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**The Impact of Geopolitical Risk and Rising
Uncertainty on Foreign Direct Investment Inflows
in the European Union**

fsQCA analysis

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ABSTRACT:

The full-scale invasion of Ukraine by Russia in 2022 introduced a new and significant geopolitical risk to Europe, one not seen in decades. The conflict reshaped the regional security landscape and created widespread uncertainty across the continent. As a result, the war influenced how multinational enterprises assess and evaluate their foreign direct investment opportunities in Europe, driven by concerns over potential conflict spillovers. Countries near the conflict have experienced notable increase in perceived country risk, which then may have led to lower foreign direct investment inflows. The study hypothesized that proximity to geopolitical risk, in this case to Russia, would negatively affect foreign direct investment inflows in European Union countries, as investors tend to perceive higher geopolitical uncertainty as negative determinant for investment.

Therefore, this thesis seeks to examine how the Ukraine-Russian war has affected foreign direct investment (FDI) inflows to European Union by applying fuzzy-set Qualitative Comparative Analysis (fsQCA). The research compares data of typical determinants of FDI (gross domestic product, democracy index, cost of labour) before (2019-2021) and after (2022-2024) the full-scale invasion, with added condition of countries proximity to Russia across all 27 European Union member countries. With fsQCA, the configurations leading to higher and lower levels of foreign direct investment inflows can be identified and compared, revealing how different configurations shape investment outcomes. As a result, a clearer understanding emerged of how proximity to conflict interacts with traditional determinants of FDI inflows. The main findings support earlier research showing that FDI inflows are shaped by multiple interacting determinants rather than any single one on their own. In the broader European Union context, the results indicate that proximity to Russia alone cannot fully explain the changes in foreign direct investment inflows. While geographical proximity to Russia may have increased perceived geopolitical risk, it was not the sole determinant factor shaping investment behaviour.

However, especially Finland showed a noticeable change between the two periods. Before the war, its strong democratic system, relatively high gross domestic product, and location formed a configurations, which led to higher FDI inflows. After the war began, these same configuration of conditions were linked to lower FDI inflows. This change could underline that concerns about geopolitical risk became more relevant, by affecting how investors viewed proximity to Russia and its effect to geopolitical security in the region. More so, the observation that lower labour costs configurations were linked with higher FDI inflows after the war while higher labour costs configurations were associated with lower inflows, suggests that investors became more cost-sensitive in an uncertain environment. This shift may reflect a broader trend where large multinational firms seek to mitigate geopolitical and economic risks by prioritizing efficiency and cost competitiveness over market size or institutional quality.

KEYWORDS: Geopolitical risk, Geopolitical uncertainty, Ukraine War, Foreign direct investment (FDI), fuzzy-set Qualitative Comparative Analysis,

VAASAN YLIOPISTO**Tekniikan ja innovaatiojohtamisen akateeminen yksikkö**

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ABSTRACT:

Venäjän täysimittainen hyökkäys Ukrainaan vuonna 2022 toi Eurooppaan uuden ja merkittävän geopoliittisen riskin, jollaista ei oltu nähty vuosikymmeniin. Sota muutti alueellisia turvallisuusempäristöjä ja loi laajaa epävarmuutta koko Euroopan mantereella. Vaikutus näkyi myös siinä, miten monikansalliset yritykset arvioivat ja valitsivat suoria investointikohteita Euroopassa. Sen vuoksi sodan lähellä olevat maat ovat kokeneet huomattavan muutoksen koetussa maariskissä, mikä puolestaan vaikuttaa ulkomaalasiin suoriin sijoituksiin. Tutkielman hypoteesina oli, että geopoliittisen riskin läheisyys, tässä tapauksessa Venäjä, vaikuttaisi negatiivisesti suoriin ulkomaisiin sijoituksiin Euroopan unionin maissa, sillä sijoittajat pitävät geopoliittista epävarmuutta negatiivisena tekijänä. Tämä tutkielma pyrki ymmärtämään, miten Ukrainan ja Venäjän välinen sota on vaikuttanut suorien ulkomaisten sijoitusten virtoihin Euroopan unionissa soveltamalla kvalitatiivisen vertailevan analyysin menetelmää (fsQCA). Tutkimuksessa verrataan Euroopan Unionin 27 jäsenmaiden tyypillisiä ulkomaisen sijoituksen tekijöitä (bruttokansantuotetta, maan demokratian tasoa, työvoimakustannuksia) ennen Venäjän täysimittaista hyökkäystä (2019-2021) ja sen jälkeen (2022-2024), lisäten Venäjän läheisyyden erillisenä muuttujana. FsQCA-menetelmän avulla voidaan tunnistaa ja verrata ulkomaisten suorien sijoitusvirtojen tasoihin johtavia konfiguraatioita, paljastaen kuinka taloudellisten, institutionaalisten ja geopoliittisten tekijöiden erilaiset yhdistelmät muokkaavat sijoitusvirtoja. Tuloksena syntyi ymmärrys siitä, kuinka konfliktin läheisyys on vuorovaikutuksessa ulkomaisten suorien sijoitusvirtojen määrittävien tekijöiden kanssa. Analyysin tulokset tukevat aiempaa tutkimusta, joka osoittaa, että ulkomaiset suorat sijoitusvirrat muotoutuvat useiden toisiinsa vaikuttavien muuttujien perusteella, eikä minkään yksittäisen tekijän toimesta. Koko Euroopan unionin kontekstissa tulokset osoittavat, että Venäjän läheisyys ei yksinään voi täysin selittää suorien ulkomaisten sijoitustenvirtojen muutoksia. Vaikka maantieteellinen läheisyys Venäjään on saattanut lisätä koettua geopoliittista riskiä, se ei ollut ainoa sijoituskäyttäytymistä muokkaava tekijä. Kuitenkin Suomen tuloksissa oli huomattavia muutoksia kahden tutkitun ajanjakson välillä. Ennen sotaa Suomen vahva demokraattinen järjestelmä, suhteellisen korkea bruttokansantuote ja sijainti muodostivat konfiguraatioita, jotka johtivat korkeisiin ulkomaisiin sijoitusvirtoihin. Sodan alkamisen jälkeen näiden samojen tekijöiden konfiguraatiot olivat yhteydessä alhaisempiin ulkomaisiin sijoituksiin. Tämä muutos voi tarkoittaa, että huolet geopoliittisesta riskistä nousivat tärkeämmiksi vaikuttaen siihen, miten sijoittajat näkivät Venäjän läheisyyden ja sen vaikutuksen alueen maantieteelliseen turvallisuuteen. Lisäksi havainto siitä, että matalampien työvoimakustannusten konfiguraatiot olivat yhteydessä korkeampiin sijoitusvirtoihin sodan jälkeen, kun taas korkeampien kustannuksien konfiguraatiot olivat yhteydessä matalampiin virtoihin, viittaa siihen, että sijoittajista tuli kustannusherkeempiä geopoliittisen riskin kasvaessa. Tämä muutos saattaa tarkoittaa, että suuret kansainväliset yritykset pyrkivät lieventämään geopoliittisia ja taloudellisia riskejä priorisoimalla tehokkuutta ja kustannuskilpailukykyä, institutionaalisen laadun ja markkinakoon sijaan.

KEYWORDS: Geopolitical risk, Geopolitical uncertainty, Ukraine War, Foreign direct investment (FDI), fuzzy-set Qualitative Comparative Analysis,

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Abbreviations

AUT	Austria
BEL	Belgium
BGR	Bulgaria
CYP	Cyprus
CZE	Czechia
DEU	Germany
DNK	Denmark
ESP	Spain
EST	Estonia
FIN	Finland
FRA	France
GRC	Greece
HRV	Croatia
HUN	Hungary
IRL	Ireland
ITA	Italy
LTU	Lithuania
LUX	Luxembourg
LVA	Latvia
MLT	Malta
NLD	Netherlands
POL	Poland
PRT	Portugal
ROU	Romania
SVK	Slovakia
SVN	Slovenia
SWE	Sweden

1 Introduction

The Russia's full-scale invasion of Ukraine in February 2022 marked a shift in the European security environment. Geopolitical uncertainty across Europe escalated sharply and countries close to Russia experienced a notable increase in their perceived country risk. This heightened geopolitical uncertainty affected the European Union appeal as a stable foreign direct investment (FDI) destination. Therefore, the war influenced how multinational enterprises (MNE) assess and evaluate their foreign direct investment opportunities in Europe, driven by concerns over potential conflict spillovers. For many European Union countries such as Finland, foreign direct investment (FDI) has historically been attracted by political stability, integration into to global market, and the availability of skilled labour.

FDI plays a central role in supporting economic growth, competitiveness, and international integration. In the European Union, FDI inflows are often linked to the activities of large multinational enterprises that invest abroad for number of strategic reasons such as accessing new markets, optimizing production, or benefiting from regional integration (Carril Caccia & Pavlova, 2018, pp. 64-65). FDI inflows can be defined as cross-border investment where the investor seeks a lasting interest and significant influence in an enterprise abroad, usually defined as holding at least 10 percent of equity participation (OECD, 2009, pp. 48-49).

Previous literature has highlighted that FDI inflows are not determined solely by one factor, for instances market size or labour costs. Instead, FDI is shaped by many different determinants like institutional and political factors such as democracy, and regional security (Dunning & Lundan, 2008; Busse & Hefeker, 2007). Consequently, the increased uncertainty cause by the war in Ukraine may have altered these traditional "recipes" of FDI that usually made European Union countries attractive and stable destination for investment.

Hence, this thesis seeks to examine whether the proximity to Russia (geopolitical risk) has altered these traditional recipes of FDI and therefore, affected the multinational enterprise decision to make FDI to European Union countries. The study is applied in two stages. First, a fuzzy-set Qualitative Comparative Analysis (fsQCA) is conducted across the 27 European Union countries, comparing the pre-war period (2019-2021) and the post-war period (2022-2024) configurations for FDI. The analysis focuses on four conditions: democracy, market size (GDP), labour costs, and geographic proximity to Russia. The second part examines Finland's results to assess whether the newly formed geopolitical risk has influenced its economic position, contextualized within the broader findings of the QCA analysis.

1.1 Research problem and objectives

Foreign direct investment has traditionally been influenced by economic fundamentals such as market size, labour and institutional quality (Bertrand et al., 2024, pp. 3, 5-6). However, the Russia's full-scale invasion of Ukraine in 2022 introduced heightened geopolitical uncertainty across Europe. For countries located near Russia, such as Finland, proximity to the conflict may have reduced their appeal as destinations for foreign direct investment, even though they remain politically stable and highly integrated into global trade.

This thesis applies a configurational perspective based on fsQCA results to examine whether proximity to geopolitical conflict has weakened the traditional determinants of FDI in European Union countries and therefore altered how foreign enterprise evaluate foreign direct investment opportunities.

The thesis has three main objectives:

1. To explore how the conditions affecting FDI inflows in the European Union's 27 countries changed between the period before the war (2019-2021) and after the war (2022-2024), with a focus on the proximity to conflict.

2. To understand how proximity to Russia has influenced the decline of FDI inflows in EU countries after Russia's full-scale invasion of Ukraine in 2022, and how this relates to traditional FDI factors like market size, labor costs, and democracy.
3. Examine Finland's results to assess whether geopolitical uncertainty has influenced its economic position within the context of the broader QCA analysis.

2 Literature review

The purpose of this chapter is to explain what foreign direct investment (FDI) is and to review some of the main determinants that influence multinational firms' decisions to invest abroad. FDI is typically carried out by multinational enterprises (MNEs) that establish or expand business activities abroad. Some of the main determinants of FDI that are discussed in these chapters are market size (gross domestic product), labour cost, democracy, and geopolitical risk. These determinants play a key role in how MNEs assess both the opportunities and risks of potential host countries, shaping their investment decisions. By reviewing earlier studies, this chapter explains why these determinants matter and why they were selected for the analysis. It also gives a clearer picture of how they work together to influence the attractiveness of European Union countries for FDI before and after the start of the full-scale war in Ukraine.

2.1 Foreign direct investment

Foreign direct investment plays a central role in supporting economic growth, competitiveness, and international integration. In the European Union, FDI inflows are often linked to the activities of large multinational firms (MNEs) that invest abroad for number of strategic reasons such as accessing new markets, optimizing production, or benefiting from regional integration (Carril Caccia & Pavlova, 2018, pp. 64-65). FDI inflows can be defined as cross-border investment where the investor seeks a lasting interest and significant influence in an enterprise abroad, usually defined as holding at least 10 percent of equity participation (OECD, 2009, pp. 48-49). FDI is typically classified into inflows, outflows, and stocks, and may take the form of equity capital, reinvested earnings, or intra-company loans. It is considered as key element in global economic integration (OECD, 2009, pp. 21-22).

Foreign direct investment (FDI) plays an important role in linking economies through long term capital flows, technology transfer, and management expertise. When supported by sound policy and institutional frameworks, FDI can introduce new technologies, provide

access to new markets, and bring new expertise to local workforce (Carril Caccia & Pavlova, 2018, p. 61). This, in turn, helps build resilience against domestic economic uncertainties and supports long-term growth. For small and open economies such as Finland, these effects are particularly important.

From an economic efficiency standpoint, FDI should occur when the expected benefits outweigh the costs. However, Maček (2021, pp. 3-4) highlights that this is not always the case, as the motivations behind FDI can vary. Multinational enterprises may seek efficiency or market access, while state-owned investors might pursue geopolitical objectives. If we measure FDI success solely in terms of profitability, we could reach misleading conclusions, because not all investments are driven by purely economic logic.

Maček (2021, pp. 4-5) further explains that higher FDI inflows are often linked to several factors, including a favourable business climate. The investment climate is shaped by external conditions that affect an organization's ability to succeed and operate effectively. Maček (2021, pp. 4-5) continue to explain that low corruption, strong rule of law, transparent governance, and political stability all contribute to an investment friendly climate. Countries that can combine these elements are consistently more successful at attracting foreign direct investment, because these elements reduce risks and transaction costs while signaling predictability to investors. The top five recipient countries of FDI, as shown in (Table 1), consistently perform above average in several factors measuring the investment climate.

Table 1. FDI and business climate rankings in 2019 (Maček, 2021, p. 5).

Ranking of FDI recipients v. ranking in business climate factors				
Country	FDI inflow ranking	Doing busi- ness ranking (Total: 190)	Corruption perception in- dex/ranking (Total: 180)	Rule of law in- dex ranking (Total: 128)
The USA	1	6	23	21
China	2	31 / 3 (Hong Kong)	80 / 16 (Hong Kong)	88 / 16 (Hong Kong)
Singapore	3	2	4	12
The Nether- lands	4	42	8	5
The United Kingdom	5	8	12	13

2.2 Foundations of FDI Determinants: Insights from Hymer

The foundations of foreign direct investment (FDI) determinants have been studied from several perspectives, each highlighting why multinational enterprises (MNEs) expand abroad and what factors influence their choices. One of the earliest influential explanations comes from Stephen Hymer (1960, pp. 14-16, 25-27), who argued that FDI is not simply a matter of capital moving to where returns are highest, as classical economic models suggested. Instead, Hymer shifted the analysis toward the behaviour of firms, showing that FDI is fundamentally tied to the structure of industries, the pursuit of market power, and the existence of firm-specific advantages.

As mentioned, standard trade and finance theories predict that capital should move from countries with lower returns to those with higher returns. However, Hymer (1960, pp. 14, 23-24) observed that FDI involved more than just passive capital movements. Unlike portfolio investment, where investors seek returns without managerial involvement, FDI is characterized by active control over foreign operations. He further points

out that the decision to undertake FDI must be explained by industrial organization factors such as firm behaviour, strategy, and competition, rather than by just financial considerations. This statement emphasizes that FDI is more than mere capital transfer, involving strategic considerations beyond being just financial decision.

Hymer (1960, pp. 24, 51-52) also proposed that FDI is often motivated by the desire to reduce competition and achieve market power. By acquiring or establishing subsidiaries in foreign markets, multinational enterprises can neutralize rivals, control market share, and stabilize profits. In this sense, FDI is not only about exploiting advantages but also about conflict reduction between competing firms, linking cross-border investment to the broader dynamics of industrial organization.

Hymer's work laid the foundation for many of the determinants of FDI that remain important today. Market size, labour costs, and institutional conditions can be understood through his perspective, as they affect both the opportunities and risks faced by firms operating internationally. While Hymer's main contribution centered on firm behaviour and market power, he also acknowledged that host-country factors such as market size, resource availability, and regulatory conditions affect where multinational firms choose to invest (Hymer, 1960, pp. 65-66, 72-74).

3 Determinants of foreign direct investment: Four key dimensions

The determinants of foreign direct investment (FDI) are not explained by a single factor but reflect a combination of strategic and economic considerations. Motives such as cost reduction, profit maximization, global market trends, mergers, and strategic expansion can all play a role in shaping foreign direct investment decisions. From an economic efficiency perspective, FDI takes place when the expected benefits exceed the costs, but that's not always the case (Maček, 2021, p. 46).

FDI activity can be examined through four critical dimensions that capture the key host-country conditions: Market size and gross domestic product (GDP), labour costs, democracy, and geopolitical risk. Market size and GDP reflect potential sales and economies of scale and have consistently been recognized as key determinants of FDI (Dunning, 2008, pp. 69-70). Labour costs on the other hand influence efficiency-seeking investment, as lower costs can attract production, although high costs may be offset by higher productivity (Bellak et al., 2008, pp. 17-18, 33-34). Democracy and institutional quality are also central, since investors prefer predictable environments with strong property rights and low political risk (Busse & Hefeker, 2007, pp. 399-400). Recently, understanding possible geopolitical risks has become increasingly important, as instability or even proximity to conflict can deter foreign investors regardless of economic fundamentals (Abadie & Gardeazabal, 2003, pp. 113-114).

Europe's shifting security environment could have altered the traditional determinants of FDI in European Union. The Russian invasion of Ukraine in 2022 created a new layer of geopolitical risk that is particularly relevant for countries geographically close to the conflict. Such risks can undermine investor confidence, even when other fundamentals like market size and institutional quality remain strong.

Research shows that foreign investors tend to avoid regions perceived as unstable, real-locating capital toward safer destinations, even if this comes at the cost of lower returns (Caldara & Iacoviello, 2018, pp. 1-3). In the European Union context, this suggests that while traditional factors such as gross domestic product, labour costs, and democracy remain important, proximity to Russia or exposure to conflict may reduce the attractiveness of certain EU member countries. At the same time, countries further from the conflict may benefit from diversion effects, attracting investment that might otherwise have gone elsewhere. This changing environment indicates that the determinants of foreign direct investment should be understood as dynamic rather than being just static.

3.1 Market size and gross domestic product

Market size is one of the most consistently identified determinants of foreign direct investment (Islam & Beloucif, 2024). The practical implication is that multinational firms prioritize countries where economies of scale and expanding consumer demand can be realized. Market size therefore signals not only immediate consumption potential but also long-term durability and scalability. Even when other factors such as infrastructure or institutional quality lag, the revenue opportunities associated with a large domestic market often compensate. This finding aligns with broader international research that underscores the gravitational pull of big markets (Artige & Nicolini, 2005, pp. 18-20).

Hossain's (2019, pp. 2-5) study on South Asian countries provided evidence that market size is one of the strongest determinants of FDI. Similar evidence has been documented in the Western Balkans. Petrović-Ranđelović, Janković Milić, and Kostadinović (2017) studied six Balkans economies between 2007 and 2015, to assess the impact of market size (proxied by GDP), market growth, population size, and trade openness on FDI inflows. They found that both market size and market growth were found to exert positive effects on FDI. Supporting the fact that larger and expanding economies provide more lucrative environments for foreign investors (Petrović-Ranđelović et al., 2017, pp. 95-98, 102). In some countries even with institutional or infrastructural challenges like many Asian or

Western Balkans countries have, it seems that the power of market size can compensate it. Which underlines the power of the market size in terms of FDI determinants.

The African context further supports this argument. Atobatele (2023, pp. 860-861) stated that larger markets, measured by GDP or population, provide investors with greater opportunities for sales and efficiency gains, making them more attractive destinations for foreign capital. This view is consistent with Morisset (2000, pp. 1-3, 18), who found that in sub-Saharan Africa market size had a significant positive effect on FDI inflows with larger economies consistently attracting more investment. He further states that there was almost perfect positive correlation between FDI inflows and GDP in 29 African countries between the years 1996 and 1997. Together, these studies indicate that multinational enterprises perceive larger markets as scale economies, sustained demand, and reinvestment potential.

Therefore, it can be stated that market size and GDP are not merely an abstract economic measure but a concrete signal of scale, purchasing power, and long-term growth opportunities. Evidence from South Asia, the Western Balkans, and Africa demonstrates that market size and GDP repeatedly emerge as central predictors of FDI. This reinforces the argument that market size is one of the most straightforward explanations for distribution of FDI inflows.

3.2 Labour cost

Labour costs have been considered traditional determinate of FDI. In all simplicity, labour cost affects FDI decision, because if it is cheaper to employ people in one country compared to another, in the cheaper country production costs fall and profits rise. For example, many low-wage countries like Mexico or China have historically drawn manufacturing plants. The availability of relatively cheap labour in Mexico has long supported the manufacturing developments of U.S. firms (Torres & Jayaskankar, 2023). Tseng and Rodlauer (2003) noted that China's rapid rise as a global manufacturing hub was strongly linked to its low wage levels in the 1990s and early 2000s. In 1998, almost 60 percent of

contracted FDI in China was destined to manufacturing products such as textiles, clothing and furniture, which are all considered to be labour intensive (Figure 1). This can be seen as proof that multinational enterprises saw cheap labour as one of positive determinants for foreign direct investments. These examples confirm the straightforward logic that cost savings in labour can be a powerful magnet for efficiency-seeking investment, especially in labour intensive industries (Tseng & Rodlauer, 2003).

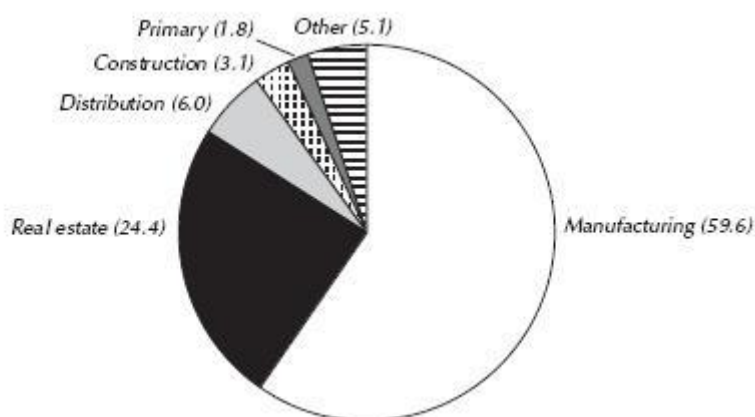


Figure 1. FDI inflows to China by Sectors, 1998 (Tseng and Rodlauer, 2003).

Nevertheless, labour costs are rarely decisive on their own. What matters is how they interact with other conditions that either amplify or weaken their effect. Bellak, Leibrecht, and Riedl (2008, pp. 23-24) point out that the conventional assessment of just labour cost is inadequate. They argue that investors evaluate the overall labour value, citing productivity as important factor for investment decisions.

Pavlinek (2015) provided a visible example of other conditions interacting with labour cost, which can be seen when inspecting the manufacturing of automotives in Central and Eastern European countries (CEE). Since the 1990s, countries such as Poland, Hungary, Czech Republic and Slovakia have been major recipients of FDI in automotives (Figure 2). This was happening in part because the wage levels in Central and Eastern Europe were significantly lower than those in Germany, France, or in the Nordics. This wage gap gave them a competitive advantage for manufacturing investment. Though, Pavlinek

(2015, pp. 212, 237) importantly notes that these inflows were only possible because lower wages were paired with geographic proximity to affluent Western European markets and European Union membership. These factors together established environment where investors were reassured about the long-term stability of the host country, that together created attracting environment for FDI.

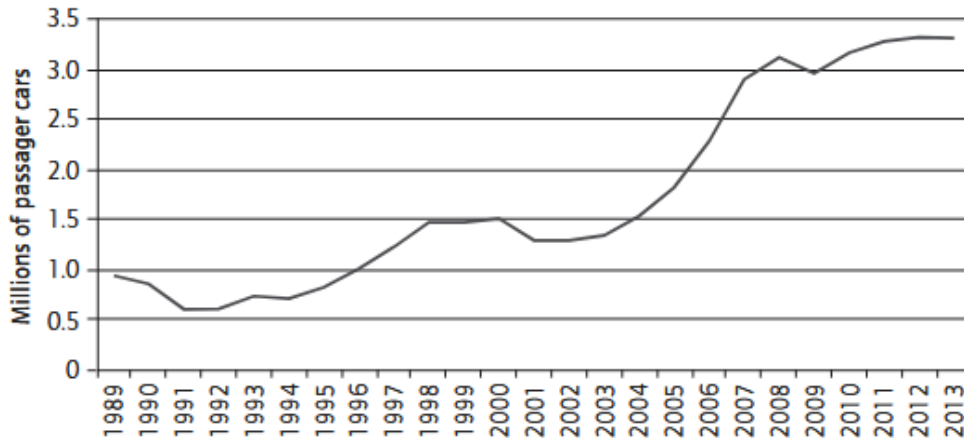


Figure 2. Car production in CCE countries 1989-2013 (Pavlinek, 2015, p. 212).

Bevan and Estrin (2004, pp. 3, 6) make a similar point when analysing transition economies noting that labour cost advantages mattered most when combined with European Union integration, which reduce country risk and signal reliability. But this also shows the configurational nature of labour costs. A country with cheap labour but weak institutions, poor infrastructure, or unstable politics may not benefit from cost advantages (Bevan & Estrin, 2004, pp. 13-14). Evidence from other regions illustrates this. Many developing countries have low wages yet attract relatively little FDI because risks outweigh labour cost savings. (Busse & Hefeker, 2007, pp. 1-3)

Interestingly, since the shifting geopolitical uncertainty in Europe, investors may have to factor in geopolitical uncertainty even more alongside side of cost advantages and other usual FDI determinants. Proximity to the conflict may have increased the perceived risk profile of countries in the eastern part of European Union, meaning that lower wages alone may no longer be sufficient to attract new inflows. At the same time, higher-wage

EU countries further from the conflict zone, such as Spain or Ireland, may appear relatively safer despite their cost disadvantage.

3.3 Democracy and regulatory certainty

As mentioned in earlier chapter, signal of reliability is one of the factors that some investors consider most relevant. Ali, Fiess and MacDonald (2010, p. 203) suggest that functional democracy, or at least strong democratic institutions, often signals predictability, and stability. Which are conditions that multinational firms value because they lower the risk of sudden policy shifts or for example corruption. Democracy also matters because it shapes transparency and accountability. Logically, investors are more confident in environments where policymaking is open and predictable, where independent courts can enforce contracts, and where citizens and media can hold governments to account (Jensen, 2003, pp. 594-595).

Busse and Hefeker (2007, pp. 9-10, 19) studied 83 developing countries and found that political stability, democratic accountability, and the rule of law were all linked to higher FDI inflows. In countries where these guarantees are weak, even attractive market or cost conditions may not be enough to compensate for the risk of the investment. This point is reinforced by Jensen (2003, p. 594), who underlines as well that democratic governments work as mechanisms that decrease political risks. Therefore, countries that have democratic governments have been considered as credible in international agreements. From the perspective of multinational enterprises, FDI is not a short-term gamble but a long-term commitment of capital, technology, and know-how. If a host country lacks institutional guarantees, the risk of sudden policy reversals, arbitrary taxation, or even outright expropriation rises, which discourages foreign direct investment inflows.

The risks of weak democratic institutions can be seen in many different forms. One valid and visible of these forms is the country's leadership. Leadership of country might be shaking if elections are invalid or the chosen political leader is polarizing figure. Examples of such leadership risk materializing can be seen in Venezuela, which holds world's

biggest oil reserves, but still was unavailable to attract FDI, because of its overall weak institutions and policy instability (Monaldi et al., 2021, pp. 1-2). Zimbabwe offers a similar lesson where weak property rights, manipulated elections, and arbitrary state actions made investors unwilling to commit capital, causing direct foreign investment to drop by 99% between the years 1998 and 2001 (Richardson, 2004, pp. 1-3 & 13.). Russia illustrates democracy weakness in different ways. Although it has attracted foreign capital during commodity booms, the absence of strong democratic institutions, combined with existence of true party system causes severe uncertainty (Stiftung, 2024, pp. 9-12). These examples demonstrate that while democracy is not the only factor shaping FDI inflows, its absence magnifies risk to the point that even favourable economic fundamentals may no longer be sufficient to attract it.

3.4 Geopolitical risk

According to Lu and Liu (2024, pp. 383-385) geopolitics today covers a wide range of issues and research perspectives, but the concept of geopolitical risk is still often understood in a narrow sense. It is usually tied to geography and refers to territorial disputes, wars, conflicts, or terrorism between rival states. Yet many modern forms of geopolitical tension do not fit neatly into these traditional categories, highlighted in (Table 2). Lu and Liu (2024, pp. 383-385) further continue to explain as the global competition has expanded beyond the military sphere, new types of geopolitical risk have emerged that are less visible but increasingly influential. These include tensions in trade, technology, supply chains, and international cooperation. For example, although the United States and China are geographically distant and do not have territorial disputes, their trade and technology conflicts have become major sources of geopolitical uncertainty.

The question of how risk affects foreign direct investment has attracted steady attention across several fields. Lu and Liu (2024) further note that earlier research tended to examine specific types of political or geopolitical risk, such as wars, terrorist attacks, or government intervention, and their direct consequences for investments. In these traditional models, risk reduces expected returns by raising costs and creating inefficiencies,

which discourages capital inflows. For example, armed conflicts and terrorism can destroy physical capital, disrupt production, and drive foreign investors to safer locations. In some cases, host governments have also seized or frozen foreign-owned assets, as seen during the Ukraine-Russian war in 2022, highlighting how political uncertainty can directly undermine investor confidence. (Lu & Liu, 2024 p. 388)

Table 2. Explanations of geopolitical risk (Lu and Liu, 2024, p. 387).

Groups	Category	Terms for text-searching	Explanations	Examples
Explicit GPR	War and Military	war, military, aggression, espionage, weapon, repression, violence, blockade, occupy, occupation, artillery and tanks, munitions, ceasefire, mass violence, mass expulsion, mass killings, ethnic cleansing	This sub-type is mainly about traditionally deemed geopolitical risk related to territorial disputes or military conflicts.	Examples include the Iraq War, the Arab Spring, the Russia-Ukraine conflicts in 2022.
		Implicit GPR	Cooperation and Communication	relations, international, diplomatic, meeting, negotiation, dispute, mediation
Policy and Reform	reform, change in leadership, change in institutions, regime, dissent, policy change, political, parties, politicians		This sub-type is associated with the stability of a nation's domestic political environment, which could result in changing strategies towards foreign affairs and impede the normal economic activities.	The Crimean Conflicts in 2014 were sparked soon after the 2014 Ukraine presidential election.
Crime and Justice	assassinate, torture, assault, police, armed force, bombing, rally opposition, complain, lawsuit against, guilty, liable, curfew, forces, emergency, martial law, arrest, detain, legal action, attack, abduct, hijack, hostage		This sub-type mostly refers to social safety and security issues for foreign investors in host countries.	Examples include the Canada-China dispute over the extradition case of Meng Wanzhou.
	Economy and Property	corruption, property, economic, economy	This sub-type mostly refers to property safety issues since geopolitical risk sometimes threatens the safety of legal property in foreign countries.	Since the Ukraine-Russia Crisis in 2022, some foreign assets have been "seized" by the Russia and Western countries.

Caldara and Iacoviello (2022 pp. 1194-1195) highlight that in context of foreign direct investment, understanding geopolitical risk has emerged as a major factor shaping global investment decisions. As it seen as an event with potentially negative or unfavourable consequences for an economy. They further explain that research consistently shows that when political tensions escalate (i.e., when geopolitical risk materializes), investors tend to postpone or cancel projects. This pattern is driven by uncertainty regarding future policies and security conditions. Logically, this impacts on the foreign direct investment's decisions, which typically involve long-term commitments, physical assets, and high sunk costs.

Past evidence from regional conflicts shows clearly how instability discourages foreign direct investment. Brada, Kutan, and Yigit (2005, pp. 2-5, 27-29) concluded that in both Central Europe and the Balkans, regional conflicts did cause significant FDI inflows impairments. Later research by Estrin and Uvalic (2013, pp. 11-15, 37-39) confirmed that the lingering effects of war (i.e. materialized geopolitical risk) effected FDI inflows in the Western Balkans. A similar pattern followed Russia's annexation of Crimea in 2014. According to OECD report Russians inward FDI peaked in 2013 and started declining 2014 on-wards (OECD, 2022, p. 14). Same time Russians GDP growth and oil prices started to plummet (Figure 3). These examples underline that during periods of heightened geopolitical uncertainty, countries located near active or recent conflict zones tend to experience a decline in investment and overall economic development, regardless of their underlying economic fundamentals.

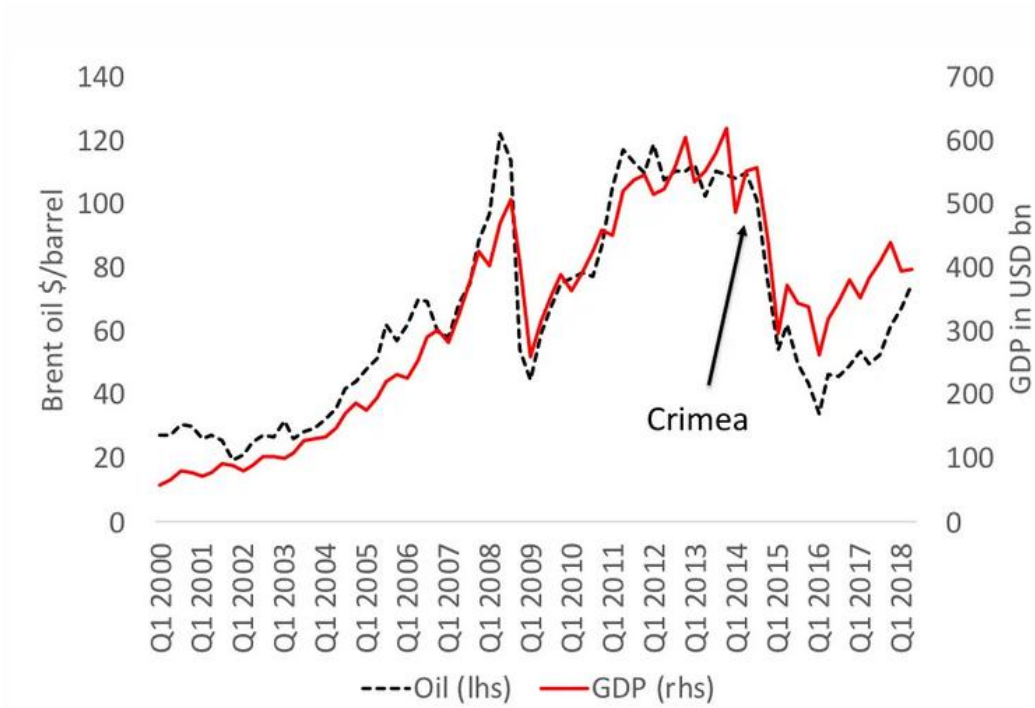


Figure 3. Russian GDP and oil price development (Becker, 2019).

3.4.1 Geopolitical risk index

Global economies are more interconnected than ever before and so too is our awareness of global tensions. Caldara and Iacoviello (2022, pp. 1194-1196) introduced the Geopolitical Risk Index (GPR), which measures global tensions based on the frequency of newspaper references to wars, terrorist threats, and diplomatic crises. The index tracks global trends back to the 1980s and shows clear spikes around major events like the Gulf War, the 9/11 attacks, the Iraq invasion and the annexation of Crimea in 2014, and most recently, the Russian invasion of Ukraine in 2022 (Figure 4). Caldara and Iacoviello (2022, pp. 1194-1196) further explain that GPR index is valuable because it translates complex political uncertainty into a single, comparable number that economists and policymakers use to track how global risk perception changes over time.

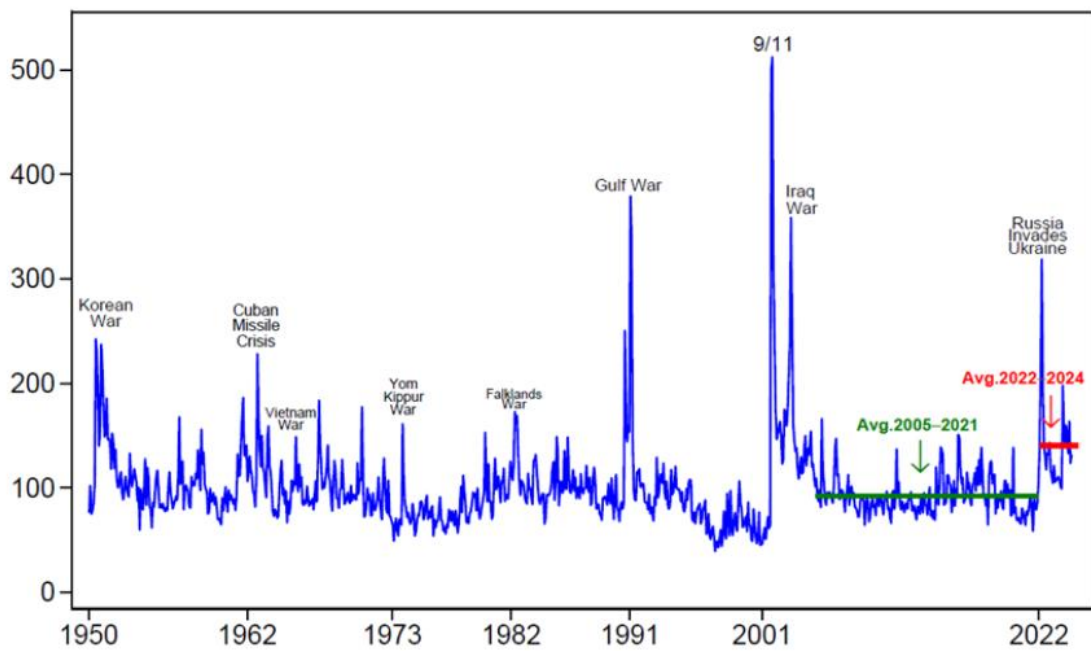


Figure 4. GRP index from 1950 to 2024 (Iacoviello, 2024, p. 2).

Caldara and Iacoviello (2022, pp. 1223-1224) found that higher geopolitical risk is consistently followed by lower levels of foreign direct investment, weaker trade flows, and reduced business confidence. It seems that investors respond to these spikes by holding back on long-term commitments and shifting capital to safer regions. While this index provides valuable insight into how geopolitical events can influence economic activity and investment behaviour, it is not used in this study. The main reason is that the index does not include data for all European Union countries, and its design focuses on global rather than regional or country-specific risk levels, making it unsuitable for this context.

3.4.2 Finland and changing geopolitical environment

This section focuses on Finland as a case example within the broader European Union context. As one of the European Union member countries sharing a direct border with Russia, Finland provides a particularly relevant case for examining how proximity to geopolitical uncertainty influences changes in a country's risk profile and the foreign direct investment (FDI) dynamics.

Finland is considered a small, open economy that covers an area of more than 338,000 square kilometers in Northern Europe. The country shares borders with Sweden in the west, Norway in the north and most notably 1,340-kilometre border with Russia in the east. The Baltic Sea surround Finland's south and west coastline. The population of Finland in the year of 2024 were 5 635 971 million people (Statistics Finland, n.d.). The country has parliamentary democracy and a member of the European Union (since January 1995) and the euro area. Finland has benefited from political stability, transparent governance, and a high level of institutional trust, all factors that traditionally make country an attractive destination for foreign investors (Bank of Finland Bulletin, 2001 p. 46). More so, Finland's strengths lie in its skilled workforce, advanced infrastructure, and strong innovation system, which are reflected in global competitiveness rankings (World Economic Forum, 2019). Finland relies on international trade and foreign investment, which makes the country vulnerable for geopolitical risks.

Finland's location at the northeastern edge of the European Union places it closer to Russia than most other EU member countries. This geographic proximity has historically shaped Finland's trade and investment relations. After Russia's full-scale invasion of Ukraine in 2022, Finland's security environment changed dramatically (Figure 5).

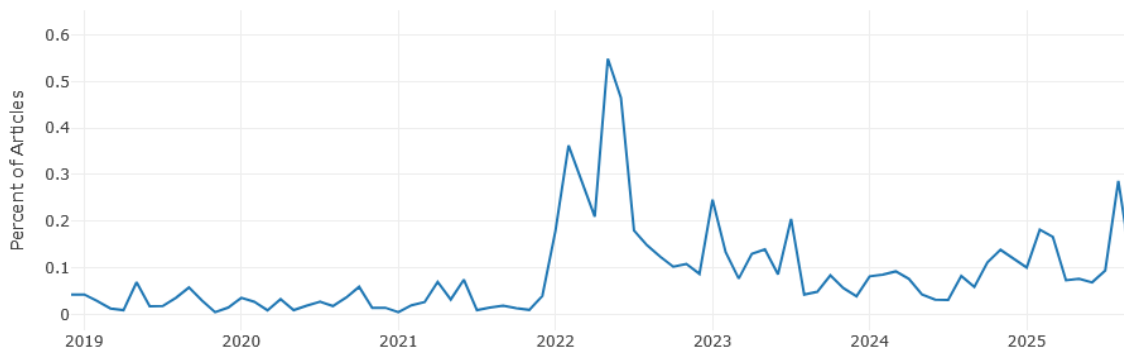


Figure 5. Finland's Geopolitical Risk Index between 2019-2025 (Penn et al., n.d.).

Ahoniemi and Rannikko (2025) observed that the war disrupted trade in energy and logistics especially to Russia (Figure 6) and raised concerns about regional stability. While Finland's institutions remained strong, the perception of increased geopolitical risk

affected how international investors viewed the Finland's county risk. In response to the changing environment, Finland accelerated its efforts to strengthen security cooperation most notably by joining NATO in 2023. The country's NATO accession marked a historic shift in its foreign policy and sent a strong signal of stability and commitment to collective security.

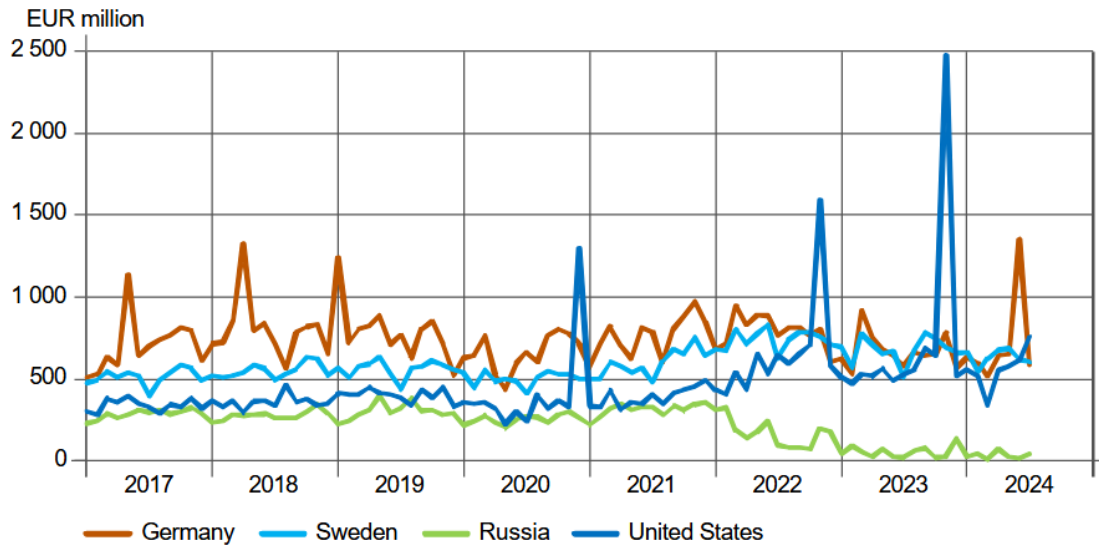


Figure 6. Finnish exports between 2017-2024 (Finnish customs, 2024).

4 Methodology

This chapter details the three-value fuzzy-set qualitative comparative analysis (fsQCA) methodology used in this study. The goal is to address the method's key principles and its components in relation to the study's objectives. The chapters will discuss the foundation of QCA and its applicability, followed by an examination of its characteristics. The purpose of this discussion is to gain a clear understanding of the analysis method's theory and applicability, considering the objectives of this study.

4.1 Qualitative Comparative Analysis

Qualitative comparative analysis (QCA) was first introduced by American social scientist Charles Ragin in 1987. Since its introduction, many different authors have improved QCA, which has led to a better applicability of it on wide range of research. Today, QCA is seen both as a general research method and as an analytical tool that works well for case-oriented studies (Schneider & Wagemann, 2010, pp. 2-3).

Schneider and Wagemann (2012 pp. 13-14) introduce the two main variants of QCA, which are crisp-set (csQCA) and fuzzy-set (fsQCA). The difference between these variants lies in the type of set they use. In csQCA, the cases are classified in a straightforward way: they either belong to a set, or they don't. Their so-called membership score is binary, either 1 (a member) or 0 (not a member). In fsQCA, which is used in this study, the membership is expressed in degrees rather than absolutes. Schneider and Wagemann (2012 pp. 13-14) continue to explain that a case doesn't have to be fully in or fully out of a set, it can also be a partial member. Membership scores range between 0 and 1, allowing for more nuance. For example, a country with a fuzzy-set score of 0.8 in the set of democracies can be considered more democratic country, though it doesn't fully meet all the criteria for complete democracy. This kind of gradation is particularly useful in research topics, where the concepts are not purely black or white. So, in practice, QCA is characterized by a set-theoretical approach, where cases are assigned to a set based on how they meet selected conditions and this selection is made by using membership scores.

These scores indicate whether cases belong entirely, partially or not at all to a set. This process reveals which specific combinations of conditions lead to a particular outcome, which is why it is useful method in this research.

Schneider and Wagemann (2010, pp. 2-3) further explain that QCA research isn't a straight line. It includes collecting data, building your model, picking your cases, and then often require go back and forth to rethink or adjust things along the way. That might mean adding or removing cases, changing how you've coded something, or even redefining what certain conditions mean. This flexible back and forth process comes from QCA's qualitative roots, where it is normal to refine your setup as you learn more from the data. In contrast, in traditional quantitative research, you're expected to set everything in stone before you start.

The other side of QCA is its role as an analytical method, which begins after you've selected your cases and measured all your conditions and outcomes. At this stage, the goal is to look for real patterns (or in this case, configurations) in the data, usually with the help of software (Schneider & Wagemann, 2010, pp. 2-3).

4.2 Fuzzy-set QCA

As discussed in last chapter, fuzzy sets allow membership scores to range continuously between 0 and 1. This means cases can be partially included in a set. Rihoux and Ragin (2009, pp. 88-91) further explains that score of 1 represents full membership in a set, while scores close to 1 (such as 0.8 or 0.9) indicate strong, but not complete membership. The value of 0.5 represents the crossover point, where it's unclear whether a case should be seen as part of the set or not. In other words, the case sits right on the border. This varies depending on the research, but it could mean that it's equally reasonable to say it's "in" or "out." Scores below 0.5 but above 0 (for example, 0.2 or 0.3) suggest that a case is more "out" than "in", though it still shows some weak association. A score of 0 means full non-membership (out). Importantly, fuzzy scores do not merely rank cases against one another instead, it expresses how strongly each case fits within a

theoretically defined concept, which is defined by setting calibration anchors (Rihoux & Ragin, 2009, pp. 88-91). Calibration plays important role in fsQCA, and it will be discussed later in this chapter

4.3 Calibration of fuzzy-set

The process of setting memberships scores in fuzzy-set QCA based on the combination of theoretical knowledge and empirical evidence is so called calibration. Schneider and Wagemann (2012, p. 32) explain that calibration process should be transparent, and the sets should reflect what they represent. Use of knowledge from external data, obvious facts and some generally accepted notions, especially in social sciences are accepted. They further continue that in some cases there might be knowledge that researchers have accumulated elsewhere, which can be used if extensive research on the matter has been conducted.

Schneider and Wagemann (2012, p. 32) emphasize that in order to perform analytically effective and meaningful calibration, several elements must be carefully defined.

- a) clearly identifying the population of cases to be studied
- b) precisely defining all key concepts used in the analysis, including both the conditions and the outcome
- c) deciding where to place the crossover point that represents maximum uncertainty between membership and non-membership
- d) determining what is the definition of full membership
- e) specifying how to grade memberships between anchors

Schneider & Wagemann (2012, p. 35) further point out that in some studies case knowledge can be accepted as a good calibration practice, as long as the justification is clear and it explains why specific cases are assigned to certain membership. This approach makes the rationale behind the calibration decisions transparent to the reader, allowing them to critically assess and form their own judgment about the choices made.

Ragin (2014, p. 24) also importantly notes that calibration should be based on an understanding of what the numerical values represent. He illustrates this by using simple examples of water freezing at 0 degrees and boiling at 100 degrees, which provides clear and meaningful anchor points for calibration. In the end, it is the responsibility of researchers to find valid rules for assigning the membership values to the cases.

4.4 Truth table and Boolean minimization

According to Ragin (2014) truth table is the basis of all QCA analyses. It provides a direct way to examine the different types of cases within a dataset. It lists all possible combinations of conditions that may influence the outcome and treats each combination as a distinct type of case. Cases that share the same configuration of causal conditions are grouped together, allowing researchers to see whether they also share the same outcome.

Ragin (2014, pp. 87-89) further explains that the truth table (Table 3) will have as many rows as there are logically possible combinations of value, which depend on the number of conditions. Each logical combination of values on the independent conditions is represented as one row of the truth table. Then each row is given an outcome value either 1 or 0, based on the results of the cases that share that particular combination of conditions. In other words, cases with the same configuration of independent conditions are grouped together, and their common outcome determines the output value for that row. The truth table therefore provides a concise summary of both the different combinations of causal conditions (independent variables) and their corresponding outcomes (the dependent variable).

Table 3. Example of truth table (Ragin, 2014, p. 90).

Conditions			Regime Failure	Number of instances
A	B	C	F	
0	0	0	0	9
1	0	0	1	2
0	1	0	1	3

0	0	1	1	1
1	1	0	1	2
1	0	1	1	1
0	1	1	1	1
1	1	1	1	3

A = Conflict between older and younger military officers

B = Death of a powerful dictator

C = CIA dissatisfaction with the regime

After truth table is ready, Boolean minimization is conducted to simplify combinations of causal conditions into more concise expressions that still explain the outcome. It identifies the essential factors by removing redundant or unnecessary conditions from the truth table, allowing to uncover the simplest causal patterns behind the results. In practice, Boolean minimization reduces multiple configurations that lead to the same outcome into a single, more general formula, highlighting the core combinations of conditions responsible for that outcome (Legewie, 2013; Duşa, 2025, p. 179). Some of the important definitions of fsQCA analysis are presented in (Table 4).

Table 4. Definition of important concepts in FSQCA (Liu et al., 2015, p. 74).

Concept	Definition
Configuration	A logical combination of causal conditions
Frequency	The number of cases for which a configuration achieves a membership value higher than 0.5
Consistency	The extent to which a given combination is a sufficient condition for the outcome
Complex solution	Solutions obtained by simplifying, through logical operations, the configurations with sufficient frequency and consistency
Parsimonious solution	Solutions obtained by simplifying the complex solutions through use of information from the combinations dropped in the frequency test
Intermediate solution	Solutions obtained from the complex solutions via utilization of substantive knowledge in the form of the presence or absence of some causal conditions
Core conditions	Causal conditions that appear in both the parsimonious and intermediate solutions
Peripheral conditions	Causal conditions that appear in the intermediate solutions, but not in the parsimonious solutions

Solution coverage	The proportion of cases (in terms of fuzzy membership value) that can be described by at least one configuration from a solution set
Raw coverage	The proportion of cases (in terms of fuzzy membership value) that can be described by the configuration
Unique coverage	The proportion of cases (in terms of fuzzy membership value) that can be described by a configuration appearing in a solution set but cannot be described by any other configuration from the set

5 Empirical study

This chapter lays out the empirical phase of the research. Each stage of the research is reviewed and explained in detail. The chapter begins with a review of the raw data collection phase, detailing the specific data gathered and the methods used to analyse the data. This is followed by a justification of the selected variables. The chapter then transitions to the qualitative comparative analysis (QCA), where the various stages of the analysis are discussed in detail. The QCA results are analysed and compared in two parts, pre-war period (2019-2021) and post-war period (2022-2024). The aim is to identify how configurations of foreign direct investment inflows have shifted between the pre-war and post-war periods, and how proximity to Russia may have played a role in it. In the end, the results of Finland are examined to highlight how geopolitical uncertainty has affected its FDI performance in the context of the broader QCA results. The analytical process for this study was executed by using RStudio software.

5.1 Data collection and analysis

This study is based on secondary quantitative data covering all current 27 member countries of the European Union. The time frame was chosen to capture the years 2019-2024, which allows for a comparison between the pre-war period (2019-2021) and the post-war period (2022-2024). This division aligns with the onset of Russia's full-scale invasion of Ukraine in early 2022, which represents a major geopolitical turning point in Europe.

All data was collected from publicly available institutional databases to ensure transparency and reproducibility. The main sources were UN Trade and Development (UNCTAD), Eurostat (European statistics), and the Varieties of Democracy (V-Dem) database. Each of these sources is recognized for consistent long-term data coverage, which makes them suitable for comparative research.

The key concepts underlying this analysis are summarized in the (Table 5), providing conditions definitions and corresponding indicators. A more detailed discussion of how data were applied and calibrated in the analysis is presented later in this chapter.

Table 5. Definition of key concepts.

Concept	Definition	Measurement
Foreign Direct Investment inflow (FDI)	The total amount of foreign capital invested in a country, reflecting its attractiveness to international investors	FDI inflows are expressed as a percentage of the country's median GDP. For example, Austria's pre-war FDI median was 4,303.6 million, and its median GDP was 395,706.8 million. Dividing FDI by GDP and multiplying by 100 yields the FDI inflows as a percentage of GDP 1.09%. The results are shown in (Table 7).
Market size (GDP)	The overall level of economic activity and purchasing power within a country	GDP are expressed using the country median in pre- and post-war periods. For example, Austria's pre-war GDP for 2019-2021 was 395,706.8, 380,317.9 and 406,232.1 million, with median of 395,706.8 million. Results visible in (Table 7).
Democracy index	The extent of democratic governance and political stability in a country	A similar calculation as in GDP was applied to the Democracy Index, using the country median for the relevant periods.
Hourly labour costs	The monetary cost of employing labour per hour	A similar calculation as in GDP was applied to the hourly labour costs, using the country median for the relevant periods.

Proximity to Russia	The degree of exposure to geopolitical risk based on geographical closeness to Russia, divided in 3 categories.	The proximity to Russia was determined based on researcher knowledge and regional context. Countries sharing a direct border with Russia were coded as “high,” those in Northern, Central, or Eastern Europe as “moderate,” and those in Western or Southern Europe as “low.” This approach reflects an informed assessment rather than a purely quantitative measure. A more detailed explanation is provided in chapter 5.3.1.
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5.2 Outcome variable: Foreign Direct Investment Inflows

The outcome variable in this study is foreign direct investment inflows. The data was obtained from UN Trade and Development (UNCTAD) database. The original data was reported in millions of dollars, but all financial figures, originally in U.S. Dollars (USD), were converted to Euros (EUR) to maintain consistency and internal balance throughout the report. The conversion process was carried out using European Central Bank (ECB) annual average exchange rates for the used periods. The FDI inflows were grouped into two timeframes, pre-war (2019-2021) and post-war (2022-2024) and the median value for each country was calculated within these periods.

As we stated earlier, FDI refers to cross-border investments where an investor holds at least 10 percent of equity in a foreign enterprise, implying a long-term interest and significant influence. This indicator reflects the overall attractiveness of each country to foreign investors. Because the absolute volume of foreign direct investment inflows varies widely across European Union, direct comparisons between countries of different economic sizes would be misleading. For instance, comparing Finland and the Netherlands based on total inflow values alone would not account for the much larger scale of the Dutch economy. To address this, FDI inflows were normalized by dividing each

country's FDI inflow median by country's median gross domestic product (GDP), within these time periods of (2019-2021) and (2022-2024). This conversion produces a relative measure of FDI as a share of GDP, which reflects the intensity of foreign investment relative to the size of the country's economy.

5.3 Conditions

5.3.1 Proximity to Russia

Geographical proximity to Russia (geopolitical risk) may represent a relevant geopolitical factor that may influence multinational enterprises foreign investment decision within the European Union countries. Countries closer to Russia could be exposed to security uncertainty, energy dependency, and political uncertainty arising from the war in Ukraine, which may cause broader regional instability. To define this condition in practice, I created a three-level categorical condition (Table 6), that divided European Union countries depending on their proximity to Russia.

Table 6. Calibration of proximity.

Membership score	Countries	Definition
0.90	Finland, Estonia, Latvia, Lithuania, Poland	Shares a direct land border with Russia: Countries that physically border Russia, representing the highest level of proximity to the conflict zone.
0.68	Sweden, Czech Republic, Slovakia, Hungary, Romania, Bulgaria, Croatia, Slovenia, Austria	Located in Northern, Central, or Eastern Europe without a direct border with Russia: Countries that do not share a border with Russia, representing moderate proximity to the conflict zone.
0	Germany, France, Belgium, Netherlands, Luxembourg, Ireland, Denmark, Italy, Spain, Greece, Portugal, Cyprus, Malta	Located in Western or Southern Europe: Countries in these regions representing the lowest proximity to the conflict zone.

Importantly, for the purposes of this study, the Kaliningrad region (Russian exclave situated between Poland and Lithuania) is considered part of Russia's land border when determining proximity. Also, after consideration, Sweden was added to moderate proximity category, as the Baltic Sea, which surrounds Sweden, have seen increase geopolitical uncertainty in the past years.

5.3.2 Democracy index

The democracy index from the Varieties of Democracy (V-Dem) is used to capture the quality and functioning of democratic institutions across EU member states. The index ranges from 0 to 1, where higher values indicate stronger democratic performance. V-Dem was selected as the data source because it offers comprehensive, annually updated, and cross-nationally comparable measurement of democracy covering all European Union countries up to 2024. The dataset is widely recognized, as it combines multiple indicators to form composite democracy scores based on expert assessments.

Democracy is included in this study as a key institutional condition influencing foreign direct investment inflows. Prior empirical literature suggests that higher levels of democracy and institutional quality are associated with greater investor confidence, lower political risk, and more predictable business environments, all of which promote long-term investment decisions. Conversely, lower democratic quality or institutional uncertainty may increase perceived risk and discourage FDI. Democracy indexes were also grouped into two timeframes, pre-war (2019-2021) and post-war (2022-2024) and the median value for each country was calculated within these periods.

5.3.3 Market size (GDP)

Market size is represented by gross domestic product (GDP), which was collected from Eurostat. GDP serves both the size of the domestic market and the purchasing power available to firms operating within it. Larger markets typically attract market-seeking FDI, as they offer greater sales potential and opportunities for economies of scale. GDP were

also grouped into two timeframes, pre-war (2019-2021) and post-war (2022-2024) and the median value for each country was calculated within these periods.

5.3.4 Hourly cost of labour

Labour costs have long been recognized as a traditional determinant of foreign direct investment. In simple terms, lower labour costs make a country more attractive to investors, as employing workers becomes less expensive, thereby reducing overall production costs and increasing profit margins. This relationship is particularly relevant for efficiency-seeking FDI, where multinational firms seek to optimize cost structures by locating operations in countries offering competitive wage levels. As noted by Tseng and Rodlauer (2003), cost savings on labour can serve as a powerful incentive for investment.

In this study, labour cost data were obtained from two different Eurostat sources. This approach was necessary because Eurostat publishes detailed labour cost data every four years, while the values for the intervening years are provisional estimates. From the perspective of this study, this has no negative material effect on the results.

The data analysis focuses on labour costs within the business economy. The subset excludes sectors such as public administration, defense, education, and agriculture (NACE sections A and O), which are either publicly funded or non-market oriented. The business economy represents a subset that private sector is more likely to operate in. By using this measure, the study captures differences in labour cost structures across EU member countries that may influence FDI attraction. The hourly labour cost was also grouped into two timeframes, pre-war (2019-2021) and post-war (2022-2024) and the median value for each country was calculated within these periods. Some fuzzy membership scores containing several decimals were rounded to a shorter precision to improve readability and consistency across the dataset.

5.4 Pre-war and post-war data tables

The conditions outlined below were organized into two separate tables to reflect the two periods of analysis. (Table 7) presents the conditions collected for the pre-war period, while (Table 8) displays the conditions collected for the post-war period. These tables provide a structured overview of all the variables included in the QCA, serving as the basis for the subsequent analysis. Some numbers were rounded up to improve readability.

Table 7. Pre-war condition (2019-2021).

Country	FDI as a percentage of GDP	Democracy index (0-1)	GPD (million €)	Hourly labour costs (€)	Proximity to Russia
AUT	1,09	0,860	395706,8	36,6	0,68
BEL	1,38	0,898	479444,9	40,8	0
BGR	2,58	0,614	61912,5	6,5	0,68
CYP	50,41	0,807	23400,9	15,7	0
CZE	3,57	0,808	229406,7	14,5	0,68
DEU	1,59	0,872	3537280	37,2	0
DNK	2,33	0,917	312118,3	46,4	0
ESP	1,29	0,872	1235474	22,4	0
EST	9,47	0,898	28472,1	14,2	0,90
FIN	4,85	0,879	238518	34,8	0,90
FRA	0,77	0,867	2432206,8	39,2	0
GRC	2,37	0,789	184574,6	14,0	0
HRV	0,64	0,761	55768,6	11,2	0,68
HUN	4,01	0,468	147373,2	10,7	0,68
IRL	25,00	0,893	381728,7	31,6	0
ITA	-0,08	0,865	1804066,8	27,9	0
LTU	2,50	0,807	50264,6	10,3	0,90
LUX	33,50	0,876	64499,2	47	0
LVA	2,93	0,832	29567	11,2	0,90
MLT	11,38	0,771	14594,2	14,2	0
NLD	-13,65	0,861	829767	36,2	0
POL	2,55	0,614	538423,5	10,6	0,90
PRT	4,25	0,885	214489,9	14,3	0
ROU	2,24	0,765	224767,4	7,8	0,68
SVK	1,68	0,844	94547,5	13,6	0,68
SVN	2,65	0,754	48156,5	20,5	0,68
SWE	3,76	0,902	478106,9	40,6	0,68

Table 8. Post-war condition (2022-2024).

Country	FDI as a percentage of GDP	Democracy index (0-1)	GPD (million €)	Hourly labour costs (€)	Proximity to Russia
AUT	2.27	0,839	473226,7	40,9	0,68
BEL	-1.37	0,898	596202,7	46,9	0
BGR	4.28	0,670	94709,3	9,20	0,68
CYP	16.54	0,778	31340	18,2	0
CZE	2.75	0,869	319099,1	17,9	0,68
DEU	1.15	0,854	4219310	42,1	0
DNK	1.87	0,916	380567,4	50,2	0
ESP	2.90	0,850	1498324	23,9	0
EST	2.92	0,895	38353,4	18,3	0,90
FIN	1.98	0,865	272848	38,4	0,90
FRA	1.40	0,876	2826541,5	42,6	0
GRC	3.03	0,750	225196,9	16,6	0
HRV	4.69	0,742	78060,4	14,4	0,68
HUN	3.17	0,437	197902	13,3	0,68
IRL	-6.91	0,895	524728,8	38,4	0
ITA	1.37	0,816	2142601,7	29,3	0
LTU	4.13	0,799	73792,8	14,8	0,90
LUX	-10.54	0,874	82115,5	53,8	0
LVA	3.25	0,838	39372,4	13,8	0,90
MLT	10.77	0,778	20911,2	17,1	0
NLD	-7.13	0,843	1050133	41,4	0
POL	3.52	0,590	751931,7	14,2	0,90
PRT	4.25	0,844	267923,2	16,1	0
ROU	2.10	0,674	324368,6	10,8	0,68
SVK	1.39	0,817	123833,2	17,2	0,68
SVN	2.15	0,757	64050	26,0	0,68
SWE	4,30	0,881	547190,4	43,2	0,68

5.5 Calibration: setting membership scores

Calibration is a fundamental operation in qualitative comparative analysis. The calibration represents a transformation from raw numerical data (displayed in Table 5 and Table 6) into fuzzy set membership scores, guided by qualitative anchors that define full membership, non-membership, and the crossover point (Duşa, 2025, p. 75). In this study all

conditions were calibrated with three anchors, that represent full membership, crossover point and full non-membership value.

The calibration used in this study is based on empirical information, observable value breaks in the light of the study's objectives and a slight application of case-based knowledge. Empirically, the median values are used to identify meaningful crossover points in the raw data. While case knowledge is used to define other anchors points by considering the underlying goal of the study. For example, understanding which countries have larger economies in European Union (gross domestic product) or higher labour costs. Although this approach lies near the limits of conventional calibration guidance, it remains plausible as the decisions reflect both basic descriptive knowledge and contextual understanding of the cases. A more detailed explanation of the calibration process of each raw data sample is explained in next paragraphs.

Since there is no universally defined "normal" level of FDI inflows that could be used as benchmark for the calibration, the anchors were set based on empirical information, value breaks and case substantive knowledge. The crossover point (0.5) was set to be the median of all European Union countries percentage amount of FDI between (2019-2021), which was 2.55 percent. In order to set thresholds for full non-membership and full-membership some case-based knowledge and observer value breaks in data were applied. Knowledge that European Union typically receives substantial FDI, combined with the study goal of clearly identifying which countries attain the highest FDI levels. The threshold for full non-membership was set to capture cases with clear minimal inflows at 0.5001 percent and full membership 4.0 percent were chosen to reflect clearly substantial inflows.

Since all cases in the dataset are European Union countries, the variation in democracy levels is relatively narrow. Therefore, the calibration of the Democracy Index (ranging from 0 to 1) was adjusted to reflect this higher baseline. Full membership (1.0) was assigned to values above > 0.85, representing consolidated democracies such as Finland.

The crossover point (0.5) was set at 0.75, indicating countries with mixed democratic characteristics, and full non-membership (0.0) was set at below < 0.65 , representing cases with weaker democratic institutions.

Market size measured by gross domestic product (GDP) was reported by using raw data without any transformations, even when GDP results are highly skewed between different countries. The reason for this was, because for this analysis, we needed to recognize the countries that are considered bigger economies, according to the country's GDP amount. After consideration, full membership was defined at 1,000,000 million euros, representing larger economies. The crossover point was based on the overall European Union GDP median, which was calculated in two steps. First, the median GDP for each country over (2019–2021) was calculated. Then the overall median was calculated from these country-specific medians. This resulted in a crossover point of 224,767.4 million euros. The full non-membership was set to 100,000 million euros. With these calibrations, the results clearly capture, which countries in European union are considered the large ones (e.g. France, Germany), the middle ones (e.g. Finland, Sweden) and the smaller ones (e.g. Estonia, Malta).

Labour costs among EU member countries are highly skewed, with a small number of countries having significantly higher wage levels that distort the mean. Therefore, I chose to use the median calculation here as well, as it avoids distortion. This ensures that the crossover point of 15.7 euros represents a typical EU labour cost rather than one inflated by high-cost economies. Countries with labour costs around 15.7 euros are thus neither distinctly high- nor low-cost, while those above this threshold are clearly identified as having higher than average labour costs. This approach ensures that the calibration reflects the empirical reality of the EU labour market and defines the set membership in a transparent way. The full membership score was set 25.5 euros, and the full non-membership was set to 8 euros. These anchors were chosen to reflect substantively meaningful boundaries in the European labour market: 8.00 euros approximates lower-wage

economies in the sample, while 25.50 euro captures the upper tier of labour cost economies.

The calibration anchors for the proximity to Russia were established based on the criteria outlined in (Table 6).

The calibration values for the pre-war data are presented in (Table 9).

Table 9. Pre-war data calibration values.

Condition	Threshold full non-membership	Crossover point	Threshold full membership
<i>FDI as a percentage of GDP</i>	0.5001%	2.55%	4.0%
<i>GPD (million €)</i>	100000	224767.4	1000000
Democracy index (0-1)	0.65	0.75	0.85
Hourly labour costs (€)	8	15.7	25
Proximity to Russia	0	0.68	0.90

The calibration of post-war data followed the same methodology as applied to the pre-war dataset. For each condition, the same logical approach was used, but the crossover point anchors were set according to the post-war data from 2022-2024 (displayed in Table 7).

- Foreign direct investment: The median value of 2.75% was used as the crossover point. Other calibration anchors were set to value those used in the pre-war table calibration.

- GDP: Thresholds from the pre-war calibration were retained, with the only adjustment being the median, which was set at 272,848 million euros and used as the crossover point.
- Democracy index: Calibration followed the same procedure as in the pre-war dataset.
- Labour costs: The new median of 18.3 euros was set as the crossover point, while other calibration anchors were aligned with the post-war dataset calibration.

The calibration values for the post-war data are presented in (Table 10).

Table 10. Post-war data calibration values.

Condition	Threshold full non-membership	Crossover point	Threshold full membership
<i>FDI as a percentage of GDP</i>	0.5001%	2.75%	4.0%
<i>GPD (million €)</i>	100000	272848	1000000
Democracy index (0-1)	0.65	0.75	0.85
Hourly labour costs (€)	8	18.3	25
Proximity to Russia	0	0.68	0.90

Hence, as membership thresholds were established the raw data was calibrated into fuzzy-set values. The calibration was performed in R-studio with the QCA package, and the resulting fuzzy-set data are presented in (Table 11) and (Table 12). Important note, as some of the fuzzy set values were exactly 0.5, which can cause uncertainty in set of membership score or complicate the minimization process in fsQCA. Therefore, a minor adjustment of 0.00001 was applied to all conditions with a value of 0.5 to ensure that no cases remained exactly at the crossover point.

```
myfuzzydata$GDPC[myfuzzydata$GDPC == 0.5] <- 0.500001
```

Table 11. Pre-war fuzzy set values.

Country	GDP	PROXIMITY	DEMOCRACY	LABOUR	FDI
AUT	0.657	0.500001	0.962	0.999	0.109
BEL	0.725	0.05	0.987	1.000	0.157
BGR	0.021	0.500001	0.018	0.029	0.516
CYP	0.009	0.05	0.843	0.500	1
CZE	0.504	0.500001	0.847	0.387	0.889
DEU	1.000	0.05	0.973	0.999	0.200
DNK	0.582	0.05	0.993	1.000	0.423
ESP	0.979	0.05	0.973	0.893	0.141
EST	0.010	0.986	0.987	0.360	1
FIN	0.513	0.986	0.978	0.998	0.991
FRA	1.000	0.05	0.969	0.999	0.072
GRC	0.279	0.05	0.759	0.343	0.435
HRV	0.018	0.500001	0.580	0.152	0.060
HUN	0.139	0.500001	0.000	0.129	0.950
IRL	0.645	0.05	0.985	0.994	1
ITA	0.998	0.05	0.967	0.979	0.022
LTU	0.016	0.986	0.843	0.113	0.481
LUX	0.022	0.05	0.976	1.000	1
LVA	0.010	0.986	0.918	0.152	0.683
MLT	0.007	0.05	0.650	0.360	1
NLD	0.909	0.05	0.963	0.998	0
POL	0.767	0.986	0.018	0.125	0.501
PRT	0.440	0.05	0.982	0.369	0.969
ROU	0.500001	0.500001	0.609	0.046	0.392
SVK	0.044	0.500001	0.941	0.309	0.222
SVN	0.015	0.500001	0.529	0.820	0.549
SWE	0.724	0.500001	0.989	1.000	0.921

Table 12. Post-war fuzzy set values.

Country	GDP	PROXIMITY	DEMOCRACY	LABOUR	FDI
AUT	0.692	0.500001	0.932	1	0.349
BEL	0.787	0.05	0.987	1	0.005

BGR	0.046	0.500001	0.087	0.069	0.974
CYP	0.016	0.05	0.695	0.493	1
CZE	0.547	0.500001	0.971	0.471	0.501
DEU	1	0.05	0.955	1	0.110
DNK	0.607	0.05	0.993	1	0.240
ESP	0.993	0.05	0.950	0.921	0.590
EST	0.018	0.986	0.986	0.500001	0.601
FIN	0.500001	0.986	0.967	1	0.268
FRA	1	0.05	0.976	1	0.145
GRC	0.308	0.05	0.500001	0.381	0.657
HRV	0.035	0.500001	0.441	0.247	0.990
HUN	0.218	0.500001	0	0.193	0.727
IRL	0.735	0.05	0.986	1	0
ITA	0.999	0.05	0.875	0.992	0.140
LTU	0.033	0.986	0.809	0.269	0.963
LUX	0.037	0.05	0.975	1	0
LVA	0.018	0.986	0.930	0.216	0.766
MLT	0.013	0.05	0.695	0.415	1
NLD	0.959	0.05	0.939	1	0
POL	0.874	0.986	0.009	0.236	0.859
PRT	0.479	0.05	0.941	0.348	0.972
ROU	0.552	0.500001	0.096	0.105	0.299
SVK	0.073	0.500001	0.878	0.422	0.144
SVN	0.028	0.500001	0.551	0.967	0.312
SWE	0.752	0.500001	0.979	1	0.972

5.6 Analysis of necessity

The necessity analysis was conducted to identify whether any single condition is required for the presence or absence of high foreign direct investment inflows. (Table 13) presents the consistency (inclN), relevance (RoN), and coverage (covN) values for each condition and its negation. Meaning that, the positive necessity analysis identifies which conditions are consistently present when the outcome (high FDI inflows) is present, therefore the condition is required for the presence of the outcome. The negative necessity analysis tests whether the absence of certain conditions is consistently linked to the absence of the outcome (low FDI inflows). Legewie (2013, chapter 4.2) recommends

setting a high consistency threshold of above 0.9. He also emphasizes that it is quite uncommon for any condition to exceed this level, and if several conditions appear above the threshold at once, it may indicate that the calibration thresholds have been set incorrectly.

Table 13. Pre-war analysis of necessity.

Pre-war	Con-	Rele-	Cover-	Con-	Rele-	Cover-
	sistency	vance	age	sistency	vance	age
Condition	inclN (+)	RoN (+)	covN (+)	inclN (-)	RoN (-)	covN (-)
~GDP	0.728	0.767	0.783	0.402	0.505	0.707
GDP	0.471	0.37	0.571	0.704	0.659	0.777
~PROXIMITY	0.494	0.437	0.599	0.506	0.534	0.719
PROXIMITY	0.590	0.657	0.657	0.410	0.466	0.690
~DEMOC	0.896	0.306	0.547	0.695	0.283	0.624
DEMOC	0.598	0.896	0.889	0.537	0.958	0.966
~LABOUR	0.685	0.511	0.632	0.460	0.409	0.668
LABOUR	0.546	0.598	0.676	0.553	0.720	0.810

The (Table 13) results show that not a single factor was strictly necessary, but low democracy (~DEMOC) had the highest consistency (0.896), suggesting that several countries with weaker democratic institutions still attracted substantial investment. This likely reflects regional or strategic factors rather than a genuine preference for less democratic environments. Before the war, investors seem to be more active in countries closer to Russia and Eastern Europe, where institutional quality varied but market potential and lower costs remained appealing. Therefore, at the pre-war time proximity to Russia had no relevant stake in the necessity analysis.

Comparing the two-necessity analysis, there were some notable changes. Before the war (Table 13), only the absence of (~DEMOC) had high consistency, with 0.896 score. After the war (Table 14), ~DEMOC remained important (0.882), but the absence of (~LABOUR)

also became notable, with its consistency rising from 0.685 to 0.882. This means that in the post-war period, avoiding high labour costs (\sim LABOUR) has become just as important as lower democracy (\sim DEMOC) for attracting FDI. Again, proximity to the conflict (PROXIMITY and \sim PROXIMITY) showed low consistency, indicating it was not a necessary condition.

Table 14. Post-war analysis of necessity.

Post-war	Con- sistency	Rele- vance	Cover- age	Con- sistency	Rele- vance	Cover- age
Condition	inclN (+)	RoN (+)	covN (+)	inclN (-)	RoN (-)	covN (-)
\sim GDP	0.718	0.776	0.815	0.452	0.495	0.667
GDP	0.45	0.408	0.625	0.753	0.691	0.766
\sim PROXIMITY	0.374	0.358	0.606	0.626	0.607	0.72
PROXIMITY	0.623	0.642	0.734	0.377	0.393	0.625
\sim DEMOC	0.882	0.348	0.602	0.638	0.255	0.576
DEMOC	0.538	0.857	0.874	0.591	0.953	0.956
\sim LABOUR	0.882	0.633	0.729	0.348	0.253	0.575
LABOUR	0.419	0.531	0.678	0.711	0.914	0.922

5.7 Analysis of truth table

The truth table analysis (Table 15) identifies causal configurations that are the combinations of conditions that are sufficient for the outcome, in this case for higher foreign direct investment inflows (Legewie, 2013, chapter 3.3.). In the truth table possible configurations are displayed by “1” and absent ones with “0”. For this truth table the primary consistency threshold was set to 0.75 and PRI cut off to 0.6.

Table 15. Truth table pre-war.

GDP	PROXIM- ITY	DEMOC	LABOR	FDI	n	incl	PRI	Cases
1	1	1	0	1	2	0.919	0.8	CZE, ROU
0	0	1	1	1	2	0.892	0.83	CYP, LUX
0	1	0	0	1	2	0.875	0.635	BGR, HUN
0	1	1	1	1	1	0.873	0.773	SVN
1	1	0	0	1	1	0.845	0.382	POL
1	1	1	1	1	3	0.822	0.738	AUT, FIN, SWE
0	0	1	0	1	3	0.774	0.664	GRC, MLT, PRT
0	1	1	0	0	5	0.716	0.528	HRV, EST, LVA, LTU, SVK
1	0	1	1	0	8	0.399	0.245	BEL, DNK, FRA, DEU, IRL, ITA, NLD, ESP

The truth table (Table 15) shows several configurations with relatively high consistency ($\text{incl} > 0.80$) that led to high FDI before the war. A clear pattern is seen in countries closer to Russia (like Czechia, Romania, Bulgaria, Hungary, Slovenia, and Poland). Many of these countries had lower labour costs, making them attractive to European investors during a more stable time. Wealthier and highly democratic countries like Austria, Finland, and Sweden also did well, even with higher labour cost. Overall, the results suggest that being close to Russia was less of a risk before the war and more of an advantage for attracting investment, even if the quality of institutions was not always as high.

Comparing the two truth tables reveals clear changes in which configuration of conditions led to positive FDI outcomes. Before the war, several configurations had moderate to high consistency, but after the war (Table 16), the results became more divided, with some paths becoming stronger and others disappearing. For example, the combination $\text{GDP}=1$, $\text{PROXIMITY}=1$, $\text{DEMOC}=1$, $\text{LABOUR}=0$ included both Czechia and Romania before

the war (consistency = 0.919), but only Czechia fit this pattern afterward, with perfect consistency and PRI of 1. This means that in the post-war period, this specific set of conditions became a guaranteed recipe for a positive FDI outcome, a path now uniquely represented by CZE.

Another shift occurred for GDP=0, PROXIMITY=1, DEMOC=0, LABOUR=0, which change from two countries (Bulgaria and Hungary) to three (Bulgaria, Croatia, and Hungary) and saw its consistency rise from 0.875 to 0.946. The group of democratic countries that were not close to Russia and with low labour cost (GDP=0, PROXIMITY=0, DEMOC=1, LABOUR=0) also became stronger. The consistency increased from 0.774 to 0.906, and Greece and Malta joined Cyprus and Portugal. These changes show that countries with lower labour costs were more likely linked to positive FDI results.

It seems that the proximity to the conflict (PROXIMITY=1) stayed relevant, especially when combined countries with low democracy and low labour cost, while configurations with high labour presence generally weakened. It appears that the heightened geopolitical uncertainty within the European Union has had a greater impact on the more developed, high-income economies, leading investors to redirect their attention toward lower-cost markets.

Table 16. Truth table post-war.

GDP	PROXIMITY	DEMOC	LABOR	FDI	n	incl	PRI	Cases
1	1	1	0	1	1	1	1	CZE
0	1	0	0	1	3	0.946	0.908	BGR, HRV, HUN
0	0	1	0	1	4	0.906	0.863	CYP, GRC, MLT, PRT
0	1	1	0	1	3	0.903	0.838	LVA, LTU, SVK
1	1	0	0	1	2	0.897	0.782	POL, ROU
1	1	1	1	1	3	0.805	0.501	AUT, FIN, SWE
0	1	1	1	1	2	0.794	0.519	EST, SVN

0	0	1	1	0	1	0.648	0.459	LUX
1	0	1	1	0	8	0.385	0.155	BEL, DNK, FRA, DEU, IRL, ITA, NLD, ESP

5.8 Sufficiency analysis

In this study, the positive and negative results are based on the intermediate solution, which reflects the directional expectations established for each solution. For the positive directional expectations, GDP and democracy were expected to contribute positively to higher FDI inflows, signaling market size and institutional stability. The negative directional expectations were associated with low GDP and lower labour costs, indicating limited market potential, weaker infrastructure, and lower purchasing power. These expectations align with the study's theoretical framework, which identifies market size and democracy as key factors influencing investment decisions. Lower labour costs, by contrast, are often linked to labour-intensive forms of FDI and are unlikely to attract foreign investment on their own, as low labour costs are often accompanied by lower productivity (Bellak et al., 2008; Artige & Nicolini, 2005; Bevan & Estrin, 2004; Jensen, 2003).

The core conditions are interpreted by parsimonious solution, which simplifies the complex solution by retaining only those conditions that cannot be left out (De Diego Ruiz et al., 2023, p. 612). The conditions that are presented in both intermediate and parsimonious solution are set as a core conditions and peripheral conditions are set by conditions that are only in intermediate solution (Liu et al., 2015, pp. 71-72). This is applied to both positive and negative outcomes.

Analysis applies a consistency threshold of 0.75, which is a bit lower than commonly recommended benchmark of 0.80 (Rubinson, 2016). The frequency cut off was set 1, which specifies that a configuration must be represented by at least one case to be included in the analysis (Legewie, 2013, chapter 4.2). PRI cutoff (proportional reduction in

inconsistency) was set at 0.60, which is recommended to be set ideally not too far from raw consistency threshold (Greckhamer et al., 2018, p. 489). These thresholds reflect on the relatively small number of cases in the study (27) and were used in both pre- and post-war results.

In the pre-war positive intermediate solution (Table 17), several configurations were relevant for the positive outcome of high FDI. The three most empirically relevant solutions were chosen, with relatively high consistency (incls).

The first positive configuration (S1) represents economically strong and democratic countries (GDP, PROXIMITY, DEMOC) that were close to Russia such as Finland, Czechia and Sweden. The second configuration (S2) also involves Finland, Sweden and Slovenia highlighting the role of democratic institutions (PROXIMITY, DEMOC, LABOUR). The third configuration (S3) captures smaller but democratic economies, such as Cyprus, Luxembourg, and Slovenia, where institutional quality and labour market strength appear to compensate for smaller economic capacity (~GDP, DEMOC, LABOUR).

The N1 negative configuration (GDP, ~PROXIMITY, DEMOC) highlights economically advanced democratic countries such as Belgium, France, Germany and Italy, that are geographically distant from Russia. The second configuration (N2) reflects countries that were geographically close to Russia and had weaker democratic and cheaper labour conditions (PROXIMITY, ~DEMOC, ~LABOUR). These configurations could tell that countries' structural weaknesses were more valid than proximity itself, but the positive solution coverage of 0.090 means that these results only explain small share of the overall outcome. This could underline that in the pre-war period, several factors likely influenced FDI inflows. Economic performance, institutional quality, and broader market dynamics could have interacted with the results, meaning that investment patterns were not driven by any single dominant configuration. Worth mentioning is that the pre-war data period overlaps with COVID-19 pandemic, which caused severe shocks globally influencing economical structures and typical market fundamentals.

To summarize, in the pre-war period proximity to Russia did not play a decisive role in determining FDI inflows because, as mentioned earlier chapters, investors may have viewed Russia less as a source of risk and more as a potential advantage. The configurations leading to high FDI inflows were primarily characterized by democratic institutions (DEMOC), which often signal predictability, and stability. Like mentioned in the literature review, democracy is determinant that multinational firms value because it reduces the risk of sudden institutional risks, therefore making the environment predictable. Therefore, the configurations associated with higher foreign direct investment in pre-war period were consistent with findings reported in the literature review.

Table 17. Final solution pre-war

Condition	S1	S2	S3	N1	N2	
	Configurations leading to high FDI			Leading to low FDI		
GDP	Present	Don't care	Absent	Present	Don't care	
Proximity	Present	Present	Don't care	Absent	Present	
Democracy	Present	Present	Present	Present	Absent	
Labour	Don't care	Present	Present	Don't care	Absent	
Strong cases	FIN, CZE, SWE	FIN, SVN, SWE	CYP, LUX, SVN	BEL, DEU, DNK, ESP, FRA, ITA, NLD	BGR, POL	
Consistency (inclS)	0.820	0.862	0.910	0.772	0.718	
Raw coverage (covS)	0.179	0.275	0.428	0.600	0.208	
Unique coverage (covU)	0.026	0.032	0.032	0.538	0.146	
Solution consistency: Positive solution (S1-S3): 0.886 Negative solution (N1-N2): 0.758			Core condition (present)	Peripheral casual condition (present)	Core causal condition (absent)	Peripheral causal condition (absent)
Solution coverage: Positive solution: 0.090 Negative solution: 0.684						

The post-war (Table 18) positive intermediate solution comprised three configurations, each demonstrating relatively high consistency (incls).

In the positive configuration (S1), proximity coexisted with democracy (PROXIMITY, DEMOC), indicating that countries like Czechia, Estonia, Latvia, Lithuania and Sweden managed to sustain FDI inflows despite being geographically close to Russia. The consistency of (0.714) supports the outcome fairly well, being above the usual 0.7 threshold. The second positive (S2) configuration (PROXIMITY, ~LABOUR) represents an interesting case of countries Bulgaria, Czechia, Hungary, Croatia, Latvia, Lithuania and Poland. These countries were able to sustain FDI inflows with lower labour cost despite being close to Russia. This is supported with high consistency (0.905), which means that this configuration is very reliable to produce the outcome. These were countries that didn't represent the highest democracy nor market sizes but with lower labour cost, they were still able to attract FDI even being near Russia. The third positive (S3) configuration (DEMOC, ~LABOUR) represent countries Cyprus, Czechia, Greece, Malta, Latvia, Lithuania and Portugal with democracy and again with lower labour cost. This configuration had the highest consistency (0.922), indicating that countries displayed in this configuration of conditions almost always experienced high FDI inflows. Importantly, the unique coverage for all positive configurations was below <0.2, meaning that each configuration explained only a small share of the overall outcome.

The first negative configuration (N1) leading to low FDI had (GDP, DEMOC) presented with cases ranging from the largest economies in European union to mid-sized economies. Countries like Austria, Belgium, Germany, Denmark, Finland, France, Ireland, Italy and Netherlands were included in this configuration. With rather high consistency (0.802) and unique coverage (0.456). The second negative configuration (N2) had all three conditions (PROXIMITY, DEMOC, LABOUR) with only few countries: Slovenia, Austria, and Finland. The consistency of this configuration was at (0.734).

To summarize, in post-war period democracy can produce different outcomes depending on the broader configuration it is presented in. For example, democracy appeared in both the positive solution (S1 and S3) and the negative configurations (N1 and N2). Meaning that democracy alone did not result for higher FDI. The most notable finding is that none of the positive configurations included high labour costs. Instead, the positive configurations had labour as “don’t care” or “absent”. This clearly points out that smaller economies with lower labour cost did better in post-war period. From the point of proximity condition, we can see that there are two negative configurations that one has proximity as “don’t care” (N1) and (N2) configuration with “present” (core condition). Therefore, the role of proximity (being geographically close to Russia) was not by itself a guaranteed predictor of low FDI inflows. Though, when proximity is a core condition, it likely represents countries where proximity to Russia could have contributed to increased perceived geopolitical risk, therefore discouraging investment. But in contrast, when proximity is “don’t care” it suggests that proximity to Russia was less relevant in explain lower FDI inflows.

Table 18. Final solution post-war.

Condition	S1	S2	S3	N1	N2
Configurations leading to high FDI			Leading to low FDI		
GDP	Don't care	Don't care	Don't care	Present	Don't care
Proximity	Present	Present	Don't care	Don't care	Present
Democracy	Present	Don't care	Present	Present	Present
Labour	Don't care	Absent	Absent	Don't care	Present
Strong cases	CZE, EST, LVA, LVU, SWE	BGR, CZE, HUN, HRV, LVA, LTU, POL	CYP, CZE, GRC, MLT, LVA, LTU, PRT	AUT, BEL, DEU, DNK, FIN, FRA, IRL, ITA, NLD,	AUT, FIN, SVN
Consistency (inclS)	0.714	0.905	0.922	0.802	0.734
Raw coverage (covS)	0.393	0.405	0.415	0.629	0.296

Unique coverage (covU)	0.13	0.142	0.153	0.456	0.123
Solution consistency: Positive solution (S1-S3): 0.847 Negative solution (N1-N2): 0.768					
Solution coverage: Positive solution: 0.404 Negative solution: 0.463					
		Core condition (present)	Peripheral casual condition (present)	Core causal condition (absent)	Peripheral causal condition (absent)

When comparing the pre-war and post-war final solutions, it can be stated that in a broader European Union context, not a single condition explained higher or lower FDI inflows on its own. During pre-war period, democracy appeared in both positive and negative configurations, even though it was generally regarded as one of the most favourable determinants of FDI. In post-war period, democracy again appeared in most configurations, both positive and negative. Suggesting once again, that while it is important condition, alone it cannot attract FDI, especially in European Union context. More so, in the post-war results, the lower labour cost was often linked with higher FDI and higher labour cost with lower FDI, suggesting that labour cost became more significant driver for investors after the war. It is reasonable to assume that the new geopolitical environment within the European Union has altered how multinational investors assess various risks, such as democratic stability and proximity to the conflict. This shift even more reinforces the view that FDI flows are influenced by complex combinations elements, as stated in the literature review.

Futhermore, before the Ukraine war, proximity to Russia could be seen as a strategic advantage especially for countries like Finland, Czechia and Sweden. These countries combine access to Eastern markets with strong democratic institutions and economic stability as seen in pre-war solutions S1 and S2. After 2022, Sweden and Czechia continue to appear in positive configurations, while Finland was present only in negative ones. Suggesting that stronger institutional and economic resilience helped Sweden and Czechia offset rising security concerns.

5.9 Interpretation of Finland fsQCA results

While the fsQCA results are somewhat limited in scope, they still offer some insight of how Finland's position evolved before and after the war. Which could give understanding of how multinational firms evaluate Finland as investment destination, especially after the war.

In the pre-war solution (Table 17), Finland appeared in two positive configurations (S1 and S2), often alongside with Sweden. These groups shared features such as high GDP, high labour costs, proximity to Russia, and strong democratic systems, which together created a favourable setting for foreign investment. At that time, being near Russia was not widely seen as a major geopolitical risk. Instead, it could be viewed as an economic advantage, giving access to eastern markets while maintaining the stability of a European Union country. Finland's presence in groups where labour conditions were either unimportant (don't care) or (present) suggests that Finland's appeal for foreign direct investment was based more on strong institutions, good governance, and economic stability than on lower labour costs.

After the start of the Ukraine war (Table 18), Finland was only present in the negative configurations (N1 and N2). In the first negative configuration, Finland was placed with the large and mid-size economies such as Denmark, Belgium and France. These countries shared higher GDP, and democratic systems with relatively high consistency (0.802) and unique coverage (0.456). In this configuration proximity was set as "don't care" condition.

Another negative configuration included just handful of countries Slovenia, Finland and Austria. These shared proximity, democracy and high labour cost with lower consistency of (0.734) and unique coverage (0.123). In both negative configurations all the conditions that were present were (core conditions), meaning that the conditions were essential for the outcome.

This shift in the pre- and post-war results shows a change in how Finland's same structural factors were viewed after the war began. The results could suggest that being close to Russia became more a risk. Nonetheless, Finland's strong democratic system and European Union integration and recent NATO membership continued to support a sense of political stability, which attracted some types of investment. At the same time, greater security concerns and energy-related risks may have discouraged investors who wanted stable supply chains and less exposure to geopolitical risks.

If we look at the raw numbers in (Table 7 and Table 8), we can clearly see that FDI was much lower in the post-war period (1.98 percent of Finland median GDP) than in pre-war period (4.85 percent of Finland median GDP). Together these developments highlight that Finland's attractiveness to multinational firms is not static but evolves alongside shifts in geopolitical landscape, market expectations, and broader economic conditions. The interpretation aligns with current Finland's investment landscape where perception of increase geopolitical and higher country risk has affected investor confidence as mentioned in the literature review.

The Finland's fsQCA results show that multinational firms investment behaviour is affected by several different factors. In pre-war period Finland's strong institutions and developed economy can attract investments, especially while proximity to Russia wasn't considered a risk. In the post-war period, Finland was associated with two different configurations, one in which proximity to Russia had no effect and another in which it played a central role. This pattern suggests that proximity alone cannot fully account for lower FDI inflows. Instead, it highlights that multinational firms base their investment decisions on a broader set of factors, rather than on geographical risks alone.

To summarize, in the pre-war sufficiency analysis (S1) and (S2) configurations (GDP, PROXIMITY, DEMOC) with Finland represented economically strong, democratic countries with proximity. The second configuration similarly (PROXIMITY, DEMOC, LABOUR) represented strong economics with higher labour cost and proximity. In both positive

solutions, proximity was categorized as core condition. In the negative configurations, proximity was only in one of the negative solutions (N2) as peripheral casual condition. In the post-war final solution, the results were completely opposite. Finland is in both negative outcomes (N1) and (N2) with almost identical conditions as in pre-war time (GDP, DEMOC) and (PROXIMITY, DEMOC, LABOUR). This indicates that proximity in pre-war time didn't matter, but in post-war time the proximity to geopolitical risk was seen as factor to cause uncertainty. Though, Finland was also placed in the group of countries where proximity had no effect on the outcome of lower FDI. Nevertheless, in Finland's case, it can be argued that geographical proximity increased the country's perceived risk and, as a result, influenced the traditional determinants of FDI.

6 Conclusion

The goal of this thesis was to examine if geopolitical uncertainty affected typical determinants of foreign direct investment (FDI) inflows in the European Union countries through fuzzy set qualitative comparative analysis (fsQCA). By comparing data from before the full-scale invasion of Ukraine (2019-2021) and data from (2022-2024) after the invasion, we could understand whether the rise in geopolitical uncertainty altered foreign direct investment determinants, especially to countries closer to Russia.

The thesis tried to answer three main questions:

- How did the factors influencing FDI inflows among the 27 European Union countries change between the pre-war period (2019-2021) and the post-war period (2022-2024), particularly in relation to rising geopolitical risks?
- In what ways has proximity to Russia contributed to the decline of FDI inflows in EU countries after the full-scale invasion of Ukraine in 2022, and how does this interact with traditional determinants such as market size, labor costs, and democracy?
- How has geopolitical uncertainty affected Finland's economic position within the broader context of the QCA analysis?

This study adds to research on foreign direct investment determinants and geopolitical risk by examining how geopolitical uncertainty affects investment decisions in the European Union countries, comparing periods before and after the war. It presents data on how factors like market size, labour costs, and democracy interact with proximity to geopolitical conflict (Russia). The study also underlines how regional geopolitical risks can influence a country's appeal for investment and alter the perceived country's risk. Furthermore, it shows how fsQCA method can help identify the different configurations of conditions.

6.1 Key findings and contributions

The study hypothesized that proximity to geopolitical risk, in this case to Russia, would negatively affect foreign direct investment inflows in European Union countries, as investors tend to perceive higher geopolitical uncertainty as negative determinant for investment. This hypothesis aligns with earlier research that found robust evidence that rising geopolitical risk did indeed deter FDI and therefore influence how multinational firms make investment decisions (Bussy and Zheng, 2023, p. 11).

The results of this study indicate that in broader European Union context, the proximity to geopolitical risk (Russia) cannot alone explain the changes in the FDI inflows. While geographical proximity to Russia may have increased perceived geopolitical risk in European Union countries, it was not the sole necessary condition shaping investment behaviour. This finding is consistent with earlier research showing that FDI patterns are not driven by a single determinant, but instead result from a combination of economic, institutional, and labour market conditions. Sarker and Serieux (2023, p. 16) concluded that firm's decision to invest abroad depends not only on the firm's own strategic characteristics, but also on the host country's economic conditions, such as governance quality and institutional environment. This could suggest that investors evaluated geopolitical risk through a multidimensional lens, where geopolitical risk mattered, but in the context of this study, the overall impact was moderated in wider European Union context.

However, uniquely Finland showed a noticeable change between the two periods. Before the war, Finland's strong democratic systems, relatively high GDP, and location linked it with positive configurations attracting foreign direct investment. After the war, these similar configurations were linked to lower foreign investment. This change suggests that the concerns of the geopolitical risk became more important, which then affected how multinational firms viewed proximity to Russia and its effect to geographical security in the region. According to a recent European Central Bank analysis by Bijsterbosch et al. (2025) the Russian invasion of Ukraine has had a profound and uneven impact on European economies. Especially on those economies that are geographically

close to the conflict and their pre-war economic ties with Russia. This could partly explain the observed shift in the FDI configurations in the case of Finland.

While democratic stability continued to play an important role in attracting FDI inflows, in the post-war final solution labour cost emerged as a key factor in shaping positive FDI configurations, especially linked with smaller economies. The observation that lower labour costs configurations were linked with higher FDI inflows, while higher labour costs configurations were associated with lower inflows, could suggest that investors became more cost-sensitive in an uncertain environment. World Bank Group report by Nebe et al. (2024, p. 4-5) reported that near-shoring has materialized as rising geopolitical stress has made firms more worried about current geopolitical environments. This may explain why firms tend to direct more investment toward countries with lower labour costs. Therefore, the results of this study may reflect a broader trend where firms seek to mitigate geopolitical and economic risks such as supply chain disruptions by relocating business activities to more assured locations or nearer their home countries (Nebe et al, 2024, pp. 5-6, 8).

To conclude, FDI inflows cannot be fully explained by any single factor, as the investment environment is continuously evolving. However, it seems that geopolitical risk has emerged increasingly important in recent years, which can be seen in the firms' behaviour of relocating operations to lower cost or geographically closer economies.

6.2 Limitations

The study was constrained by limitations that influenced the results. First, the analysis did not fully account for the potential impact of the COVID-19 pandemic, which significantly disrupted global investment flows, supply chains, and economic activity between 2020 and 2022. These disruptions may have distorted the FDI patterns observed during the pre-war and early post-war periods, making it difficult to isolate the effects of geopolitical risk alone. Second, the study did not include variables such as defense spending or military readiness, which became increasingly relevant after Russia's invasion of

Ukraine. Countries closer to Russia, such as Finland, Sweden, and Poland, experienced notable shifts in security and defense policies, including rising military investments and, in the case of Finland and Sweden, accession to NATO. These developments may have stimulated or disturbed investor perceptions.

Additionally, the focus on overall EU-level configurations means that country specific developments and unique national contexts were not deeply examined. Finally, while fsQCA offers valuable insights into complex causal patterns, its reliance on cross-sectional calibration thresholds and the study limited time coverage restricts the ability to trace long-term dynamics. Future research could build on this by combining fsQCA with longitudinal or qualitative methods and incorporating new variables to better understand how geopolitical and structural factors jointly shape FDI flows in Europe.

As this study represents my first application of fsQCA, it is worth acknowledging that the learning curve associated with the method may also have contributed to some of these limitations. Despite careful attention to data handling and methodological rigor. Future analyses could test alternative model specifications to strengthen the reliability of the findings. Nonetheless, this analysis provides a valuable foundation for understanding how geopolitical risk interacts with economic and institutional factors to shape FDI flows across the European Union.

6.3 Future research

Future research could include a longer time frame and more conditions that measure political stability, defense spending, and technological development. These additions may help explain how changes in perceived country security standing and the economy affect FDI patterns. Studies that focus on individual countries or sectors could add more detail to the overall European Union findings by showing national differences. Researchers might also use other methods to check the causal relationships that were found here and see how geopolitical uncertainty change investment behaviour over time.

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