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Disintegration of the European Asylum Systems: A Featuring Attempt

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Abstract

This study assesses the integration path of national asylum systems within the European Union between 2008 and 2017. We apply factor and cluster analyses using ten European harmonised indicators on asylum, managed migration and immigration legislation enforcement. Our results are threefold: first, the disintegration of the European asylum systems started in 2012, three years before the mediatisation of the so-called refugee crisis. Second, this disintegration is rooted in Germany's open-door refugee policy on one side, and excessive repressive policies on the borders in Italy, France, Spain and Poland. Third, the number of applications and the number of third-country nationals found to be illegally present or ordered to leave do not appear as roots of disintegration.

Keywords: *cluster analysis; asylum policy; European Union.*

Introduction

The Common European Asylum System (CEAS) established since 1999 by the European Union member states has been recently greatly challenged. The mainstream stakeholders consider that the so-called "*refugee crisis*" started in 2015 as a result of the change in the geopolitical situation in eastern Europe, the Middle East and North Africa referring to the Arab spring, and the Ukrainian and Syrian wars.

Since then, several studies focus their attention on the effect of this crisis on the CEAS. However, while studies often point out the lack of solidarity and burden-sharing initiatives (Thielemann, 2018; Hatton, 2015), the vast majority rely only on data on asylum seekers' inflow (Bordignon and Moriconi, 2017 and Guild and Carrera, 2016 for instance). Parusel (2015) goes a step further by addressing two dimensions, in terms of asylum seekers' inflow but also in terms of national decision-making processes. The author found that progress at the margin occurs in terms of more uniform outcomes.

We believe that the failure of the CEAS in promoting and warranting integration within the European Union (EU) needs to depend on a holistic approach taking into consideration all EU members and all dimensions of asylum systems, and not only asylum seekers' inflow. This allows considering the integration path of asylum systems in the EU. Unfortunately, such approach is missing in the previous literature. This study aims at filling this gap by applying factor and cluster analyses to assess the fragmentation of the European asylum systems since 2008. It includes ten European harmonised indicators which represent the main dimensions of an asylum system.To the best of our knowledge, factor and cluster analyses are used to assess EU integration in other economic areas like labour economics with Du Caju *et al*. (2008) and Syed Zwick and Syed (2016, 2017), or financial economics with Kok-Sorensen *et al.* (2006) and Lucotte (2015).

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This article proceeds as follows. Section II presents the data. Section III describes the methodology. Section IV contains the main empirical results, while the last section concludes.

Data

In order to have a complete representation of the European asylum systems within the European Union, we select ten European harmonised indicators from Eurostat (Table 1). These indicators represent the entire sequence of asylum and managed migration divided into three steps: first, applications and decisions on applications; second, enforcement of migration legislation; and third, residence permits. Migration data suffer from some drawbacks well discussed by Vespe and Santamaria (2018). The authors admit the need for collecting and using accurate European migration data and for improving their adequacy as a basis for evidence-informed policymaking. At the same time, migration data landscape in the EU is better than in many other world regions.

Table 1: Indicators, descriptions and acronyms to support variables

Indicator	Abbreviation
First time asylum applicants	*app*
Final decisions on applications	*decap*
Incoming 'Dublin' requests	*dubrin*
Outgoing 'Dublin' requests	*dubrout*
Decisions on incoming 'Dublin' requests	*decin*
Decisions on outgoing 'Dublin' requests	*decout*
Third-country nationals refused entry at the external borders	*tcnrfs*
Third-country nationals found to be illegally present	*tcnill*
Third-country nationals ordered to leave	*tcnord*
Residence permit issued to a third country national for the first time	*resper*

Note: All variables are national population-size-weighted.

Our study focuses on the twenty-seven member states of the EU[2]. Due to a lack of data, Croatia is not included. The sample period spans 2008-2017.

Table 2: Summary statistics

Variable	Mean	Std. Dev.	Min.	Max.	Skewness	Kurtosis
app	2267.9	10387.5	0.04	120000	9.55	108.1
decap	595.9	2071.3	0	19920.8	7.3	66.1
dubrin	182.9	522.6	0.04	5075	7.4	68.7
dubrout	257.4	992.7	0.01	8683	6.4	47.3
decin	125.9	372.2	0.04	3925.2	6.8	63.5
decout	162.3	618.2	0.00	4712.8	6.10	42.1
tcnrfs	1180.7	5039.8	0	46555.5	6.0	44.9
tcnill	2378.4	6805.2	0.15	60104.5	6.4	56.2
tcnord	1581.6	3029.1	0.15	12475.9	2.3	7.8
resper	9509.4	20635.6	2.27	110948.3	2.9	11.3

Sources: Author's computation

[2] Belgium-BE, Austria-AT, Bulgaria-BG, Cyprus-CY, Czech Republic-CZ, Denmark-DK, Estonia-EE, Finland-FI, France-FR, Germany-DE, Greece-GR, Hungary-HU, Ireland-IE, Italy-IT, Latvia-LV, Lithuania-LT, Luxembourg-LU, Malta-MT, Netherlands-NL, Poland-PL, Portugal-PT, Romania-RO, Slovakia-SK, Slovenia-SI, Spain-SP, Sweden-SE, United-Kingdom-UK.

A first look at Figure 1 which represents a boxplot of our ten variables by considering the entire period gives an idea on the European asylum systems' integration. Overall, we note the appearance of several outliers represented by dotes after 2012 for almost every variable. The situation is less obvious for variables dealing with law enforcement like the evolution of the number of third-country nationals refused entry at the external borders (*tcnrfs*) or ordered to leave (*tcnord*). We can reasonably assume that there is on the contrary after 2012 a consensus among the EU member states in enforcing the law and being more repressive toward refugee inflows. However, from figure 1, we cannot reach a conclusion which establishes a disintegration of the European asylum systems.

Figure 1: Evolution of European asylum systems' integration (2008-2017)

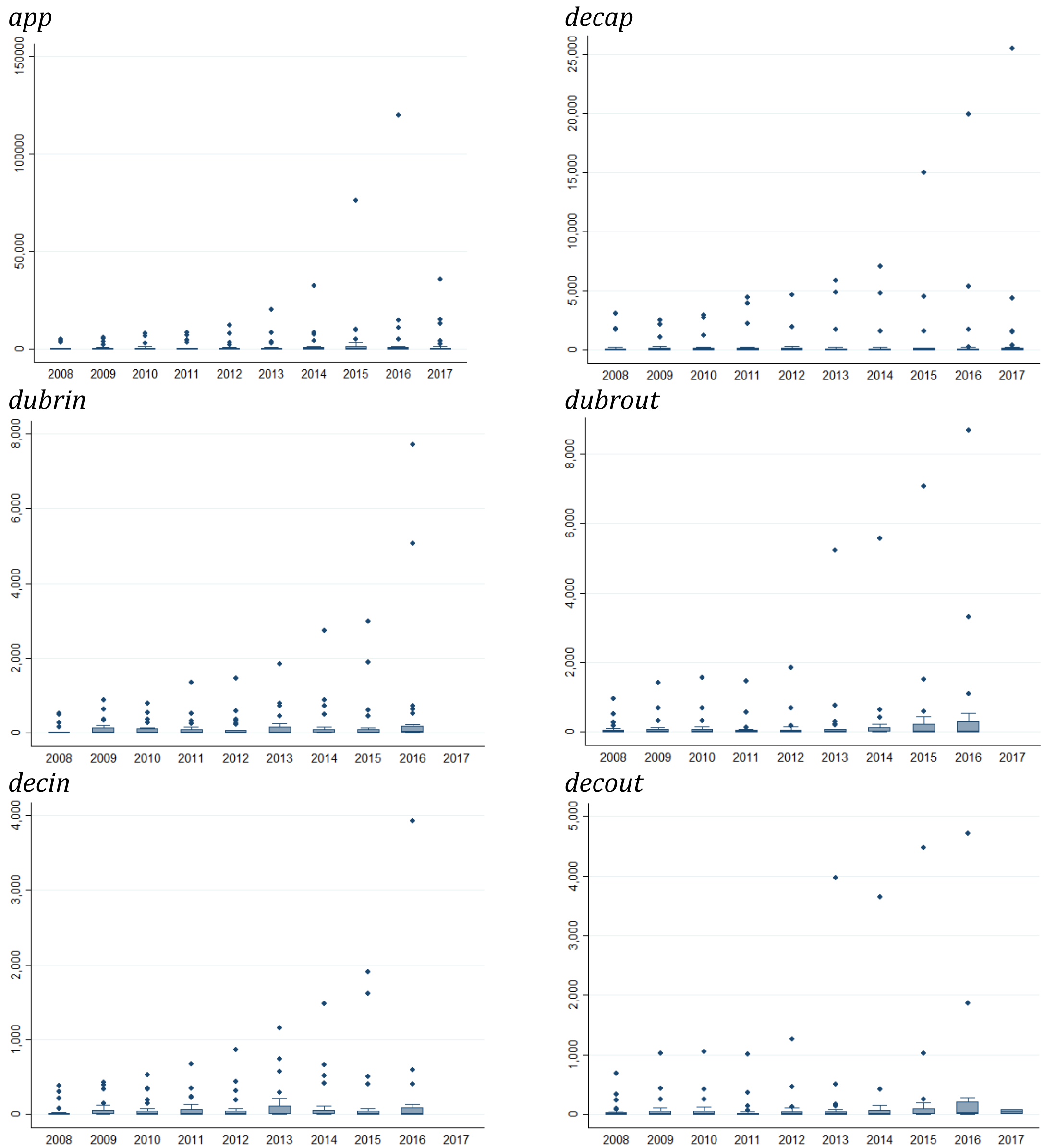
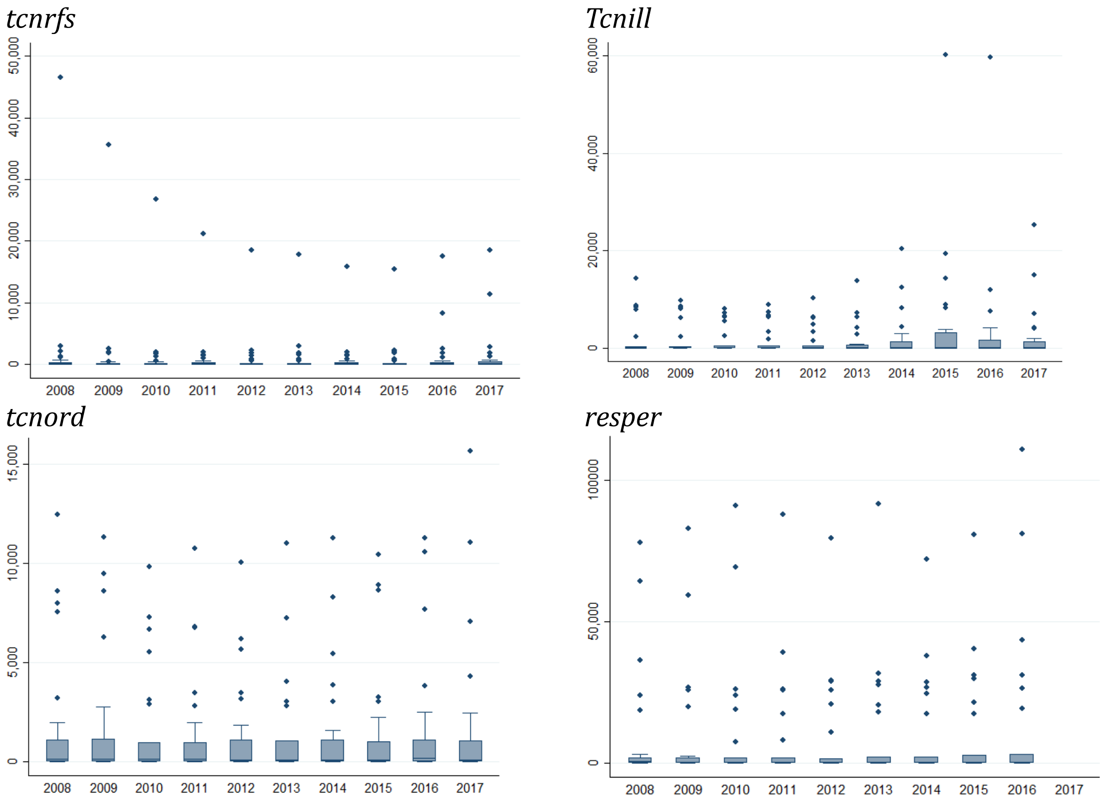


Figure 1: *Continued.*



Source: Author's computation

Methodology

Our methodology follows a three-step approach. We first test the validity of the data. Second, we conduct a factor analysis in order to extract factors that will be used in the third step where we run a cluster analysis.

Table 3 displays the results of the Kaiser-Meyer-Olkin (KMO, Kaiser, 1974) test and the Bartlett's sphericity (1937) to determine the usefulness of the factor analysis. The KMO value equals 0.85 indicating that the factor analysis would be useful for these variables. Besides, the low p-value (< 0.0001) of the Bartlett's sphericity test indicates that we can reject the null hypothesis suggesting that the correlation matrix is an identity one.

Table 3: KMO measure of sampling adequacy and Bartlett's sphericity test

Variable	Value
app	0.74
decap	0.79
dubrin	0.73
dubrout	0.77
decin	0.77
decout	0.75
tcnrfs	0.25

Table 3: *Continued.*

tcnill	0.90
tcnord	0.59
resrep	0.80
KMO test	**0.85**
Bartlett's sphericity test	
χ^2 (observed value)	3979.06
Degree of freedom	45
p-value	< 0.0001

Source: Author's computation
Note: Bartlett test of sphericity with null hypothesis that variables are not inter-correlated.

The validation of the data allows us run a factor analysis. In order to have a perception about the interrelations, we compute the correlations between all the pairs of variables. Table 4 represents this correlation matrix using the Pearson product-moment correlation coefficient, which measures the strength and direction of association between two variables. We distinguish unsurprisingly three strong pairs of correlation between *decin* and *dubrin*, *decout* and *dubrout*, and *app* and *decap*.

Table 4: Correlation matrix

	app	*decap*	*dubrin*	*dubrout*	*decin*	*decout*	*tcnrfs*	*tcnill*	*tcnord*	*resper*
app	1.00									
decap	0.93	1.00								
dubrin	0.76	0.66	1.00							
dubrout	0.91	0.92	0.66	1.00						
decin	0.83	0.72	0.98	0.72	1.00					
decout	0.86	0.90	0.60	0.99	0.65	1.00				
tcnrfs	0.0	0.02	0.03	0.00	0.03	0.0	1.00			
tcnill	0.91	0.92	0.67	0.87	0.73	0.85	0.16	1.00		
tcnord	0.44	0.62	0.43	0.45	0.43	0.44	0.40	0.65	1.00	
resper	0.38	0.47	0.45	0.37	0.43	0.35	0.24	0.52	0.76	1.00

Source: Author's computation

To visualize how evolves this disintegration within the EU and identify its features, we use factor and cluster analyses following the methodology of Syed Zwick and Syed (2017). Cluster analysis attempts to determine the natural clusters of observations by classifying them into groups that are relatively homogeneous within themselves and relatively heterogeneous between each other (Norusis, 2010). The greater is the similarity within a cluster and the greater is the difference between clusters and the better the clustering.In cluster analysis terminology, we consider n objects (countries) and p variables in a data set (with $n = 27$ and $p = 10$ in our study) which are denoted as $X_1, \dots, X_n$ ($X_j = (x_{j1}, \dots, x_{jp})$for $j = 1,2, \dots, n$).

Before applying the hierarchical cluster analysis, two decisions to set the model need to be taken. First, as the measurement of distance, we choose to apply the most commonly used measure of distance for continuous variables which is the squared Euclidean distance. This dissimilarity distance, $d(j,k)$ between two objects, X_j and X_k is written:

$$d(j,k) = \sqrt{\sum_{l=1}^{p}(x_{jl} - x_{kl})^2} \qquad (1)$$

Second, we define the dissimilarity distance between clusters through the average linkage. This technique defines the cluster proximity to be the average pairwise proximities of all pairs of observations from different clusters. The dissimilarity distance $d(x_j, x_k)$, of two clusters, x_j and x_k defined by the average linkage approach may be expressed as:

$$d(x_j, x_k) = \frac{1}{|x_j||x_k|} \sum_{j \in w_j, k \in x_k} d(j, k) \qquad (2)$$

Where $|x_j|$ and $|x_k|$ represent the number of objects (countries) in the cluster,$x_j$and x_k, respectively.

We can therefore apply hierarchical clustering. It implies the creation of hierarchically related sets of nested groups, contrary to the partitional clustering, which is a division of the set of data objects into non-overlapping groups. We choose the agglomerative procedure –and not the divisive one– since it is the one that better fits with our dataset. Its algorithm consists of three main steps: first, it begins with a classification denoted by $\Omega_0 = \mathrm{x}_1^0, \ldots, \mathrm{x}_\mathrm{n}^0$ with n clusters in it and each observation being considered as a separate cluster (in our study, 27singletons). Then the closest two groups are combined (27 $minus$ 1 groups). A new classification at stage i, $\Omega_\mathrm{i} = \mathrm{x}_1^\mathrm{i}, \ldots, \mathrm{x}_{\mathrm{n}-1}^\mathrm{i}$ allows an update of the dissimilarities between clusters. Finally, it ends when all the data are merged into a single cluster.

The visualization of the output of the clustering analysis is given by a dendrogram. The distancebetween countries is plotted on the vertical axis, while the years are given in the horizontal axis. The tree presents how sample units are combined into groups, the height of each branching point associating to the distance at which two groups are joined. In other words, the lower height countries are combined, reflecting more similar asylum systems.

Finally, the two followingcluster-analysis stopping rules commonin the literature (Milligan-Cooper, 1985; Gordon, 1999; Everitt et al., 2011) are usedto determine the optimal number of clusters. The Cali'nski-Haraba (1974) pseudo-F index for w clusters and N observations is written:

$$\frac{trace\ (B)/(g-1)}{trace\ (W)/(N-g)} \qquad (3)$$

where B is the between-cluster sum of squares and cross-products matrix, and W is the within-cluster sum of squares and cross-products matrix.

The Duda-Hart Je(2)/Je(1) (2001) stopping index value is written as:

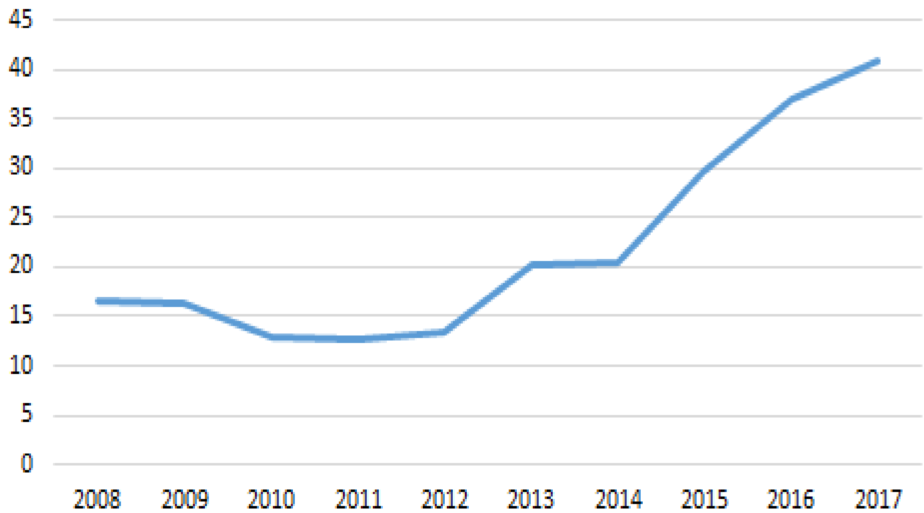
$$\frac{1}{Je(2)/Je(1)} = 1 + \frac{T^2}{N_1 + N_2 - 2} \qquad (4)$$

where N_1 and N_2 are the numbers of observations in the two subgroups, Je(1) is the sum of squared errors within the group and Je(2) is the sum of squared errors in the two resulting subgroups.For both rules, larger values indicate more distinct clustering.

Empirical results

We start by running a factor analysis for each year. The evolution of integration of the asylum systems within the EU over our sample period is given by the computation of the average of the heights between countries for each year (figure 2). Clearly, a break in the integration process occurs in 2012. Before that turning point, the index of fragmentation was slightly decreasing suggesting that the European Commission's initiatives, especially the 2008 policy plan on asylum supported the harmonization of the national systems (European Commission, 2008). Since 2012, the disintegration is obvious: in less than ten years, the index more than tripled, from 13 in 2012 to 41 in 2017.

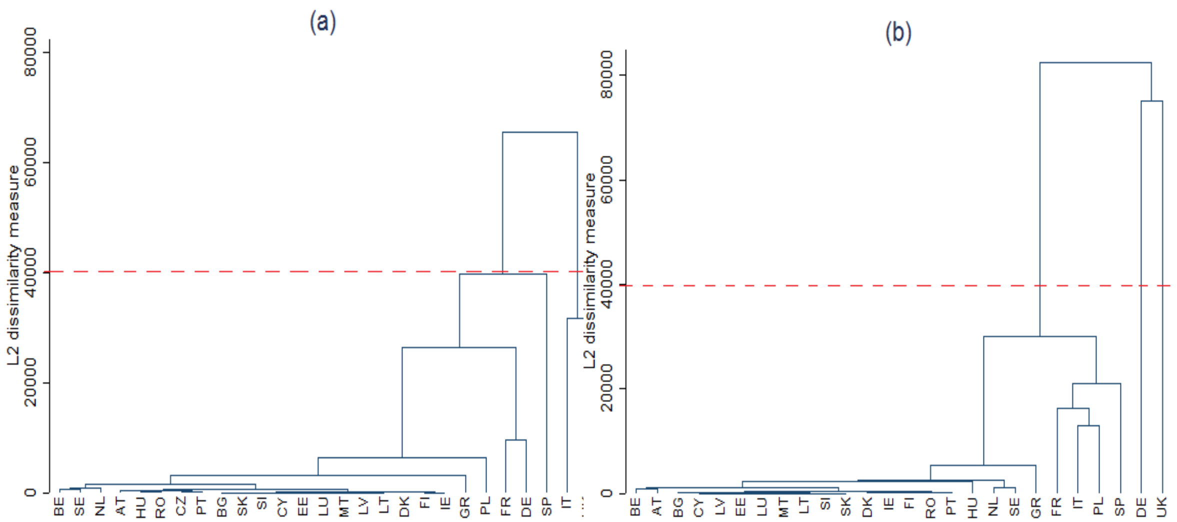
Figure 2: Disintegration of the national asylum systems within the European Union



Source: Author's computation

To identify the main features of this disintegration, we run a hierarchical cluster analysis for the two non-overlapping sub-periods 2008-2012 and 2013-2017. Outputs are represented by the two below dendrograms (figure 3).In complement, results from the two stopping-rules indexes (table 1A in appendix) recommend three optimal clusters for the first period and four for the second one.

Figure 3: Evolution of the features of the fragmentation between 2008/12 (a) and 2013/17 (b)



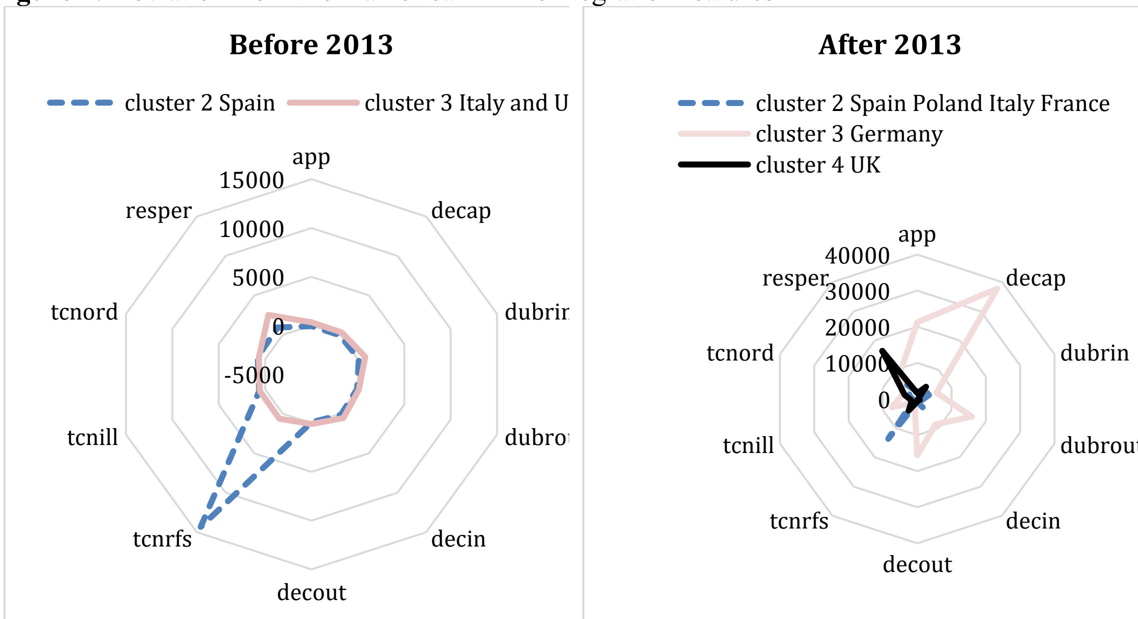
Source: Author's computation

Several facts emerge. First, dendrograms confirm that for the same level of dissimilarity (set here at 4000), the degree of fragmentation before and after 2013 significantly increases.

Disintegration is clearly confirmed. However, similarities still remain across some national asylum systems. This leads to our second comment suggesting three optimal clusters before 2013. The first one includes 85% of the member states (24 out of 27), the merging process indicating besides that France and Germany have the lowest degree of similarity with the other members of the group. This cluster is used as a benchmark to assess the deviation of other asylum systems' features from the mainstream. This average deviation is given in figure 4. The second cluster is a singleton (Spain) while the third one consists of Italy and the UK. Compared to the mainstream, Spain's asylum system strongly deviates in terms of number of third-country nationals refused entry to the territory (*tcnrfs*). Spain became the main point of entry of legal and illegal migrants in the middle of the 2000s especially at the borders of Ceuta and Melilla, the two Spanish enclaves in North Africa (see Arango and Martin, 2006 for instance). In that sense, features of its asylum system are too different from other national systems to share a common cluster.The third cluster consists of Italy and UK, for which the main deviation from the mainstream is reflected in disproportionate number of residence permits issued to third country nationals for the first time (*resper*). The UK attracts third-country nationals thanks to its colonial past. Between 2008 and 2013, its immigration policy under points-based system attracts mainly third-country nationals from South and South Asia, including China, despite restrictions on family reunification (Hatton, 2014). At the same time, Italy's asylum system's specificity reflects a high-level and permanent immigration in the country. The high number of residence permits issued between 2007 and 2012 is driven by waves of regularisation, hold especially in 2009 and by permits granted for the purpose of family reunification. This cluster does not deviate from the benchmark regarding any other dimension of the asylum system.

After 2013, both optimal number and composition of the clusters change. Four clusters are optimally identified: the first one remains the biggest one with 21 countries, mainly from Central and Eastern Europe. Greece despite its strategic position in the Mediterranean still belongs to this group. The second cluster consists of Spain, already an outlier before 2013, which is joined by Poland, France and Italy, for which its asylum system took distance with the UK's. Like Spain, these countries share an excessive number of third-country nationals refused entry to the territory. While France and Italy are not surprising members of this group, since they are southerners on the Mediterranean shore where most refugees and migrants land from Africa, Central Asia and the Middle East, Poland on the contrary, was not expected. Though, with the Ukrainian war and being a front door on the Eastern side of the EU for neighbouring countries like Georgia, cases of refusal of entry at Poland's eastern border steadily increased after 2013, the number of applications remaining constant. In other terms, although Poland did not face the same refugee challenges as Spain or Italy, it adopted similar responses based on a repressive approach. Since 2014, the government's stance on refugees is characterized by a categorical refusal to any burden-sharing initiative at the European level (Klaus, 2017). The same approach is shared by Hungary, Czech Republic and Slovakia, but their asylum systems' features are still close enough to the mainstream to remain in its cluster.

Figure 4: Deviation from the mainstream – Disintegration features



Source: Author's computation
Notes: The benchmark refers to cluster 1 for each period. It represents 24 countries before 2013 and 21 countries after 2013.

After 2013, Germany becomes unsurprisingly a singleton: its refugees welcome policy launched in 2014 contrasts with the rest of the EU members' policy (Bordignon and Moriconi, 2017; Bertoli *et al.*, 2016 and Green, 2013) in terms of disproportionate number of positive decisions considering applications for international protection and grants of authorisations to stay in the country for humanitarian reasons (*decapp*) compared to the mainstream but also in terms of number of outgoing Dublin requests (*dubrout*) and decisions taken (*decout*).

The UK remains in another cluster after 2013 but becomes a singleton. Its asylum system is still characterized by an uneven number of residence permits issued to third country nationals for the first time reflecting the colonial past of the UK (European Parliament, 2016).Besides, the fact that the country is not a Schengen member might help understand why its asylum system did not deviate from the mainstream in terms of number of applications or number of refused entry to the territory (see Beine, Docquier and Ozden, 2011 and Ortega and Peri, 2013).

Conclusion

This paper assesses the evolution of the integration of national asylum systems within the EU over the period 2007-2017. We use factor and cluster analyses and rely on ten European harmonised variables that reflect all dimensions of asylum systems, from first time asylum applications to enforcement of immigration legislation and to permanent immigration.

Our results are twofold: First, a break in the integration path of national asylum systems within the EU occurs in 2012. After 2012, we note a clear and increasing disintegration. This contrasts with the common statement in the literature that the refugee crisis started in 2015. Actually, we find that the fragmentation within the EU started much earlier, in 2012. Second,the core group or mainstream is still represented after 2012 by 75% of the EU members. The disintegration comes out with, on one side, Germany and its open-door refugee policy and on the other a group of four countries, consisting of France, Italy, Spain and Poland. This second group is featured by a disproportionate number of first entry refusals to their respective territory. Refugee challenges are different across the group members, especially for Poland, but approach is similar. The UK was an outlier before 2012 and remains one after that. It deviates from the mainstream in terms of excessive number of residence permits granted to third-country nationals. Third, the number of applications, the number of third-country nationals found to be illegally present or the number of third-country nationals ordered to leave do not appear as roots of disintegration. On the contrary, decisions taken on applications, entry-refusal to third-country nationals and granting in residence permits are major factors of disintegration.

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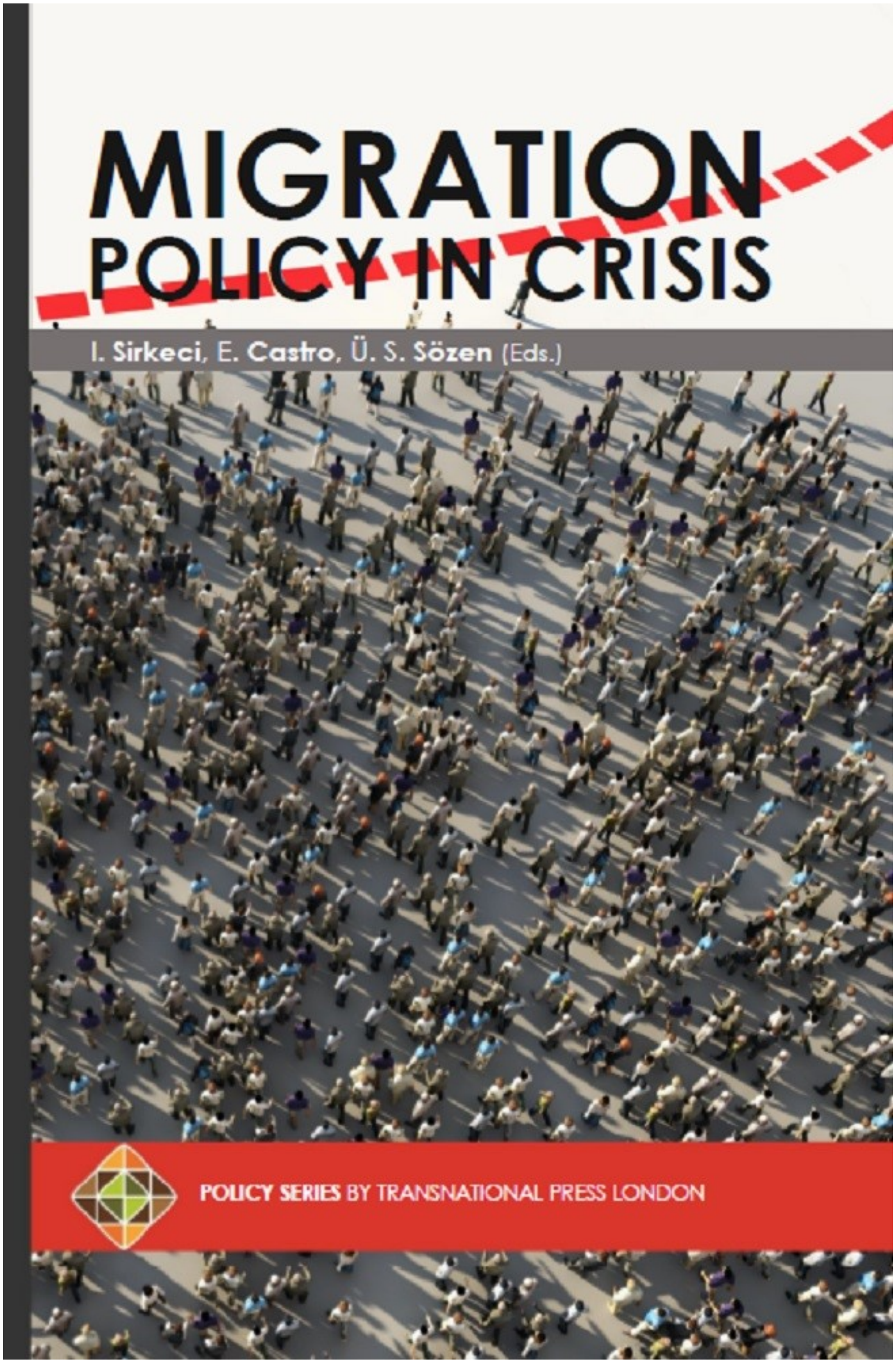
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