart from Sweden and Finland all EU15 member states implemented TA for the second enlargement round. Moreover, unlike in previous enlargement rounds, not only were there countries that did not implement TA, but there was significant variation in the degree of restrictiveness of the TA in those countries that did implement them<sup>9</sup>. In Austria, for instance, EU2 workers generally needed a work permit, however, there was an exemption for 65 skilled professions experiencing a shortage of workers (Groenendijk et al. 2012). In Italy, EU2 nationals needed a work permit, unless the position concerned employment in agriculture, tourism and hotel business, construction, domestic work and personal assistance, mechanical engineering, management, highly skilled work or seasonal work (Holland

<sup>8</sup> For more information, please see [http://europa.eu/rapid/press-release MEMO-11-773 en.htm](http://europa.eu/rapid/press-release_MEMO-11-773_en.htm)

<sup>9</sup> See Holland et al. (2011) and Groenendijk et al. (2012) for an overview.

et al. 2011). In Germany, only engineers and qualified workers who were satisfying a regional, economic or labour market interest did not need or were granted a work permit (idem).

This lack of cross-country coordination was not without consequences in terms of the scale, composition and direction of migration flows to the EU15, from the EU8 and EU2 groups respectively. Transitional arrangements did not as much as stop migration, but rather diverted flows away from regular countries of migration which have now applied restrictions (e.g. Germany, Austria) to countries which maintained their labour markets open (e.g. Ireland, United Kingdom) (Boeri and Brücker 2005; Barrell et al 2007; Kahanec et al 2009). Indeed, in Germany, the net inflow post enlargement was 2.5 times larger than in the four previous years (Brenke et al 2010), while in Spain, the percentage of EU12 (EU2 and EU10 countries) immigrants increased from 10 per cent in 2004 to almost 20 per cent in 2008 of the total immigrant population (de la Rica 2010). The data for the United Kingdom (one of the countries that did not apply restriction for the EU8 countries) shows that the stock of EU8 immigrants registered a significant growth, from around 50,000 in 2003 (including EU2 immigrants), to 704,000 in 2008, while the stock for EU2 migrants grew from 34,000 in 2006, to 67,000 in 2008 (United Kingdom Migration Advisory Committee 2008). Sweden, the only country that opened its markets for both enlargement rounds registered only a slight increase in immigration from the accession countries, underscoring the fact that labour demand is also needed to attract immigrants, and that geographical distance and language skills can act as barriers (Galgóczi, Leschke, and Watt 2011). Another factor limiting immigration to Sweden may have been strict labour market regulations and strong trade unions (Kahancova and Szabo 2015).

The transitional arrangements also affected the composition of post-enlargement migration. In the United Kingdom, the proportion of EU2 and EU8 migrants with low education

was smaller after enlargement, while of those with higher education was larger (Kahanec et al 2010). Moreover, EU2 and EU8 immigrants in both the United Kingdom and Ireland seemed to exhibit, on average, higher educational levels than other immigrant groups, although they were found to earn less than these groups (Barrett 2010; Holland et al. 2011). Conversely, in Germany, the share of EU8 post-enlargement migrants with low education was substantially larger than the share of pre-enlargement migrants with low skills suggesting a negative selection of migrants (Kahanec et al 2010). Similarly, Elsner and Zimmermann (2013) found that the educational levels of the post-accession arrivals were higher than those of comparable natives, but lower than those of pre-accession cohorts, prompting the authors to conclude that Germany would have been better off without the introduction of restrictions, as it would have received younger and more highly educated individuals, like Ireland and the United Kingdom did.

In terms of labour market outcomes, although on average highly educated, the post enlargement migrants tended to be employed in lower skilled jobs and had higher employment rates than other immigrant groups or natives (Drinkwater et al 2006). In the United Kingdom, both EU2 and EU8 migrants were more likely to be in employment than migrants from other countries and the native population (Holland et al. 2011). In Italy, around one third of EU2 migrants were employed in craft and elementary occupations, while the construction sector employed the largest share of EU2 migrants, followed by manufacturing and the household sectors (idem).

There are no empirical studies to date investigating the effect of the transitional arrangements on migrants' propensity to become self-employed, yet there are several studies observing increased self-employment rates for EU2 and EU8 migrants, post enlargement. For example, in the United Kingdom, which opened its labour market, EU8 migrants had a particularly high probability of becoming self-employed (Blanchflower and Lawton 2010). In Germany, too,

post enlargement immigrants were up to five times more likely to be self-employed than previous cohorts (Elsner and Zimmermann 2013), while in Austria, the number of self-employed Poles increased four times, and doubled for the EU8 population as a whole, between 2003 and 2005 (Barrell, FitzGerald, and Riley 2007).

Section 4 explores the post enlargement patterns of self-employment for the two immigrant groups and presents the methodology employed for the empirical analysis.

## 4. DATA AND METHODOLOGY

### 4.1 Key variables

The dependent variables are self-employment rates for EU2 and EU8 migrants, respectively, in the EU15 countries. The variables are computed using the EULFS between 2004-2016, as the share of self-employed EU2/8 migrants in the total population of employed EU2/8 migrants. The EULFS allows us to distinguish between different groups of migrants, by country of birth or nationality. We use nationality in this case, as the former is not available in the case of Germany. The quantitative differences between the two are very small or inexistent, in most countries. Lastly, Sweden and Finland do not distinguish between EU2 and EU8 migrants, likely because of the small sample size, therefore we use the combined group for these two countries<sup>10</sup>. Ideally, we would include only self-employed migrants without employees, as the assumption is that this is the type of “bogus self-employment” that we are investigating, however, the EULFS data does not distinguish between self-employed individuals with or without employees.

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<sup>10</sup> The results of the analysis with or without Finland and Sweden do not differ significantly substantially.

The main independent variables are two dummy variables, one for the transitional arrangements implemented during the 2004 enlargement round and one for those implemented during the 2007 enlargement round. The dummy variables are equal to 1 if transitional arrangements were in place, and 0 otherwise.

In order to isolate the effect of the transitional arrangements, we control for several factors which previous research has found to be associated with self-employment propensities. The first such control variable is unemployment. We obtain unemployment rates for the entire active population in each EU15 country, between 2004-2016, from Eurostat (2018). Unemployment is proposed in the literature as a determinant of self-employment, with the direction of the effect depending on context and circumstances. High unemployment can lead to more self-employment as the opportunity cost of starting a business decreases, however, it also entails fewer resources available, which in turn could undermine the creation of new businesses (see for example Blau 1987; Blanchflower and Meyer 1994; Audretsch et al. 2002); and for an extensive review Thurik et al. 2008).

The second variable we control for is the level of GDP per capita in purchasing power standard (PPS), obtained from Eurostat (2019) for the period 2004-2016. The level of GDP per capita PPS, a proxy for economic development, can be negatively associated with self-employment if it is associated with greater capital per worker, and can be positively associated with self-employment, when it is the result of increased economic growth and demand for goods and services, encouraging business creation (Parker and Robson 2004). Further, an increase in the level of GDP per capita should be associated with a decrease in self-employment, as the returns from waged employment relative to self-employment are now higher (Lucas 1978).

Short term interest rates are used as a proxy for the costs associated with setting up a new business. We obtain data on short term interest rates for the period 2004-2016 from the OECD database (OECD 2019). In the absence of sufficient personal resources to finance a new business, one of the most formidable entry barriers to self-employment is the cost of borrowing (Parker 1996). We would expect thus a higher interest rate to be negatively associated with the level of self-employment.

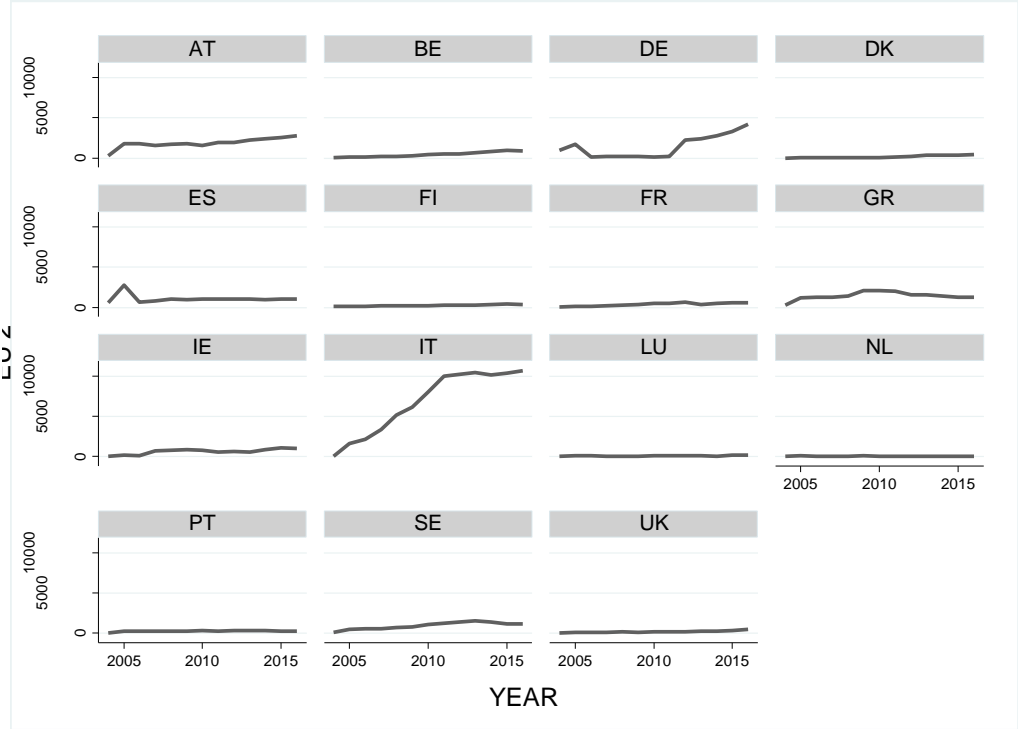
We also include an enlargement dummy, equal to 1 if the year is bigger than 2004 or 2007 for the EU8 and EU2 countries, respectively, to control for the effect of the enlargement, and the self-employment rate of the native population, which stands in for other unobserved characteristics of the business environment, including opportunities and barriers. Lastly, we include the stock of EU2 and EU8 migrants in the EU15, respectively, to control for the potential effect of networks in attracting migrants to each country.

## 4.2 Descriptive statistics

The premise of our study is that immigration policies put in place during the two enlargement rounds of 2004 and 2007 left room for a mechanism which could be used to access the labour markets of the EU15 countries. That mechanism is self-employment. We expect, thus, to observe an increase in the level of self-employment rates of the two migrant groups in the EU countries which implemented transitional arrangements, and to subsequently observe an increase in the EU2 and EU8 migrant population in each country.

We begin by exploring the latter<sup>11</sup>. Figure 1 presents the evolution of the EU2 migrant stock within each EU15 country, between 2004-2016. Italy registers, by far, the largest number of EU2 migrants over the period covered, a steady increase from 2004 onwards, followed by Austria, Germany and to a lesser extent, Sweden. In the case of EU8 migrants (figure 2), Ireland registers a disproportionate increase in the stock of EU8 migrants, with a sharp increase between 2004-2006 and slow decrease since 2012. Germany, Austria and the UK also register an ascending trend over this period.

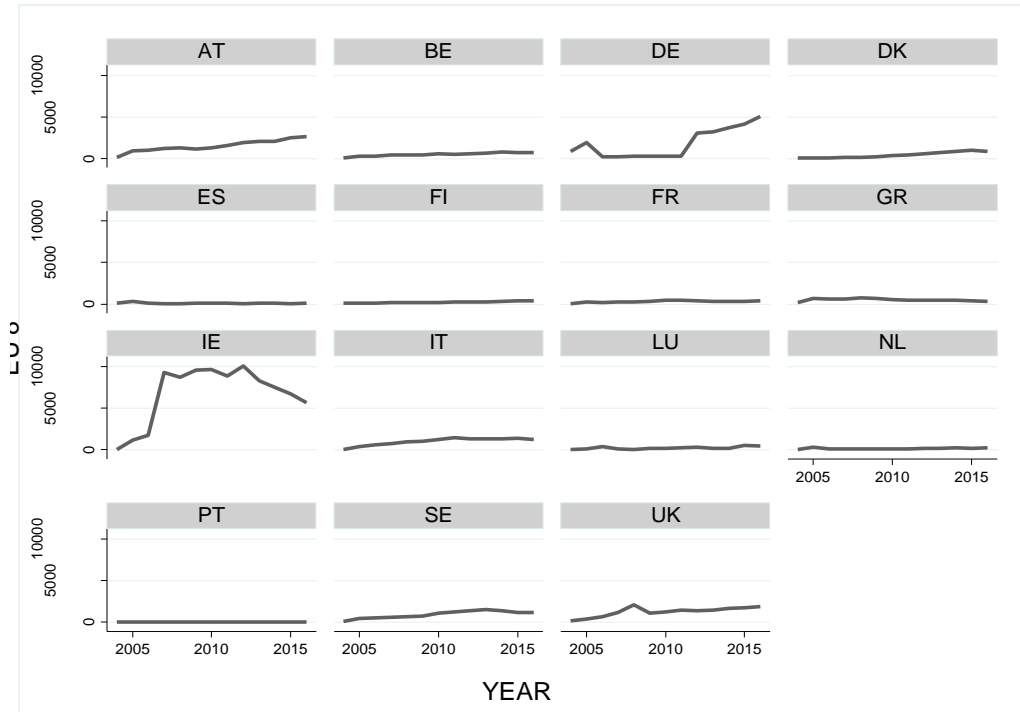
Figure 1. The evolution of the EU2 migrant stock by country, 2004-2016



Source: Own computations using EULFS data  
 Note: Data for Finland and Sweden includes both EU2 and EU8, as available in the EULFS.

<sup>11</sup> Figures 5 and 6 in the Annex present a comparison of all EU15 countries in an overlaid graph.

Figure 2. The evolution of the EU8 migrant stock by country, 2004-2016



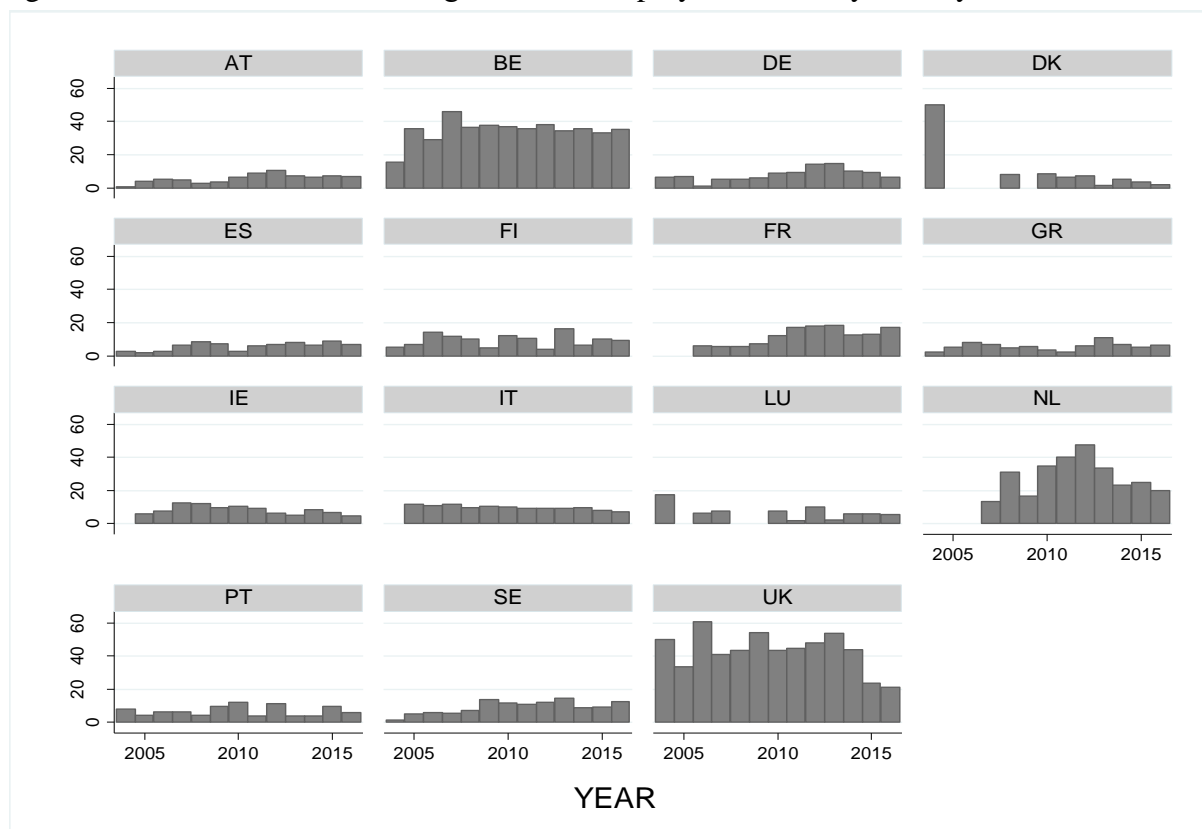
Source: Own computations using EULFS data

Note: Data for Finland and Sweden includes both EU2 and EU8, as available in the EULFS.

Our hypothesis is that EU2 and EU8 migrants used self-employment to circumvent the transitional arrangements put in place by most of the EU15 countries, to access their labour markets. We would expect, thus, to see an increase in self-employment rates for these two migrant groups, post-enlargement, and subsequently, a decrease at the end of the transitional arrangements period within each receiving country. Figure 3 presents the evolution of self-employment rates for the EU2 migrant group, and figure 4 for the EU8 group. In the case of the EU2 group, their self-employment rates seem to have increased post-2007 in Spain, Finland, Greece, Ireland, the Netherlands and Portugal, and to have decreased post-2014 in Germany, Denmark, Finland, Ireland, Greece, the Netherlands, Sweden and the UK.



Figure 3. The evolution of EU2 migrant's self-employment rates by country, 2004-2016



Source: Own computations using EULFS data

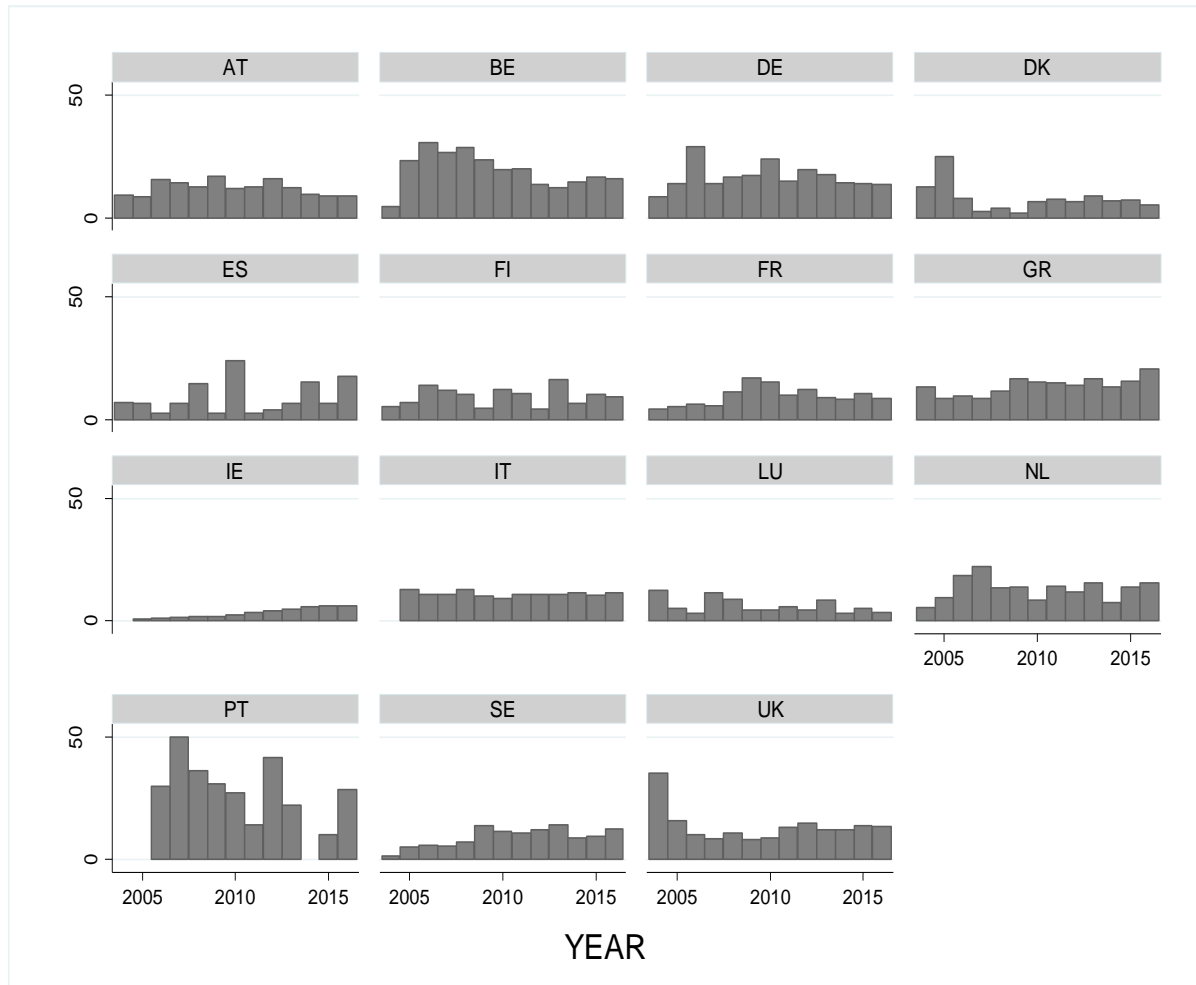
Note: Data for Finland and Sweden includes both EU2 and EU8, as available in the EULFS.

In the case of the EU8 migrants, their self-employment rates seem to have registered an ascending trend post-2004 in Belgium, Germany, Austria and the Netherlands, and a descending trend post-2009 in Belgium, the Netherlands, Luxembourg and Portugal, and post-2011 in Austria and Germany, the only two countries which had the TA in place for the entire 7-years period.

The hypothesis that EU2 and EU8 migrants circumvented transitional arrangements by claiming self-employment – since the self-employed were not subjected to restrictions - seems plausible based on the descriptive data exhibited in figures 1-4 and in the literature. Yet, to the authors' knowledge, no systematic study has been undertaken to test its validity. The study intends

to fill this gap in the literature, but also draw broader conclusions about the effectiveness of restrictive immigration policies in deterring immigration.

Figure 4. The evolution of EU8 migrant’s self-employment rates by country, 2004-2016



Source: Own computations using EULFS data

Note: Data for Finland and Sweden includes both EU2 and EU8, as available in the EULFS.

### 4.3 Empirical model and estimation techniques

To determine whether EU2 and EU8 migrants used self-employment to bypass the transitional arrangements most of the EU15 countries put in place, we estimate the following model:

$$Y_{it} = \beta_0 + \beta_1 X_{it} + \beta_2 Z_{it} + \varepsilon_{it}$$

where  $Y_{it}$  is the dependent variable, either self-employment rates for EU2 or self-employment rates for EU8 migrants,  $X$  represents the independent variable transitional arrangements,  $\beta_1$  is its slope,  $t$  refers to the time unit – years,  $i$  to the cross-national units - countries, while  $\varepsilon$  is the error term.  $Z$  represents a vector of the control variables described in section 4.1.

We use a time series of cross-sectional data to estimate our models. By pooling multiple cross-sections over multiple years, the data incorporates variation across countries and over time, allowing the inclusion of unobserved and unspecified factors (Sanderson 2013). These unobserved factors can bias our results, as we would not be able to determine whether the effect is due to the treatment (i.e. whether an increase in self-employment rates is caused by TA) or whether it is driven by country-specific factors. This phenomenon is called heterogeneity bias and can be dealt with by employing random and fixed effects models, which allow each country to have a unique intercept (Sanderson 2013).

In order to decide on the appropriate model for our data, we conduct a series of specification tests. We begin with a Hausman (1978) test, which assesses whether the errors ( $ui$ ) are correlated with the regressors, with the null hypothesis being that they are not. The tests suggest that the random effects estimator is consistent both in case of the EU2 model ( $p=0.2004$ ) and in case of the EU8 model ( $p=0.3708$ ). A Breusch-Pagan Lagrange multiplier test for random effects

confirms the estimator is consistent, with  $p=0.0000$  for both models. The Wooldridge test for serial correlation indicates that the residuals are autocorrelated in both the EU2 ( $p=0.0249$ ) and EU8 ( $p=0.0319$ ) models. Lastly, a Breusch-Pagan Lagrange multiplier test for contemporaneous correlation suggests that residuals are correlated across countries in the same cross-section ( $p=0.0001$  for both models). Based on these results, we proceed to employ a linear regression model with panel-corrected standard errors (PCSE) and a first-order autoregression (AR1) autocorrelation process, which corrects for these deviations and allows for a better inference using time series cross-sectional data. However, to test the sensitivity of our results to the modelling technique, we also employ a random effects model with robust standard errors clustered at the country level. The results presented in Section 5 are robust to an additional sensitivity test, namely bootstrapping. Our analysis incorporates data on the largest possible sample given the EULFS datasets available (2004-2016), however, it is possible that the estimates are sensitive to the size and composition of the sample. Bootstrapping performs a nonparametric estimation of the standard errors from the observed distribution of the sample, creating a larger sample of the existing data on which to test for significance (Mooney and Duval 1993). We use 1000 replications for our models, the amount required for bias-corrected models (*idem*). Our estimates were robust to the bootstrap technique employed<sup>12</sup>.

A potential issue arising from our analysis would be endogeneity, and specifically, simultaneity. Do transitional arrangements determine changes in self-employment rates, or the other way around? We argue that in our case, endogeneity is not really an issue. EU2 and EU8 migrants' self-employment rates are not likely to affect the implementation of transitional arrangements, which were decided at a more general political level. Moreover, the decision to

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<sup>12</sup> Results available upon request.

implement transitional arrangement would have been taken based on the size of the specific migrant group and a country's overall history of that specific migration trend, and not self-employment rates.

## 5. RESULTS AND DISCUSSION

Tables 2 and 3 present the pairwise correlation matrices between EU2 and EU8 self-employment rates and the control variables employed in the empirical analysis. The self-employment rates of EU migrants seem to be associated most strongly with transitional arrangements, a positive and significant association, followed by unemployment and native self-employment. On the other hand, the self-employment rates of EU8 migrants are most strongly associated with GDP per capita, a negative and significant association, and native self-employment. Transitional arrangements seem to be only weakly correlated with EU8 self-employment rates, although the direction is positive.

Table 2. Correlation matrix, EU2 migrant group

	EU2 SER	Transitional arrangements	Interest Rates	Unemployment	GDP per capita	Native SER	EU2 Immigrants stock
EU2 SER	1						
Transitional arrangements	0.2450*	1					
Interest Rates	0.0335	0.2835*	1				
Unemployment	-0.1764*	-0.1981*	-0.3302*	1			
GDP per capita	-0.0753	0.1339*	-0.0867	-0.4126*	1		
Native SER	-0.1326*	-0.104	-0.0271	0.5779*	-0.4776*	1	
EU2 Immigrant stock	-0.1312*	0.0035	-0.1745*	0.1314*	-0.1466*	0.3647*	1

Significance at \*\*\* $p < 0.01$ , \*\* $p < 0.05$ , \* $p < 0.1$ .

Table 3. Correlation matrix, EU8 migrant group

	EU2 SER	Transitional arrangements	Interest Rates	Unemployment	GDP per capita	Native SER	EU8 Immigrants stock
EU8 SER	1						
Transitional arrangements	0.0579	1					
Interest Rates	0.0835	0.4413*	1				
Unemployment	0.0682	-0.2250*	-0.3302*	1			
GDP per capita	-0.3043*	-0.0927	-0.0867	-0.4126*	1		
Native SER	0.1905*	-0.1261*	-0.0271	0.5779*	-0.4776*	1	
EU8 Immigrant stock	-0.2311*	-0.2037*	-0.1021	0.044	0.1111	0.0629	1

Significance at \*\*\*p<0.01, \*\*p<0.05, \*p<0.1.

Turning to our regression analysis, Table 4 presents the two estimation techniques, across 6 different models for the EU2 self-employment rates. Models 1-3 are estimated using PCSE, while models 4-6 are estimated using random effects with robust standard errors clustered at the country level. The models test our hypothesis that EU2 migrants used self-employment as a strategy to avoid the labour market restriction imposed by the EU15 member states. The results seem to support this hypothesis, with the effect of transitional arrangements on the self-employment rates of EU2 migrants being positive and significant regardless of the estimation technique employed. Implemented transitional arrangements, thus, seems to have increased self-employment rates for EU2 migrants, across all countries, by between 2.8 to 3.4 percentage points. Other factors contributing to self-employment seem to be the level for GDP per capita PPS and the pre-existence of EU2 migrants at destination, although their influence does not hold in the random effects specification.

Table 4. The effect of TA on EU2 self-employment rates, 2004-2016

VARIABLES	(1) PCSE (AR1)	(2) PCSE (AR1)	(3) PCSE (AR1)	(4) RE	(5) RE	(6) RE
TA EU2	2.76* (1.41)	3.07** (1.51)	3.37** (1.61)	3.72** (1.81)	4.59** (2.09)	4.66** (2.26)
Interest rates		-0.36 (0.52)	-0.34 (0.52)		-0.87 (0.54)	-0.79 (0.54)
Unemployment		-0.29 (0.19)	-0.29 (0.19)		-0.01 (0.14)	-2.07 (0.15)
GDP per capita PPS		-0.0002* (0.0001)	-0.0002* (0.0001)		-6.42 (0.0002)	-4.38 (0.0002)
EU2 immigrant stock		-0.001* (0.0003)	-0.0005* (0.0003)		-0.0003 (0.0003)	-0.0003 (0.0003)
Native SER		-0.22* (0.13)	-0.21 (0.13)		-0.14 (0.32)	-0.12 (0.33)
EU2 enlargement			-0.79 (1.53)			-0.75 (2.11)
Constant	11.66*** (1.29)	24.72*** (4.62)	24.44*** (4.59)	11.33*** (2.52)	17.15* (10.19)	16.02 (10.46)
Observations	193	193	193	193	193	193
R-squared	0.04	0.06	0.07	0.05	0.08	0.08
Number of countries	15	15	15	15	15	15

Notes: Robust standard errors in parentheses. Significance at \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ . Data for Finland and Sweden includes both EU2 and EU8, as available in the EULFS.

Turning to the EU8 migrant group (Table 5), we find no effect of transitional arrangements on EU8 migrants' propensity to become self-employed. Moreover, if we ignore for a moment the lack of significance, the effect would be negative and of a much smaller magnitude than for EU2 migrants. One potential explanation might be the fact that EU8 migrants did not need to use self-employment as a strategy to access the labour markets of traditional destinations like Germany or Austria, because of alternative destinations like the UK, Ireland or Sweden, who do not implement TA. It would seem, though, as in the case of the 2004 enlargement round, the transitional arrangements as immigration policies were more effective in reducing flows to countries that implemented them. Their success, however, rests more on the uneven implementation of TA across

all EU15 countries, than on the nature or duration of the restrictions per se. That was not the case during the 2007 enlargement round, when only Sweden and Finland kept their labour markets open. The language barrier, the geographic distance, or the existence of strict labour market regulations and strong trade unions likely made these two countries less attractive destinations.

In this case, other factors seem to have had a larger effect on EU8 migrant's self-employment rates, the most important being the pre-existence of EU8 migrants at destination. In this case, the effect is negative, which might imply that a network support makes it easier to find paid employment, hence migrants do not need to turn to self-employment as a way to find or create a job (Ulceluse and Kahanec 2018).

Table 5. The effect of TA on EU8 self-employment rates, 2004-2016

VARIABLES	(1) PCSE	(2) PCSE	(3) PCSE	(4) RE	(5) RE	(6) RE
TA EU8	-0.45 (1.47)	-1.51 (1.52)	-1.13 (1.55)	-0.05 (1.285)	-1.41 (1.79)	-1.04 (2.13)
Interest rates		0.24 (0.39)	0.25 (0.41)		0.59 (0.51)	0.55 (0.52)
Unemployment		-0.13 (0.24)	-0.13 (0.24)		0.13 (0.11)	0.12 (0.10)
GDP per capita PPS		-0.0002*** (5.25)	-0.0002*** (5.26)		-6.52 (8.23)	-9.19 (7.10)
EU8 immigrant stock		-0.001*** (0.0002)	-0.001*** (0.0002)		-0.001*** (0.0002)	-0.001*** (0.0002)
Native SER		0.15 (0.10)	0.14 (0.10)		0.20 (0.23)	0.18 (0.23)
EU8 enlargement			-2.23* (1.28)			-2.18 (3.45)
Constant	11.86*** (0.81)	16.40*** (3.28)	17.01*** (3.18)	11.88*** (1.44)	9.66** (4.92)	11.09** (4.85)
Observations	192	192	192	192	192	192
R-squared		0.06	0.06	0.0002	0.04	0.04
Number of countries	15	15	15	15	15	15

Notes: Robust standard errors in parentheses. Significance at \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Data for Finland and Sweden includes both EU2 and EU8, as available in the EULFS.



## 6. CONCLUSIONS

This paper investigates whether EU2 and EU8 migrants used the self-employment channel available during the 2004 and 2007 EU enlargement rounds to circumvent the transitional arrangements put in place by the EU15 countries. Our results suggest that this might indeed have been the case for the EU2 migrant group, which registers a significant increase in self-employment rates post enlargement, yet it is not applicable to the EU8 migrant group.

Our findings have broader research and policy implications. Firstly, they contribute to the existing literature on immigrant self-employment, which has preponderantly focused on personal characteristics of migrants and available networks as determinants of self-employment, and less so on institutional and policy related factors. We show that immigration policies, as the gatekeepers setting the conditions of entry and stay, can be an important determinant of migrant self-employment. However, this type of, rather, “necessity” self-employment, would arguably contribute less to the overall economy and create far less jobs that policy-makers expect. Furthermore, necessity self-employment is often associated with subsistence living and health issues for migrants themselves. This should constitute some food for thought for most developed countries, which see self-employment as a silver bullet to all-around socio-economic gains.

Secondly, they add value to existing debates concerning the effectiveness of immigration policies. By taking advantage of the self-employment loophole, EU2 migrants have managed to circumvent the transitional arrangements and thus undermine their role in restricting immigration.

Thirdly, we point to the importance of synchronization and alignment in applying migration policies, as we have seen, in the case of EU8 migrants, the fact that the UK and Ireland did not implement restrictions meant that flows were diverted away from other traditional

immigration countries towards them instead. It becomes critical, thus, for policy makers to look beyond their own borders when implementing immigration policies (Palmer and Pytliková 2015) and to anticipate how other countries' policies will interact with their own and affect immigration decisions. This might be a particularly valuable lesson for EU countries considering future enlargements.

It is critical to acknowledge that any type of analysis, particularly when it involves migration, is bound to face methodological limitations. All evidence found on the effects of immigration policies is bound to be dependent on the context and the time of the analysis, and our study is no exception. The transitional arrangements are a very specific case of restrictive immigration policies, and the results might not translate beyond the borders of the European Union. Nevertheless, this is an important contribution on the effects and effectiveness of restrictive immigration policies.

**Conflict of Interest:** The authors declare that they have no conflict of interest.

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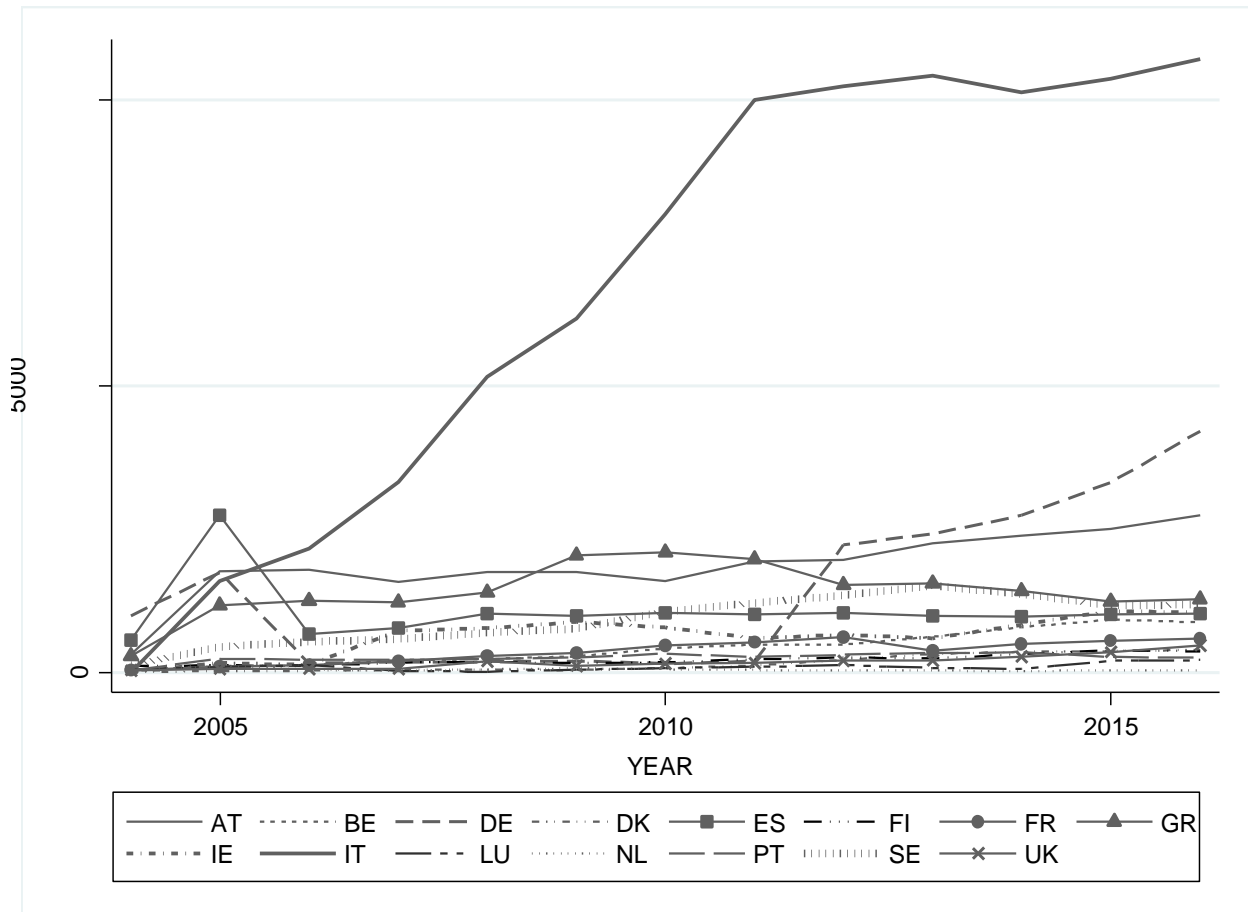
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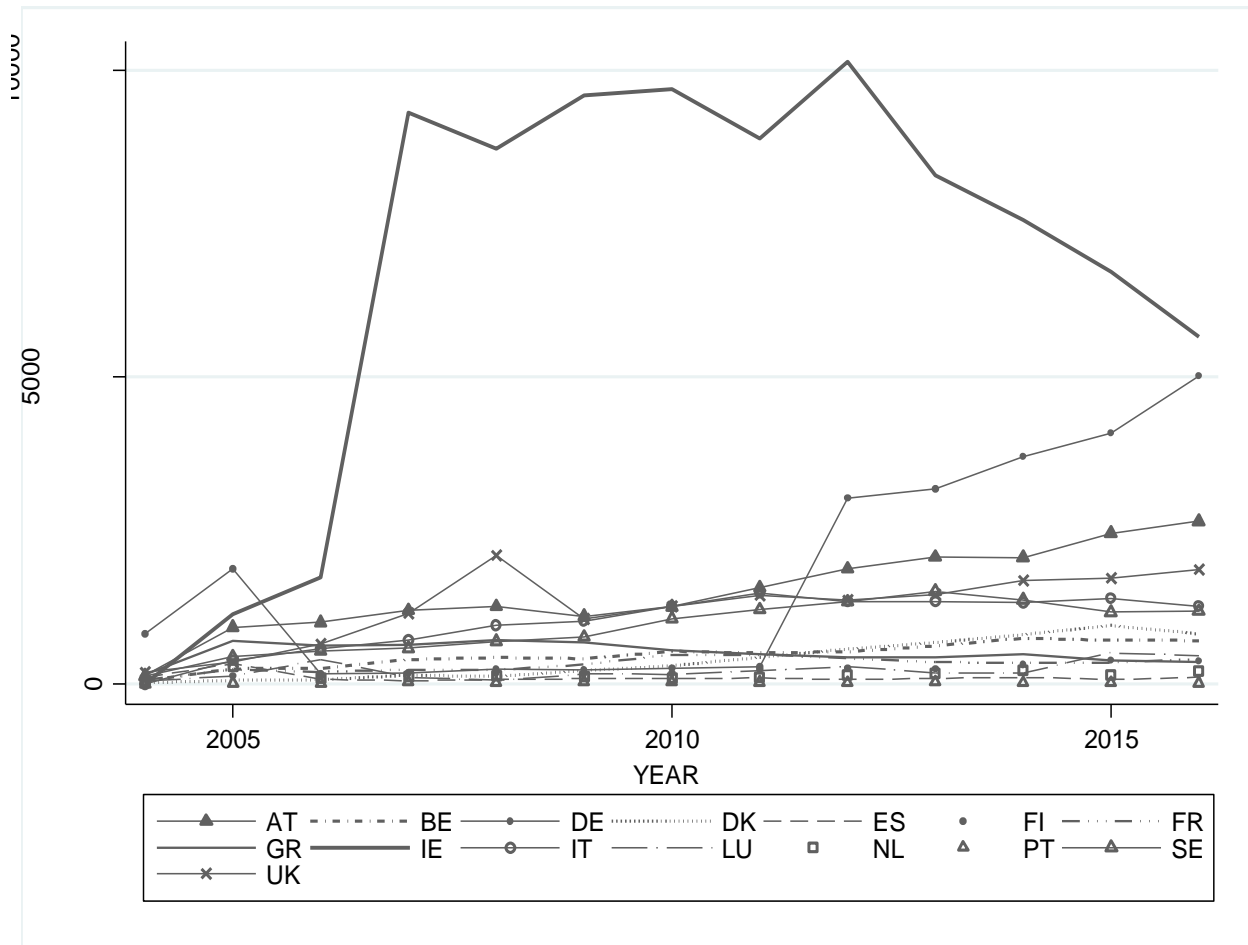
# ANNEX

Figure 5. The evolution of the EU2 migrant stock by country, 2004-2016, overlaid



Source: Own computations using EULFS data

Figure 6. The evolution of the EU8 migrant stock by country, 2004-2016, overlaid



Source: Own computations using EULFS data