The impact of COVID-19 on the growth of the international migrant stock of 31 European countries

Dr. Yu Han
Prime Statistical Service
The Netherlands

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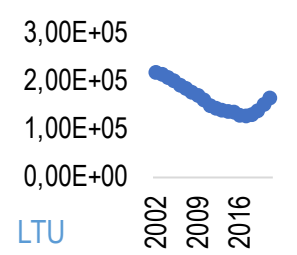
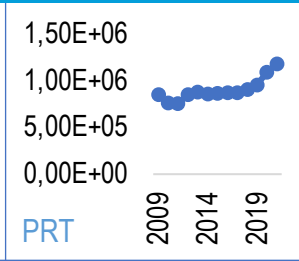
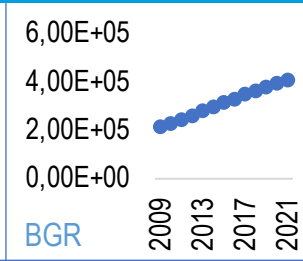
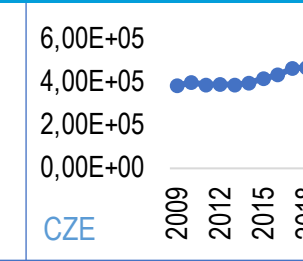
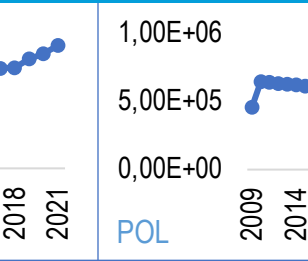
Foreign-born population on 1 January

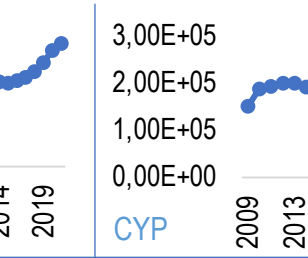


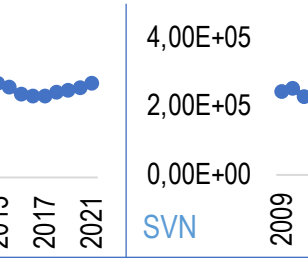


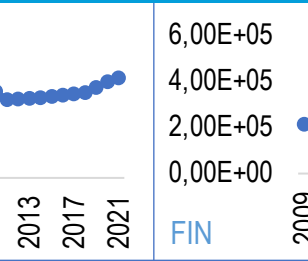


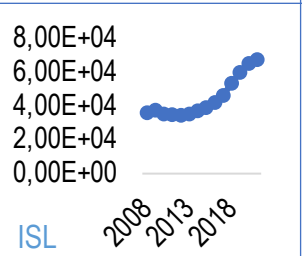


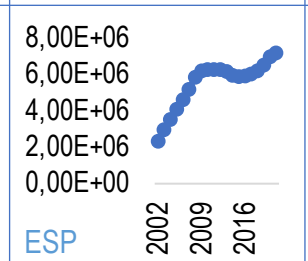


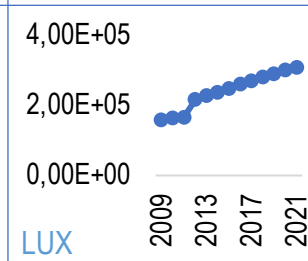


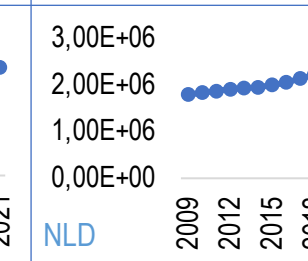


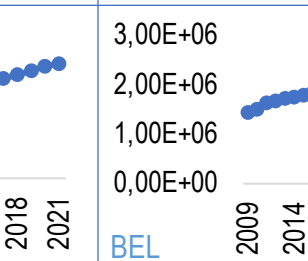


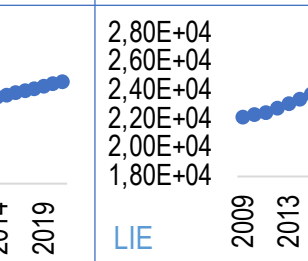


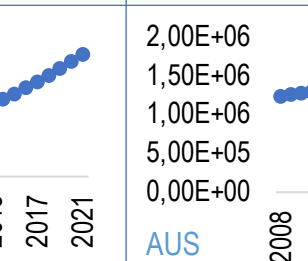


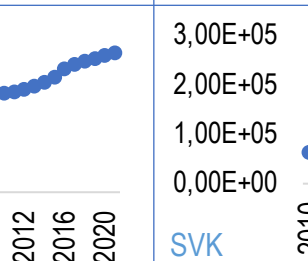


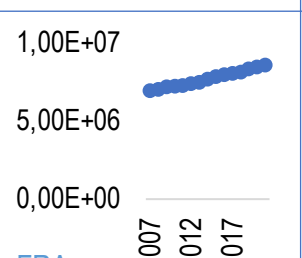


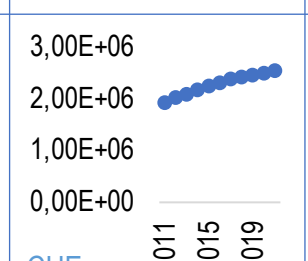


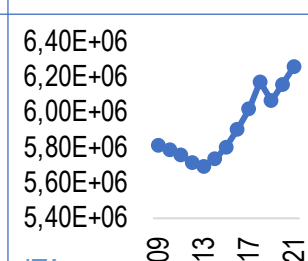


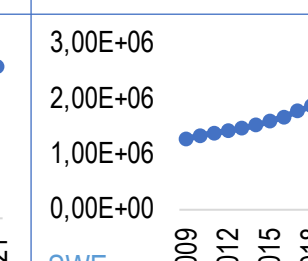


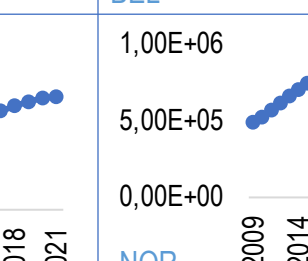


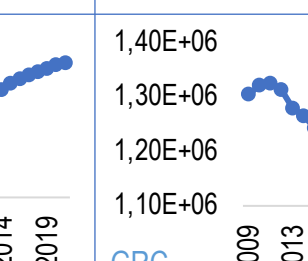


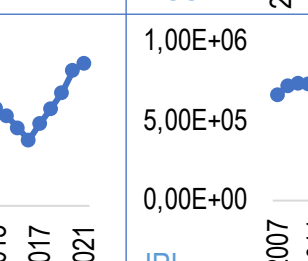


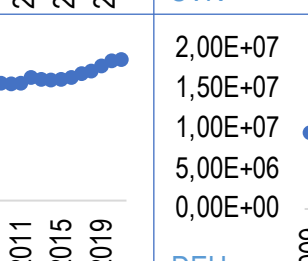


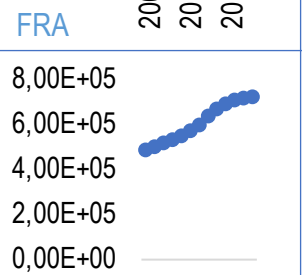


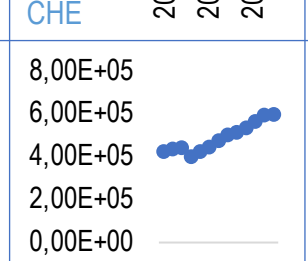


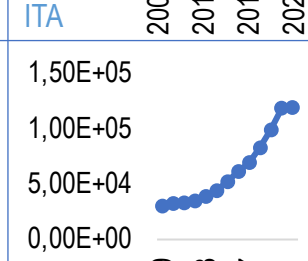


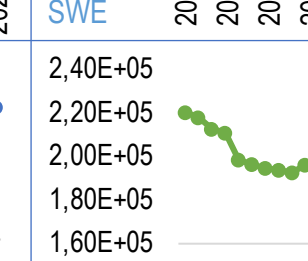


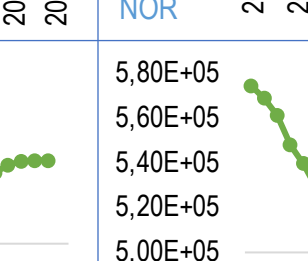


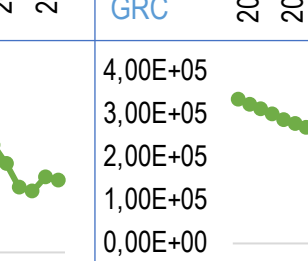


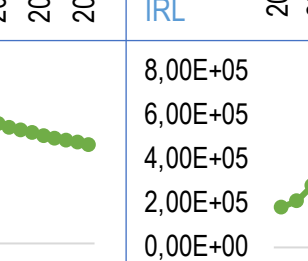












Source: Eurostat Population on 1 January by age group, sex and country of birth, update: 03/06/2022

Why international migrant stocks continue to grow?

Similar pattern also found for foreign-citizen population on 1 January published by Eurostat for these 31 countries (descreased in Sweden, Latvia, and Italy)

Counter-intuitive because

1. *Migration flows dropped by at least one-third in 2020 in OECD countries, due to the COVID-19 pandemic*
2. *Border closure, quarantine and test requirement*

Possible explanation

1. *High share of EU migrants*
2. *Supports to mitigate the effects of the pandemic for migrants by receiving countries*

Effect of the share of EU citizens on the growth rate

Formulae	R^2
Growth rate of foreign citizens 2019 ~ Share of EU citizens of the foreign citizens	6.1%
Growth rate of foreign citizens 2020 ~ Share of EU citizens of the foreign citizens	8.4%
Growth rate of foreign citizens 2021 ~ Share of EU citizens of the foreign citizens	13.5%

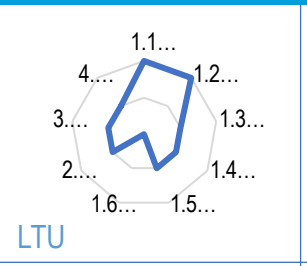
No statistically significant results have been found, but the R squared did increase from 2019 to 2021, suggesting that the share of EU citizens explain the growth rate more after COVID-19 than before

Mitigation policies in EU countries

1. Residence permits, entry conditions, unemployment and labour market needs	1.1 Residence permits and entry conditions √
	1.2 Support for migrants √
	1.3 Labour market
	1.4 Access to healthcare
	1.5 Living condition (seasonable workers)
	1.6 Border closure, quarantine and testing √
2. International protection	
3. International students	
4. Voluntary and forced return	

Source: European Migration Network *The impact of COVID-19 in the migration area in EU and OECD countries*

Mapping mitigation policies in EU countries



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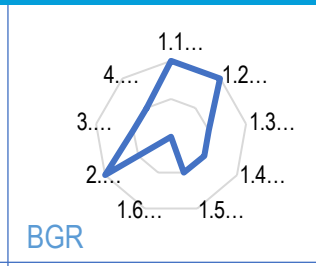
PRT



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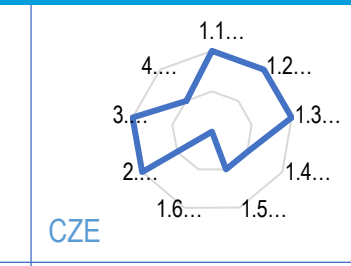

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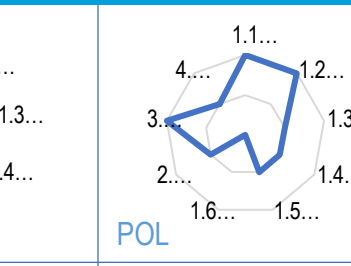

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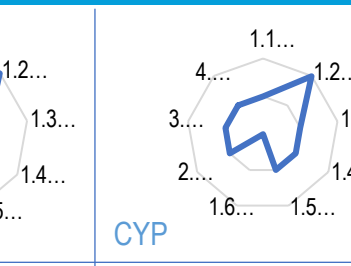

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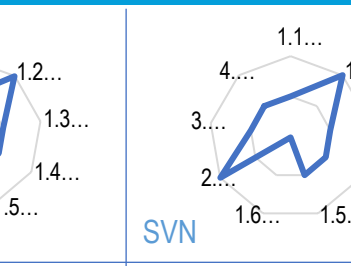

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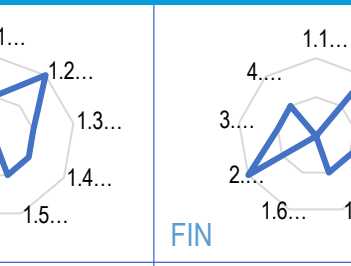

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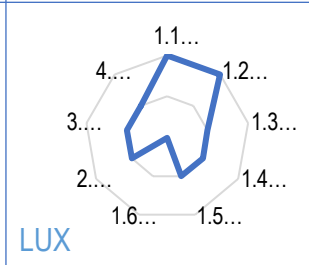
ISL

ESP



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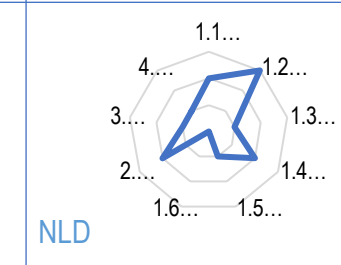

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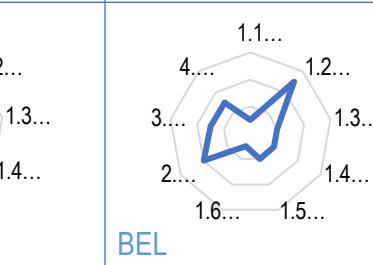

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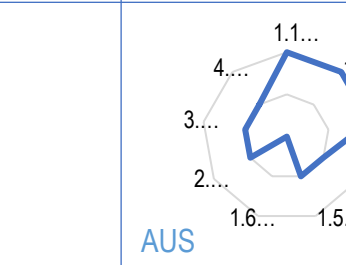

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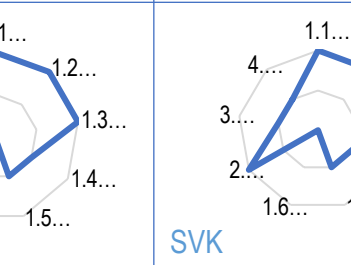

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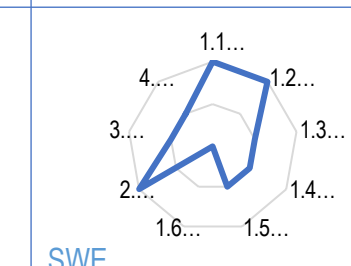

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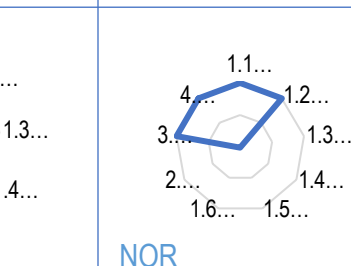

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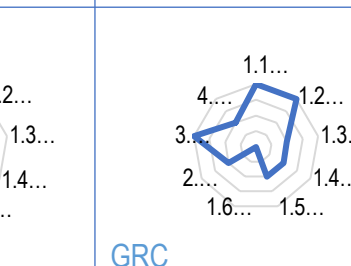

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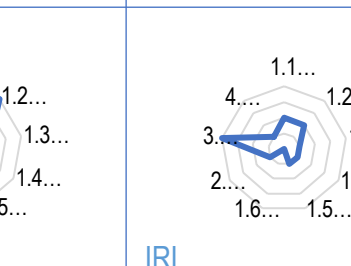

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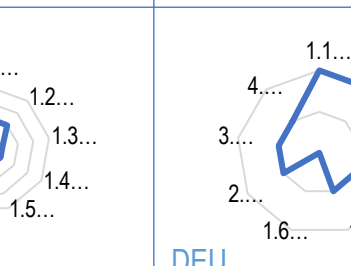

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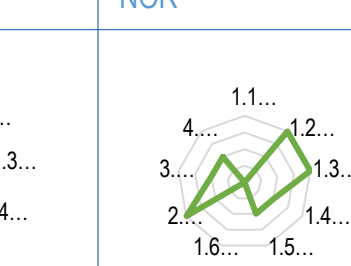
DNK

HUN

MLT

EST



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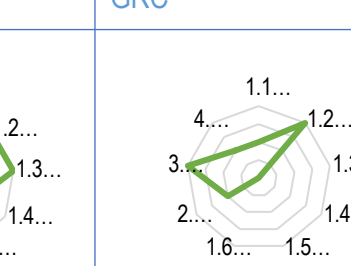

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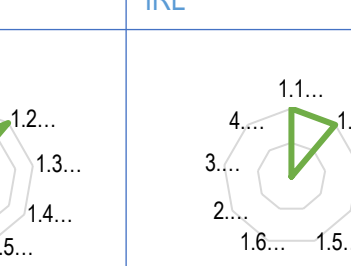


ROU

Source: European Migration Network *The impact of COVID-19 in the migration area in EU and OECD countries*

Time-series cluster analysis

Aim to identify similarities and differences of the growth of international migrant stock among countries

Measures

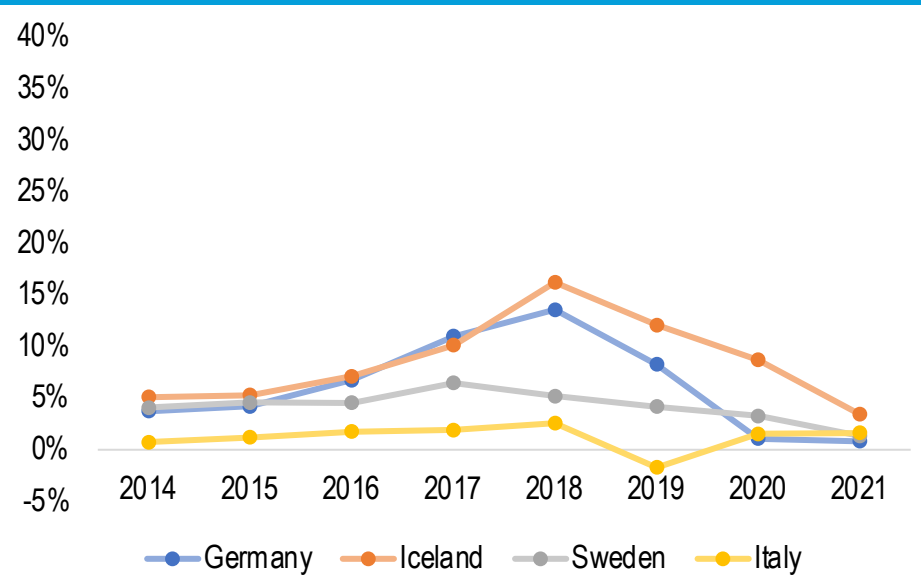
1. *Dissimilarity index modulates the proximity using the CORT coefficient*[1]
2. *a fuzzy k-means algorithm based on the Pearson's correlation factor COR*[2]

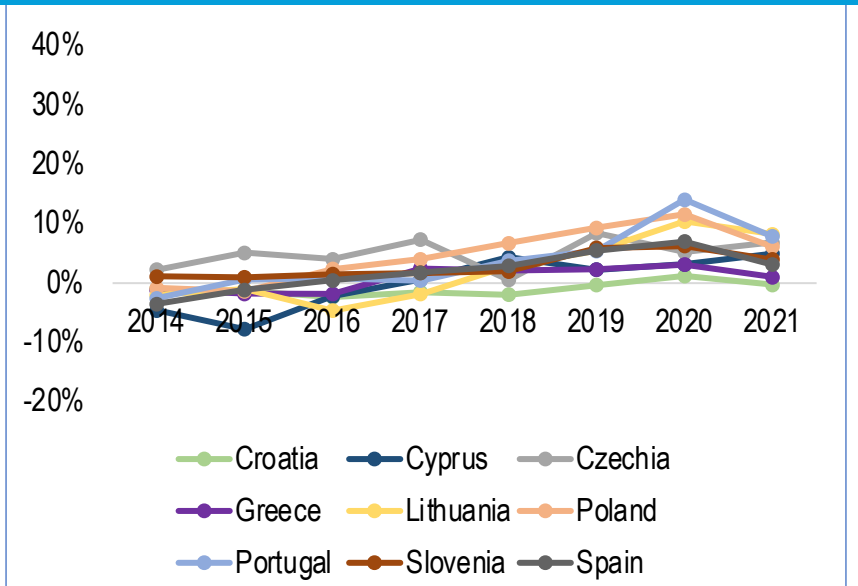
Number of clusters **determined by cluster quality statistics**

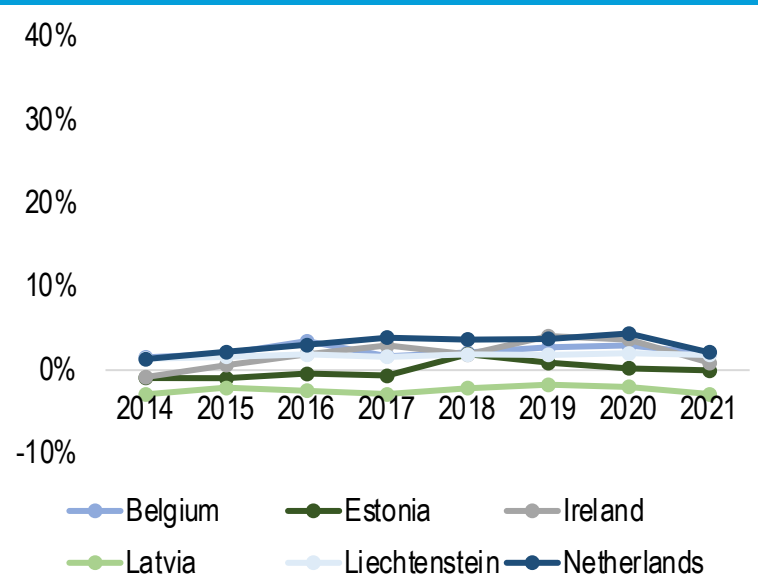
*Balanced between Point Biserial Correlation (**PBC**), Hubert's C (**HC**), Average Silhouette Width (**ASW**), and Calinski-Harabasz index (**CH**)*

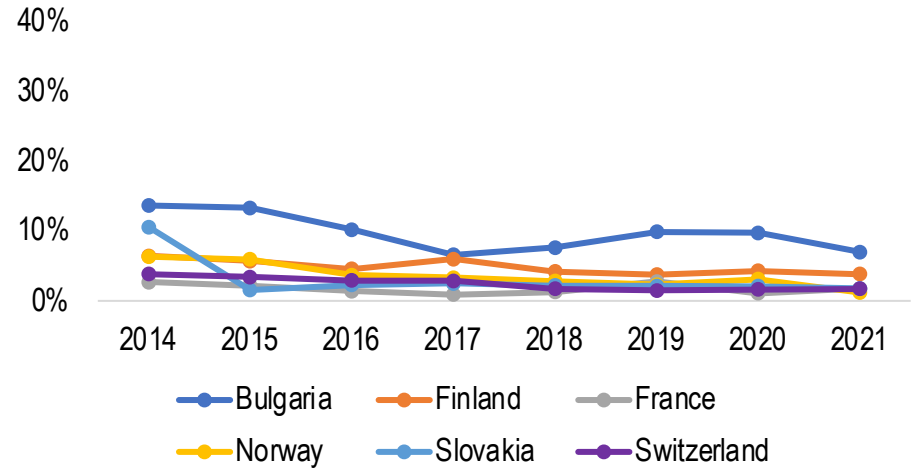
Source: [1] Chouakria, A. D., & Nagabhushan, P. N. (2007). Adaptive dissimilarity index for measuring time series proximity. Advances in Data Analysis and Classification, 1(1), 5-21.
[2] Golay, X., Kollias, S., Stoll, G., Meier, D., Valavanis, A., & Boesiger, P. (1998). A new correlation-based fuzzy logic clustering algorithm for FMRI. Magnetic resonance in medicine, 40(2), 249-260.

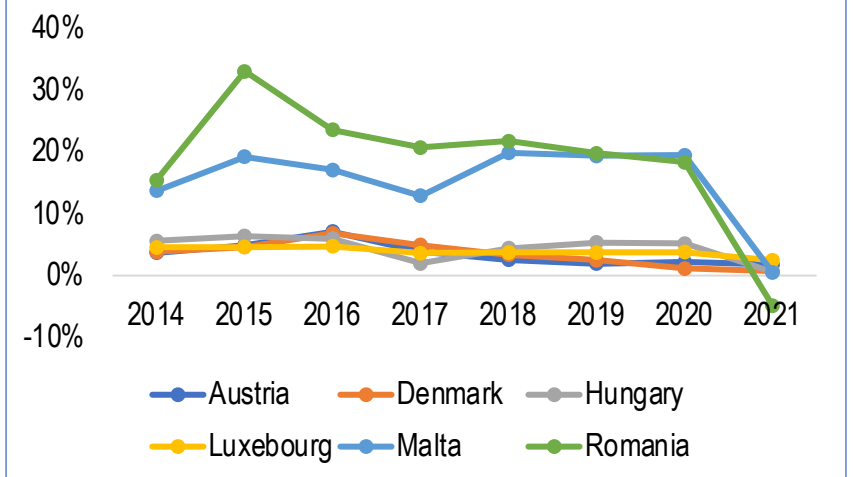
Cluster results



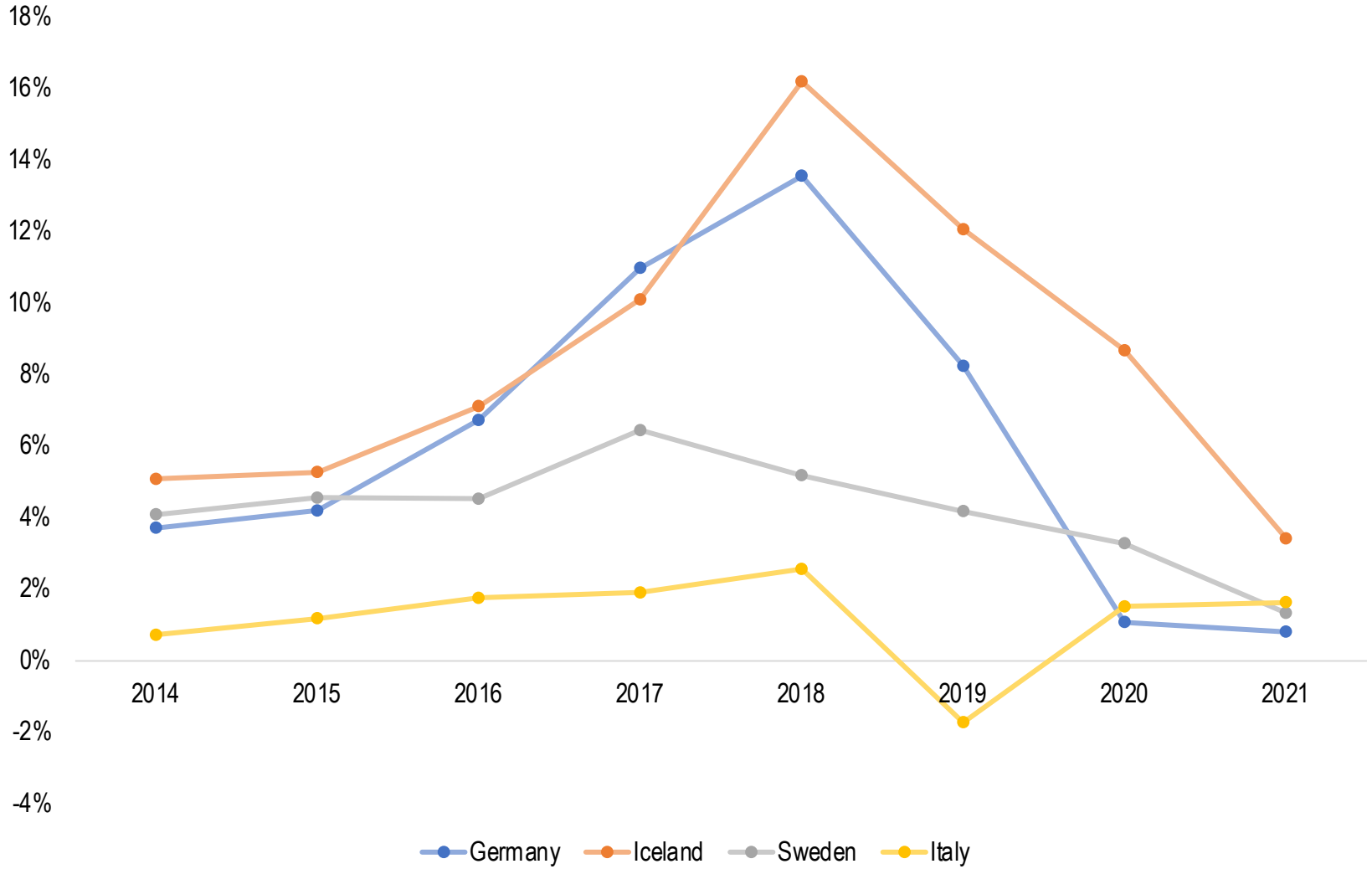






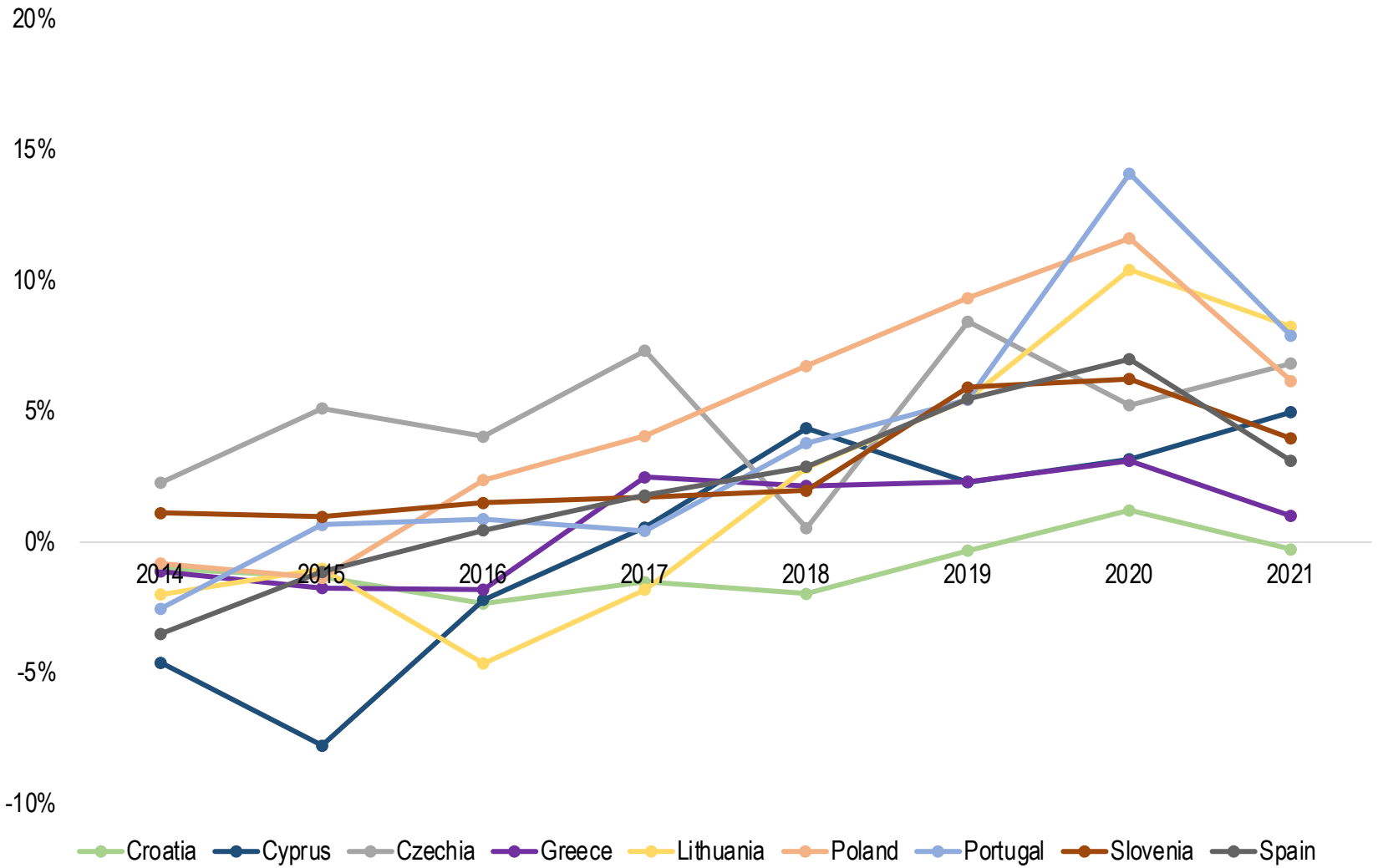


Cluster membership



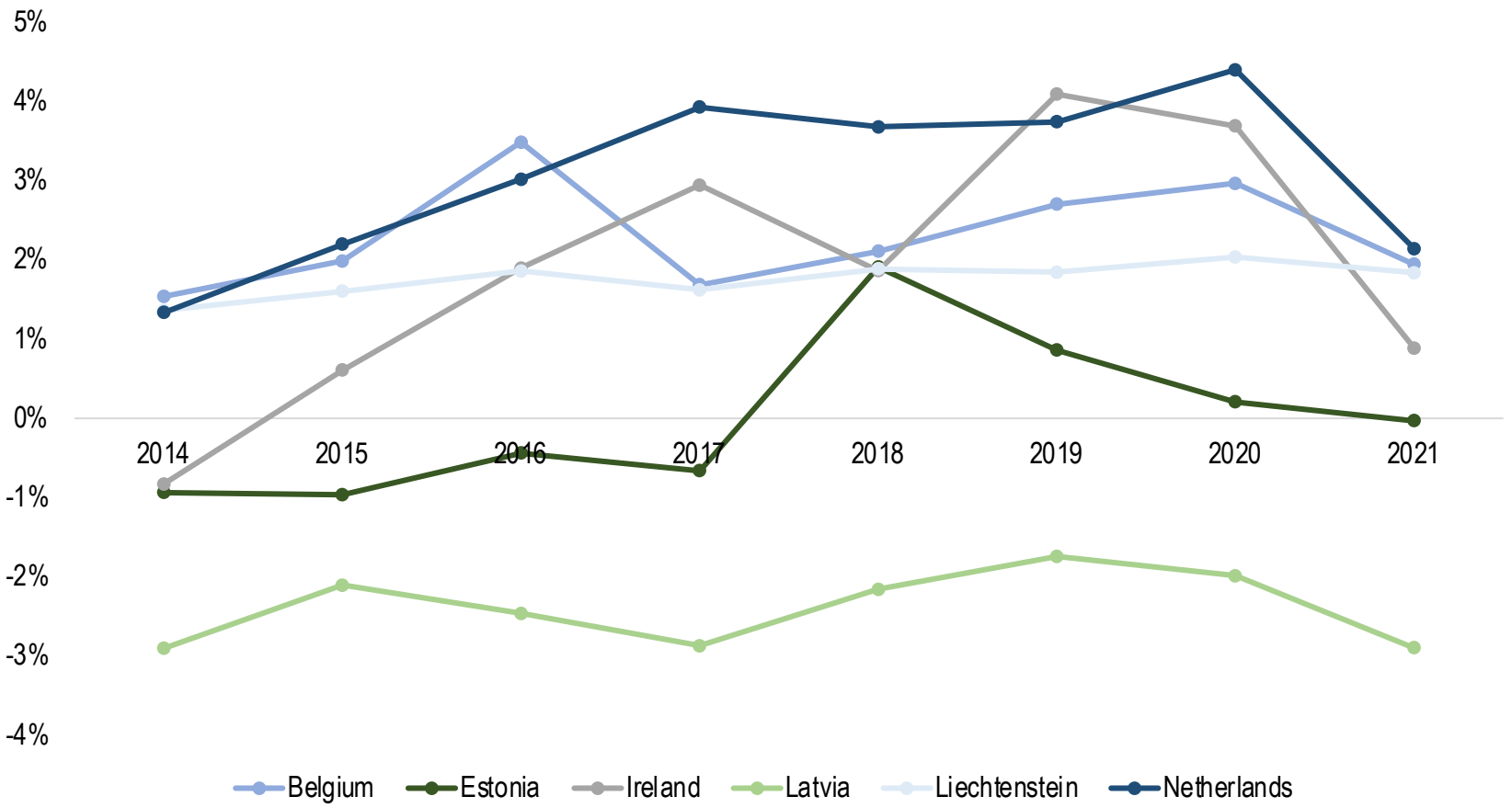
Cluster 1 Feature:
First sharp increase, then decrease

Cluster membership



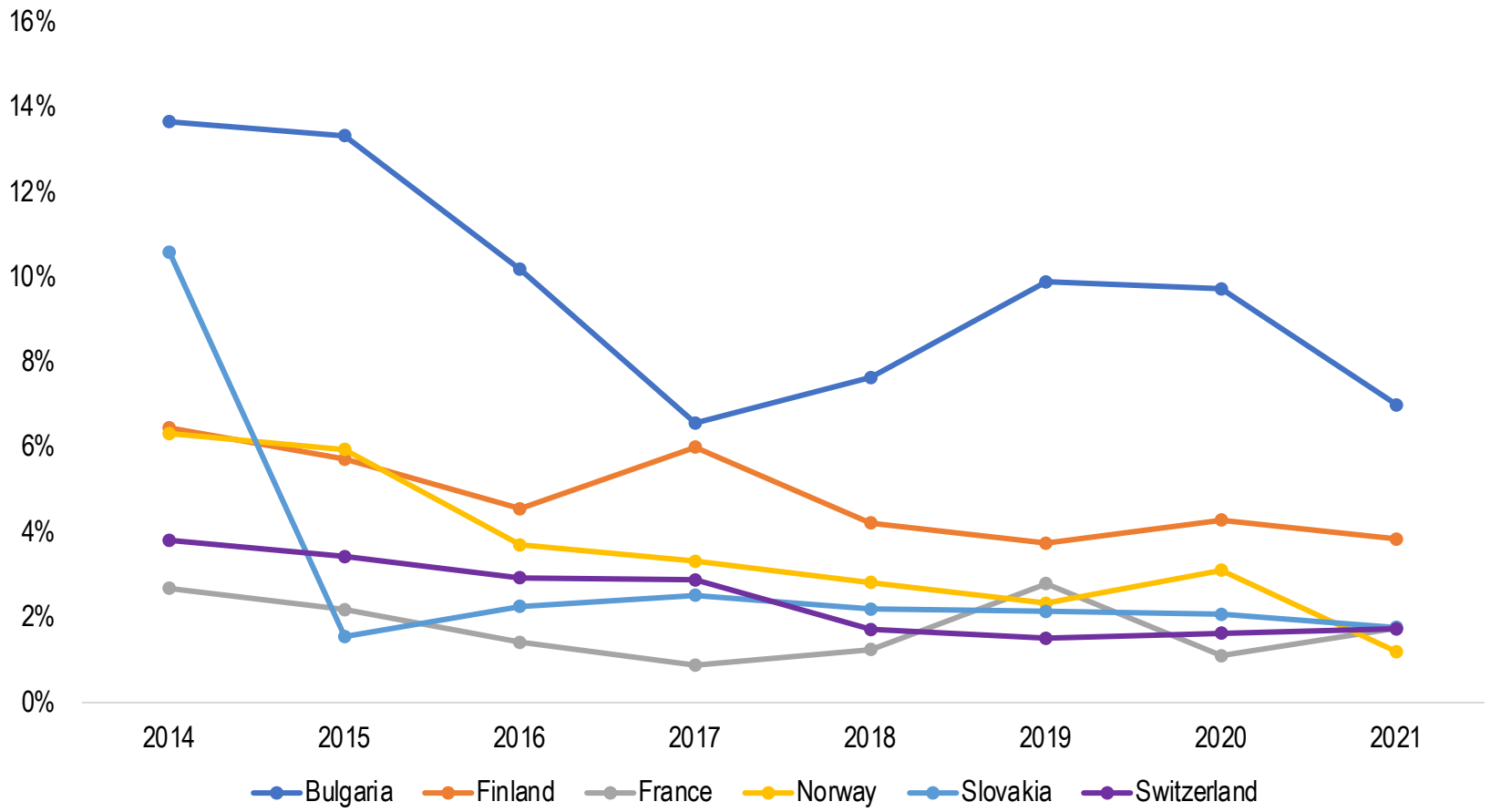
Cluster 2 Feature:
Sharp increase

Cluster membership



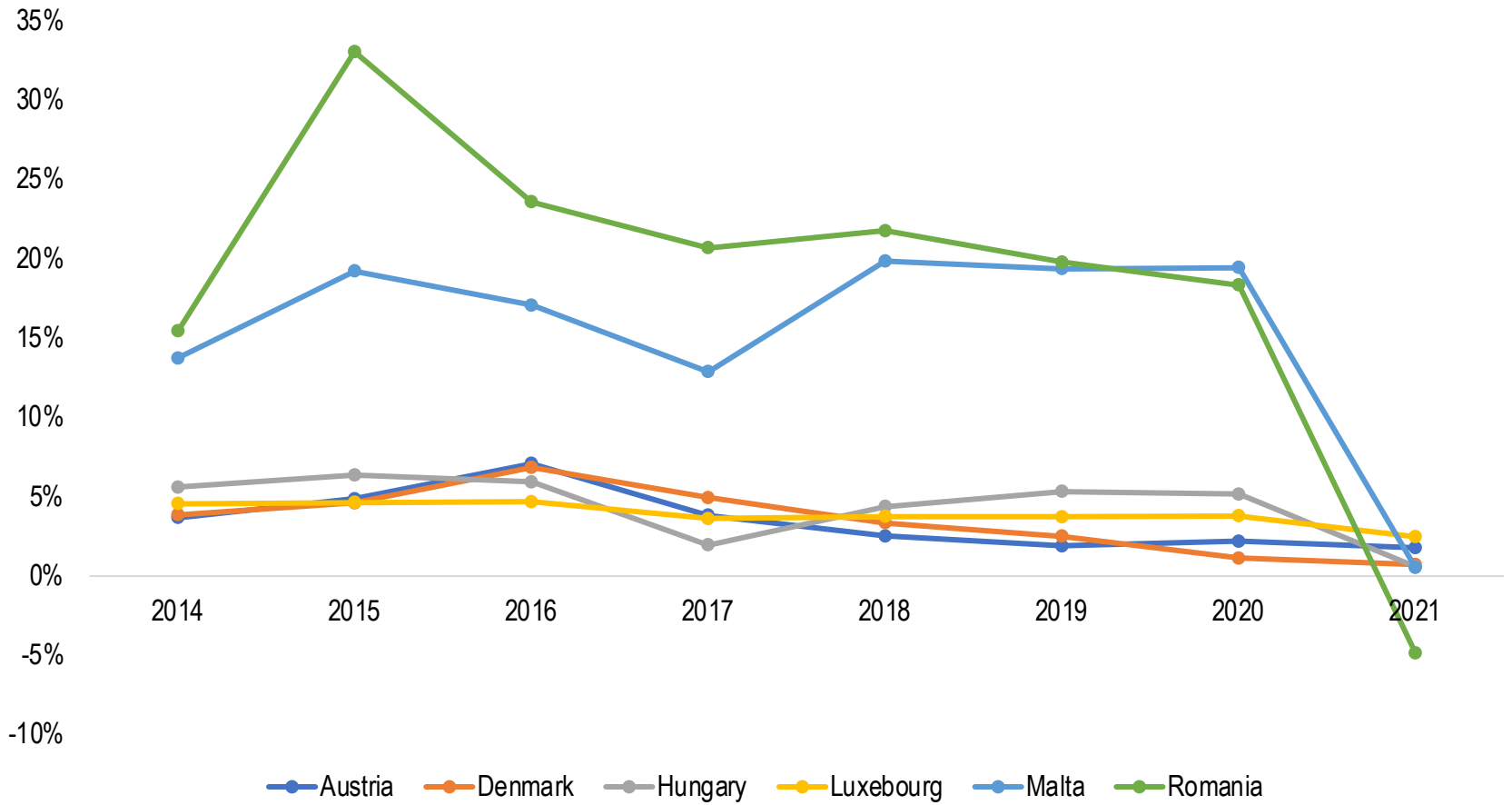
Cluster 3 Feature:
Stable and slow increase

Cluster membership



Cluster 4 Feature:
Sharp decrease in the International migrant stocks

Cluster membership



Cluster 5 Feature:
Stable and slow decrease in the growth of International migrant Stocks (except for Romania and Malta)

Next steps

Construct validity

Test correlation between membership and ***mitigation policy***, ***share of EU migrants***, ***share of humanitarian migrants***, ***economic growth (GDP growth)***, and ***COVID-19 stringency index***

Source: OXFORD COVID-19 Government Response Stringency index

Thank you

Feel free to reach out:

sapphireinenschede@gmail.com