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Re-bordering Schengen? Explaining the spatial patterns of border control measures

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ABSTRACT

This article examines the temporary reintroduction of internal border controls within the Schengen area and its implications for spatial and political integration. While European cross-border integration has intensified over recent decades, recent crises, most notably the migration crisis and the COVID-19 pandemic, have exposed the vulnerability of a 'borderless' Europe. The study addresses two research questions: How can temporary border controls be categorised from thematic, spatial, and temporal perspectives? How can the observed spatial patterns be explained in relation to political dynamics and officially stated justifications? Empirically, the analysis draws on European Commission data covering the period 2006–2025 and examines border control measures across all Schengen border pairs. Border permeability is operationalised through the number of days with temporary controls and their formal reasons. The findings reveal a clear increase in the frequency of border controls over time, accompanied by strong spatial differentiation across Europe. Asymmetric patterns, where controls are introduced unilaterally or persist longer in one country, are more common than symmetric ones. These asymmetries are closely linked to uneven levels of policy integration, particularly in fields such as migration and health. Uncoordinated national responses to crises tend to produce spatially uneven re-bordering dynamics. These findings highlight the interdependence of policy domains and underline the limits of existing cross-border governance mechanisms. Overall, the study contributes to the literature by conceptualising border pairs as analytical units and by demonstrating how political asymmetries translate into spatial patterns, with significant implications for cross-border cooperation and European cohesion.

1. Introduction

Cross-border linkages are an essential result of the EU integration (Topaloglou et al., 2005; Havlíček et al., 2018). Over the last decades, integration across borders has increased, with 'cross-border living areas' being developed (Coletti et al., 2024; Hippe et al., 2026). However, numerous crises in recent years have demonstrated that the 'borderless' Europe remains a vision rather than a reality (Böhm, 2021; Opilowska, 2021). Examples include border control measures introduced during the migration crisis of 2015/16 and the 2020/21 COVID-19 crisis (Casella Colombeau, 2019; Chilla et al., 2022; Karamanidou and Kasperek, 2022). The latter is also referred to in the literature as 'covidfencing' (Medeiros et al., 2021; Novotný, 2022; Böhm, 2023). Trends towards re-bordering and disintegration have been evident almost everywhere across Europe (Evrard and Chilla, 2021; Schimmelfennig, 2021; Sohn, 2023). The reintroduction of border controls is critically discussed as a weak point of border-regional resilience (Prokcola, 2019; Hippe et al.,

2024).

Increased cross-border integration has been organised via various pan-European agreements. The Schengen Agreement is amongst the most prominent ones, allowing for the free movement of people, goods, services and capital across national borders (European Commission, 2025a). The free movement across national borders without controls is of high economic, political, and symbolic relevance (Wassenberg, 2020; Capello et al., 2023; Konrad et al., 2025). In its early years, the Schengen Borders Code was a surprising success story. Initially, only a small group of Member States agreed to this new set of regulations. However, in the following years, a growing number of other EU Member States adopted the code, particularly for economic reasons. Since 1999, it has been part of the EU Acquis. At the same time, the number of daily border crossings raised continuously (Chilla and Heugel, 2022). Today, more than two million people cross a national border every day between their home and workplace (European Commission, 2025b). Forty years after its establishment, the Schengen regulations face multiple challenges,

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including the almost systematic reintroduction of temporary border controls. Some even question whether the Schengen Borders Code still functions effectively (Biermann et al., 2019; Hooghe and Marks, 2019).

The recent crises of the Schengen agreements came along with a certain 'non-alignment' in other policy areas: The COVID-19-pandemic came along with controversies in the health policy at the national level, and the migration crisis revealed the weaknesses of the Common European Asylum System (CEAS), including the three Dublin Regulations (Schimmelfennig, 2021). Here, the basic principle is that the state in which an asylum seeker first enters the EU or is registered (finger-printed in EURODAC) is responsible. It became apparent that the previous asylum system was unable to cope with increased challenges, so the CEAS was revised in 2024 and is currently implemented (Pfitzner, 2024; European Commission, 2025c). Consequently, most applications for protection will be processed at the EU's external borders in the future, and a binding solidarity mechanism has been agreed to include the distribution of those seeking protection (Kaufmann, 2021).

In parallel, the institutional and political integration across borders remained rather soft at the regional level. A large number of Euregios has been established along the EU's borders, some of which have developed into more highly institutionalised European Groupings of Territorial Cooperation (Noferini et al., 2019). The EU cooperation programmes of the Interreg strand allow for financial capacities through which cooperation across national borders can be expanded and strengthened (Chilla and Lambrecht, 2022; Wong Villanueva et al., 2022). Ultimately, cross-border governance structures have evolved and trust has been established over the years, but they largely depend on political consensus, engaged individuals and, thus, rather serve as trust building basis for policy action (Zumbusch and Scherer, 2015). As soon as it comes to 'high politics' and controversial topics, the capacities of the regional level tend to be limited (Bertram et al., 2023). Against this background, the article addresses the temporary suspensions of the Schengen Agreement and the effects of political instruments, focusing on the following two questions:

- How can the temporary border controls within the Schengen area be categorised from the thematic, spatial and temporal perspective?
- How can these patterns be explained? To what extent can explanatory arguments be derived from official reasons for the temporary introduction of border controls and from parallel political dynamics?

This article examines both the pan-European perspective and each border pair within the Schengen area separately. A key aspect of the analysis is what kind of spatial patterns exist, such as the (a)symmetrical suspension of the Schengen Agreement within a border pair. For this purpose, a period of almost two decades is considered. The results are then reflected upon and discussed in the context of multiple policy instruments and dynamics. The empirical novelty of this article is to extend existing research by operationalising border pairs as spatial units across Europe with most recent data.

2. Conceptual framework

2.1. The Schengen agreement and reintroduced border controls

National borders continue to constitute structural obstacles, even within an integrated Europe (Brakman et al., 2012). Persistent border-related obstacles primarily result from institutional, regulatory, and social barriers. Differences in national legal frameworks and administrative systems increase complexity and transaction costs in cross-border projects (Richardson, 2024; Novotný, 2025; Paul et al., 2026). Institutional and social differences remain significant obstacles to cooperation and innovation (Potluka et al., 2025), while political and governance fragmentation further constrains strategic coordination across borders (Cappellano et al., 2025).

In addition, labour market fragmentation in many European border

regions continues to limit the cross-border integration of human capital. Despite geographical proximity, labour mobility, knowledge exchange, and skills integration often remain restricted (Jardon et al., 2024). Mental barriers and governance fragmentation can also persist at the local level, as demonstrated in cross-border cities between Bavaria and Czechia (Bloßfeldt, 2023).

Cross-border cooperation and governance might not have the mandates to change the underlying regulative principles, but does play a central role in addressing the involved challenges. Cooperation facilitates knowledge transfer, strengthens innovation, and enhances policy coordination through joint strategies and programmes (Richardson, 2024; Cappellano et al., 2025). Thereby, it is possible to reduce transaction costs and improve market access across borders (Brakman et al., 2012; Serwicka et al., 2024). Cross-border networks facilitate territorial cohesion, institutional learning, and trust-based governance structures (Medeiros et al., 2023; Novotný, 2025; Potluka et al., 2025). Cooperation and coordination projects, such as town-twinning initiatives, can function as strategic nodes that enhance cross-border integration (Bloßfeldt, 2023).

In this complex border-regional context, open borders remain a fundamental precondition for effective cross-border interaction and cooperation (Basboga, 2020). Enacted in 1985, the Schengen Agreement marked the beginning of the gradual removal of internal border controls and represented a major institutional advancement in European integration (Davis and Gift, 2014). However, since the agreement came into force, its provisions have occasionally been suspended, resulting in the temporary reintroduction of border controls by individual countries (Wille, 2025a). While such suspensions were relatively rare in the late 1990s to the early 2000s, they became more frequent in the 2010s. During the COVID-19 pandemic, temporary border closures and widespread controls became common policy measures (Medeiros et al., 2021; Chilla et al., 2022).

Initially, border control measures were primarily introduced to protect meetings of political representatives (Groenendijk, 2004). Zaiotti (2007) later interprets suspensions for specific purposes as the emergence of a new culture of border controls. More recently, Gülzau (2021) argues that such measures have become the 'new normal' within the Schengen area, analysing the justifications provided by nation states for suspending the Agreement over an extended period. The temporary reintroduction of border controls in several European countries for prolonged periods has, in turn, raised questions about the sustainability of free movement (Wille, 2025a). These 're-bordering' practices challenge a fundamental principle of European integration and reveal the fragile relationship between de-bordering and the return of border controls (Böhm, 2021; Schimmelfennig, 2021; Novotný and Böhm, 2022).

In parallel, the resilience of border regions has emerged as an increasingly important field of debate (Prokkola, 2019; Hippe, 2024). The reintroduction of border controls has respectively shaped the more recent debate on border-regional resilience, in particular during the COVID-19 pandemic. This strand of research reflects that border regions must be able to adapt to the opportunities and vulnerabilities associated with changing cross-border integration dynamics (Evrard et al., 2020; Novotný, 2022).

Empirically, several authors have analysed national suspensions of the Schengen Agreement from a pan-European perspective (Van der Woude and van Berlo, 2015; Evrard and Chilla, 2021; Pettersson Fürst, 2023a, 2023b; Wille, 2025a, 2025b). These studies examine either longer time periods or specific episodes, such as during the migration crisis. Jacobs and Kabata (2024) analyse the respective roles of nation states and the EU in relation to the reasons for the suspensions, while Freudlsperger et al. (2024) examine border closures in five countries during the COVID-19 pandemic. However, the contributions remain largely confined to a national perspective.

Case studies, by contrast, focus on individual border pairs and potential asymmetries between two nation states in specific crises. Evrard

et al. (2020) analyse border control measures following the migration crisis in the Greater Region around Luxembourg, while Casella Colombeau (2015), (2019) examines the French-Italian border region. Chilla et al. (2022) and Hippe et al. (2022) investigate border control measures along the German borders during the 2020–2021 pandemic, highlighting that different border pairs involving Germany exhibit distinct patterns, including both symmetrical and asymmetrical control measures.

From a legal perspective, several studies assess the consequences of suspensions by individual nation states (Guild et al., 2015; Salomon and Rijpma, 2023; Gyeney, 2024). In addition, the EU has commissioned research on this issue. For example, comprehensive reports have examined how amendments to the legal framework affect the behaviour of nation states (Guild and Groenendijk, 2016), discussed regional examples, and reflected on political measures (Carrera et al., 2018).

From a spatial perspective, the state of research can therefore be summarised as follows: while pan-European analyses have identified differences in member states' approaches and several case studies have provided detailed insights, a systematic analysis of 'border pairs' that explicitly reflects on (a)symmetries and the directionality of control measures has not yet been conducted. This paper aims to fill that gap.

2.2. Spatial and political integration in border areas

Cross-border integration is an important facet of European integration and is closely linked to the free movement of people and goods across national borders (Capello et al., 2017; Decoville and Durand, 2019). The academic debate offers various conceptualisations of spatial integration in border areas (De Boe et al., 1999; Topaloglou et al., 2005; Vasanen, 2013). The two most prominent forms are functional and institutional integration. Functional integration refers to socio-economic dynamics and the ways in which they evolve across borders. Examples include cross-border commuting, mobility and accessibility (Järv et al., 2022; Trager, 2023; Bertram et al., 2024; Berzi et al., 2026).

Institutional integration refers to cross-border cooperation and the associated forms of institutionalisation. This includes, for example, cross-border governance structures such as Euregios or European Groupings of Territorial Cooperation, as well as the impact of Interreg funding programmes on cross-border spatial development (Zumbusch and Scherer, 2015; Chilla and Lambracht, 2022; Wong Villanueva et al., 2022). In essence, institutional integration describes efforts to reduce and/or manage border barriers and obstacles. These processes are supported by European policy instruments such as the BRIDGEforEU initiative, funding schemes and regulatory agreements (European Commission, 2025d). Notably, national approaches on cross-border governance are highly relevant for functional and institutional integration, as political asymmetry can be an obstacle for cross-border cooperation (Evrard and Chilla, 2014; Bertram, 2025; Heyduk, 2025).

The different and often overlapping dynamics of cross-border integration can result in highly diverse spatial patterns (Dittel and Weber, 2025). On the one hand, integration processes may lead to convergence in the socio-economic sense, creating increasing similarities on both sides of the border (Barro et al., 1991; Jakubowski and Wójcik, 2024). On the other hand, they may generate polarisation effects, whereby one side benefits disproportionately while the other remains disadvantaged (Decoville et al., 2013). The intensity of integration is affected by cross-border differences and tends to unfold more dynamically where significant economic, social or spatial contrasts are present (Chilla and Heugel, 2022; da Rosa et al., 2024). Importantly, the dynamics of functional and institutional integration do not necessarily correlate. For example, functional integration between Switzerland and its neighbouring regions is particularly strong, even though institutional integration, given Switzerland's status as a non-EU member state, remains comparatively limited (Turner et al., 2022).

From a more critical border studies perspective, border-related regulations in general, and 'Schengen' in particular, involve internal de-

bordering accompanied by the fortification of the EU's external borders. Both serve as a selective 'sorting mechanism' that institutionalises processes of othering (Van Houtum, 2010; Mezzadra and Neilson, 2012; Van Houtum, 2021).

In parallel to the spatial perspective, integration processes can also be examined from a political angle. The functionalist approach assumes that strengthening competences at the supranational level has implications for related policy fields (Hooghe and Marks, 2019). For example, the EU single market, as a highly integrated policy field, provided an important argument for developing a common EU environmental policy in order to avoid competitive distortions resulting from differing regulatory standards (Allmendinger et al., 2014). From this perspective, the liberalisation of EU borders creates the expectation that adjacent policy areas will also move towards deeper integration. More specifically, further European integration in policy fields like asylum and migration as well as health could be interpreted as a logical consequence of Schengen-induced liberalisation (De Ruijter, 2016; Schimmelfennig, 2018).

However, reflections on the Schengen crisis provide a counterpoint to the assumption that crises necessarily deepen European integration (Wassenberg, 2020; Ferrara and Kriesi, 2022). Adopting a neo-functionalism perspective, Schimmelfennig (2018) argues that crises can indeed foster further integration, as was the case during the Eurozone crisis. Yet, the dynamics developed differently in the context of the Schengen crisis. Despite the evident pressures, the level of integration in migration, asylum and border management declined. Schimmelfennig (2018) attributes this primarily to the fact that supranational mechanisms were not sufficiently strong to sustain integration in these policy areas.

In this context, several authors emphasise the close link between the Schengen regime and the Common European Asylum System (CEAS), including the three Dublin Regulations. Biermann et al. (2019) and Schimmelfennig (2018), for example, argue that the EU has failed to replace or complement the Dublin rules with a system of shared responsibility or reallocation. Hooghe and Marks (2019): (1121) go further, conceptualising the Dublin regime as "an unintended spill-over from Schengen, which abolished passport controls at internal borders". Drawing on Scipioni (2018), this can be interpreted as dysfunctional, as member states, reluctant to relinquish sovereignty over a core state power, settled on a minimalist system characterised by low harmonisation, weak monitoring, limited solidarity and a lack of strong institutions.

Current CEAS reform efforts aim to address these shortcomings, particularly with regard to governance at the EU's external borders. However, it remains to be seen what impact the reform will have and whether internal European borders will benefit from it (cf. Pfützner, 2024).

2.3. Operationalising border permeability

In this article, Schengen border permeability is operationalised through the temporary reintroduction of internal border controls. Specifically, we analyse the number of days per year during which temporary controls are reinstated within border-pairs, as well as the officially stated reasons for these measures. This perspective allows us to address our first research question, which seeks to identify possible thematic, spatial and temporal patterns of border control measures within the Schengen area.

According to the Schengen Borders Code, the reintroduction of border controls is intended as a measure of last resort, to be applied only in exceptional circumstances and in strict adherence to the principle of proportionality in both duration and scope (European Commission, 2016). This normative framework is particularly relevant, as temporary controls directly affect the daily lives of residents, cross-border commuters and businesses that rely on the free movement of people and goods (Prokkola, 2019). Such measures may result in longer travel

times, labour market disruptions and reduced access to cross-border services (Medeiros et al., 2021). Analysing the frequency, duration and stated causes of these controls therefore enables an assessment of the resilience and vulnerability of border regions to political, health-related or security-related challenges. At the same time, it provides an empirical basis for evaluating policy responses and identifying measures to mitigate negative impacts on cross-border cooperation.

Building on this descriptive assessment, our second research question examines how the observed patterns can be explained and to what extent explanatory arguments can be derived from the officially communicated reasons for reintroducing border controls, as well as from parallel political dynamics. To address this question, we formulate three hypotheses grounded in the existing literature.

Hypothesis 1. ‘Border control patterns in Europe are more frequently asymmetric than symmetric’. This hypothesis is based on the observation that the reintroduction of border controls constitutes a national policy decision that varies considerably between member states, as demonstrated during the migration crisis and the COVID-19 pandemic (Van der Woude and Van Berlo, 2015; Evrard and Chilla, 2021; Pettersson Fürst, 2023a; Wille, 2025b). Moreover, international events often result in unilateral or one-sided border control measures (Groenendijk, 2004).

Hypothesis 2. ‘Unforeseen developments led to the reintroduction of border measures if they relate to policy fields of only limited European integration’. This was the case for both, migration and asylum policies as well as the health and pandemic policies (De Ruijter, 2016; Pettersson Fürst, 2023a; Wille, 2025b). While border controls were first reintroduced in many countries during the migration crisis (Van der Woude and Van Berlo, 2015; Carrera et al., 2018), borders were, for the first time, occasionally completely closed during the COVID-19 pandemic (Chilla et al., 2022; Freudlsperger et al., 2024).

Hypothesis 3. ‘Spatial patterns of temporary border controls reflect large-scale migratory routes’. This hypothesis builds on the close link between the Schengen regime and the Common European Asylum System (CEAS). Given that migration-related controls are frequently associated with specific transit routes and frontline states, it can be assumed that such measures are often directionally biased rather than reciprocal (Schimmelfennig, 2018; Biermann et al., 2019).

3. Data and methods

To analyse the spatial and temporal patterns of temporary reintroduction of border controls this study uses a multi-step descriptive analysis and data from the Schengen Borders Code of the European Commission. The analysed dataset covers the period from 2006 to 2025 (cut-off date: 30 April 2025) and is based on notifications submitted to the European Commission pursuant to Articles 25, 28 et seq. of the Schengen Borders Code (European Commission, 2025e). It includes periods of border control at intra-European land and maritime borders, in line with the respective Schengen membership status of each country (see Table 1).

The multi-step descriptive analysis started with the aggregation of the total number of border control days per year, both for individual border pairs and for the Schengen Area in total. To analyse the difference of border controls for each border pair for the time frame 2006–2025, a difference ratio (D) was calculated with the following formula:

$$D_{AB} = \frac{d_A}{d_B}$$

d_A describes the number of days between 2006 and 2025 when Country A controlled its border. d_B describes the same for Country B, which is Country A's respective border partner. The difference ratio D can be used to identify the presence of symmetric or asymmetric border control patterns for each border pair. The higher the ratio, the stronger the

Table 1

Intra-European border pairs between Schengen member states.

Year	Number of Schengen Area member states	Number of land and maritime border pairs	Country code
2006	15	46	AT, BE, DE, DK, ES, FI, FR, GR, IS, IT, LU, NL, NO, PT, SE
2007	24	100	CZ, EE, HU, LT, LV, MT, PL, SI, SK, CH*
2008	25	108	
2009	25	108	
2010	25	108	
2011	26	114	LI
2012	26	114	
2013	26	114	
2014	26	114	
2015	26	114	
2016	26	114	
2017	26	114	
2018	26	114	
2019	26	114	
2020	26	114	
2021	26	114	
2022	26	114	
2023	27	120	HR
2024	29	128	BG**, RO**
2025	29	128	

* 2008 for land borders, 2009 for air borders

** 2024 for air borders, 2025 for land borders

asymmetry of border control measures within a border pair.

To further analyse the patterns over the years the Bravais-Pearson correlation coefficient (r_{xy}) was used and can be defined as follows:

$$r_{xy} = \frac{c_{xy}}{s_x \bullet s_y}$$

c_{xy} represents the covariance between the two variables – number of days with border controls in country A and in country B. s_x and s_y stand for the standard deviations of both variables. Positive values indicate a positive correlation and negative values a negative correlation. Values close to 0 indicate no linear correlation between the variables. Moreover, weak, medium-strong, and strong correlations were shown by r_{xy} values of 0.5 and less, between 0.5 and 0.8, and between 0.8 and 1, respectively. The higher the correlation value, the more similar is the course of border controls over time.

In a second step, the reasons for each border control was investigated and grouped into categories. This has been done based on a coding of the individual official national reasons in the data set (key word analysis). For this analysis, we used a standard coding template to assign the information from each official reason for border control measures. Thus, we developed qualitative codes to capture the general reasoning in an inductive manner (Mayring and Fenzl, 2019). Two reviewers were involved for quality assurance, and they independently cross-checked the extracted data for all border control measures. An example is the key word ‘event’ which was used for football events like the European Championships or intergovernmental meetings like the G7/G8/G20 summits.

In a final step, the temporal and spatial explanations are added by visualising the data through maps and diagrams to reveal spatial patterns. This allows for the identification of differences between categories, as well as between border pairs. It enables a cartographic interpretation and facilitates the integration of qualitative insights from policy analyses.

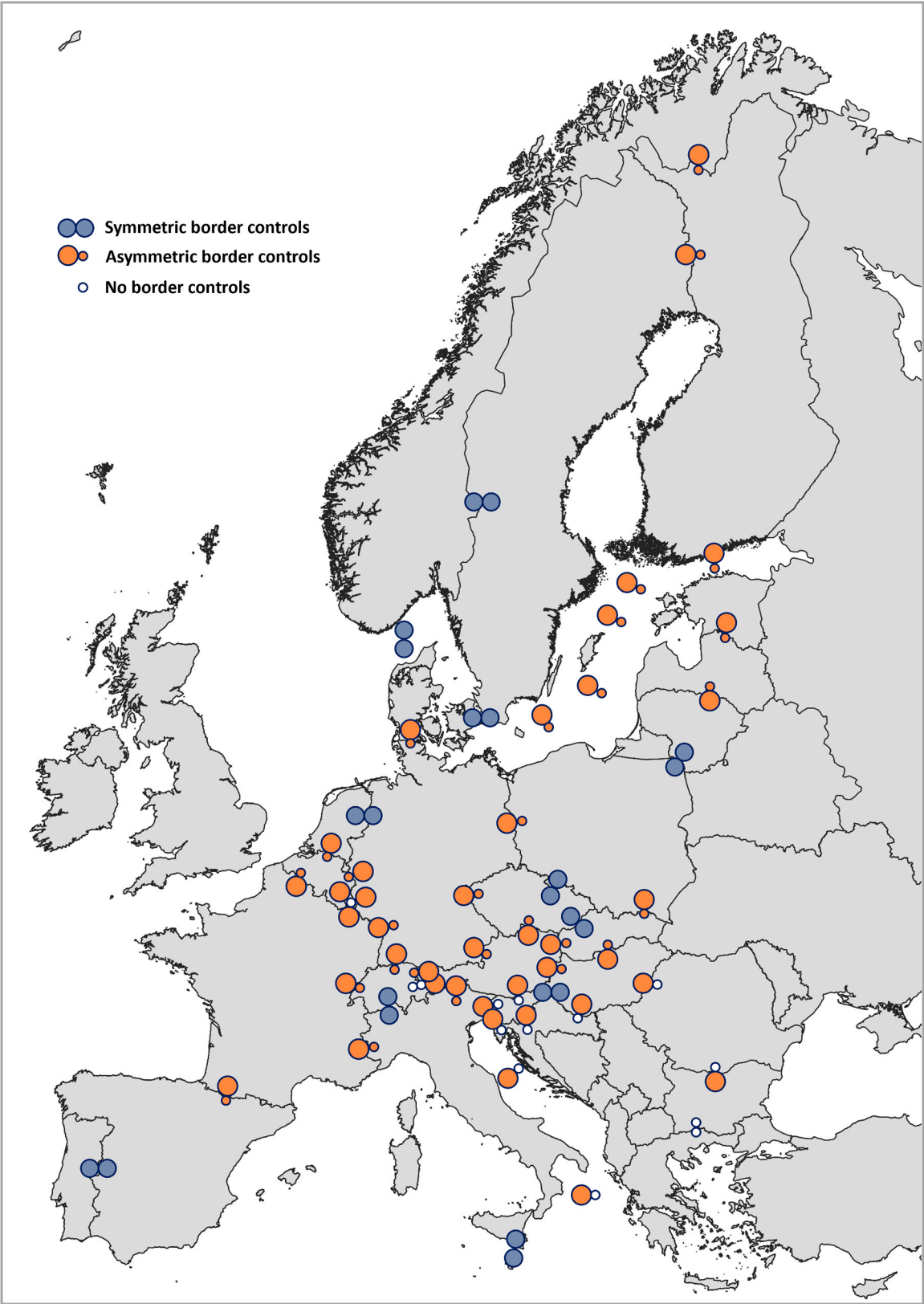


Fig. 1. Pan-European overview of temporary reintroductions of border controls (comparison of the aggregated number of border control days from 2006 to 2025).

4. Results

4.1. Overview

Fig. 1 provides a pan-European overview of the spatial patterns of temporarily reintroduced border controls based on the aggregated number of days with border controls from 2006 to 2025. To identify the pattern for each border pair, a ratio between the number of days with border controls was calculated (see Table 3 in the appendix, column 4). The higher the ratio, the greater the asymmetry between a border pair. Control patterns are classified as *symmetric* if the number of days with reintroduced border control measures between two member states does not differ significantly between the two countries by at least a ratio of 1:2. In other words, if one country reintroduced controls for 100 days and the other did so for a comparable duration, the controls are symmetric; if one country does so for 100 days but the other for (less than) 50 days, the border pair is classified as *asymmetric*. The 1:2 ratio was chosen as the value dispersion of the ‘general-ratio’ values (compare Table 3, column 4) shows a first kink between the ratios of 1.82 and 2.16. Furthermore, the ‘double’ perspective seems to be the most intuitive and practical. Since Iceland shares only air borders with other Schengen member states, it is not displayed in the map.

The map indicates that border controls are a prominent feature throughout Europe, despite the principles of free movement established by the Schengen Agreement. On initial observation, the predominant spatial pattern appears to be that of asymmetric border controls, suggesting that the implementation of temporary border controls is often maintained unilaterally rather than mutually. It is notable that only eleven border pairs exhibit symmetric controls (e.g., Norway-Sweden, Italy-Switzerland or Portugal-Spain). The symmetric pattern links to the overall number of days with border controls. However, this does not mean a symmetric pattern of aggregated values throughout different periods.

To analyse this in more detail, the Bravais-Pearson correlation coefficient was calculated (see Table 3 in the appendix, column 3). It allows to differentiate if the border controls happened in different years on either side of the border. The correlation values of the symmetric border pairs show a) border pairs with a medium-strong and strong correlation ($r_{xy} > 0.5$) which means that the control patterns over time were similar (e.g. both controlled during the COVID-19 pandemic in 2020/2021): Czechia-Poland, Denmark-Norway, Denmark-Sweden, Germany-Netherlands, Lithuania-Poland, Norway-Sweden as well as Portugal-Spain. Other border pairs, b), show a weak correlation ($r_{xy} < 0.2$) which means that the control patterns are different over time (e.g., one country is performing border controls during the COVID-19 pandemic, while the other is not; the pattern is exactly the opposite for the migration crisis of 2015/2016): This is the case for Czechia-Slovakia, Italy-Malta, Italy-Switzerland as well as Hungary-Slovenia.

Table 2 illustrates two ‘symmetric’ examples: It shows the number of days with border controls for the border pairs Portugal–Spain and Hungary–Slovenia over the years. While Portugal and Spain exhibit similar patterns, with border controls primarily implemented during the pandemic, Hungary and Slovenia demonstrate distinct trends. Hungary introduced border controls during the COVID-19 pandemic, whereas Slovenia did so mainly between 2023 and 2025. The overall number of

days is quite similar, resulting in a symmetrical evaluation. However, the trend over time is different, resulting in differing correlations. In conclusion, border pairs with a weak correlation can exhibit symmetric patterns during the study period but asymmetric patterns over time.

The predominantly asymmetric finding suggests that there are relatively few instances of reciprocal enforcement. In contrast, there is only one example of a border that does not feature border controls on either side, namely the border between Switzerland and Liechtenstein (and Bulgaria, that joined the EU in 2025). Furthermore, maritime border pairs in both the Baltic and the Mediterranean Sea also demonstrate several temporary border control measures that are asymmetric, thereby reinforcing the overall pattern of uneven border control management across Europe.

4.2. Reasons for border controls

The key question is how to explain these patterns, particularly why border controls tend to be asymmetric and what explains the ‘directions’ of the asymmetries. The temporal perspective helps in this regard. Fig. 2 shows a timeline of the cumulative temporary reintroductions of border controls between Schengen member states.

The figure distinguishes four main categories of justification that were identified based on the coding-approach. The first category relates to specific events, such as intergovernmental meetings (e.g., NATO or the G7/G8/G20) and major sports events (e.g., the UEFA European Football Championship), which have repeatedly triggered reintroductions. The second category relates to the extraordinary and sudden event of the 2020/21 COVID-19 pandemic, which resulted in high values. Border controls and closures were among the measures adopted to manage the pandemic. The third category relates to migration. From 2015 onwards, migration became a prominent justification, particularly following the sharp increase in arrivals from Syria (Hess and Kasperek, 2017; Hudson, 2018; Panebianco, 2023). Disagreements over national policies regarding refugees, asylum seekers and migration more broadly have led to a high number of asymmetric measures along internal European borders. The fourth category encompasses threats, including ‘general threats’ or ‘terrorist threats’ as described in the Schengen Borders Code. Following the peak of migration-induced controls in 2016/17, such threats became a common justification across Schengen member states.

The size of the circle indicates the average number of days for which member states controlled their land and maritime borders with an adjacent member state.

It is evident that during the pandemic, other reasons became less relevant, as mobility was generally restricted. Apart from this exceptional period, the sharp increase in controls from 2023 onwards deserves particular attention. These measures can be partly linked to migration flows as a result of geopolitical strategies (e.g., Belarus, see Forti, 2023).

Therefore, Fig. 3 provides a pan-European overview of the temporary reintroduction of border controls, categorised by the four official reasons. Following the same logic as Fig. 1, it uses maps to indicate whether border controls between Schengen member states are *symmetric*, *asymmetric*, or *non-existent* (for detailed ratio values see Table 3 in the appendix, column 5–8). The subsequent chapters examine the underlying reasons for these patterns in more detail.

Table 2

Days with border controls from 2006 to 2025 for two exemplary border pairs.

Direction	‘06-‘09	‘10	‘11	‘12	‘13	‘14	‘15	‘16-‘18	‘19	‘20	‘21	‘22	‘23	‘24	‘25	Sum
SI to HU	0	0	0	0	0	0	10	0	0	294	173	0	0	0	0	477
HU to SI	0	0	0	0	0	0	30	0	0	0	0	0	72	365	172	639
Ratio: 1.34; correlation: –0.12																
ES to PT	0	5	0	0	0	0	0	0	0	107	90	0	17	0	0	219
PT to ES	0	0	0	3	0	0	0	0	16	106	111	12	10	0	0	258
Ratio: 1.19; correlation: 0.98																

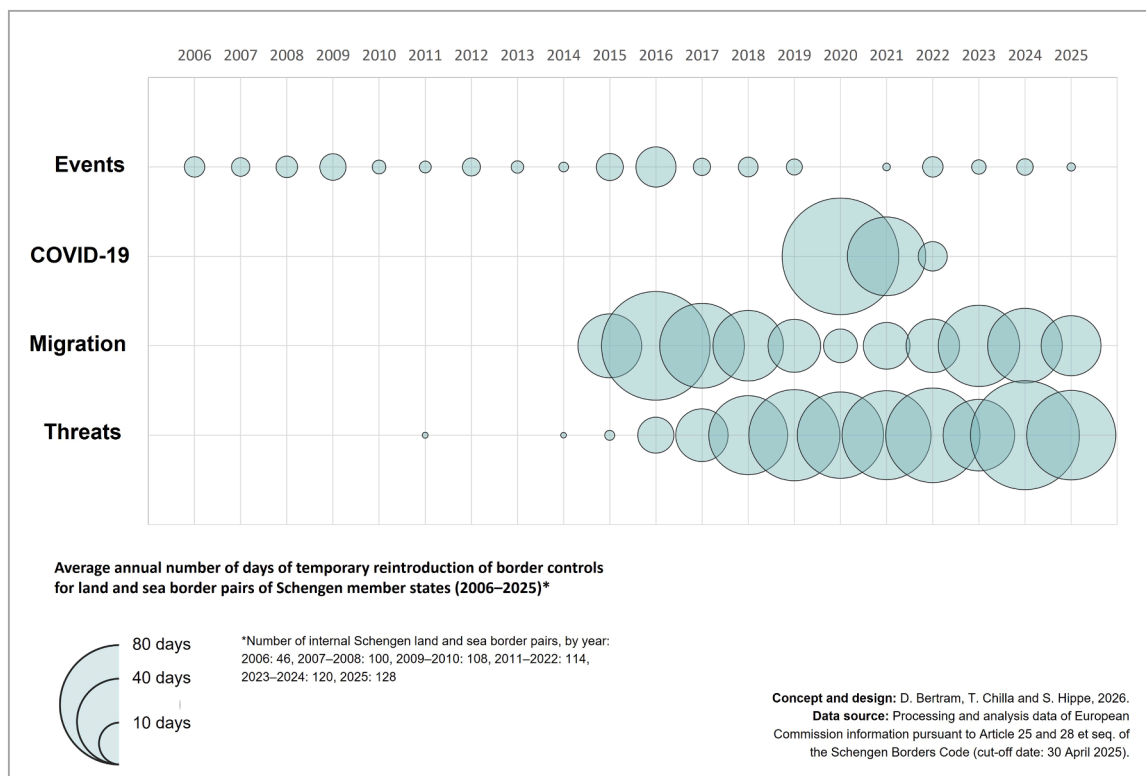


Fig. 2. Average number of days for which temporary border controls were reintroduced in the Schengen area over time (2006–2025).

4.2.1. Events

The asymmetries in border controls linked to events are relatively straightforward to explain. The general logic is that the host country, whether for high-level political meetings or major sports events, introduces controls. This pattern is the least surprising, as ensuring security for such events has from the outset been considered a legitimate justification for border controls. It is also the least problematic, as it neither undermines the principle of liberalisation nor generates a high number of controls, as illustrated in Fig. 3. Surprisingly, some countries do not have border controls for large-scale events such as football championships or political meetings, including Czechia, Hungary, Slovenia, and Switzerland.

4.2.2. COVID-19

Although some border pairs display symmetric configurations (e.g., Austria-Switzerland, Czechia-Poland, Germany-Switzerland, Poland-Slovakia, Portugal-Spain), the patterns of border controls related to the pandemic tend to be asymmetric. This asymmetry is predominantly due to divergent national policy styles. While some countries adopted strict measures, others avoided using border controls entirely (e.g., Italy, Latvia and Sweden). This occurred against a backdrop of limited European preparedness; neither the EU nor border regions had strategies in place to address a pandemic. Health policy, and pandemic response in particular, remain policy areas with a relatively low degree of European integration. Measures were therefore developed and implemented incrementally, often accompanied by communication problems and unforeseen interruptions to cross-border flows. Romania and Bulgaria are exceptions in that they only joined the Schengen area in 2025; their controls during the pandemic were 'regular' rather than 'temporarily reintroduced'.

4.2.3. Migration

The spatial patterns of migration-related border controls are distinctive in that they display mostly asymmetric configurations. The direction of controls aligns closely with the main migratory routes (see

Frontex, 2024). Typically, the *receiving* country introduces controls, whereas the *transit* country does not. For instance, Italy imposes no controls towards Austria, while Austria does; similar patterns can be observed for France-Italy, France-Spain, and Germany-Poland. This reflects the most significant migratory routes, particularly the Central Mediterranean route, with migrants primarily arriving in Italy and Malta from sub-Saharan countries and North Africa. Malta has introduced controls towards Italy due to its high number of arrivals. Countries further north, namely France, Austria, and Germany, also apply controls. Switzerland, by contrast, does not, as the Alpine barrier substantially limits cross-border mobility.

Comparable dynamics occur along the Eastern Mediterranean and Western Balkan routes, which see arrivals in Bulgaria, Cyprus, and Greece, often from the Middle East. Here, border controls are in place crossing the border from Croatia to Slovenia, Slovenia to Austria, Hungary to Slovakia, and Slovakia to Czechia. The Western Mediterranean route, used by irregular migrants arriving in Spain, particularly in the enclaves of Ceuta and Melilla as well as the Balearic Islands, results in asymmetric controls from France towards Spain. Conversely, border pairs not situated on major migratory routes rarely justify controls on migration grounds (e.g., Latvia-Lithuania, Lithuania-Poland, Portugal-Spain). Maritime borders show some exceptions: for instance, no migration-related controls exist between Greece and Italy, since onward transit typically occurs via land routes towards northern Europe.

4.2.4. Threats

The spatial patterns of threat-related border controls show certain parallels to the migration-related border controls described before. In addition, countries that experienced terrorist attacks often display asymmetric controls, for example, France (e.g., Charlie Hebdo shooting in 2015), Germany (a car ramming into a crowd of people at the Berlin Christmas Market in 2016), and Norway (e.g., bomb explosion in Oslo (NO) and shooting on the island Utøya (NO) in 2011). Several of these terrorist attacks have been frequently linked in political and media debates to migration, even if the causal connection is not straightforward

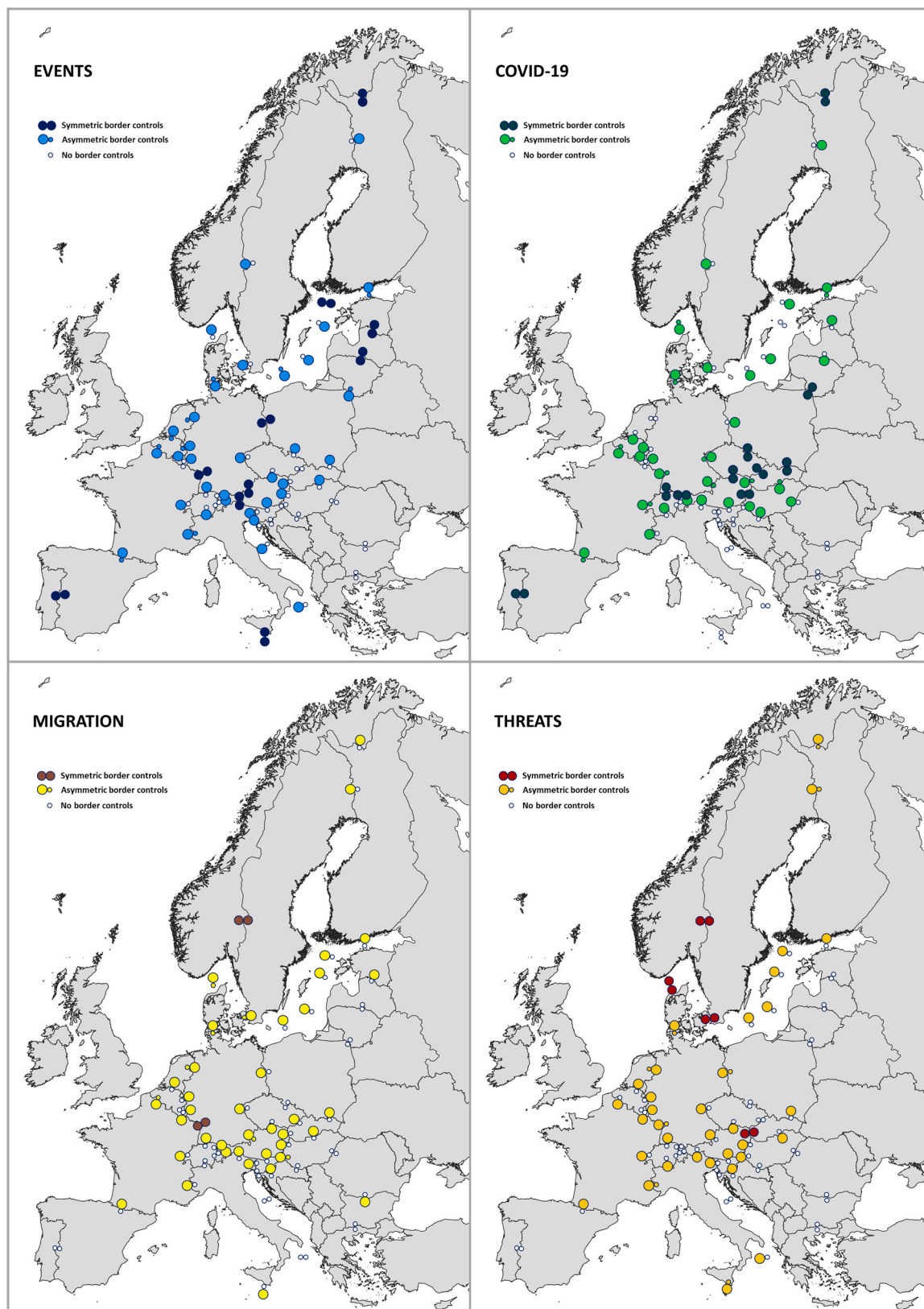


Fig. 3. Pan-European overview of temporary reintroductions of border controls, categorised by reasons (from 2006 to 2025).

(Nail, 2016).

Moreover, the analysed reasons for temporary border controls demonstrate several other types of threats. Examples are the Russian aggression in Ukraine, instability in the Middle East, organised gang-

related crime environment and specific sports-related threats such as heightened security requirements for UEFA EURO football events due to hooliganism. Besides predominately asymmetric border control measures between border pairs, there are also some symmetric threat-

related patterns (Austria-Slovakia, Denmark-Norway, Denmark-Sweden and Norway-Sweden).

5. Discussion

This study shows how temporary border controls within the Schengen area can be categorised based on their official reasoning and how these measures are distributed across Europe over time. Overall, we observe an increasing number of border control measures over the analysed period (2006 to present). This finding is consistent with previous research and confirms a growing frequency of crisis events (Pettersson Fürst, 2023a; Wille, 2025a). Re-bordering dynamics between Schengen countries question the progress achieved through cross-border cooperation in reducing border-related obstacles, affect border-regional resilience, and intensify the barrier effect of borders, for instance by increasing transport costs or limiting social interactions (cf. Bertram et al., 2024; Hippe et al., 2024; Novotný, 2025). From the perspective of cross-border spatial integration, border controls in general, and asymmetric control measures in particular, can lead to border-regional polarisation or even divergence, ultimately contributing to processes of disintegration (Durand et al., 2017; Evrard and Chilla, 2021).

Against this background, our article identifies two types of asymmetries that help to explain the temporary reintroduction of border controls: highly asymmetric spatial patterns of temporary reintroduced border control measures and asymmetric policy integration. Both help to respond to the three hypotheses, developed earlier.

Hypothesis 1. Border control patterns in Europe are more frequently asymmetric than symmetric

The asymmetric spatial patterns can be attributed to several official reasons. This study differentiates four categories: (1) meetings and events, (2) the COVID-19 pandemic, (3) migration flows, and (4) terrorism and general security threats. Across all categories, asymmetric patterns of border control measures can be observed, supporting *Hypothesis 1*. This aligns with previous research on crises and recent challenges to the Schengen Agreement (Pettersson Fürst, 2023b; Jacobs and Kabata, 2024).

More specifically, the asymmetric measures related to migration and the COVID-19 pandemic reflect varying national policy decisions across Europe, as noted in earlier studies (Van der Woude and van Berlo, 2015; Evrard and Chilla, 2021; Pettersson Fürst, 2023a; Wille, 2025b). Similarly, temporary reintroductions linked to meetings and events are predominantly asymmetric. Such exceptions have always been foreseen in the Schengen Agreement and typically display short-term patterns (see Groenendijk, 2004).

Hypothesis 2. Unforeseen developments led to the reintroduction of border measures if they relate to policy fields of only limited European integration

Also, the second hypothesis can be confirmed for the case of the pandemic and for the migration case. Border control measures related to the COVID-19 pandemic were limited to the period 2020–2022. During these years, the number of controls was exceptionally high across Europe, reflecting the unpredictable impact of the crisis on border regions (Medeiros et al., 2021). The observed asymmetries stem from regulatory differences, political decisions as well as varying incidence rates and spatial diffusion patterns (see also Chilla et al., 2022).

Regarding COVID-19-related temporary reintroductions, the lessons learned from ad hoc and often highly asymmetric measures may also offer opportunities. As Hippe et al. (2022) argue for German border regions, despite substantial differences in border closure impacts and a strong dependence on national decision-making, the pandemic acted also as a catalyst for cross-border cooperation. Temporary reintroductions of border controls within Schengen may therefore stimulate innovative crisis governance arrangements and new communication

channels that could, in the long term, strengthen cross-border integration.

With regard to migratory flows we can state the following: The Schengen system, originally designed to guarantee free movement, has increasingly been influenced by the difficulties in implementing the Dublin Regulation. The Dublin system has rarely functioned effectively (Schimmelfennig, 2018; Hooghe and Marks, 2019; Kaufmann, 2021), which has put the legitimacy of Schengen under pressure. Contrary to functionalist expectations, this has not (yet) resulted in deeper integration or a strengthening of the Dublin framework, i.e., in the field of migration and asylum. Neither EU governance structures nor national political actors in border regions possess sufficient capacities to address these issues comprehensively. As our findings indicate, border controls therefore remain one of the few measures that can be activated rapidly and unilaterally, particularly in relation to migration- and COVID-19-related developments.

With regard to migration-related temporary reintroductions, the future effectiveness of policy responses therefore depends largely on the EU's Common European Asylum System (CEAS), which has not yet been fully operationalised (cf. Schimmelfennig, 2018; Ferrara and Kriesi, 2022). The ongoing CEAS reform may represent an opportunity to achieve a more coherent political approach. If successful, it could indirectly alleviate pressure on internal European borders and reduce the frequency of border controls, thereby strengthening cohesion among member states (Medeiros et al., 2023). Internal and external border controls are closely interlinked and, taken together, form the 'sorting machine' for cross-border operations referred to above (Van Houtum, 2010).

Hypothesis 3. Spatial patterns of temporary border controls reflect large-scale migratory routes

As Biermann et al. (2019) and Schimmelfennig (2018) underline, migration-related controls can be expected to be predominantly one-directional. Our findings show that migration has remained a consistent justification for border controls since 2016, with particularly high levels recorded in 2016 and 2023. The spatial patterns reflect the main migration routes towards and across Europe (e.g., the Balkan route), confirming *Hypothesis 3*. European internal borders are thus strongly influenced by migration dynamics and corresponding political reactions. In particular, destination countries have reinstated border controls directed towards source or transit countries, reflecting concerns over irregular migration flows. From 2016 onwards, additional measures were justified by reference to security threats. The threat-related border measures show patterns similar to migration-related controls (in exceptional circumstances, the maximum duration of temporary border controls for a specific reason is two years, see Gülzau, 2021; European Commission, 2025e).

6. Conclusions

The empirical findings of our study underline the relevance of asymmetries in the temporary reintroduction of border controls, both in political and spatial terms. From the perspective of political integration, the integratedness of policy areas may spill over into neighbouring policy fields, as highlighted in the literature, for example, in the context of the financial crisis, which triggered further integration dynamics in response to critical developments (Schimmelfennig, 2018). However, such spillovers are not an automatism. Border-related integration, particularly within the Schengen framework, has been challenged by unforeseen developments such as the migration crisis and the COVID-19 pandemic.

These political asymmetries tend to be accompanied by spatial asymmetries – in our empirical case, reflected in border control measures. The findings can be summarised as follows: if critical developments in a given policy field do not lead to deeper integration, asymmetric spatial patterns are likely to emerge in related policy

domains. Against this backdrop, several normative implications arise. Policy frameworks such as the Schengen Borders Code, on the one hand, and predominately national policy domains such as health and migration policy, should not be treated as isolated policy frameworks. Instead, their close interdependence must be systematically acknowledged. If governance mechanisms fail to function effectively, this not only weakens Schengen but may also affect European integration more broadly, as increasing political polarisation in recent years has demonstrated.

The findings of this study provide empirical evidence, albeit at an exploratory level. Future research could extend this analysis to additional policy fields in a more systematic manner, potentially in combination with Heyduk's (2025) work on asymmetries in political decision making. A systematic investigation of asymmetries in both political and spatial dimensions appears particularly promising. Such work may also open the door to further normative discussions. The key question might be how to address the multidimensional consequences of political and spatial asymmetries in European border regions.

It is important to note that our approach also comes along with limitations. In particular, border control measures are operationalised in a simplified manner, distinguishing only whether such measures were formally announced as exceptional interventions. The data do not capture the extent or intensity of implementation (e.g., systematic physical controls, random checks, or the absence of checks despite formal control announcements). National approaches of implementation vary considerably. For instance, France has reported extended periods of border controls, yet these are often applied intermittently rather than continuously at all crossings. Other countries, by contrast, have implemented stricter and more comprehensive controls regimes, including severe restrictions for cross-border travellers. Moreover, border control measures are also strongly influenced by political and institutional factors, including domestic debates, electoral contexts, and bilateral relations. During crises, policy responses may diverge between more restrictive and more flexible approaches. Even within individual countries, substantial variation can occur, as shown by Bloßfeldt (2023) during the COVID-19 pandemic. Ultimately, individual perceptions of border control measures may differ from official reports. For residents of border

regions, however, the decisive factor is not the formal justification, but whether the border is effectively open or a barrier in daily life.

From a border-regional resilience perspective, our findings support the argument of Evrard and Chilla (2021) and Novotný (2022) that the temporary reintroduction of border controls, particularly when applied asymmetrically, highlights the vulnerability of border regions, even where functional and institutional integration is well developed. Highly asymmetrical re-bordering practices can undermine longstanding trust and cross-border cooperation, revealing the fragile balance between de-bordering processes and the reintroduction of border controls (see Hippe et al., 2022; Novotný and Böhm, 2022).

CRediT authorship contribution statement

Tobias Chilla: Writing – original draft, Validation, Supervision, Resources, Methodology, Investigation, Data curation, Conceptualization. **Dominik Bertram:** Writing – original draft, Visualization, Validation, Resources, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Stefan Hippe:** Writing – original draft, Validation, Resources, Methodology, Investigation, Formal analysis, Data curation, Conceptualization.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Appendix

Table 3 shows the Bravais-Pearson correlation coefficients and difference ratio values for all 53 border pairs, based on the number of days with border controls between 2006 and 2025. The ratios are calculated for the total number of border control days (column 4), as well as for specific categories of reasons (columns 5–8). N/A values occur when border controls were not reintroduced on one side of a given border pair; in such cases, neither the correlation nor the difference ratio can be calculated. The country with the higher number of border control days is indicated in brackets, reflecting the direction of asymmetry. Higher ratio values correspond to stronger asymmetry.

For example, the first row (Austria-Slovakia) can be read as follows: the overall correlation coefficient is 0.21, and the overall difference ratio is 8.74, indicating a pronounced asymmetry between the two countries. The label 'AT' in brackets shows that Austria recorded a higher number of border control days. In column 5, no value is reported because only Austria implemented border controls for 'event'-related reasons; again, 'AT' indicates that Austria accounts for the higher number of control days. This logic applies analogously to the remaining columns.

Table 3
Bravais-Pearson correlation coefficients and difference ratios for 53 border pairs across Europe

Country A	Country B	General - Correlation	General - Ratio	Events - Ratio	COVID-19 - Ratio	Migration - Ratio	Threats - Ratio
AT	SK	0.21	8.74 (AT)	N/A (AT)	2.59 (AT)	N/A (AT)	1.51 (AT)
AT	SI	N/A	N/A (AT)	N/A (AT)	N/A (AT)	N/A (AT)	N/A (AT)
AT	IT	-0.22	6.37 (AT)	1.13 (IT)	N/A (AT)	N/A (AT)	N/A (IT)
AT	CZ	0.03	8.00 (AT)	N/A (AT)	1.48 (AT)	N/A (AT)	N/A (AT)
AT	DE	0.24	9.68 (DE)	1.85 (DE)	2.03 (DE)	9.12 (DE)	N/A (DE)
AT	HU	0.35	7.63 (AT)	N/A (AT)	1.28 (HU)	N/A (AT)	N/A (AT)
AT	CH	0.42	3.99 (AT)	N/A (AT)	1.02 (AT)	N/A (AT)	N/A (N/A)
AT	LI	N/A	N/A (AT)	N/A (AT)	N/A (AT)	N/A (AT)	N/A (N/A)
BE	NL	-0.09	2.16 (NL)	2.50 (NL)	N/A (BE)	N/A (NL)	N/A (NL)
BE	DE	-0.19	3.77 (DE)	14.17 (DE)	N/A (BE)	N/A (DE)	N/A (DE)
BE	FR	0.44	14.75 (FR)	47.33 (FR)	2.03 (FR)	15.03 (FR)	N/A (FR)

(continued on next page)

Table 3 (continued)

Country A	Country B	General - Correlation	General - Ratio	Events - Ratio	COVID-19 - Ratio	Migration - Ratio	Threats - Ratio
BE	LU	N/A	N/A (BE)	N/A (BE)	N/A (BE)	N/A (N/A)	N/A (N/A)
BG	RO	N/A	N/A (BG)	N/A (N/A)	N/A (N/A)	N/A (BG)	N/A (N/A)
BG	GR	N/A	N/A (N/A)	N/A (N/A)	N/A (N/A)	N/A (N/A)	N/A (N/A)
CH	DE	0.08	12.43 (DE)	N/A (DE)	1.01 (DE)	N/A (DE)	N/A (DE)
CH	FR	0.24	40.24 (FR)	N/A (FR)	4.51 (FR)	N/A (FR)	N/A (FR)
CH	IT	-0.11	1.61 (CH)	N/A (IT)	N/A (CH)	N/A (N/A)	N/A (IT)
CH	LI	N/A	N/A (N/A)	N/A (N/A)	N/A (N/A)	N/A (N/A)	N/A (N/A)
CZ	SK	0.17	1.45 (CZ)	N/A (N/A)	1.75 (CZ)	N/A (CZ)	N/A (N/A)
CZ	PL	0.88	1.40 (PL)	N/A (PL)	1.56 (CZ)	N/A (N/A)	N/A (N/A)
CZ	DE	-0.13	7.53 (DE)	N/A (DE)	2.33 (CZ)	N/A (DE)	N/A (DE)
DE	FR	0.31	4.10 (FR)	1.86 (FR)	4.46 (FR)	1.63 (FR)	28.54 (FR)
DE	NL	0.60	1.74 (DE)	5.67 (DE)	N/A (N/A)	34.25 (DE)	13.92 (DE)
DE	PL	-0.15	5.07 (DE)	1.25 (PL)	N/A (PL)	N/A (DE)	6.53 (DE)
DE	DK	0.28	5.14 (DK)	4.72 (DE)	4.61 (DK)	2.99 (DK)	13.96 (DK)
DE	LU	N/A	N/A (DE)	N/A (DE)	N/A (DE)	N/A (DE)	N/A (DE)
DK	SE	0.80	1.59 (SE)	N/A (DK)	N/A (DK)	4.86 (SE)	1.29 (SE)
DK	NO	0.78	1.69 (NO)	N/A (NO)	2.80 (DK)	5.21 (NO)	1.26 (NO)
EE	LV	-0.02	21.44 (EE)	1.22 (EE)	N/A (EE)	N/A (EE)	N/A (N/A)
EE	FI	0.62	4.79 (FI)	3.82 (FI)	4.48 (FI)	N/A (FI)	N/A (FI)
EE	SE	0.21	35.49 (SE)	1.38 (EE)	N/A (EE)	N/A (SE)	N/A (SE)
ES	FR	0.31	26.21 (FR)	6.70 (FR)	4.19 (FR)	N/A (FR)	N/A (FR)
ES	PT	0.98	1.18 (ES)	1.86 (ES)	1.10 (ES)	N/A (N/A)	N/A (N/A)
FI	SE	0.37	5.76 (SE)	N/A (FI)	N/A (FI)	N/A (SE)	290.88 (SE)
FI	NO	0.42	4.45 (NO)	1.50 (NO)	1.22 (NO)	N/A (NO)	169.25 (NO)
FR	IT	0.22	59.10 (FR)	5.23 (FR)	N/A (FR)	N/A (FR)	297.71 (FR)
FR	LU	N/A	N/A (FR)	N/A (N/A)	N/A (N/A)	N/A (FR)	N/A (FR)
GR	IT	N/A	N/A (IT)	N/A (IT)	N/A (N/A)	N/A (N/A)	N/A (IT)
HR	IT	N/A	N/A (IT)	N/A (IT)	N/A (N/A)	N/A (N/A)	N/A (N/A)
HR	HU	N/A	N/A (HU)	N/A (N/A)	N/A (HU)	N/A (N/A)	N/A (N/A)
HR	SI	N/A	N/A (SI)	N/A (N/A)	N/A (N/A)	N/A (SI)	N/A (SI)
HU	RO	N/A	N/A (HU)	N/A (N/A)	N/A (HU)	N/A (N/A)	N/A (N/A)
HU	SI	-0.12	1.34 (SI)	N/A (N/A)	N/A (HU)	33.5 (SI)	N/A (SI)
HU	SK	0.45	2.32 (HU)	N/A (SK)	5.70 (HU)	N/A (SK)	N/A (HU)
IT	MT	0.15	1.58 (MT)	1.12 (MT)	N/A (N/A)	N/A (MT)	2.57 (MT)
IT	SI	N/A	N/A (IT)	N/A (IT)	N/A (N/A)	N/A (IT)	N/A (IT)
LT	LV	-0.05	20.11 (LT)	1.29 (LV)	N/A (LT)	N/A (N/A)	N/A (N/A)
LT	PL	0.87	1.08 (PL)	15.14 (PL)	1.93 (LT)	N/A (N/A)	N/A (N/A)
LT	SE	0.25	20.18 (SE)	N/A (LT)	N/A (LT)	N/A (SE)	N/A (SE)
LV	SE	-0.24	406.11 (SE)	N/A (LV)	N/A (N/A)	N/A (SE)	N/A (SE)
NO	SE	1.00	1.01 (NO)	N/A (NO)	N/A (NO)	1.19 (NO)	1.24 (SE)
PL	SE	0.26	18.65 (SE)	13.25 (PL)	N/A (PL)	N/A (SE)	N/A (SE)
PL	SK	0.58	4.34 (PL)	N/A (PL)	1.78 (SK)	N/A (PL)	N/A (PL)

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