

MESTRADO
ECONOMIA E GESTÃO INTERNACIONAL

Is tension-derived military power an asset or a liability when attracting FDI?

A study of the NATO allies

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2026



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IS TENSION-DERIVED MILITARY POWER AN ASSET OR A
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Dissertation
Master in International Business

Supervised by
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2026

Acknowledgements

To my mother, my beacon and greatest friend. A piece of my heart, and forever so.

To my father, who has always pushed me to become my best possible version and has made all my dreams seem achievable.

To my boyfriend, my one and only, who has always anchored my mind through vacillation and guided my heart – now his, eternally uplifting my spirits.

To my godmother, my greatest confidant, who has been by my side in every possible manner for as long as I can remember.

To my grandparents, whose ever-proud gaze has been a nurturing light upon my path since I was a little girl.

To my dear remaining family members and closest friends – you know who you are. Thank you for rooting for me louder than any crowd ever could. Silent gestures are ever as strong as physical presence.

To my Supervisors, Professors Rui Alves and Ricardo Oliveira, who have firmly contributed to the development of my intellect and to the systematisation of my ideas into the following output.

Abstract

The rise in multipolarity, tension, and various contemporary threats globally has spurred individual and collective military spending to safeguard national sovereignty. To maintain relevance and deter external threats, long-established and cooperative international alliances, such as NATO, found the need for increasing this spending, while deploying the needed alterations to modernise and extend the scope of its defensive mechanisms. Accordingly, the alliance has set military spending as a share of GDP to a 5% threshold at The Hague Summit of 2025 to every ally – following the 2014 Wales Summit's 2%. Whether this decision may encourage or deter FDI remains a theoretical gap. Since defence spending has the potential to impact the economy, an element pivotal to foreign investment decisions, the dissertation questions whether this type of spending, by inducing economic growth, can influence inward FDI to the allies. The methodology comprises a descriptive statistics analysis, which inspects dispersion, central tendency, and Spearman correlation, followed by an econometric regression component using panel data of 31 NATO allies over the period 2014–2024 and a TWFE estimator to examine a possible connection between military spending and FDI inflows, mediated by economic growth. Military spending is lagged to account for time-sensitive implications, and a GDP growth-mediated channel aims at capturing the proposed link, controlled by country-level structural regressors. Investors appear to look for reliable and stable environments just as NATO's – in compliance with Institutional Neoliberalism, but the findings yield no statistically significant result for the hypothesised connection, as the mediation channel breaks at its first link and bootstrap confidence intervals span zero; several diagnostic tests support its robustness. Structural variables, especially economic size, appear more determinant to FDI as location advantages within Dunning's OLI Paradigm than the defensive rationale. This contrasts with evidence from co-existing analyses for developing and conflict-embedded nations.

Keywords: defence; military expenditure; Foreign Direct Investment; North Atlantic Treaty Organization.

Resumo

A ascensão da multipolaridade, tensão e diversas ameaças contemporâneas globais tem incentivado o investimento militar, individual e coletivo, em defesa da soberania nacional. Para permanecerem relevantes e dissuadirem ameaças externas, alianças internacionais duradouras e cooperativas, como a NATO, viram necessidade de aumentar esta despesa, modernizando e alargando o âmbito dos seus mecanismos defensivos. Assim, a aliança fixou, na Cimeira de Haia de 2025, uma meta de despesa militar de 5% do PIB para todos os aliados – após os 2% definidos na Cimeira de Gales de 2014. Permanece uma lacuna teórica se esta decisão poderá incentivar ou dissuadir o IDE. Dado esta despesa poder potencialmente afetar a economia, central às decisões de investimento estrangeiro, esta dissertação questiona se, ao induzir crescimento económico, a despesa militar poderá influenciar o IDE recebido pelos aliados. A metodologia compreende uma análise de estatística descritiva – dispersão, tendência central e correlação de Spearman – seguida de uma componente de regressão econométrica, com dados em painel de 31 aliados no período 2014–2024 e um estimador de efeitos fixos bidirecionais (TWFE), para examinar uma possível ligação entre despesa militar e entradas de IDE, mediada pelo crescimento económico. A despesa militar é desfasada para capturar implicações graduais e o canal mediado pelo crescimento, controlado por regressores estruturais, procura captar esta ligação. Dentro do Liberalismo Institucional, os investidores parecem procurar ambientes confiáveis e estáveis como o da NATO, mas os resultados não revelam significância estatística: o canal de mediação quebra no primeiro elo e os intervalos de confiança *bootstrap* incluem zero; os testes de diagnóstico indicam robustez. As variáveis estruturais, sobretudo a dimensão económica, revelam-se mais determinantes ao IDE – enquanto vantagem de localização do Paradigma OLI de Dunning – do que a racionalidade defensiva. Tal contrasta com as evidências para nações em desenvolvimento e marcadas por conflito.

Palavras-chave: defesa; despesa militar; Investimento Direto Estrangeiro; Organização do Tratado do Atlântico Norte.

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List of Abbreviations

ARDL	– Autoregressive Distributed Lag
ASEAN	– Association of Southeast Asian Nations
BRICS	– Brazil, Russia, India, China and South Africa
CD	– cross-sectional dependence
CI	– confidence interval
CIMIC	– Civil-military Cooperation
CSNO	– Conventional Support for Nuclear Operations
CSTO	– Collective Security Treaty Organization
EU	– European Union
FDI	– foreign direct investment
FE	– fixed effects
GDP	– gross domestic product
IAMD	– Integrated Air and Missile Defence
IEP	– Institute for Economics and Peace
IQR	– interquartile range
IR	– International Relations
M&A	– mergers and acquisitions
ME	– military expenditure
MENA	– Middle East and North Africa
MNE	– multinational enterprise
NATO	– North Atlantic Treaty Organization
NDPP	– NATO Defence Planning Process
NPG	– Nuclear Planning Group
OECD	– Organisation for Economic Co-operation and Development
OLI	– ownership, location, internalisation
OLS	– Ordinary Least Squares
pp	– percentage points
R&D	– Research and Development
RE	– random effects
SCO	– Shanghai Cooperation Organisation
SE	– standard error(s)
TWFE	– Two-way Fixed Effects

UNCTAD – United Nations Conference on Trade and Development

UNSC – United Nations Security Council

US – United States

VIF – Variance Inflation Factor

WWII – World War II

1. Introduction

The international system has undergone significant transformations in the last few years. The environment of growing conflict, causing a change in the geopolitical and economic outlook of nations, brings along new challenges that may influence states' security – and its perception, as well as the safeguard of their sovereignty. As a cohesive, long-lasting and ever-evolving alliance with great influence on international security, the North Atlantic Treaty Organization (NATO) has set the decision to increase the share of GDP spent by its allies on national military expenditure (ME) from 2 to 5% by 2035¹, during the 2025 NATO Summit that took place in The Hague (Tidey & Murray, 2025). This is a highly important topic that influences the alliance's future steps. Concurrently, as this type of spending causes a direct stir in the national economy of the allies, this decision flags pertinence on whether it spurs economic growth – a topic on which the overall literature finds no common conclusion (Alptekin & Levine, 2012; Dunne & Tian, 2013). Since developed nations attract the larger share of FDI inflows (Groh & Wich, 2012), the dynamics of FDI within the sample give relevance to its research. Although according to Institutional Neoliberalism (Keohane, 1984) international organisations are grounded on the purpose of making the international system more predictable, acting via stability mechanisms, as other key actors of the international system (Keohane & Nye, 1977), multinationals represent some of the entities that this recent decision to raise the target may affect. Their desire for instability avoidance when investing overseas (Dunning, 1993) can be deterrent to investing in the NATO allies that meet the target set by the organisation. Apart from the stability reasoning, this line of thought meets another point to consider: economic growth is deemed as determinant to incoming FDI (Dunning, 1993; Iamsiraroj & Doucouliagos, 2015), so any impact of ME upon the economic growth of NATO members might propagate into the effects that the members experience on Foreign Direct Investment (FDI) attraction and retention – making it an up-to-date topic for research in International Economics. By analysing – inter-summit – FDI patterns between the Wales Summit in 2014, where defence targets were set to reach 2% of the allies' national GDP, and the year prior to this recent The Hague Summit in 2025, where the target rose 3 pp, this research can possibly predict the implications of this NATO decision on the economic situation of its members. In this sense, a few questions follow up to this decision, regarding

¹ A sum to be spent annually, of which 3.5% must correspond to core capabilities and the remaining 1.5% to defence-related expenditures, supplements to the essential (Tian et al., 2025).

the possible effects of ME upon the national economy and its impact on investment decisions, as the latter is also a pillar to FDI location determinants within Dunning's OLI Paradigm (1993) – which will be further explored.

Accordingly, the aim of this dissertation is to analyse whether increasing the share of national defence funding on GDP may affect the FDI inflows to the NATO allies, via its economic growth potential. Therefore, the research question suggested is: RQ – May increasing the share of defence expenditure in national GDP, through its impact on economic growth, affect FDI inflows to the NATO states responsible for such increase?

Thus, the possible effect of national military expenditure on FDI, mediated by economic growth, is the focus of the research. This mediation channel is a construction, not an assumption: both legs of the channel are individually grounded in theoretical and empirical literature, while their connection is still untested for the chosen sample. It follows that Thakur (2021) highlights the vastness of academic research regarding the effects of military expenditure on economic growth, and even though finding these inconclusive as to the effects being positive or negative, literature on the effects of the first variable on FDI attraction is still very scarce².

The academic relevance of the theme lies both in the multidisciplinary approach of this research and the mentioned scarcity of academic research on the main topics, due to its contemporary status. Despite the existence of a wealth of literature on FDI and geopolitical tensions alone, as well as on security expenses in NATO, very few authors have established a link between these topics. By addressing such gap, this dissertation contributes to the literature on the intersection between international political economy and International relations/Security Studies by examining how defence spending influences FDI inflows in NATO member states. By contrast, the existing literature suggests a certain disagreement on the link of this type of spending to FDI, i.e. whether it can attract or hinder FDI. The mediation mechanism that aims at being captured by GDP growth is also an empirically contested topic.

Considering the existing literature, its findings are inconclusive regarding a possible ME/GDP growth link. Alptekin and Levine (2012), one of the most thorough empirical analyses within the literature, find positiveness for developed countries – proximal to NATO. However, these are contested by Dunne and Tian (2013). When it comes to

² Although less common, there is literature on the effects of FDI in military spending (Kentor et al., 2023) and the geography of its distribution (Ferguson-Dryden, 2021).

studies addressing the allies specifically, Dimitriou et al. (2025) find positiveness, but the results are non-linear and these are dependent on the threshold set – validating the period in-between Summit chosen. Regarding the second leg of the channel – GDP growth/FDI, there is more consensus within the literature, although still limited: Iamsiraroj and Doucouliagos (2015) find a positive connection, but it seems stronger for developing nations, leaving open whether these findings adjust to the developed NATO allies. When it comes to the possible ME/FDI impact, Zafer and Yuille (2024) mention the impact of security expenditure on trade patterns in NATO allies, but not FDI inflows directly. In addition, even though the specific effects of military spending on FDI inflows are analysed by Regmi et al. (2024), Thakur (2021) and Wisniewski and Pathan (2014), these do not directly apply to NATO allies; however, the authors commonly address the relevance of the research being applied to a different sample of countries, rather than the ones already analysed. The recent strategic shift of NATO is the main driver to its choosing as this research's sample. Santamaría et al. (2021) state the lack of studies on the topic and specifically on NATO, unlike those on developing economies. Correspondingly, another literature gap persists regarding the sample this dissertation will unveil: many authors combine defence spending with FDI, but concerning developing nations (Aziz & Khalid, 2019; Douch, 2025; Effiong et al., 2022; Iheonu & Ichoku, 2022). Additionally, authors who engage with related variables – such as military spending and FDI – often do so only indirectly. For instance, through their concept of Complex Interdependence, Keohane and Nye (1977) suggest that dense economic and political ties may alter states' cost-benefit calculations and reduce the salience of military force. However, their framework does not explicitly theorise the impact of such interdependence on risk premiums or FDI flows, leaving a gap between IR theory and political economy outcomes. In a nutshell, there is some contemporary research on the main themes of this dissertation, but none that can provide sturdy answers to its research question. This dissertation seeks precisely to address these identified gaps.

Another point to consider is that this dissertation follows a dual-field analysis, combining both International Relations Theory influencing national security and economic perspectives more directed towards FDI patterns. Military spending – an indicator of the national security policy³ – and inward FDI represent, accordingly, the two main variables

³ The security of a nation goes far beyond military spending, combining an umbrella of slopes that constitute it and characterise its sovereignty, as well as its *modus operandi* (Floştoiu, 2024). However, the research has

selected, along with their mediator variable, economic growth.

The dissertation starts with an enlarged literature review, in line with its multidisciplinary nature. The main theoretical framework is constituted by Keohane's Institutional Neoliberalism (1984), underpinned by the Complex Interdependence (Keohane & Nye, 1977), with the goal of attesting NATO's purpose and mission – the means that justify its target-setting decision, the origin of military spending; still within the main theoretical framework is Dunning's OLI Paradigm (1993), aiming at discerning the grounds for the engagement in FDI while exploring NATO allies' advantage for investment. This is Section 2.1. Following up, Section 2.2 goes over the geopolitical matters that have and will be influencing the collective defence and stability of the alliance, as well as NATO's background, its mechanisms of deterrence and defence domains. Section 2.3 analyses three pivotal concepts to scan commitment and integration in the alliance: free-riding, military neutrality and military non-alignment. It also delves into the direct – and multiplier – impact of military spending on economic growth. Section 2.4 advances with FDI determinants, motivations thereto, and the impact of growth in it. The Section 2.5 presents the main studies that tie up the main intent of the research question proposed. To address it, a quantitative empirical analysis – Chapter 3 – combining a descriptive statistics analysis along with econometric panel data regressions follows. The former examines the evolution and the correlation between the three core variables, while the latter delves into the ME/FDI effects moderated by conflict, and the mediation channel that the research question proposes. Lastly, a discussion of the results bridges the final conclusions of the dissertation and the answer to its main question.

been limited to military spending (also referred to, throughout it, as military defence or military/security/defence expenditure, sometimes ME), in order to narrow down its scope and adjust it to NATO's most recent central security strategy adoption.

2. Literature Review

2.1 Theoretical framework

2.1.1 Theoretical foundations of NATO and their relevance for FDI

NATO was founded in 1949 within the structural context of the emerging bipolar international system – during the Cold War, where neorealist logic of balance of power and security competition provided a key structural incentive for alliance formation (Lindley-French, 2023; Waltz, 1979). From this perspective, NATO can be understood as a response to the security dilemma generated by Soviet military power, whereby states engage in external balancing through formal alliances (Herz, 1950; Walt, 1987). However, neorealism alone does not fully capture the mechanisms through which such cooperation is institutionalised and sustained. Neoliberal institutionalism complements this explanation by emphasising that states, even under anarchy⁴, may establish durable institutions when they anticipate gains from cooperation, reduced uncertainty, and lower transaction costs. In this sense, NATO can also be interpreted as a rational institutional response to collective action problems in the field of security⁵ (Keohane, 1984; Keohane & Nye, 1977). Therefore, while neorealism accounts for the structural incentives for alliance formation under bipolarity, neoliberal institutionalism explains the conditions under which such cooperation becomes institutionalised and sustained over time. As mentioned, neorealism pushes nations into joining alliances out of seeking the aid of external agents at self-sustaining national security (Herz, 1950; Walt, 1987). That being said, according to the neorealist Security Dilemma's (Herz, 1950) theoretical approach, the more a nation secures itself, the higher its counter-threats – other countries will treat it as an arms race. Additionally, the neorealist Alliance Theory (Walt, 1987) proclaims that states form alliances to surpass the most threatening state. When combined with FDI dynamics, neorealism goes against the main hypothesis: if arming up conveyed menace, NATO membership would not capture stable location

⁴ Anarchy is the state of there being no world government above the other – sovereign – states that may control their conduct via authoritarian mechanisms (Weber, 2001). To neoliberal institutionalists, states are capable of creating long-lasting institutions, even under international anarchy (Keohane, 1984). Alliances such as NATO then mitigate the effects of anarchy, while strengthening predictability and cooperation.

⁵ Collective security or defence, in the context of NATO, is a principle stating that any armed attack to one ally is viewed as an attack against every ally, committing the whole group to a collective counterattack. Article 5 of the 1949 Treaty is binding of this behaviour and it represents the legal core of the alliance's deterrence purpose (Lindley-French, 2023).

advantages to FDI⁶. Therefore, neorealism explains why alliances emerge in response to security threats, but it offers limited theoretical expectations regarding the economic benefits of alliance membership, such as FDI attraction. The dissertation follows with Institutional Neoliberalism to act in that sense.

Fundamentally, when analysing Institutional Neoliberalism vis-à-vis neorealism (Herz, 1950; Keohane, 1984; Keohane & Nye, 1977; Walt, 1987), some inferences about NATO's – original – mission can be drawn when combined with the statements of Lindley-French (2023) on the alliance's true foundational purpose: internally, NATO represents a bundle of interdependent nations that, despite looking out for power maximisation and self-defence needs, were fundamentally drawn to the idea of whole security, via interterritorial cooperation, all the while deterring external threats. Therefore, neorealism explains animosity with agents external to the alliance and Institutional Neoliberalism – a dual-effect role – states that cooperation within is ensured and eased by NATO, currently acting as a deterrent, preclusive instrument.

While Neoliberal Institutionalism explains how institutions reduce uncertainty among states, The OLI Paradigm (Dunning, 1993) provides the framework for analysing how such reduced uncertainty may translate into an advantage for foreign investors. The following subsection develops this theoretical connection.

⁶ A concept that Subsection 2.1.2 will further explore and connect to the research question.

2.1.2 Economics theory to influence FDI: The OLI Paradigm

One of the most used economic theories for explaining FDI is The OLI Paradigm, or The Eclectic Paradigm (Dunning, 1993)⁷, which identifies three main interdependent reasons that guide multinational enterprises' decision to invest overseas: (O) ownership, (L) location, and (I) internalisation. MNEs will engage in FDI driven by the O convenience supporting full control of operations, the host country's L opportunities, and their I desire to keep certain activities in-house. Considering the scope of this research, the location-specific advantages – the exogenous variables – assume a major role to identify FDI attraction by the general allies, the allies closer to conflict, or even NATO candidates. That being said, within the location set – market size, infrastructure quality, stability, regulatory environment, institutions, among others, this dissertation isolates specific subsets: institutional and security factors, involving, above all, the proximity to conflict zones, political stability, NATO membership, and the perception of security risks. These signal whether some – or potential – NATO allies⁸ seem advantageous for investors to allocate their funds. Given the current scenario, many authors confirm this inference's truth (Elezi & Kurtishi, 2019; Kuokka, 2024; Nasrulddin, 2024), whereas others conclude the opposite: closeness to conflict erodes L advantages within The OLI Paradigm, even if these nations are NATO allies⁹ (Fischer & Oechslin, 2026; O'Connor, 2023).

However, Institutional Neoliberalism provides justification to why NATO membership ought to function as a location advantage, as an institution able to reduce uncertainty, signal stability, and lower the costs of transaction (Keohane, 1984) – just as Dunning (1993) reckons for the L set. All things considered, when bridging Institutional Neoliberalism and The OLI Paradigm, via its L component, despite the unsettled academic and theoretical conclusions, the following corollary is plausible to assume: NATO membership stands as a proxy for internal stability, having the potential to affect new members, nations within tense environments, or nations facing post-war scenarios¹⁰, favouring investor confidence – which may lead to an increase in incoming FDI. Whether an increase in military spending has similar effects is precisely what this research seeks to address.

⁷ The author has published, rephrased, and explored this Paradigm via diverse angles over the years, in order to maintain its accuracy when applied to an ever-changing international panorama.

⁸ The samples are specifically Sweden and Finland (Kuokka, 2024), Ukraine (Nasrulddin, 2024), and new members – using North Macedonia as the main case study (Elezi & Kurtishi, 2019).

⁹ See Subsection 2.4.2 for additional notes on the authors' statements.

¹⁰ In this case, Ukraine is analysed considering a post-conflict setting. North Macedonia is placed – and highlighted – within the new member set; Sweden and Finland represent the tension-embedded reference – also overlapping with the new member part (Elezi & Kurtishi, 2019; Kuokka, 2024; Nasrulddin, 2024).

2.2 Geopolitical environment and security norms

2.2.1 Geopolitical environment's influence on defence

Right after the end of the Cold War, international investment trends on security slowed down significantly, derived from the perspective of geopolitical stability (Yildirim & Sezgin, 2005). According to Odehnal and Neubauer (2020), in the last few years that led to the pandemic, the investment of the allies in national security slowed down, overlooking the defence duties set by the 2014 Wales NATO Summit Declaration. Military spending had fallen down after the Great Recession in 2008, due to the reduction of most nations' financial availability, and the generalised rising of individual public debt. It went back up right after Russia invaded Ukraine, in 2022, leading NATO to rethink their strategy of reliance on outdated defensive strategies – to be addressed in Subsection 2.2.2. Fundamentally, this type of spending varies according to the ally, mostly due to differences in internal conditions and the usual free-riding defined by weaker economies piggybacking on allies that are wealthier and therefore more capable of investing (Olejnik, 2026).

On another note, the current panel of growing uncertainty, associated with the specified impending episodes of war and insecurity, has naturally caused the need for growing military spending to rise sharply again, reflecting the importance of heightened defensive mechanisms to cope with geopolitical tensions and to prevent them from materialising in tangible conflicts – the theory of deterrence¹¹ (Floştoiu, 2024). It is said that transitioning from a unipolar world – US-dominated – to multipolarity was the cause of such instability; competition has also risen among world powers, such as BRICS, the US, and the EU, especially in the wake of the Cold War (Sun & Mallard, 2025). Logically, the statements of Sun and Mallard (2025) translate in geopolitical segregation: on one hand, this fact brings the EU allies closer to one another; on the other hand, this behaviour may cause collision between the US and the EU spheres of the organisation – as this very subsection aims, among other topics, at unveiling. At the same time, the rising allocation of resources and funds to national defence, as well as the adoption of innovative security mechanisms, can either be perceived by the creation of an adversary or the dissuasive safeguarding of the nation. Alliances, such as NATO, can thus rearrange the global panorama, by imposing – Keohane's Institutional Neoliberalism (1984) – a common cooperative goal of mutual

¹¹ The theory of deterrence characterises a nation's strategy of ensuring a constantly optimal defensive system as a means to deter potential foreign attackers (Floştoiu, 2024). Its reliance is verifiable not only in the Cold War NATO security strategies, as well as nowadays.

security to its Members (Floştoiu, 2024). Therefore, NATO's independent mission can tackle geopolitical (re)order.

Given this fact, how to firstly define military spending? Military spending constitutes the passive and responsive investment in military assets that encompass militia, equipment and technology, infrastructure, core operations, and several other defensive assets of a country's armed forces¹², as well as R&D. During the last few decades, terrorist and cyber attacks, social, environmental and nuclear threats, the clash of powers and ongoing conflicts – a pattern that Subsection 2.2.2 will underline as an influencer on the actions of the allies of NATO – have coerced nations to shift towards circumstance-conscious defensive spending, contributing to the creation of a self-reinforcing loop, in which military spending boosts R&D and the modernisation of industries dedicated to defence. This affects the national economy and paves the way for larger funds to reorganise and reinforce security, but increases military competition between territories (Floştoiu, 2024).

Regarding geographical location, sharing borders with allies lowers the need for investment in national defence, conversely to having other types of neighbours. Ambiguously, after 2014, the eastern allies of NATO have spent more on defence, either due to the geographical closeness to Russia, causing them to rely more on their national army and less on burden-sharing strategies, or due to the Wales Pledge, demanding the 2% minimum – a proposition derived from the escalation of the Russian tension with Ukraine. With regard to geopolitical relations, different allies will have diverse security concerns that the same alliance needs to address, as to fulfil its purpose and remain relevant to integrate. However, whereas the eastern flank pays attention to the Russian military endowment, other allies look out for their own rivals, and one country in particular, the US, seems to defend the clear-cut position of being responsible for providing a general piggyback ride for every NATO ally¹³ (Monaghan, 2022; Tardy, 2022) – the argument of free-riding from the smaller economies' end aligns with the burden-sharing tensions that Institutional Neoliberalism connects with cooperation within environments of uneven contribution, softened by the institutional role of NATO. These geographical asymmetries, leading to uneven ally commitment, in turn have an influence on the alliance's defensive requirements and its strategic response to the tensions ahead. That is what the next subsection addresses.

¹² Olejnik (2026) highlights the regional importance of the military, being a local ecosystem that can largely influence the economy and representing a strong lever to any government's strategic manoeuvre.

¹³ The Hague Summit's decision derived from an attempt to put down American pressures to leave the alliance (Tian et al., 2025).

2.2.2 NATO: from foundation to nowadays – evolution of defence requirements and impending tension prospects

According to Monaghan (2022), still making use of the seven strategic concepts¹⁴ the alliance has set from 1949 to 2010, for guidance was taming its defensive potential, such as relying on its sword – the US bomb capacity – and shield – frontline troops. These concepts depict premises of defensive and deterrent attitudes¹⁵ – active and passive, respectively – from the alliance towards its (potential) contenders, in order to fundamentally, among others, increase flexibility and unity within, postpone aggression and/or prevent violent conflict. After the Cold War, these aimed at decentralising defence and reduce the reliance on American nuclear weapons – this latter factor had previously been at the forefront of NATO’s Cold War strategy of deterrence (Monaghan, 2022). Therefore, the alliance’s *modus operandi* has changed course right after the Cold War, becoming more interventive through a fundamentally defensive proposal. Acting against the United Nations Security Council (UNSC), amidst the Kosovo War, NATO bombed Belgrade to put an end to the conflict, causing it to appear a higher threat to its potential enemies (Lindley-French, 2023). Given this fact, how do these transformations shape modern-day NATO and thereupon its defensive domains?

There are four main challenges that the alliance faces: “Russian revisionism, the rise of China, the related problem of coping with threats in the cyber domain, and persistent challenges emanating from the southern flank” (Dalgaard-Nielsen, 2022, p. 165). Nonetheless, as more threats arise, representing danger progressively more imminent for the citizens of NATO regions, most authors agree: the defensive focus of the alliance is in need of a conscious realignment (Dalgaard-Nielsen, 2022; Juntunen et al., 2024; Lindley-French, 2023; Monaghan, 2022; Olech & Štručl, 2025) – which may be undergoing, as the threshold increase decision at The Hague Summit of 2025 appears to be an attempt to fund a greatly needed effort to connect effectiveness and innovation (Dalgaard-Nielsen, 2022; Tidey & Murray, 2025).

Via its Complex Interdependence concept, Institutional Neoliberalism states that from extensively linked societies originates mutual dependency, placing institutional and

¹⁴ In the context of NATO, a strategic concept represents a publication guiding the established doctrine at the moment, being revised periodically. This document comprises the priorities and must-dos of the organisation in dealing with current threats, responsible for guiding its planning and the following defence allocation (Lindley-French, 2023).

¹⁵ The theory of deterrence mentioned in Subsection 2.2.1 (Floştoiu, 2024).

economic ties at the forefront of a country's strategic pillar areas – the need for military robustness is then diminished (Keohane, 1984; Keohane & Nye, 1977). That being said, from an institutional neoliberal perspective (Keohane, 1984), these security challenges matter, by inducing the allies to strengthen common planning mechanisms, defence capability targets, procurement coordination, and industrial cooperation. More than merely increasing ME, these responses reduce uncertainty, create long-term policy commitments and improve the predictability of defence markets, thereby affecting investment incentives for private firms and foreign investors.

Firstly, concerns regarding cyberspace must be at the forefront¹⁶, combining both national assets and Civil-military Cooperation (CIMIC), as these threats have the potential to affect national security as a whole, other than just the defensive pillar of the allies' sovereignty. In this sense, Olech and Štrucl (2025) warn that the alliance ought to decide on increasing budgetary funds – its share on military spending – for this complex and growing challenge. Cybersecurity requires greater institutional coordination, strong information-sharing mechanisms and the common settlement of technological standards. Accordingly, these institutional arrangements encourage cross-border cooperation between the governments and private firms of the allies, increasing opportunities for multinational investment in dual-use technologies and defence innovation (Dunning, 1993; Zafer & Yuille, 2024).

In addition, Lindley-French (2023) notes that after the 9/11 attacks, NATO has been increasingly aware of its surroundings regarding terrorist attacks¹⁷, which have simultaneously become more at hand when combined with autonomous tools. Even though NATO has exchanged knowledge on counterterrorism with other national and regional powers, it is in need of intra-alliance cooperation – especially regarding economic contribution – for a retooling in its technological panorama that can successfully address cutting edge threats (Lindley-French, 2023). This retooling allows for a concentration in R&D-oriented industries, whose civilian spillovers may sustain the growth channel this dissertation aims to research¹⁸.

¹⁶ Olech and Štrucl (2025) found that, especially since 2022, a multiplying number of allies are progressively organising specialised units and more, so as to be able to strike and to defend themselves through – or from – different fronts of combat, investing in training and multi-domain learning – one of ME's destinations.

¹⁷ Nomad and escalating groups – such as ISIS or Al-Qaeda – and solo actors have been challenging traditional defensive strategies, which, despite evolving, still fall much behind the required capacity (Lindley-French, 2023).

¹⁸ Military spending spillovers into the economy will be further addressed in Subsection 2.3.2.

Other defensive mechanisms include the NATO Defence Planning Process (NDPP)¹⁹, planning the security modules of the NATO allies according to each set of individual tangible and intangible assets (Deni, 2020). From a Neoliberal Institutional perspective, the NDPP functions as a coordination mechanism that reduces information asymmetries among allies, establishes common objectives and enhances policy credibility. In this sense, by increasing transparency regarding future procurement needs and defence priorities, the NDPP lowers uncertainty for firms operating in the defence sector, which may encourage long-term FDI into allied defence industries.

In another field, Kaushal et al. (2021) suggest that air and missile defence schemes will only reach their maximum potential via general integration of each individual powerhouse within the alliance, allowing a better handling of resources for collective use: in other words, minimising the waste of resources – to optimise defence expenditure decisions and deepen cooperation. Inasmuch as the Integrated Air and Missile Defence (IAMD) structure²⁰ is designed to tackle isolated local threats, its purpose consists of endlessly blind missions, with no predictive tools to its disposal (Kaushal et al., 2021) – a preventable waste of resources. Meanwhile, IAMD's importance extends beyond operational effectiveness: common capability planning requires interoperability standards, overall technological coordination and long-term industrial cooperation among the allies. That being said, these institutional arrangements, in line with neoliberalism, reduce transaction costs and generate more stable expectations for defence contractors, from which favourable conditions for cross-border investment and multinational production networks may emerge.

Lastly, NATO's nuclear deterrence mechanisms²¹ are one central pillar. Unsure of the nuclear power retained by potential foes – and how to tackle it, NATO has been consolidating its strategy in deterrence, as mentioned in this subsection's introduction, such as the active/reactive methods most literature advises on (Juntunen et al., 2024). In fact, this strategy allows for collective assurance: the NPG stabilises nuclear vulnerability in the non-owning states, accounting for the secure environment that spurs investor confidence.

¹⁹ Its most notable 2017 success could put an end to the burden-sharing debate, and every nation, in line with the 5th article of the Treaty, would self-fulfil its defensive needs. Nonetheless, Deni (2020) predicts that the pandemic may cause some retrogress in the process's sturdiness.

²⁰ Plans regarding the IAMD need, according to Kaushal et al. (2021), reframing.

²¹ Its backbone stands in the US and, in minor quota, in other allies. As to non-nuclear-owning states, the Conventional Support for Nuclear Operations (CSNO) mechanism allows for integration in the political sphere of this section of defence, whose decision-making is reliant on the Nuclear Planning Group (NPG) (Juntunen et al., 2024).

Overall, these institutional developments suggest that NATO's response to contemporary security challenges is not limited to military adaptation – to cyber and nuclear threats, counterterrorism, air and missile defence, and capability planning (Deni, 2020; Juntunen et al., 2024; Kaushal et al., 2021; Lindley-French, 2023; Olech & Štrucl, 2025). By strengthening institutional coordination, harmonising defence requirements and creating long-term commitment among allies, the alliance also shapes the economic environment within which MNEs make investment decisions. Consequently, changes in NATO's institutional architecture are the channel through which defence strategies may reach the economic rationale, by influencing patterns of inward FDI.

Furthermore, analysing NATO's defensive guidelines requires complementary focus on the scenario in which these unfold. Russia's invasion of Ukraine in 2022 represents a major international shift, depicting a possible conflict bordering NATO's very own, which accelerated institutional adaptation (George & Sandler, 2022), including higher defence spending commitments, expanded capability targets and renewed emphasis on defence industrial capacity. When scrutinising the effects this shift has had in the defensive strategies of former-Soviet NATO allies²², Edström and Westberg (2022) find differences impacted by dimension and geographical proximity. The authors conclude that these two factors standardise the smaller states' – that are coincidentally herein – strategies, expressed via expeditionary means. The middle powers – Poland, Czechia, among others – address it more individually, via regulatory adaptations, equipment and militia acquisition, and a modernised approach to defence. Findings such as these can pave the way for tailored strategies in the Eastern flank.

Additionally, considering the geopolitical transformations that affect perceptions on international security, Dembinski and Spanger (2025) speculate that the future of the hegemonic core of NATO will oscillate between – or fixate on one of – the three models: full intra-alliance cooperation and no US leadership, reduced US presence in Europe, and a Eurocentric approach to security without any US presence²³. Accordingly, each of the models upholds the already mentioned burden-sharing within, deeply dependent on each individual choice of commitment. Therefore, the analysis now delves into the conceptual approach to this matter.

²² The research sample includes both EU and NATO Eastern members, but the latter is more important for the analysis. There are 11 former-Soviet simultaneous members (Edström & Westberg, 2022).

²³ The reaction of NATO is still to be known, creating a research foundation based mostly on speculations and dependent on Washington resolution (Dembinski & Spanger, 2025).

2.3 Military spending – in-alliance behaviour and economic impact

2.3.1 Free-riding and the inter-influential environment

Military neutrality, a concept connected to individuality postures towards NATO, characterises the voluntary decision regulated by law of not fighting-off international conflicts along with other states, a fact that gets recognised by others and implies strategies of self-sustainability – or even self-arming – when operating alone. Alternatively, military non-alignment means not entering a military alliance, while still being open to providing aid to foreign conflicts as these countries will. This strategy constitutes less direct risk and common cases regarding NATO are Sweden and Finland²⁴. The impulse to join NATO in Sweden, which required a change in identity, derived from a long need for national political realignment, other than a sole interest on military alignment, as it was more the case for Finland (Iskandarov & Gawliczek, 2020). Both strategies – military neutrality and non-alignment – can, however, coexist, and their adoption does not necessarily imply non-involvement as a whole; in fact, the adoption of one or the other by some nations could pose a strategic option for NATO to acquire more indirect allies. Beyond purely strategic, both positions carry economic relevance: these signal the stability within the alliance and how predictable its policy environment is – exactly what Institutional Neoliberalism frames as uncertainty reduction and Dunning (1993) classifies as location advantages for FDI. In that sense, closeness to the alliance without direct commitment could boost the reduced institutional credibility that uneven direct commitment passes on to foreign investors.

As burden-sharing, or free-riding, has been a common matter of discussion when analysing different patterns of investment of the allies, investing less in defence than the remaining allies when operating with similar capacity²⁵ signals exactly that lack of commitment to NATO. Concurrently, ME is the most frequently used variable to measure commitment to the alliance²⁶ (Olson & Zeckhauser, 1966; George & Sandler, 2022; Tardy, 2022), but its adequacy is still contested by some (Cooper & Stiles, 2021). Cooper and Stiles (2021)

²⁴ In the empirical Chapter, since both nations became a part of the ally cohort after the beginning of this research's chosen period (2014–2024), military spending, for instance, will not reflect NATO-bound coerciveness. However, figures for them will still be considered, just as NATO does for research purposes (NATO, 2025).

²⁵ If not, the same economic strength and military spending ratio can be used to balance comparisons. Thus, in its empirical Chapter, this research will present the data sets for GDP and FDI normalised in certain parts of the analysis – where suitable – to essentially reflect this fact and account for lower commitment, instead of less resources.

²⁶ However, Cooper and Stiles (2021) challenge this approach by making up the hypothesis that aid to civilians honours the values of the institution far more than redirecting funds to national contentment, via international deployments to other areas asserted to individual populational size.

conclude that countries with more financial availability and new member states will tend to invest higher shares of national GDP in their military – intimately connected to mindset, which signals that existence of underlying free-riding among allies and unequal monetary contributions. The absence of compliance then suppresses institutional reliability, the factor on which individual economic credibility grounds in part (Dunning, 1993; Keohane, 1984). Analysing NATO’s investment altogether, the alliance not only seems to have neglected military expenditure, it also seems to have disregarded the potential Russian threat, acting as an impulse for reassessment²⁷ – as 2.2.2 mentions. In the case of the US, free-riding opportunities were reduced due to the country’s curtailed investment after 2013. Additionally, the increasing demand to invest in ME has caused a negative effect on free-riding within the alliance that will carry on in the near future, which the authors speculate to translate to upgraded defensive instruments²⁸ (George & Sandler, 2022) – spending that may be identifiable within the data sets to be deployed in the empirical analysis section. On another note, the latest decision to reach 5% will, among others, also have a structural impact: it will demand fiscal, political, and operational adjustments – or unity especially in these fields (Tian et al., 2025). That being said, individual economies may experience an impact therein – the possible economic growth, due to changes to these structural elements. What internal differences do the allies that comply – or will comply – with the military spending targets set might perceive?

²⁷ Bringing along assertion, whereas efficiency is still uncertain (Tian et al., 2025), as mentioned in 2.2.2.

²⁸ Upgrade that will, most certainly, comprise some of the strategies that 2.2.2 analyses.

2.3.2 The effects of military spending on growth

According to several works of literature, the highest number being produced after 1980 (Alptekin & Levine, 2012), military expenditure can positively affect a country's individual economic growth²⁹, via increasing the demand for equipment, guns, militia, or other indirect by-products originated thereof. Despite the number of articles on the ME/growth relationship having slowed down after the end of the Cold War, due to the belief that military spending would no longer be observable enough to study, this kind of output has resurged in recent years (Ilzetzki, 2025).

Moving onto the empirical evidence, Alptekin and Levine (2012) have presented one of the most thorough analyses on these topics. The authors have come to conclude, after reviewing 32 other empirical investigations – scattered over three decades – that allowed for 169 result variants for the correlation between military expenditures and growth³⁰, that for developed nations the effect of the first on the latter is found to be positive, unlike the findings for developing countries and the global sample. Therefore, the conclusions seem to point to a more probable moderately positive link between military spending and national growth – at least for the sample this dissertation has adopted, which is constituted mostly by NATO allies – mostly developed. These results are found to be non-linear and dependent upon the military spending threshold set – relevant when considering 2 *versus* 5% targets.

Regarding studies using different samples, such as the Collective Security Treaty Organization (CSTO) and the Shanghai Cooperation Organisation (SCO)³¹, which have been defensively meeting NATO remarks: through the analysis of disaggregated alliance-level data on these three alliances, Dimitriou et al. (2025) conclude that defence expenditure on NATO allies likely possesses a positive link to national (economic) growth, contrarily to non-members of NATO, especially when analysing the highest contributors to the alliance. In this sense, when it comes to an alliance such as NATO, considering its countries' level of development, the pattern appears to behave positively, as the institutional adjustments imposed by the alliance favour defensive investment; the same is

²⁹ Another batch of authors refute this type of causality (Deger & Smith, 1983; Dunne & Tian, 2013; Faini et al., 1984; Saeed, 2025).

³⁰ This relationship was first explored – and deemed positive – by Benoit (1978) in the earliest years of research on the topic, though later the meta-analysis of Alptekin and Levine (2012) found the statement did not hold for developing nations.

³¹ The CSTO and the SCO are two security-oriented alliances founded in the 2000s. CSTO integrates Euroasian-nations and SCO is made up of Asian members (Dimitriou et al., 2025).

not verifiable for belligerent alliances made up of smaller economies, such as CSTO and SCO (Dimitriou et al., 2025). Additionally, Dimitriou et al. (2025) emphasise that most of the remaining literature – not alliance-sorted – is inconclusive on the effects of military expenditures on individual economic growth, tending towards an insignificant or negative connection (Dunne & Tian, 2013).

Parallely, when it comes to disaggregating military spending into its different components as to prospect the impact of each area's growth on economic enhancement, Becker and Dunne (2023) conclude that the investment in personnel represents the variable that most negative effects on the national economy brings to the equation. Conversely, in the long run, aggregated military expenditure can positively impact the country's human assets (Ilzetzki, 2025) – another catalyst for growth.

Adopting a different approach to the subject, Santamaría et al. (2021) build a dynamic model as to understand the stationary effects of military spending on GDP via the analysis of the ally panel as a whole, as well as through the allocation of 28 allies into 5 different groups, according to the given effects on their economy. Each of the 5 groups comprises countries made similar by their post-WWII singularities, those being (1) beaten or neutral nations, (2) nuclear-armed allies with great potential at the beginning of the Cold War, (3) past Soviet Union members, (4) nations experiencing conflict continuously, and (5) the ones that do not fit in any of the groups above³². The study confirms a substantially positive impact of defence expenditures on the national economy during the first year of the investment, which tends to soften out following this initial period – consistent with the non-linearity found by Alptekin and Levine (2012); this impact also seems to be higher on the group of nuclear powers. However, the authors emphasise the fact that collateral benefits, such as the perception of security in the long-term, are also worth the investment (Santamaría et al., 2021).

According to Floştoiu (2025), another positive outcome of the investment in defence in the national economy relates to the multiplier effects that entice employment, progress and continuous learning, affecting many industries and agents besides the ones directly dedicated to defence. The Keynesian multiplier theory represents a great explanation for defensive investment spillovers on the economy: it generates demand in defence and

³² The allocation of the allies to each of the five groups was done as such: (1) Spain, Portugal, Italy, and Germany; (2) UK, France, and the US; (3) Hungary, Albania, Estonia, Czechia, Latvia, Bulgaria, Lithuania, Slovakia, Romania, Poland, Slovenia, Montenegro, and Croatia; (4) Türkiye and Greece; (5) Canada, Norway, Luxembourg, Belgium, Netherlands, and Denmark (Santamaría et al., 2021).

complementary industries, as well as other indirect effects that translate into economic development³³. This has been the case for Romania ever since joining NATO and attempting to reach the 2% ME target. Moreover, even though investing in defence will retract funds from other public sectors, it can contribute to long-term advancements that might and will interact with economic growth, considering that a responsible management of funds is carried out and synergies are taken advantage of. Drivers to growth include directly increased defence manufacturing and indirect effects on the employment rate and the country's trade pattern, all of these enhancing Romania's competitiveness in the international panorama (Floştoiu, 2025). Examples of found indirect positivities of this also include an increased stock of capital, sustainable development trends, and enhancement of the state of justice, among others. Notwithstanding the limitation of it being a single-country study (Floştoiu, 2025), these effects will most likely boost the economy of other NATO allies as well, when faced with similar circumstances to Romania's.

What is more, according to Ilzetzki (2025), short-term investment outlooks do impact the economy positively, as long as the overall environment favours this paradigm. This then raises the question of how the national economy can reap the highest benefits of defence spending. According to the author, fiscal adjustments and the correct financing model are some of the needed factors to ensure success. Governments should choose to finance it via public debt, not taxation; any negative spillovers resulting from the decision will be smoothed out during a short-term time frame, contrasting with the long-lasting positive effects, and the momentary economic background must not influence decision-making. The author also states that a nation's percentage of GDP directed to defence should be aligned to its specific financial planning and not meet a collective target that may not benefit the group as a whole, hence being an analysis that does support the existence of economic spillovers following defence funding, but not always. The more adapted to a country's specific financial capabilities, the better the outcome, because mandatory targets can sometimes be misaligned with national capacity, such as the ubiquitous ones imposed by NATO to its allies. As Ilzetzki (2025) reveals that different externalities may provoke asymmetric effects throughout the alliance³⁴, it is beneficial for the research – despite the core focus on the organisation-set defensive targets – to take into consideration the fact that the results of a certain military spending target do not translate into growth uniformly.

³³ Other indirect effects of ME include supplier-search-derived competitiveness and gains in productivity, due to increased public R&D, which generate indirect conveniences to private entities (Ilzetzki, 2025).

³⁴ To be controlled by the regressors of the econometric regression component that Chapter 3 will conduct.

2.4 Inward FDI – some relevant questions

2.4.1 Influential patterns to foreign investment

Foreign direct investment – or simply FDI – is defined, by the EU, as a 10% or more share ownership of capital or voting rights in an enterprise, coming from a long-term extending interest and strong involvement in managerial processes within the receptor, for both incorporated and unincorporated enterprises (Eurostat, n.d.). OECD's Benchmark Definition of FDI (2025) divides it into 4 principal operations: "greenfield investment (new entities), extensions of capacity (additional new investment in existing entities), purchase/sale of existing equity in the form of mergers and acquisitions (M&A), corporate and financial restructuring" (p. 198). The outward flow reaches a foreign country and its numerical value includes that country's balance of payments. It fundamentally refers to an investment directed to owning a stake of an enterprise, carried out by a direct investor, whose country differs from the one where it invests. The initial transaction between investor and the new entity – (international) direct investment – and the ones following between the existing incumbents, associated to the main investor and the new investment, constitute the whole of FDI. More than capital, it allows for a cross-country interchange of output and core capabilities, connecting the world economy³⁵. It represents the opportunity of benefiting both the investor and the receptor economies. Regulatory allowance and incentives to such investment recognise its positive spillovers into the national economy (Eurostat, n.d.; OECD, 2025; UNCTAD, 2004, p. 60) – which can be determinant to FDI. When decision is made to engage in FDI, there are determinants within The OLI Paradigm (Dunning, 1993) for its location. UNCTAD (1998) divides them into three sets: the regulatory environment of the country – including policies regarding FDI, the measures adopted to ease and to promote FDI, and the economic conditions of the nation. Overall, these encompass, among others, aspects of the individual market, trade, policy, fiscal and financial incentives, macroeconomy, national growth, infrastructure, and development level³⁶ (Dang & Nguyen, 2021; Groh & Wich, 2012; Iamsiraroj & Doucouliagos, 2015; Rehman et al., 2011; Rehman, 2016; UNCTAD, 1998; Zhao & Du, 2007) – useful for the selection of the control variables to be used in the regressions.

³⁵ Globalisation has contributed – and been a byproduct of – to a diffusion of direct investment and a diversification of both origin and final targets in the last few decades, with an expansion in transactions and in the industrial entities willing to invest (Eurostat, n.d.; OECD, 2025; UNCTAD, 2004).

³⁶ On the other hand, political instability and conflict are signalled as deterrents by some authors (Aziz & Khalid, 2019; Effiong et al., 2022; Herz, 1950; Iheonu & Ichoku, 2022; O'Connor, 2023; Fischer & Oechslein, 2026; Regmi et al., 2024; Wisniewski & Pathan, 2014).

2.4.2 Investment attractiveness

When it comes to whether integrating such a vast international alliance, of which NATO is an example, may attract foreign investment, the Institutional Neoliberalism (Keohane, 1984) provides a clear answer (as Section 2.1 infers): institutions impose norms and stabilise the international order, contributing to a reduction of uncertainty and political risk. As mentioned, this fact may appeal to investors and favour L advantages within the OLI framework. Members of NATO are, therefore, more prone to attract FDI, due to integrating a unified body that, among others, aims at ensuring the pre-emptive recognition of external threats to the group. Considering the benefits of unity, Aiyar et al. (2024) find that interstate geopolitical alignment might lead to FDI flow concentration within – and NATO can be one example thereof. However, when nations act as solo players, these will most likely invest in military stamina to safeguard from others, as they are stripped from the credible commitment of any institution and more within the risk-signalling zone that investors prefer to avoid (Dunning, 1993; Keohane, 1984).

Fischer and Oechslin (2026) focus precisely on location-specific determinants – The OLI Paradigm (Dunning, 1993) – to FDI and analyse whether FDI to Eastern-NATO-territories more proximal to Russia has risen or fallen: the authors conclude the latter to be more common and that the closer the geographical proximity, the larger the withdrawal. The research puts an evidence on the environmental changes after 2022, being the most logical reason for setback, and as the authors attempt to use tension-derived trade sanctions as the main reason for FDI decline, via the analysis of the tradability of FDI's outputs, the reason does not seem plausible. The results suggest an overall negative effect of possibly influential tension on FDI inflows, hence these appearing similar even when the variable of proximity is Ukraine and not Russia. Despite the countries considered not being directly at war, it portrays the spillover effects conflict can have in the economy of regions bordering colliding nations³⁷.

On another note, Ukraine has forwarded intention to join NATO (NATO, 2026). How would inward FDI behave for this potential ally? This topic presents a need for exploring FDI inflows to war-embedded regions. According to O'Connor (2023), FDI flows are mainly determined by the intensity of the conflict and the business conditions of the nation; the author found that after Crimea's annexation, in 2014, both Russia and Ukraine's FDI in

³⁷ Nonetheless, it is relevant to note that this research takes place from 2022 onward (Fischer & Oechslin, 2026), so it is still uncertain whether these effects are long-lasting – even during extended periods of conflict.

and outflows have decreased, conveying the finding that conflict has a potential of affecting FDI to other countries not directly involved in it. Therefore, even though it may not be universally verifiable, the author concludes that uncertainty and conflict-originated investment hurdles will most likely deter valuable FDI – some investors may bet and succeed under these conditions, but most do not. Despite a possible upsurge in FDI, this pattern will not be sustained permanently (O'Connor, 2023). By contrast, if NATO membership comes true for Ukraine, this factor will assume a pivotal role in attracting foreign investors (just as Subsection 2.1.2 hints); simultaneously, the adoption of strategic regulation to entice and fasten national regeneration is also fundamental to inward FDI, signalling a stable and reliable environment for growth (Nasrulddin, 2024).

Foreign Direct Investment also implies trustworthy targets in the short and long-term. From this standpoint, how does security policy refocusing affect investors' certitude and risk-taking decisions? Kuokka (2024) has investigated the effects of Sweden and Finland's admission to NATO on both countries' credit spreads³⁸, as the behaviour of sovereign bond markets is considered to have great influence on investment calls, via shaping attractiveness – credit spreads are here analysed as a proxy. Other than less relevant factors, NATO integration and heightened defence expenditures – coming as an indirect factor thereof – seem to have affected bond spreads³⁹ in Finland. NATO integration, possibly for happening later for Sweden, has affected Swedish spreads in lower measure. However, credit spread upsurge in Finland appears to have stabilised, making the authors conclude that initial defence spending shocks can be counter-balanced through the perceived risk reduction implied by subsequent NATO defence policy alignment. Most literature agrees on this last factor being attractive for investors (Elezi & Kurtishi, 2019; Fischer & Oechslin, 2026; Kuokka, 2024; Zafer & Yuille, 2024). Not enough evidence is found to conclude the same for Sweden. Overall, Kuokka (2024) concludes that NATO membership can impact FDI positively in early years; identical findings are the ones provided by Elezi and Kurtishi (2019). The authors infer that, among other externalities, integrating the alliance leads to an increase in FDI inflows, especially in the short-term, being recognised, even so, as one adjuvant piece of a very large decision-puzzle.

³⁸ Benchmarking Germany, the authors have compared each of the analysed country's government bond yields to that of Europe's best representative (Kuokka, 2024).

³⁹ The evolution of the cost of lent capital is directly proportional to the country's credit spreads (Kuokka, 2024).

2.4.3 Connecting economic growth to FDI attraction

According to Iamsiraroj and Doucouliagos (2015), research on the effects FDI may exert upon national growth represents a much larger portion of work, whereas literature focusing on the effects of economic growth on FDI attraction is scarcer – the most ubiquitous portion of work finds the existence of a positive relationship (Iamsiraroj & Doucouliagos, 2015).

By assessing the results of almost 1000 observations and 140 empirical research, via an isolated-country meta-analysis, Iamsiraroj and Doucouliagos (2015) conclude that, as an FDI determinant, economic growth plays a significant role. In addition, it is found time has not had an identifiable effect on the noteworthiness of this link. Slightly higher positiveness is found when developing countries are partitioned from the rest, despite not being remarkable. Additionally, one relevant factor is the environment that accompanies national economic growth, which constitutes a motivation or a dealbreaker for foreign investors – hence the amount of military spending and its current situation in this field, which signal that the reliability of the nation's (political) future steps is significant.

On another note, Groh and Wich (2012) point to the fact that developed nations attract the highest piece of the global FDI flows, due to their almost inherent larger-economy structure. Therefore, this represents the greatest example for economic development and its manifestation being one of the reasons for investment inflows – simultaneously, a key reason. Comparing both studies, it becomes feasible to conclude that if developing economies reap the most positive effects of growth on incoming FDI (Iamsiraroj & Doucouliagos, 2015) and if more economic power leads to higher inward FDI (Groh & Wich, 2012), when nations experience economic growth, their potential to attract FDI significantly increases. This case applies to developed economies, i.e. the scope of this dissertation, NATO allies, either through their economic landscape or to its downstream effects.

A positive connection is also found in developing Association of Southeast Asian Nation (ASEAN) countries (Dang & Nguyen, 2021) and China (Zhao & Du, 2007). Rehman (2016) extended the conclusions drawn to combining the sense of security with economic growth to effectively attract FDI to Pakistan – which is what policymakers must aim at.

2.5 Military spending and FDI

2.5.1 Investment trends based on national defence spending

There is no consensus in literature as to whether defence spending attracts or deters FDI⁴⁰ (Effiong et al., 2022), and Regmi et al. (2024) characterise the cross-bordering between military expenditure and FDI as “an expanding body of literature” (p. 1). Given these facts, this section aims at connecting the two main variables in analysis, selecting the most relevant literature with the emphasis on the relationship among them.

Using an econometric methodology, the Arellano-Bond estimator, in order to eliminate Nickell bias, Regmi et al. (2024) conclude that in non-belligerent environments military expenditures are almost incapable of having an effect on inward FDI patterns, whereas the opposite occurs within conflictuous settings, in which the “geoeconomic favoritism hypothesis”⁴¹ prevails. In these cases, military enhancement signals an intention to increase security and the outcomes are sturdier the smaller the conflict, since these appear more tractable hurdles to root formation. Moreover, in the scenario of transitioning from the first to the latter environment, the positive effects of defence investment translate forthwith to FDI inflows; the same is not verifiable inversely, paving the way for the identification of a common trait in the behaviour of foreign investors, responding more promptly to conflict upsurge. The authors hypothesise that recently conflict-affected countries may need a period for reset that investors fear. In addition, investors seem to focus mostly on current situations, rather than long-term conjunctures (Regmi et al., 2024). Higher investment in defence can also drive down economic growth and inflate interest rates, as well as causing inflation to rise, leading to a setting less prone to foreign investment. ME should also be counterbalanced with investment in productive industries, in order to curtail the reallocation of funds to defence (Regmi et al., 2024); according to Thakur (2021), this type of expenditure should be justified by policymakers as possibly affecting FDI inflows positively. The author finds this fact to be empirically verifiable, recognising, nonetheless, the lagging conditioning imposed by the analysis of a single year of investment. Conversely, Wisniewski and Pathan (2014) find that excessive military

⁴⁰ Notwithstanding the existence of scholarly evidence of the effects of military spending on domestic investment (Smith, 1980), that is not the aimed focus to this section.

⁴¹ Drezner and Hite-Rubin (2016, as cited in Douch, 2025) coin the expression “geoeconomic favoritism hypothesis”, as to designate the possible positive impact of military expenditure on FDI attraction, which contrasts with the also coined “crowding-out hypothesis”.

spending – combined with other political factors of a country, such as the political system – will keep foreign investors at a distance.

In addition, when assessing individual vis-à-vis collective militarisation for European countries, Ferguson-Dryden (2021) has deduced that if FDI increases, military spending is discouraged especially in interdependent countries. Being military spending, as seen in 2.2.2, a self-reinforcing loop, less military spending – which brings along more regional stability – may encourage investors.

2.5.2 Military spending and FDI in developing regions

Even though this dissertation's sample is NATO members, it is possible to identify several works of literature connecting military expenditures and FDI for developing countries (Aziz & Khalid, 2019; Douch, 2025; Effiong et al., 2022; Iheonu & Ichoku, 2022), proving this research orientation to be more dense than for nations – or regions – considered developed. Moreover, the studies reviewed within this subsection help establish the mechanisms that connect military spending and FDI in a more general sense, and aid on the drafting of a subtle answer to whether the possible link between these two main variables may be ubiquitous or NATO-specific.

Iheonu and Ichoku (2022), when analysing African prospects, have found “a threshold of 2% to 5% of military expenditure in GDP is required for military expenditure to offset the negative effect of terrorism on FDI”⁴² (p. 109). According to Aziz and Khalid (2019), the path to reaping the effects of national defensive boost on FDI is found to be lengthy; the impact is positive within a conflictual setting and negative when spending takes place during peaceful periods. On the positive side, spending has more impact on countries facing higher belligerent conflict, being that civil or several-state collision. Via the analysis of a 20-year-period in Nigeria, one of the most insecure nations worldwide, Effiong et al. (2022) find that when military spending has come to reduce environmental insecurity, FDI has risen; periods of lower inward investment, supposing a negative effect of militarisation, are marked by less security, which induces risk-avoidant behaviours from foreign investors. When negative effects come into picture, these are more relevant in the long run to FDI attraction. In fact, the optimal expenditure threshold was found to be 7.75% in order to reap a higher investment margin. Therefore, the authors advise for policymakers to consider the optimal military spending threshold before fund allocation.

Concurrently, research focused on the Middle East – where Türkiye is located – and North Africa (MENA) region (Douch, 2025) concludes that defence spending must be paired with other-area funding, as to improve overall environmental attractiveness for investors and favour long-term sustainable growth to continue fostering FDI inflows. Stability and security are also key factors for the author. In this sense, less developed economies may attract lower FDI due to signalling instability with increased military spending (Keohane, 1984).

⁴² If it were a study directed to NATO allies (Iheonu & Ichoku, 2022), it could be hypothesised that policymakers were also guided by economic purposes when setting the 2 and, later on, 5% targets.

In sum, the literature intersects when unveiling the two main factors to shape whether the country or region will reap the benefits of national military expenditures by attracting FDI inflows: stability and risk perception. Yet, these findings are mostly grounded on empirical research on developing economies, where the intensity of conflict and the fragile institutional dynamics shape the pattern found. Whether the institutionally stable, defence and deterrence-oriented, economically developed, and geopolitically interdependent NATO allies – a distinctly different setting – lead to a corresponding mechanism remains scarcely explored. Therefore, this is the precise gap that the following empirical chapter aims at addressing, in line with this dissertation's research question.

3. Empirical Analysis

3.1 Methodological choices

In view of the key findings of the literature review and the limited coverage therein of the topic under analysis in this dissertation, particularly at the empirical level, it was decided to proceed with an exploratory quantitative analysis. This analysis is carried out in stages, comprising: (i) a descriptive analysis of the behaviour of three key variables (FDI inflows, GDP growth and military spending) and an examination of possible correlations; and (ii) an econometric regression analysis to assess possible causal relationships. The first will help scan the evolution of both defence spending (as a % of national GDP), economic growth – GDP growth, and FDI inflows, in order to understand whether it points to the existence of any type of relation between three – GDP growth as a mediator. The second component will aid in concluding if an increase in the first variable (first independent variable) can affect the latter (dependent variable), mediated by growth.

The analysis covers the period of 2014 to 2024, from the Wales to The Hague Summit, inferring in-between the oscillation of a 2% to a 5% military expenditure as a share of GDP target. The whole of the countries that constitute the alliance – excluding Iceland, which was removed upon the data-cleaning process due to reasons indicated ahead –were considered, the 31 allies, because target defence expenditures planning and decision-making constitute centralised processes that affect the whole of the alliance and highlight its overall cohesion (Lindley-French, 2023; Tidey & Murray, 2025).

Looking into the methodologies of some of the reviewed authors helps to validate the chosen approaches. Alptekin and Levine (2012) and Dimitriou et al. (2025) illustrate that there is behavioural difference when the military spending relationship is tested using heterogeneous and homogeneous specific samples – just as this dissertation isolates the 31-ally panel instead of opting for a global cross-section. Conversely, Santamaría et al. (2021) conclude that military spending is more impactful within the first year, via a dynamic model which uses NATO members in order to reproduce static effects, and Ilzetzi (2025) and Kuokka (2024) bolster the over-time stability of brief increases. Accordingly, the selected 11-year scope widens the possibility of capturing the dynamic effects that may follow the Wales Summit while avoiding the risk of overparameterisation brought by an Autoregressive Distributed Lag (ARDL) model – as the one used by Douch (2025). The present approach will also include a lagged variable, as suggested by Aziz and Khalid (2019), Effiong et al. (2022) and Regmi et al. (2024), accounting for time-sensitive implications.

Regarding the control variables to be used in the regression, these are underpinned by the literature claims (to be explored in Subsection 3.3). The estimator type is a Two-way Fixed Effects (TWFE) model, a middle ground between the cross-section of Thakur (2021) and the Arellano-Bond estimator of Regmi et al. (2024) or the ARDL model (Douch, 2025), allowing for a deeper analysis while preventing the Nickell bias (Baltagi, 2021; Wooldridge, 2010).

3.2 Descriptive statistics analysis and possible correlations

The usage of jamovi⁴³ for statistical inference allows for a first-instance empirical test for causality, mapping co-movement. Even though the software does not assess the direct effects of military spending upsurges in the increment of FDI receipts for a selected sample, this analysis serves as an introductory approach to the verification of whether the first is responsible for the latter, by leading up to descriptive examination of central tendency, dispersion, distribution, normality, correlation, among other metrics. These metrics may indicate similar behavioural patterns of evolution within the selected period among variables, which will then be complemented by a more solid ascertainment of such through the next chapter's econometric regression.

The data set used for the analysis of the ME variable consisted of expenditure adjusted to 2021 pricing as a share of real GDP, tracking the period of implementation of the defence target required of 2% up until before the rise of the target to 5% in 2025 (NATO, 2025), of which the statistical analysis is shown in Table 3 (Annex A):

Descriptives	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024e
N	31	31	31	31	31	31	31	31	31	31	31
Mean	1.37	1.38	1.40	1.42	1.49	1.60	1.70	1.67	1.71	1.89	2.15
Std. error mean	0.108	0.104	0.103	0.0964	0.101	0.112	0.108	0.114	0.115	0.110	0.117
95% CI mean lower bound	1.14	1.17	1.19	1.23	1.28	1.37	1.48	1.44	1.47	1.66	1.91
95% CI mean upper bound	1.59	1.59	1.61	1.62	1.69	1.83	1.92	1.91	1.94	2.11	2.39
Median	1.16	1.16	1.24	1.24	1.34	1.37	1.59	1.52	1.50	1.68	2.03
Mode	0.368*	0.414*	0.380*	0.495*	0.501*	0.547*	0.578*	0.472*	0.563*	1.06*	1.19*
Sum	42.3	42.7	43.3	44.1	46.1	49.7	52.8	51.8	52.9	58.5	66.6
Variance	0.362	0.334	0.332	0.288	0.314	0.391	0.359	0.404	0.406	0.377	0.427
Range	3.35	3.09	3.11	2.78	2.75	2.94	3.03	3.19	3.31	2.21	2.60
Minimum	0.368	0.414	0.380	0.495	0.501	0.547	0.578	0.472	0.563	1.06	1.19
Maximum	3.71	3.51	3.49	3.28	3.25	3.49	3.61	3.66	3.87	3.27	3.79
Skewness	2.09	1.86	1.72	1.44	1.12	1.26	1.06	1.62	1.65	0.924	0.881
Std. error skewness	0.421	0.421	0.421	0.421	0.421	0.421	0.421	0.421	0.421	0.421	0.421
Shapiro-Wilk W	0.819	0.833	0.865	0.899	0.925	0.903	0.940	0.845	0.855	0.896	0.923
Shapiro-Wilk p	< .001	< .001	0.001	0.007	0.032	0.008	0.084	< .001	< .001	0.006	0.028
25th percentile	0.982	1.05	1.05	1.10	1.12	1.22	1.33	1.32	1.36	1.48	1.71
50th percentile	1.16	1.16	1.24	1.24	1.34	1.37	1.59	1.52	1.50	1.68	2.03
75th percentile	1.52	1.52	1.54	1.71	1.81	1.91	1.99	1.93	1.85	2.08	2.32

Note. The CI of the mean assumes sample means follow a t-distribution with N - 1 degrees of freedom

* More than one mode exists, only the first is reported

Some informative notes are here presented, prior to the description of the results: values for 2024 are estimates based on the concurrent defensive patterns of each ally; Montenegro,

⁴³ Jamovi 2.6.44 was the software used for the calculation of the given metrics, employing data collected from each designated source (R Core Team, 2024; The jamovi project, 2024).

North Macedonia, Finland and Sweden are considered new member states, hence figures for these nations representing solo actors up until each year of integration: 2017, 2020, 2023, and 2024, respectively; $n = 31$ for every year, since Iceland is the single ally not in possession of organised military personnel and equipment officially, consequently not being present within the list of the spending territories that comprise the alliance (NATO, 2025). Regardless of the mentioned coarsened data figures, the presented data set for the respective variable was constructed from NATO's direct collection and estimation of statistical values, validating its accuracy and adequacy.

The mean percentage of GDP allocated to defence improves steadily after 2014, reaching the 2% threshold solely in 2024, according to the estimates. A decade is estimated to be needed for average military spending by NATO allies to collectively uphold the amended target. The variable is non-normally distributed for almost every year of the selected period, except for 2020, during which military spending as a share of real GDP followed a normal distribution, as the p -value for Shapiro-Wilk surpassed the chosen significance level⁴⁴ ($p > \alpha$); the opposite behaviour is identifiable for the remaining years. This pattern indicates convergence in 2020 followed by a return to typical figures for military expenditure right after, in 2021. Moreover, the exact middle ground of the data set, the median, brings about a higher number of n not reaching the agreed target in comparison with the compliant nations. The same conclusions can be drawn for the mode. The scenario is expected to differ in 2024, when estimates indicate a median slightly above the 2% threshold. The variance highlights a rising distance of values to their mean throughout the selected period. Alternatively, for every year, the range between maximum and minimum values culminates in a larger figure than the sum each individual state should be allocating to defence. Positive yet depleting skewness points, once again, to confluence. Finally, when organised in an ascending order, the percentiles indicate the first 25% of the sample elements were consistently below the 2% target – even the first 75% of the figures were individually inferior until 2023.

Proceeding to GDP, this was the variable selected for being the most indicative of individual economic size, with economic growth itself captured by its annual variation, GDP growth – which, within this dissertation's research question, is intimately linked to military spending upstream and to inward FDI downstream. Following the upload of data on GDP (millions of US \$) at current pricing and exchange rates for the selected period

⁴⁴ The confidence interval (CI) chosen for the descriptive statistics analysis is of 95%, $\alpha = 0.05$.

(World Bank, 2025b) – excluding Iceland – the GDP of the 31 allies is found to be non-normally distributed when analysed collectively⁴⁵ (see Table 1, Annex A).

Descriptives	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024e
N	31	31	31	31	31	31	31	31	31	31	31
Mean	1.26e+6	1.18e+6	1.21e+6	1.20e+6	1.33e+6	1.36e+6	1.31e+6	1.50e+6	1.52e+6	1.69e+6	1.76e+6
Std. error mean	575121	593561	608262	637369	669521	695411	690020	764242	838401	891368	938619
95% CI mean lower bound	83287	-35398	-31817	-102871	-41087	-56746	-94703	-59124	-193839	-132501	-160806
95% CI mean upper bound	2.43e+6	2.39e+6	2.45e+6	2.50e+6	2.69e+6	2.78e+6	2.72e+6	3.06e+6	3.23e+6	3.51e+6	3.67e+6
Median	233972	194587	206249	95944	243651	256905	251181	290895	257101	343569	306635
Mode	4595*	4056*	2711*	4774*	5509*	5543*	4777*	5864*	6243*	4226*	8022*
Sum	38993092	36481276	37522984	37163141	41114018	42267672	40749645	46551645	47070556	52325398	54439419
Variance	1.03e+13	1.09e+13	1.15e+13	1.26e+13	1.39e+13	1.50e+13	1.48e+13	1.81e+13	2.18e+13	2.46e+13	2.73e+13
Range	17603543	18290963	18802202	19607328	20651007	21534439	21349328	23675307	26000649	27716484	29161654
Minimum	4595	4056	2711	4774	5509	5543	4777	5864	6243	4226	8022
Maximum	17608138	18295019	18804913	19612102	20656516	21539982	21354105	23681171	26006892	27720710	29169676
Skewness	4.75	4.95	4.99	4.97	4.96	5.03	5.05	5.04	5.13	5.13	5.13
Std. error skewness	0.421	0.421	0.421	0.421	0.421	0.421	0.421	0.421	0.421	0.421	0.421
Shapiro-Wilk W	0.395	0.361	0.356	0.348	0.358	0.347	0.342	0.348	0.326	0.332	0.332
Shapiro-Wilk p	< .001	< .001	< .001	< .001	< .001	< .001	< .001	< .001	< .001	< .001	< .001
25th percentile	58355	42130	53285	28404	56847	65056	55354	76766	49161	82115	54360
50th percentile	233972	194587	206249	95944	243651	256905	251181	290895	257101	343569	306635
75th percentile	920903	821459	833160	532242	864042	844704	824599	931396	821761	1.14e+6	1.28e+6

Note: The CI of the mean assumes sample means follow a t-distribution with N - 1 degrees of freedom

* More than one mode exists, only the first is reported

As the p -value for Shapiro-Wilk falls consistently beneath the chosen significance level α ($p < \alpha$), there is non-normal distribution. This fact evidences the presence of extreme values – outliers – and asymmetric behaviours among the different national economies that make up the organisation. For the time being, conclusions can be drawn on the difficulty to fund defence for weaker economies. In addition, when assuming the self-reinforcing spending loop – that 2.2.2 refers to, these point out to less potential to do so over time and to the shadowing of stronger defensive powers within. Therefore, the free-riding patterns are identifiable in the analysis of the data set evolution.

The mean has risen about 45% during the decade, but the median with merely 6 digits indicates notable disparity between allies. Variance evolution denotes strong convergence in 2015, settling some divergence especially from 2022 onward. The expressive result of range for all years points to a collective GDP dominated by a few large economies. For the whole period, percentile 75th indicates that the right end of the data set is where most economies cluster; the same conclusion can be drawn from positive skewness values: NATO is made up of a strict set of strong economies combined with numerous smaller economies.

⁴⁵ Similar trends were found when using data for GDP at constant 2021 prices and exchange rates.

The final variable to be statistically analysed is FDI inflows⁴⁶ (millions of \$) at current prices, from 2014–2024 (UNCTAD, 2026). Accordingly, the 31 allies constitute the whole of n , turning out as (see Table 2, Annex A):

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
N	31	31	31	31	31	31	31	31	31	31	31
Mean	18736	41748	36653	26258	19070	20454	9606	20766	21071	16305	15015
Std. error mean	7407	19118	16826	10972	7468	10139	6869	12971	11184	10154	9433
95% CI mean lower bound	3609	2704	2290	3850	3817	-253	-4422	-5725	-1769	-4432	-4251
95% CI mean upper bound	33863	80791	71016	48665	34322	41162	23634	47257	43911	37042	34280
Median	3216	3840	5874	5419	3973	8300	3605	4931	8451	7296	5737
Mode	-3506*	-14716*	-6842*	-11403*	-30047*	-130008*	-131780*	-72077*	-80272*	-184352*	-40003*
Sum	580816	1294174	1136241	813983	591165	634081	297793	643757	653207	505458	465454
Variance	1.70e+9	1.13e+10	8.78e+9	3.73e+9	1.73e+9	3.19e+9	1.46e+9	5.22e+9	3.88e+9	3.20e+9	2.76e+9
Range	205239	482341	466261	320360	233281	359938	241341	458174	397167	417458	318851
Minimum	-3506	-14716	-6842	-11403	-30047	-130008	-131780	-72077	-80272	-184352	-40003
Maximum	201733	467625	459419	308957	203234	229930	109561	386097	316895	233106	278848
Skewness	3.50	3.23	3.75	3.76	3.23	1.73	-0.681	4.54	3.63	0.442	4.44
Std. error skewness	0.421	0.421	0.421	0.421	0.421	0.421	0.421	0.421	0.421	0.421	0.421
Shapiro-Wilk W	0.526	0.461	0.451	0.497	0.624	0.638	0.714	0.455	0.582	0.606	0.471
Shapiro-Wilk p	< .001	< .001	< .001	< .001	< .001	< .001	< .001	< .001	< .001	< .001	< .001
25th percentile	526	719	915	1316	966	1649	359	1466	1824	2078	1537
50th percentile	3216	3840	5874	5419	3973	8300	3605	4931	8451	7296	5737
75th percentile	17488	19959	21516	18324	22202	19479	13138	12275	24203	28138	11749

Note. The CI of the mean assumes sample means follow a t-distribution with N - 1 degrees of freedom

* More than one mode exists, only the first is reported

Besides 2020, the mean for the years of 2023 and 2024 has registered an all-time low. Furthermore, there is a tendency to disinvest frequently in the allies – and the subtracted amount repeats often, as the mode is negative for every year⁴⁷. The sum is well above the values registered for mode, peaking between 2015 and 2017 and falling to half of it in the remaining decade. High variance suggests data asymmetry, and an equivalent conclusion is drawn when comparing maximum investment values to the corresponding 75th percentile figure in each given year. Once again, the p -value for Shapiro-Wilk is unarguably indicative of a non-normal distribution – analogous to the previous assessment. Positive skewness for every year – except for 2020 – is telling of a high concentration of lower investment margins; the exact opposite is inferred from a negative figure within the hampered period. Progressing forward to the analysis of the correlation among variables, this final part of the descriptive statistics analysis will allow for acknowledging whether these evolve in parallel direction and, in the event of such, whether the given correlation is strong – founding a

⁴⁶ The data set retrieved for FDI inflows depicts the net basis. Given this fact, the negative values are a reflection of annual disinvestment, rather than the result of the economy's liquid flows (UNCTAD, 2026).

⁴⁷ By default, the software displays the lowest mode that it identifies in the data set when more than one is identifiable – see the asterisk below each table (R Core Team, 2024; The jamovi project, 2024).

steady pattern or otherwise. The chosen test is Spearman, in order to depict the non-normal distribution the data sets hold more accurately; the observable presence of skewed figures and outliers reinforce this choosing (Hauke & Kossowski, 2011). Data transformation is often deemed important in correlative analysis to ensure the results are as accurate as possible (Hauke & Kossowski, 2011). That being said, to prevent the raw larger/smaller country comparison and to recognise effect-inducing time lags, three new variables were customised: one assuming a $t-1$ formula for military spending [ME_lag (% of GDP)], another dealing with the normalisation of FDI by calculating its volume to each domestic economy relatively [FDI_inf (% of GDP)], and a final one addressing GDP's annual evolution, which standardises country size [GDP_growth (annual %)]. These derived from the core variable tripod: military expenditure [ME (% of GDP)], FDI inflows [FDI_inf], and economic size [GDP]⁴⁸, whose annual variation makes up economic growth. The correlation matrix is the following (see Table 4, Annex D):

	1	2	3	4	5	6
1 ME_% of GDP	1.000					
2 ME _{lag} _ % of GDP	0.934	1.000				
3 GDP	0.117	0.117	1.000			
4 GDP_growth (annual %)	-0.086	-0.022	-0.161	1.000		
5 FDI_inf	0.143	0.135	0.606	-0.079	1.000	
6 FDI_inf (% of GDP)	-0.071	-0.074	-0.421	0.131	0.305	1.000

As mentioned in Subsection 2.5.2, Aziz and Khalid (2019) argue that the materialisation of the effects of ME on FDI inflows is gradual⁴⁹. What is more, cross-country methodologies tend to normalise FDI through GDP (Regmi et al., 2024; Thakur, 2021). Finally, GDP_growth prevents the US from dominating the values of the correlation due to disproportionate sizing within the sample. Given this fact, an interconnecting panel data was tested via Spearman (see Annex B) – ME_lag (% of GDP) and FDI_inf⁵⁰. This tested correlation simulates a time-consuming process through which direct implications of ME upon inward FDI may occur. The same logic was then applied to the mediator variable, GDP – ME_lag (% of GDP) and GDP_growth (annual %), providing an answer for how last years' military spending has affected the ally's current year real GDP growth⁵¹. The

⁴⁸ Nevertheless, for the previously presented static solo variable analysis, raw figures were more adequate.

⁴⁹ Comparably, Effiong et al. (2022) have found that repercussions on incoming FDI – even if negative in the authors' findings – seem more long-run discernible. In the literature review, presented arguments of Regmi et al. (2024) and Santamaría et al. (2021) also underline the importance of timing for outcome accuracy.

⁵⁰ In this case, t stands for each given year constituent of the selected decade for the analysis.

⁵¹ This specific cross-examination briefly brings back the contents of Subsection 2.3.2.

necessity for both variables is proven by the test between raw GDP and ME (% of GDP), pointing to a stronger economy/higher spending pattern – already expected from the literature review. Lastly, in order to validate whether economic prosperity lures investors in, GDP_growth (annual %) and FDI_inf (% of GDP) were also tested.

When dissecting Annex B, a few conclusions can be drawn from each adjusted interval quadrant. Figure 1 depicts essentially no correlation between the last year's military expenditure and the current year's GDP growth (Spearman = -0.02; $p = 0.70$). Figure 2 portrays a similarly weak negative – close to zero – correlation between lagged ME and normalised FDI of -0.07. The lagged ME values show imperceptible co-movement with normalised FDI. Figure 3 analyses the same link, but with FDI in its raw format, disclosing a weak positive correlation of 0.14 – mostly an artefact of economic size, which justifies the normalisation by GDP. Moving on to Figure 4, the result of 0.12 implies that larger economies spend more on defence. Lastly, Figure 5 reveals only weak positiveness between economic growth and normalised FDI, around 0.13. However, the result is clear: under the given conditions, there is a weak to non-existent correlation between military spending and FDI inflows to NATO allies. Concurrently, two hypotheses guide the progression to the second methodological component, founded by the research question:

H₁: Increasing lagged military expenditure inflates incoming FDI.

H₂: Lagged military expenditure, via economic growth, affects incoming FDI indirectly.

Before proceeding, there are a few points to consider. Firstly, the three variables all share a common trait: heterogeneity. The analysis of military spending (as a share of GDP) captures the non-abiding results, the so called free-riding. In the case of GDP, it unveils an identifiable outlier-driven domain of a handful of economic powers – extending the conclusion connected to the investment gap within the alliance. On the other hand, inward FDI patterns point to repeated disinvestment and a descending mean. Majorly, these are non-normally distributed and evolve asymmetrically, with no discernible lockstep. When it comes to the Spearman test, specifically for the link between lagging military spending and normalised FDI, the rank correlation in-between these variables is essentially null, as $\rho = -0.07$. Thus, neither H_1 nor H_2 are preliminarily backed. However, since correlation is not the same as causality, the research moves onto its next approach: econometric regression – leading to a more robust answer to the research question, by allowing the mediation route to be tested. Will any relationship emerge when controlled for other variables determinant

to inward FDI? Will a mediation route capture what the raw figures could not? The TWFE estimator will aid in adjudicating among these questions and confirm whether this surface result is a clear reflection of the examined link rather than a by-product of heterogeneity, confounding, or the bivariate nature of the correlations.

3.3 Econometric regression

Despite the inability to fully illustrate the possible causal relation among ME and FDI, via the effect of the first on growth, the following econometric regressions showcase their relevance by being an accurate method in identifying this pattern – in the event of its existence. The three regressions – (1) to (3) – and the mediated effect⁵² – (4) – are specified as follows⁵³:

$$(1) FDI_inf = \beta_0 + \beta_1 ME_{lag_ \% \text{ of GDP}} + \beta_2 (ME_{lag_ \% \text{ of GDP}} \times Ong_diconfl) + \beta_3 Ong_diconfl + \beta_4 \ln(GDP) + \beta_5 GDP_growth + \beta_6 Td_open + \beta_7 Infl_rate + \beta_8 Gov_effective + a_i + \delta_t + e_{it}$$

$$(2) GDP_growth = \beta_0 + \beta_1 ME_{lag_ \% \text{ of GDP}} + \beta_2 \ln(GDP) + \beta_3 Td_open + \beta_4 Infl_rate + \beta_5 Gov_effective + a_i + \delta_t + e_{it}$$

$$(3) FDI_inf = \beta_0 + \beta_1 ME_{lag_ \% \text{ of GDP}} + \beta_2 GDP_growth + \beta_3 \ln(GDP) + \beta_4 Td_open + \beta_5 Infl_rate + \beta_6 Gov_effective + a_i + \delta_t + e_{it}$$

$$(4) Mediated\ effect = \beta_1 (2) \times \beta_2 (3)$$

FDI inflows [FDI_inf], lagged military expenditures [ME_{lag} % of GDP], and economic growth [GDP_growth] are central to the equations – the log of GDP level [ln(GDP)] is also included, but as a control for economic size. The positive values registered for skewness and the agglomeration of economic powers within the 75th percentile (see Section 3.2) when analysing raw GDP justify its conversion in logarithm (Wooldridge, 2010), entering the equation to control size and minimising the prevalence of the larger economic powers – while economic growth, GDP growth, mediates the ME/FDI link. On another note, ME is still used in its lagged format due to the recommendations of literature that are pointed out in 3.2. In addition, the control variables used will account for factors of more importance to the final inferences of this research than the discrimination of country size and economic strength – its main intention is to inspect NATO allies in their natural form, or as natural as possible considering the research scenario. The control variables elected to

⁵² In this equation, calculated from the coefficients of the equations (2) and (3), $\beta_1 (2)$ represents the ME/growth link and $\beta_2 (3)$ the growth/FDI link, the two legs of the mediation channel.

⁵³ In the regressions, a_i = country FE, δ_t = year FE – where a and δ represent the TWFE estimator, and e_{it} = error term.

ensure a thorough and strategic follow-up to the research and chosen based on which the literature deems most influential to inward FDI are the following⁵⁴: Economic size [$\ln(\text{GDP})$], Trade openness [Td_open], Inflation rate [Infl_rate], and Government effectiveness [Gov_effective] (World Bank, 2025a; World Bank, 2025b); one interaction variable is also included in the first equation, Ongoing domestic and international conflict [Ong_diconfl] (IEP, 2025). Groh and Wich (2012) and Iamsiraroj and Doucouliagos (2015) endorse the usage of GDP and GDP growth – already a core variable of this dissertation – as proxies for the size and growth of the national economy, respectively, with influence on inward FDI. The OLI Paradigm reinforces the claim, as market size is deemed a relevant L advantage (Dunning, 1993). Dang and Nguyen (2021) and Rehman (2016) empirically confirm the positive determination of GDP growth, and perceived environmental stability, on FDI, for ASEAN countries and Pakistan, respectively – do these inferences uphold for the 31 allies? Trade openness, measuring the receptiveness to integrating the global economy, is mentioned several times as an important FDI determinant⁵⁵ (Dang & Nguyen, 2021; Dunning, 1993; Rehman et al., 2011; UNCTAD, 1998; Zhao & Du, 2007). The macroeconomic metric inflation rate – consumer-price inflation – is used as a proxy for stability. This is another determinant of location advantages (Dunning, 1993), and it is also noted by Regmi et al. (2024) that too much military expenditure can cause an uprise in inflation rates and, therefore, discourage investors. Finally, including a variable that controls institutional quality – government effectiveness – is a must-do: the Institutional Neoliberalism signals their role on reducing uncertainty, instability, and transaction costs⁵⁶ (Keohane, 1984; Keohane & Nye, 1977) – all favouring FDI. As mentioned previously, Dunning (1993) also emphasises the effect of regulatory and institutional constraints on the location determinants of The OLI Paradigm (see 2.4.1). The used index concentrates political and regulatory dimensions within a single variable (World Bank, 2025a) – dodging multicollinearity issues. An interaction variable – ongoing domestic and international conflict – is included to account for all the moderation influence that conflict may have directly on military spending, pre-empting the ME, via GDP, to FDI relation that the research question aims at testing. Its inclusion in the first equation accounts for the overall

⁵⁴ A collected set of non-elected interaction variables, due to various reasons, reduced and/or dubious adequacy, and lack of data for the main period, among others, is constituted by: political instability, intensity of internal conflict, military personnel, relationships with neighbouring countries, safety and security, conflict exposure, cities and armed conflict events, incompatibility (government or territory), political regime – quantified, and military capability.

⁵⁵ Return to Subsection 2.4.1 where some location determinants are identified in a preliminary manner.

⁵⁶ As the Subsections 2.1.2 and 2.4.1 explore.

impact of violence on FDI inflows via its defence spending upper-level – some authors deem it a factor influential to FDI, as the literature review sections discuss (Aziz & Khalid, 2019; Effiong et al., 2022; Fischer & Oechslin, 2026; Herz, 1950; Iheonu & Ichoku, 2022; O’Connor, 2023; Regmi et al., 2024; Wisniewski & Pathan, 2014).

This way, three regressions were carried out (see Table 5, Annex E): equation (1) linking defence spending directly to FDI⁵⁷, with ME moderated by conflict, equation (2) – delving deeper into the research question – to capture the association between military spending and economic growth (GDP growth) – the first connection exposed by the research question, followed by equation (3) to capture a possible growth/FDI link – the second leg of the mediation channel. To finalise, calculations that combine military spending, growth and FDI into a single link were conducted. In sum, equation (1) looks into the ME/FDI link, a preliminary approach to this analysis; equations (2) and (3) account for both legs of the mediation channel that the research question suggests, and equation (4) completes the mediation channel, by merging regressions (2) and (3) to capture the ME/FDI effects mediated by GDP growth.

The inclusion of year and country fixed effects aims at accounting for – unlike pooled Ordinary Least Squares (OLS) – time and country-specific impacts, just as a few authors point to the in-alliance heterogeneous abidance to the defence targets set (Albalade et al., 2012; Edström & Westberg, 2022; Olejnik, 2026). The following table contains the expected signs⁵⁸ for every regression coefficient:

	Equation (1)	Equation (2)	Equation (3)
FDI inflows (FDI_inf)	DV		DV
Lagged ME (ME _{lag} _%GDP)	+	+	+
GDP growth (GDP_growth)	+	DV	+

⁵⁷ The equation (1) was conducted twice, under the terms $n=30$ and $n=31$, as there are no published figures for Luxembourg within the variable Ongoing domestic and international conflict – hence $n=30$. Therefore, $n=31$ used a proxy made up of average values between Belgium and Netherlands – the countries conceptually closest to Luxembourg in matters of security – to estimate figures for Luxembourg.

⁵⁸ “DV” stands for dependent variable and “?” means no sign is expected, as there is no literature reviewed on the matter; the choices are justified within the paragraph that follows.

Lagged ME $\times$ conflict (ME _{lag} $\times$ Ong_diconfl)	$\pm$		
Ongoing conflict (Ong_diconfl)	$\pm$		
Economic size (ln(GDP))	+	?	+
Trade openness (Td_open)	+	+	+
Inflation (Infl_rate)	–	–	–
Gov. effectiveness (Gov_effective)	+	+	+

Upon reaching the final results⁵⁹ (see Table 5, Annex E), a few conclusions can be drawn:

	Total effect⁶⁰ – ME on FDI	Eq. (1) – moderation FDI (<i>n</i> = 31)	Eq. (1) – moderation FDI (<i>n</i> = 30)	Equation (2)	Equation (3)
ME _{lag} % of GDP	-3.795	-6.664	-7.597	0.148	-3.755
	(4.584)	(9.799)	(10.313)	(0.562)	(4.641)
GDP_growth	–	-0.272	-0.273	–	-0.275
		(0.164)	(0.186)		(0.165)
ME _{lag} $\times$ Ong_diconfl	–	1.989	2.675	–	–
		(4.854)	(5.071)		
Ong_diconfl	–	-3.215	-4.303	–	–
		(8.564)	(9.072)		
ln(GDP)	-2.273	3.418	3.156	23.524***	4.190
	(14.119)	(13.906)	(14.385)	(5.737)	(13.728)
Td_open	-0.016	-0.017	-0.045	0.019	-0.011
	(0.053)	(0.052)	(0.070)	(0.022)	(0.051)
Infl_rate	0.072	0.046	0.052	-0.122***	0.038
	(0.131)	(0.121)	(0.126)	(0.033)	(0.122)
Gov_effective	-0.095	-0.385	-0.629	-0.994	-0.368
	(3.131)	(3.251)	(3.330)	(1.178)	(3.257)
Equation (4) – mediated effect, computed from (2) and (3); not estimated					

⁵⁹ The software used for the processing of the given data sets was StataNow/SE 19.5 (StataCorp, 2025).

⁶⁰ Equation (1) has two variations: the direct ME/FDI link, designated total effect – when omitted the interactive variable – and the conflict-moderated ME/FDI link – the formally intended version of the equation, as it was estimated with and without the moderation of the conflict variable – apart from Luxembourg's robustness check (see footnote 61).

(2) × (3) = -0.041 95% bootstrap CI [-0.30; 0.45]					
Observations	310	310	300	310	310
<i>n</i>	31	31	30	31	31
R ² within	0.048	0.050	0.052	0.756	0.050
Country-year FE	Yes	Yes	Yes	Yes	Yes

Firstly, the coefficient for ME being -3.80 and the standard error 4.58⁶¹ is indicative of a low statistical significance from the effect of the investment in national defence (as a share of GDP) on the increase of the attraction of FDI to the 31 NATO allies, between 2014 and 2024 – the direct effect of defence on FDI – pointing to the absence of an observable direct link between both variables. Equation (1) corroborates this statement by including ongoing international and domestic conflict – a proxy for conflict and violence – as an interacting variable with ME; the moderation is statistically non-significant: 1.99 and a standard error of 4.85. With every level of conflict, the marginal effect of military expenditure remains null – no confirmed moderation (see Annex C). Looking into equations (2), (3) and (4), in order to delve deeper into the determined query, it is possible to draw similar conclusions. Neither does military spending have a strong effect upon economic growth – with a 0.15 coefficient and a 0.56 standard error – nor does the latter affect FDI inflows significantly, due to a -0.27 coefficient and a value of 0.17 for standard error⁶². In this sense, the product of the calculations – equation (4) – that aim at capturing the significance of the tripod, unveil a nearly null effect of -0.04, to which a CI of [-0.30; 0.45] – computed via a non-parametric cluster bootstrap by country with 1000 replications (Preacher & Hayes, 2008), containing 0, adds up. Consequently, the estimation works out a negative result for every coefficient, but the large standard errors relative to each coefficient – for equations (2), (3), and (4) – as well as a CI spanning 0, underpin statistical lightweight and are not indicative of the direction of the relation between the variables. Through the examination of the figures for the effect of the lagged military spending on inward FDI, when directly linked and then when mediated by economic growth – with a coefficient of -3.80 and -3.75, respectively, it becomes feasible to conclude that economic growth is not a pivotal transmission channel of effects, as the direct effect of defence was

⁶¹ It can be inferred that Luxembourg's real value inclusion – as these are not published – for ongoing international and domestic conflict would not significantly alter the final results, as much as its inclusion being optional. When *n* = 30, the moderation effect remains insignificant: 2.68 and error of 5.07.

⁶² When a supplementary test was conducted using lagged GDP growth, *t*-1, the results remained statistically insignificant – coefficient of 0.03 and *p* = 0.89 (see Table 6, Annex E), serving as proof of the sturdiness of the findings of equation (3). However, it was not included in the main analysis, as the literature covers immediate GDP upon FDI effects in panel settings (Dang & Nguyen, 2021).

barely impacted upon its introduction. Therefore, the mediation effect this variable offers is negligible. In conclusion, the analysis of the econometric regressions, which retrieved data from the 31 given NATO allies, from 2014–2024, fails to confirm both H₁ and H₂. Hence, it provides evidence to answer to the research question of this dissertation: the results point to no statistically significant evidence of an increase in the share of defence expenditure in national GDP, through its impact on economic growth, being able to affect FDI inflows to the NATO states responsible for such increase.

In order to validate miscellaneous aspects of the econometric models and the results these have provided, a series of follow-up diagnostic tests (see Table 7, Annex E) were conducted on Stata (StataCorp, 2025): Variance Inflation Factor (VIF) for multicollinearity, the Hausman test, Wooldridge for autocorrelation, modified Wald for heteroskedasticity, Pesaran CD for cross-section dependence, and Driscoll-Kraay standard errors.

Test	<i>p</i> -value	Decision
VIF (multicollinearity)	medium 1.49; max 2.06 (lnGDP); ME _{lag} 1.25, GDP_growth 1.05, Td_open 1.68, Infl_rate 1.13, Gov_effective 1.77	No multicollinearity (all < 5)
Hausman FE <i>vs</i> RE – Eq. (2)	$\chi^2(5) = 38.29$ ($p < 0.001$)	Reject RE → FE
Hausman FE <i>vs</i> RE – Eq. (3)	$\chi^2(6) = 5.13$ ($p = 0.528$)	RE adequate; FE adopted for cohesion
Wooldridge (serial autocorrelation)	Eq. (3): $F(1,30) = 419.95$; Eq. (2): $F(1,30) = 97.56$ ($p < 0.001$)	Present → robust standard errors
Modified Wald (heteroskedasticity)	Eq. (3): $\chi^2(31) = 83518$; Eq. (2): $\chi^2(31) = 834.99$ ($p < 0.001$)	Present → clustered SE
Pesaran CD (cross-section dependence)	Eq. (2): -1.24 ($p = 0.215$); Eq. (3): 23.48; Eq. (1): 22.94 ($p < 0.001$)	Driscoll-Kraay (dependence in FDI equations)
Driscoll-Kraay (robustness)	GDP_growth to FDI_inf: -0.275 (SE 0.145, $p = 0.091$); ME _{lag} to FDI_inf: insignificant	GDP_growth/FDI_inf marginally significant at 10%; <u>Main conclusion unaltered</u>

The first test aims at identifying any intercorrelation among the regressors of the equation that may influence individual coefficient values, quantifying the extent to which each coefficient's variance is amplified by its correlation to the other variables. In this case, the VIF has ruled out multicollinearity, with 1.49 for mean and a 2.06 for maximum – falling well beneath the warning maximum of 5 (Wooldridge, 2010). This fact acknowledges the absence of collinear regressors that may result in inflated standard errors. Secondly, the Hausman test (Baltagi, 2021) explored whether random⁶³ or fixed effects were the best fitting for equations (2) and (3) to capture unperceived heterogeneity. For equation (2), the

⁶³ Despite efficient, random effects assume the singular effects are not correlated to the control variables of the equation, which, if unfulfilled, makes for a biased estimator (Baltagi, 2021; Wooldridge, 2010).

inconsistency of random effects was confirmed ($\chi^2(5) = 38.29$; $p < 0.001$); for equation (3), the result admitted random effects ($\chi^2(6) = 5.13$; $p = 0.528$). However, the consistency provided by fixed effects – even when random effects are valid for usage, the need for an ubiquitous use of a single estimator to ensure coherence, and the consideration for within-country temporal variations of national characteristics, such as the variables connected to market and trade, among others, clarified the decision: using fixed effects was the better option for both equations. Moving onto the Wooldridge test (Wooldridge, 2010), it looks for correlation among disturbances, or first-order correlation within the data panel's errors, as fixed effects are able to ensure correct coefficient calculations even if there is this type of correlation over time. It confirms the existence of serial correlation between error terms, advising the use of standard errors that are robust to autocorrelation – there is the relevance of Driscoll-Kraay – to ensuring the reliability of the significance tests performed. The in-group heteroskedasticity modified Wald test (Baltagi, 2021) signals the inconstancy of the error variance throughout panels ($\chi^2(31) = 834.99$ for equation (2) and 83518 for equation (3); $p < 0.001$) – confirmed and reinforcing the Wooldridge result. Another motivator to rely on robust standard errors is the Pesaran CD test. For equation (2) it finds no cross-unit dependence (CD = -1.24; $p = 0.215$), but for equations (1) and (3) cross-dependence is proved outright (CD = 22.94 and 23.48, respectively; $p < 0.001$). Given this fact, the evolution of economic growth is found to be anchored in national conditions – the equation's regressors, whereas the flows of investment are firmly responsive to common shocks to the allies, such as the pandemic and the invasion of Ukraine. To finalise, the Driscoll-Kraay estimator (Baltagi, 2021) produces standard errors robust to autocorrelation, heteroskedasticity, and cross-section dependence (Wooldridge, Wald, and Pesaran CD), thus enhancing the reliability of the variance estimator (see Table 8, Annex E). The main conclusion remains unchanged, with one small detail: the GDP growth/FDI link coefficient of -0.275 – equation (3) – acquires marginal significance ($p = 0.091$, at a 90% confidence level), as the SE goes from country-clustered 0.165 to Driscoll-Kraay 0.145. However, as the lagged ME coefficient of 0.148 in equation (2) – the one testing the ME/GDP growth link – remains statistically non-significant, the mediation channel still breaks at its first leg, as previously identified.

3.4 Final remarks

Given the robustness supported by the diagnostic tests, why do the results for the possible connection of this research unveil this way? Apart from the existence of no evident link, the nature of the object, the 31 NATO allies, or its environmental conditions – such as the chosen period – may be the most influential factors to the given results. The sample is made up of a developed, reasonably peaceful, relatively homogeneous group of nations with strong institutions and overall political stability. Consequently, looking at the whole of the research, inward FDI may be more affected by other structural determinants, such as the previously mentioned market size, fiscal conditions, macroeconomic state, among others. Indeed, economic size possesses the highest correlation value with raw incoming FDI; however, larger economies attract in proportion less – normalised – FDI relative to GDP – $\rho = -0.421$. Conceptually, market size appears to be influentially independent of ME as an L determinant within The OLI Paradigm (Dunning, 1993). Accounting for lagged effects, in the case of military expenditure, was a methodological choice recommended by the literature, hence not having been conducted any econometric regression (or other methodological calculation) using contemporary military spending – not even as robustness tests. Alternatively, even though the literature assumes eventual immediate effects of economic growth upon inward FDI in panel models, a robustness check (see Table 6, Annex E) was carried out using lagged GDP growth on equation (3) – the one that links this variable to FDI – to account for the temporal mismatch that lagged military spending, current GDP growth, and – also current – FDI have (see footnote 62). It is then presumable that the final statistically non-significant results are not dependent on the structure of the variables. Regarding the interaction variable of Ongoing Domestic and International Conflict of equation (1), for every level of conflict, the conflict-moderated effect of ME upon FDI inflows is statistically null, as the CI spans zero (see Graph 1, Annex C). The estimate does rise with the intensity of conflict – going from around -4.7 (low intensity conflict) to around -0.8 (high intensity conflict) while nearing zero, which is consistent with the positive interaction term: the escalation of the conflict makes the negative effect of ME less pronounced. However, this finding is not statistically significant, as the SE is 4.85 – much higher than the 1.99 interaction term coefficient, and the CI widens at both extremes of the conflict intensity range values, where there are fewer observations – indicating the absence of conflict moderation between ME and FDI inflows. This finding is consistent with the literature referred to in 2.5.1 and 2.5.2 (Aziz & Khalid,

2019; Effiong et al., 2022; Iheonu & Ichoku, 2022; Regmi et al., 2024): conflict will most likely interact with ME regarding its effect on FDI inflows within unstable and developing economies – in general, not the case for the developed NATO allies during the period that was considered. In addition, most of the countries do not comply with the defence targets set by NATO within the required period, which translates to suppressed effects, and the ones who do verify very subtle to non-existent effects of this sort of investment in GDP, as the targets represent a minor percentage of the economy – first 2% and then 5% – which leads to insignificant figures unable to produce discernible results when interacting with FDI inflows. These findings corroborate in part the literature: the absence of significant causality between ME and growth (Alptekin & Levine, 2012; Dunne & Tian, 2013), the results of the defence and FDI connection contrast with Douch (2025) – founded in dynamic effects, and the weak positiveness between growth and inward FDI is in line with Iamsiraroj and Doucouliagos (2015). In addition, irrespective of any link between GDP growth and inward FDI, the mediation channel breaks at its first leg, as ME barely influences economic growth, leading to no indirect effect propagating downstream.

4. Conclusion

This dissertation questions whether an increase in national military spending as a share of GDP, through its effect on economic growth, can influence incoming FDI positively to the NATO allies that have engaged in that increase. Therefore, in order to provide an answer to this research's question, panel data of 31 NATO allies was considered, for the period between the Wales and The Hague Summit – from 2014 to 2024 – where defence spending targets were set to rise from 2% to a 5% threshold. First via a descriptive statistics analysis comprising the examination of metrics and the conduction of a Spearman correlation test and afterwards through econometric regressions that aimed at identifying conditional association between ME and FDI, direct and then moderated by conflict, and between the three-prong mediation channel connecting ME, economic growth and inward FDI, using a TWFE model. Military expenditure was lagged to account for time-sensitive impact and the proxy for economic growth was GDP growth. A set of selected FDI determinants, in congruence with The OLI Paradigm (Dunning, 1993) and evidence found in the reviewed literature, were chosen to control the equations.

The evidence found is not statistically significant to back the main hypothesis. The Spearman rank correlation results captured a near-null coefficient between lagged military expenditure and normalised FDI. The following regressions reinforced the absence of discernible association when adding control variables and fixed effects to test for a relationship between lagged ME and FDI inflows: the results point to non statistical significance when tested for direct effect and positive yet equally not statistically significant when moderated by ongoing conflict. The mediation channel also captures nearly null results when accounting for the ME/growth link and, later, the growth/FDI link: thus, the mediation effect seems not to be relevant. The diagnostic tests rule out possible problems of specification and support the robustness of the findings that reject both H_1 and H_2 , the hypotheses formulated with basis on the research question to guide the econometric regressions. Thus, using the given sample within the selected period, no evidence of direct nor economic-growth mediated effects were found between ME and incoming FDI, with the mediation channel breaking right at its first leg. Therefore, abiding by the defence targets set by NATO is no guarantee that the ally will experience economic growth nor that this will impact its attraction of FDI. Where the mediation channel breaks is its decisive aspect: the upstream leg, as the results fail to find the ME/growth connection. On this basis, since the mediation is dependent on both legs to produce discernible effects upon

incoming FDI, the propagation of any impact is inhibited downstream. This behaviour is consistent with the extent of the target set, as 2% is too small to represent significant macroeconomic stimuli within diversified and strong economies, such as NATO allies'. That being said, on one hand, the mediated effect CI is tight enough to rule out an economically significant mediation channel, being, at most, consistent with a subtle effect that cannot underpin the channel that the research question hypothesised. On the other hand, the total effects of ME upon FDI inflows CI is wide enough to admit economically significant positive or negative effects. GDP growth may be what pins down the relationship – and limits the findings obtained.

These findings contribute to bridging the identified literature gaps, by directly addressing whether ME can affect inward FDI and by analysing a homogeneous panel of NATO allies, which contrasts with the main piece of literature that tests this hypothesis but for developing countries, as previously mentioned. Essentially, it reveals that the outcomes documented for conflict-affected nations and/or regions, as well as for weaker economies of the globe – such as the MENA region, Pakistan, and Asian alliances – do not dwell on similar mechanisms for institutionally stable and developed countries, at low levels of defensive investment as a share of the national GDP to influence foreign investors positively. By attesting the inconclusive ME/growth link for samples with miscellaneous countries, all the while contrasting with the non-linear and dynamic positive effect found in single or developing-country analyses, this dissertation then resolves into a boundary condition to some of the existing literature, rather than solely adding to it.

Investors are found to look for reliance and stability, especially under moderate defence targets and/or national or international conflict. The mechanism that raises security concerns upon engaging in ME in conflict-prone zones presupposes an unstable environment that the allies do not display; the second mechanism presupposes that, in order to affect the risk perception of investors and foreign rivals, military spending is the enough amount. With underlying institutional stability and moderate defence targets, the alterations verified within the analysed period are not sufficient to activate instability. The result rather indicates that NATO membership and its institutional constraints are enough to signal reliability, independent of whether ME attracts or deters investors. When framing the results within The OLI Paradigm, military spending does not seem to constitute an advantage able to meaningfully determine FDI location in this research. In fact, economic size, or GDP, has the strongest correlation with FDI inflows of the analysed variables,

implying that structural conditions are more determinant to foreign investors. This conclusion is in line with the Institutional Neoliberalism framework, along with its Complex Interdependence concept (Keohane, 1984; Keohane & Nye, 1977): for the internal environment of the allies, the economic – size – and the institutional pillar, such as NATO membership or its regulatory impositions that signal reliability, make the need for military spending decline. Therefore, foreign investors will decide where to invest based on the first two pillars, rather than the third. From a political standpoint, the decision adopted at the NATO Summit in The Hague to raise defence spending targets to 5% of GDP reflects a renewed emphasis on security considerations within the alliance. As the findings of this dissertation do not provide robust evidence of significant economic effects associated with defence expenditure, either in terms of economic growth or FDI attraction, defence spending targets appear to be primarily grounded in security and strategic political rationales, rather than in their potential economic benefits for member states.

A few limitations modulate this research's final conclusions. The period spanning the two NATO Summits may be too short to capture the long-term period needed for military spending effects to spill over into the national economy, via growth or FDI inflows. On another note, the selected span of years does not cover any period following the decision to increase the spending to 5% – an empirical question that remains open, so the effects derived from the latest Summit are not translated in the findings of this research. The fact that ME lagged is in a $t-1$ format, may lead to a more difficult identification of gradually impactful effects upon FDI inflows – therefore, adopting a bigger lagging period may lead to other results.

Fundamentally, the trade-off between including the single panel of allies or sorting compliers from non-compliers to fit the analysis was a deliberate decision – based on the effective addressees of the alliance's decisions and the internal cohesion grounds that NATO preaches. However, it leaves open whether isolating and analysing solely compliers could translate differently on the final results, which future research could inspect. In fact, future research could aim at enlarging the chosen period and/or opting for a longer inter-summit period of time, periods of tension, or other influential moments to the NATO's defensive background altogether – as, for example, dealing with the spillovers brought by the development of the Russo-Ukrainian conflict. More importantly, research could ignite after the effects of the 2025 Summit begin to show – analysing whether a higher target has the potential of leading to a more expressive pattern. Moreover, if the increase of defence

expenditure in national GDP of NATO member states was found to affect FDI inflows therein, there would be an intent to explore in which ways these effects unfold. Since no positive connection was found under the designated conditions, the intent did not take place in this dissertation, but it could be reserved for future research on the topic. On another note, the disaggregation of the variable military spending into its several components, such as militia, equipment, infrastructure, among others, could find other conclusions as well – just as Becker and Dunne’s (2023) analysis of personnel mentioned in 2.3.2. Another adequate option is an almost empirically underexplored link, and there is one indicated by footnote 2: the effects of FDI inflows upon ME (Kentor et al., 2023). One other possible research could aim at capturing the effects of Trump’s administration – in line with the mentioned American pressures (Tian et al., 2025) – upon NATO and their translation into the alliance’s economic panorama. Future research could also exclude the US from the ally panel, so as to suppress the impact of the highest contributor in the attempt of using a less skewed data set, less able to mask the final result – another recognisable limitation of this study. Regarding the literature gaps that uphold the need for future research, as developed nations are not often met with the chosen variables – the aim of this study, EU countries could be another sample to consider, as the organisation’s *modus operandi* also connects to the frameworks of the Institutional Neoliberalism through its cooperation purpose. Additionally, when examining the whole research, a few study proposals unfold, and Subsection 2.1.2 points in the direction of one: testing whether NATO membership can develop L advantages within The OLI Paradigm to influence the attraction of FDI positively – placing membership at the core of the research question. Another possible core is conflict, as it is used as an equation moderator herein, while also having the potential to be an independent variable. Lastly, the findings of this dissertation leave for future research whether economic size would better mediate the ME/FDI link instead of growth, as its correlation rank with FDI is found to be positive.

References

- Aiyar, S., Malacrino, D., & Presbitero, A. F. (2024). Investing in friends: The role of geopolitical alignment in FDI flows. *European Journal of Political Economy*, 83, Article 102508. <https://doi.org/10.1016/j.ejpoleco.2024.102508>
- Albalade, D., Bel, G., & Elias, F. (2012). Institutional determinants of military spending. *Journal of Comparative Economics*, 40(2), 279–290. <https://doi.org/10.1016/j.jce.2011.12.006>
- Alptekin, A., & Levine, P. (2012). Military expenditure and economic growth: A meta-analysis. *European Journal of Political Economy*, 28(4), 636–650. <https://doi.org/10.1016/j.ejpoleco.2012.07.002>
- Aziz, N., & Khalid, U. (2019). Armed conflict, military expenses and FDI inflow to developing countries. *Defence and Peace Economics*, 30(2), 238–251. <https://doi.org/10.1080/10242694.2017.1388066>
- Baltagi, B. H. (2021). *Econometric analysis of panel data* (6th ed.). Springer.
- Becker, J., & Dunne, J. P. (2023). Military spending composition and economic growth. *Defence and Peace Economics*, 34(3), 259–271. <https://doi.org/10.1080/10242694.2021.2003530>
- Benoit, E. (1978). Growth and defense in developing countries. *Economic Development and Cultural Change*, 26(2), 271–280. <https://doi.org/10.1086/451015>
- Cooper, S., & Stiles, K. W. (2021). Who commits the most to NATO? It depends on how we measure commitment. *Journal of Peace Research*, 58(6), 1194–1206. <https://doi.org/10.1177/0022343320980820>
- Dalgaard-Nielsen, A. (2022). Tackling strategic simultaneity: What NATO could do to adapt to the new multitude of threats. *Scandinavian Journal of Military Studies*, 5(1), 165–176. <https://doi.org/10.31374/sjms.143>

- Dang, V. C., & Nguyen, Q. K. (2021). Determinants of FDI attractiveness: Evidence from ASEAN-7 countries. *Cogent Social Sciences*, 7(1), Article 2004676. <https://doi.org/10.1080/23311886.2021.2004676>
- Deger, S., & Smith, R. (1983). Military expenditure and growth in less developed countries. *Journal of Conflict Resolution*, 27(2), 335–353. <https://doi.org/10.1177/0022002783027002006>
- Dembinski, M., & Spanger, H.-J. (2025). *The future of NATO: Germany's NATO policy shaped by the Ukraine war and Donald Trump*. Friedrich-Ebert-Stiftung. <https://collections.fes.de/publikationen/ident/fes/22158>
- Deni, J. R. (2020). *Security threats, American pressure, and the role of key personnel: How NATO's defence planning process is alleviating the burden-sharing dilemma*. US Army War College Press. <https://press.armywarcollege.edu/monographs/919>
- Dimitriou, D., Goulas, E., Kallandranis, C., & Drakos, K. (2025). Military expenditures and economic growth: Evidence from NATO and non-NATO alliances. *Defence and Peace Economics*, 36(3), 324–348. <https://doi.org/10.1080/10242694.2024.2346860>
- Douch, M. (2025). FDI, defense spending, and economic prosperity. *Bulletin of Economic Research*, 77(1), 86–118. <https://doi.org/10.1111/boer.12473>
- Dunne, J. P., & Tian, N. (2013). Military expenditure and economic growth: A survey. *Economics of Peace and Security Journal*, 8(1), 5–11. <https://doi.org/10.15355/epsj.8.1.5>
- Dunning, J. H. (1993). *Multinational enterprises and the global economy*. Addison-Wesley.
- Edström, H., & Westberg, J. (2022). *Military strategies of the new European allies: A comparative study*. Routledge.
- Effiong, U. E., Okijie, S. R., & Udonwa, U. E. (2022). Military spending and influx of foreign direct investment in Nigeria: A security-oriented perspective. *International Journal of Academic Accounting, Finance & Management Research*, 6(8), 24–40.

- Elezi, S., & Kurtishi, N. (2019). Economic benefits of joining NATO – The case of new member states and potential impact on sustainable development in Macedonia. *International Journal of Scientific Engineering and Research*, 7(2), 45–53. <https://www.ijser.in/archives/v7i2/IJSER18630.pdf>
- Eurostat. (n.d.). *Foreign direct investment (FDI)*. Statistics Explained Glossary. Retrieved January 26, 2026, from [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Foreign_direct_investment_\(FDI\)](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Foreign_direct_investment_(FDI))
- Faini, R., Annez, P., & Taylor, L. (1984). Defense spending, economic structure, and growth: Evidence among countries and over time. *Economic Development and Cultural Change*, 32(3), 487–498. <https://doi.org/10.1086/451402>
- Ferguson-Dryden, S. (2021). *Does FDI matter? Assessing how foreign direct investment impacts the geography of defense spending* [Master's thesis, University of Chicago]. Knowledge UChicago. <https://doi.org/10.6082/uchicago.3181>
- Fischer, J., & Oechslin, M. (2026). *War risk and subnational foreign direct investment*. Repository Social Science Research Network (SSRN). <https://doi.org/10.2139/ssrn.5330974>
- Floștoiu, S. (2024). Military spending in the context of national and global security. *Scientific Bulletin*, 29(2), 225–235. <https://doi.org/10.2478/bsaft-2024-0024>
- Floștoiu, S. (2025). Considerations on the impact of the defense industry on the national economy. *The Knowledge-Based Organization*, 31(2), 27–45. <https://doi.org/10.2478/kbo-2025-0046>
- George, J., & Sandler, T. (2022). NATO defense demand, free riding, and the Russo-Ukrainian war in 2022. *Journal of Industrial and Business Economics*, 49(4), 783–806. <https://doi.org/10.1007/s40812-022-00228-y>
- Groh, A. P., & Wich, M. (2012). Emerging economies' attraction of foreign direct investment. *Emerging Markets Review*, 13(2), 210–229. <https://doi.org/10.1016/j.ememar.2012.03.005>

- Hauke, J., & Kossowski, T. (2011). Comparison of values of Pearson's and Spearman's correlation coefficients on the same sets of data. *Quaestiones Geographicae*, 30(2), 87–93. <https://doi.org/10.2478/v10117-011-0021-1>
- Herz, J. H. (1950). Idealist internationalism and the security dilemma. *World Politics*, 2(2), 157–180. <https://doi.org/10.2307/2009187>
- Iamsiraroj, S., & Doucouliagos, H. (2015). Does growth attract FDI? *Economics*, 9(1), 1–35. <https://doi.org/10.5018/economics-ejournal.ja.2015-19>
- Iheonu, C. O., & Ichoku, H. E. (2022). Terrorism and investment in Africa: Exploring the role of military expenditure. *Economics and Business Review*, 8(2), 92–112. <https://doi.org/10.18559/ebr.2022.2.6>
- Ilzetzki, E. (2025). *Guns and growth: The economic consequences of defense buildups* (Kiel Report No. 2). Kiel Institute for the World Economy. <https://hdl.handle.net/10419/311212>
- Institute for Economics and Peace. (2025). *Global Peace Index map* [Data set]. Vision of Humanity. Retrieved June 26, 2026, from <https://www.visionofhumanity.org/maps/>
- Iskandarov, K., & Gawliczek, P. (2020). The strategy of "military non-alignment" and NATO. *Social Development and Security*, 10(3), 16–28. <https://doi.org/10.33445/sds.2020.10.3.2>
- The jamovi project. (2024). *jamovi* (Version 2.6.44) [Computer software]. <https://www.jamovi.org>
- Juntunen, T., Lavikainen, J., Pesu, M., & Särkkä, I. (2024). *NATO as a nuclear alliance: NATO's nuclear capability and its evolution in the international nuclear order*. Prime Minister's Office, Finland. <https://urn.fi/URN:ISBN:978-952-383-203-9>
- Kaushal, S., Macy, A., & Stickings, A. (2021). *The future of NATO's air and missile defence*. Royal United Services Institute for Defence and Security Studies. <https://www.rusi.org/explore-our-research/publications/occasional-papers/future-nato-air-and-missile-defence>

- Kentor, J., Clark, R., & Jorgenson, A. (2023). The hidden cost of global economic integration: How foreign investment drives military expenditures. *World Development*, 161, Article 106105. <https://doi.org/10.1016/j.worlddev.2022.106105>
- Keohane, R. O. (1984). *After hegemony: Cooperation and discord in the world political economy*. Princeton University Press.
- Keohane, R. O., & Nye, J. S., Jr. (1977). *Power and interdependence: World politics in transition*. Little, Brown and Company.
- Kuokka, J. (2024). *Neutrality to NATO: Credit spreads and security policy. Evidence from Finland and Sweden* [Master's thesis, LUT University]. LUTPub. <https://lutpub.lut.fi/handle/10024/168409>
- Lindley-French, J. (2023). *The North Atlantic Treaty Organization: The enduring alliance* (3rd ed.). Routledge.
- Monaghan, S. (2022). *Resetting NATO's defense and deterrence: The sword and the shield redux* (CSIS Brief). Center for Strategic and International Studies. <https://www.csis.org/analysis/resetting-natos-defense-and-deterrence-sword-and-shield-redux>
- Nasrulddin, V. (2024). Prospects of post-conflict foreign direct investments in Ukraine through the lens of Dunning's eclectic paradigm. *International Journal of Economics and Finance*, 16(6), 43–61. <https://doi.org/10.5539/ijef.v16n6p43>
- North Atlantic Treaty Organization. (2025, August 28). *Defence expenditure of NATO countries (2014–2025)* [Press release]. <https://www.nato.int/en/news-and-events/articles/news/2025/08/28/defence-expenditure-of-nato-countries-2014-2025>
- North Atlantic Treaty Organization. (2026). *Relations with Ukraine*. Retrieved June 18, 2026, from <https://www.nato.int/en/what-we-do/partnerships-and-cooperation/relations-with-ukraine>

- O'Connor, K. (2023). *The impact of conflict on foreign direct investment* [Bachelor's thesis, Universidad Pontificia Comillas]. Repositorio Comillas. <http://hdl.handle.net/11531/75332>
- Odehnal, J., & Neubauer, J. (2020). Economic, security, and political determinants of military spending in NATO countries. *Defence and Peace Economics*, 31(5), 517–531. <https://doi.org/10.1080/10242694.2018.1544440>
- Olech, A., & Štručl, D. (2025). *The evolution of cyber forces in NATO countries*. NATO Cooperative Cyber Defence Centre of Excellence (CCDCOE). <https://ccdcoe.org/library/publications/the-evolution-of-cyber-forces-in-nato-countries/>
- Olechnik, Ł. W. (2026). How political ideology shapes military spending: Political determinants of military expenditures in EU and NATO member countries. *Armed Forces & Society*, 52(3), 844–872. <https://doi.org/10.1177/0095327X251315429>
- Olson, M., Jr., & Zeckhauser, R. (1966). An economic theory of alliances. *The Review of Economics and Statistics*, 48(3), 266–279. <https://doi.org/10.2307/1927082>
- Organisation for Economic Co-operation and Development. (2025). *OECD benchmark definition of foreign direct investment* (5th ed.). OECD Publishing. <https://doi.org/10.1787/7f05c0a3-en>
- Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, 40(3), 879–891. <https://doi.org/10.3758/BRM.40.3.879>
- R Core Team. (2024). R: *A language and environment for statistical computing* (Version 4.4) [Computer software]. R Foundation for Statistical Computing. <https://www.R-project.org/>
- Regmi, N., Bhandari, P., & Sharma, K. (2024). *Military expenditure and foreign direct investment inflow: An empirical analysis*. Repository Social Science Research Network (SSRN). <https://doi.org/10.2139/ssrn.4952521>

- Rehman, C. A., Ilyas, M., Alam, H. M., & Akram, M. (2011). The impact of infrastructure on foreign direct investment: The case of Pakistan. *International Journal of Business and Management*, 6(5), 268–276. <https://doi.org/10.5539/ijbm.v6n5p268>
- Rehman, N. U. (2016). FDI and economic growth: Empirical evidence from Pakistan. *Journal of Economic and Administrative Sciences*, 32(1), 63–76. <https://doi.org/10.1108/JEAS-12-2014-0035>
- Saeed, L. (2025). The impact of military expenditures on economic growth: A new instrumental variables approach. *Defence and Peace Economics*, 36(1), 86–101. <https://doi.org/10.1080/10242694.2023.2259651>
- Santamaría, P. G.-T., García, A. A., & González, T. C. (2021). A tale of five stories: Defence spending and economic growth in NATO's countries. *PLOS ONE*, 16(1), Article e0245260. <https://doi.org/10.1371/journal.pone.0245260>
- Smith, R. P. (1980). The demand for military expenditure. *The Economic Journal*, 90(360), 811–820. <https://doi.org/10.2307/2231744>
- StataCorp. (2025). *Stata statistical software: Release 19* [Computer software]. StataCorp LLC.
- Sun, K., & Mallard, G. (2025). Post-neoliberal parallel globalization: The unipolar to multipolar transition in transnational financial orders. *Socio-Economic Review*. <https://doi.org/10.1093/ser/mwaf051>
- Tardy, T. (Ed.). (2022). *The nations of NATO: Shaping the alliance's relevance and cohesion*. Oxford University Press. <https://doi.org/10.1093/oso/9780192855534.001.0001>
- Thakur, A. (2021). *The effect of government military spending on foreign direct investment* [Master's thesis, University of Texas at Austin]. Repository University of Texas Libraries. <http://dx.doi.org/10.26153/tsw/38067>
- Tian, N., Scarazzato, L., & Guiberteau, R. (2025). *NATO's new spending target: Challenges and risks associated with a political signal* (SIPRI Essay). Stockholm International Peace Research Institute. <https://www.sipri.org/commentary/essay/2025/natos-new-spending-target-challenges-and-risks-associated-political-signal>

- Tidey, A., & Murray, S. (2025, June 25). Defence spend to 5% of GDP, Ukraine, Russia: The key takeaways from the NATO summit. *Euronews*.
<https://www.euronews.com/my-europe/2025/06/25/defence-spend-to-5-of-gdp-ukraine-russia-the-key-takeaways-from-the-nato-summit>
- United Nations Conference on Trade and Development. (1998). *World investment report 1998: Trends and determinants*. United Nations.
- United Nations Conference on Trade and Development. (2004). *World investment report 2004: The shift towards services*. United Nations.
- United Nations Conference on Trade and Development. (2026). *Foreign direct investment: Inward and outward flows and stock* [Data set]. UNCTADstat Data Centre. Retrieved March 21, 2026, from
<https://unctadstat.unctad.org/datacentre/dataviewer/US.FdiFlowsStock>
- Walt, S. M. (1987). *The origins of alliances*. Cornell University Press.
- Waltz, K. N. (1979). *Theory of international politics*. Addison-Wesley.
- Weber, C. (2001). *International relations theory: A critical introduction*. Routledge.
- Wisniewski, T. P., & Pathan, S. K. (2014). Political environment and foreign direct investment: Evidence from OECD countries. *European Journal of Political Economy*, 36, 13–23. <https://doi.org/10.1016/j.ejpoleco.2014.07.004>
- Wooldridge, J. M. (2010). *Econometric analysis of cross section and panel data* (2nd ed.). MIT Press.
- World Bank. (2025a). *Government effectiveness: Estimate (GE.EST)* [Data set]. Worldwide Governance Indicators. Retrieved April 20, 2026, from
<https://databank.worldbank.org/source/worldwide-governance-indicators>
- World Bank. (2025b). *World Development Indicators* [Data set]. Retrieved April 4, 2026, from
<https://databank.worldbank.org/source/world-development-indicators>

- Yildirim, J., & Sezgin, S. (2005). Democracy and military expenditure: A cross-country evidence. *Transition Studies Review*, 12(1), 93–100. <https://doi.org/10.1007/s11300-005-0037-0>
- Zafer, U., & Yuille, A. (2024). *NATO expansion and security cooperation: The impact on trade, investment, and energy partnerships* [Working paper]. ResearchGate. <https://doi.org/10.13140/RG.2.2.34847.57765>
- Zhao, C., & Du, J. (2007). Causality between FDI and economic growth in China. *The Chinese Economy*, 40(6), 68–82. <https://doi.org/10.2753/CES1097-1475400604>

Annex A – Full Descriptive Statistics Analysis Results

The following tables are the author's own elaboration (R Core Team, 2024; The jamovi project, 2024):

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024e
N	31	31	31	31	31	31	31	31	31	31	31
Mean	1.26e+6	1.18e+6	1.21e+6	1.20e+6	1.33e+6	1.36e+6	1.31e+6	1.50e+6	1.52e+6	1.69e+6	1.76e+6
Std. error mean	575121	593561	608262	637369	669521	695411	690020	764242	838401	891368	938619
95% CI mean lower bound	83287	-35398	-31817	-102871	-41087	-56746	-94703	-59124	-193839	-132501	-160806
95% CI mean upper bound	2.43e+6	2.39e+6	2.45e+6	2.50e+6	2.69e+6	2.78e+6	2.72e+6	3.06e+6	3.23e+6	3.51e+6	3.67e+6
Median	233972	194587	206249	95944	243651	256905	251181	290895	257101	343569	306635
Mode	4595*	4056*	2711*	4774*	5509*	5543*	4777*	5864*	6243*	4226*	8022*
Sum	38993092	36481276	37522984	37163141	41114018	42267672	40749645	46551645	47070556	52325398	54439419
Standard deviation	3.20e+6	3.30e+6	3.39e+6	3.55e+6	3.73e+6	3.87e+6	3.84e+6	4.26e+6	4.67e+6	4.96e+6	5.23e+6
Variance	1.03e+13	1.09e+13	1.15e+13	1.26e+13	1.39e+13	1.50e+13	1.48e+13	1.81e+13	2.18e+13	2.46e+13	2.73e+13
IQR	862548	779330	779875	503839	807195	779648	769245	854630	772601	1.06e+6	1.22e+6
Range	17603543	18290963	18802202	19607328	20651007	21534439	21349328	23675307	26000649	27716484	29161654
Minimum	4595	4056	2711	4774	5509	5543	4777	5864	6243	4226	8022
Maximum	17608138	18295019	18804913	19612102	20656516	21539982	21354105	23681171	26006892	27720710	29169676
Skewness	4.75	4.95	4.99	4.97	4.96	5.03	5.05	5.04	5.13	5.13	5.13
Std. error skewness	0.421	0.421	0.421	0.421	0.421	0.421	0.421	0.421	0.421	0.421	0.421
Kurtosis	24.4	26.0	26.4	26.2	26.1	26.7	26.8	26.8	27.5	27.5	27.5
Std. error kurtosis	0.821	0.821	0.821	0.821	0.821	0.821	0.821	0.821	0.821	0.821	0.821
Shapiro-Wilk W	0.395	0.361	0.356	0.348	0.358	0.347	0.342	0.348	0.326	0.332	0.332
Shapiro-Wilk p	< .001	< .001	< .001	< .001	< .001	< .001	< .001	< .001	< .001	< .001	< .001
25th percentile	58355	42130	53285	28404	56847	65056	55354	76766	49161	82115	54360
50th percentile	233972	194587	206249	95944	243651	256905	251181	290895	257101	343569	306635
75th percentile	920903	821459	833160	532242	864042	844704	824599	931396	821761	1.14e+6	1.28e+6

Note. The CI of the mean assumes sample means follow a t-distribution with N - 1 degrees of freedom
 * More than one mode exists, only the first is reported

Table 1: Every metric on GDP (millions of US \$) at current pricing and exchange rates, $n = 31$, 2014–2024

Descriptives	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
N	31	31	31	31	31	31	31	31	31	31	31
Mean	18736	41748	36653	26258	19070	20454	9606	20766	21071	16305	15015
Std. error mean	7407	19118	16826	10972	7468	10139	6869	12971	11184	10154	9433
95% CI mean lower bound	3609	2704	2290	3850	3817	-253	-4422	-5725	-1769	-4432	-4251
95% CI mean upper bound	33863	80791	71016	48665	34322	41162	23634	47257	43911	37042	34280
Median	3216	3840	5874	5419	3973	8300	3605	4931	8451	7296	5737
Mode	-3506*	-14716*	-6842*	-11403*	-30047*	-130008*	-131780*	-72077*	-80272*	-184352*	-40003*
Sum	580816	1294174	1136241	813983	591165	634081	297793	643757	653207	505458	465454
Standard deviation	41240	106443	93682	61089	41582	56454	38243	72221	62268	56534	52522
Variance	1.70e+9	1.13e+10	8.78e+9	3.73e+9	1.73e+9	3.19e+9	1.46e+9	5.22e+9	3.88e+9	3.20e+9	2.76e+9
IQR	16962	19240	20602	17008	21236	17830	12779	10809	22379	26060	10212
Range	205239	482341	466261	320360	233281	359938	241341	458174	397167	417458	318851
Minimum	-3506	-14716	-6842	-11403	-30047	-130008	-131780	-72077	-80272	-184352	-40003
Maximum	201733	467625	459419	308957	203234	229930	109561	386097	316895	233106	278848
Skewness	3.50	3.23	3.75	3.76	3.23	1.73	-0.681	4.54	3.63	0.442	4.44
Std. error skewness	0.421	0.421	0.421	0.421	0.421	0.421	0.421	0.421	0.421	0.421	0.421
Kurtosis	13.5	10.2	14.9	15.9	12.9	8.16	7.34	23.5	17.8	12.0	22.7
Std. error kurtosis	0.821	0.821	0.821	0.821	0.821	0.821	0.821	0.821	0.821	0.821	0.821
Shapiro-Wilk W	0.526	0.461	0.451	0.497	0.624	0.638	0.714	0.455	0.582	0.606	0.471
Shapiro-Wilk p	< .001	< .001	< .001	< .001	< .001	< .001	< .001	< .001	< .001	< .001	< .001
25th percentile	526	719	915	1316	966	1649	359	1466	1824	2078	1537
50th percentile	3216	3840	5874	5419	3973	8300	3605	4931	8451	7296	5737
75th percentile	17488	19959	21516	18324	22202	19479	13138	12275	24203	28138	11749

Note. The CI of the mean assumes sample means follow a t-distribution with N - 1 degrees of freedom
* More than one mode exists, only the first is reported

Table 2: Every metric on FDI inflows (millions of \$) at current prices, $n = 31$, 2014–2024

Descriptives	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024e
N	31	31	31	31	31	31	31	31	31	31	31
Mean	1.37	1.38	1.40	1.42	1.49	1.60	1.70	1.67	1.71	1.89	2.15
Std. error mean	0.108	0.104	0.103	0.0964	0.101	0.112	0.108	0.114	0.115	0.110	0.117
95% CI mean lower bound	1.14	1.17	1.19	1.23	1.28	1.37	1.48	1.44	1.47	1.66	1.91
95% CI mean upper bound	1.59	1.59	1.61	1.62	1.69	1.83	1.92	1.91	1.94	2.11	2.39
Median	1.16	1.16	1.24	1.24	1.34	1.37	1.59	1.52	1.50	1.68	2.03
Mode	0.368*	0.414*	0.380*	0.495*	0.501*	0.547*	0.578*	0.472*	0.563*	1.06*	1.19*
Sum	42.3	42.7	43.3	44.1	46.1	49.7	52.8	51.8	52.9	58.5	66.6
Standard deviation	0.602	0.578	0.576	0.537	0.560	0.625	0.599	0.636	0.638	0.614	0.653
Variance	0.362	0.334	0.332	0.288	0.314	0.391	0.359	0.404	0.406	0.377	0.427
IQR	0.539	0.467	0.485	0.611	0.696	0.693	0.667	0.609	0.491	0.608	0.611
Range	3.35	3.09	3.11	2.78	2.75	2.94	3.03	3.19	3.31	2.21	2.60
Minimum	0.368	0.414	0.380	0.495	0.501	0.547	0.578	0.472	0.563	1.06	1.19
Maximum	3.71	3.51	3.49	3.28	3.25	3.49	3.61	3.66	3.87	3.27	3.79
Skewness	2.09	1.86	1.72	1.44	1.12	1.26	1.06	1.62	1.65	0.924	0.881
Std. error skewness	0.421	0.421	0.421	0.421	0.421	0.421	0.421	0.421	0.421	0.421	0.421
Kurtosis	6.91	5.14	4.89	3.60	2.02	2.25	2.38	3.99	4.05	-0.106	0.335
Std. error kurtosis	0.821	0.821	0.821	0.821	0.821	0.821	0.821	0.821	0.821	0.821	0.821
Shapiro-Wilk W	0.819	0.833	0.865	0.899	0.925	0.903	0.940	0.845	0.855	0.896	0.923
Shapiro-Wilk p	< .001	< .001	0.001	0.007	0.032	0.008	0.084	< .001	< .001	0.006	0.028
25th percentile	0.982	1.05	1.05	1.10	1.12	1.22	1.33	1.32	1.36	1.48	1.71
50th percentile	1.16	1.16	1.24	1.24	1.34	1.37	1.59	1.52	1.50	1.68	2.03
75th percentile	1.52	1.52	1.54	1.71	1.81	1.91	1.99	1.93	1.85	2.08	2.32

Note. The CI of the mean assumes sample means follow a t-distribution with N - 1 degrees of freedom
* More than one mode exists, only the first is reported

Table 3: Every metric on ME adjusted to 2021 pricing as a share of real GDP, $n = 31$, 2014–2024

Annex B – Spearman Rank Correlation

In the following figures, in which $n = 31$ and covering the period 2014–2024, each colour denotes a country. In addition, each figure is made up of four dispersion graphs, organised in sequence, whose progressive scale adjustments both allow for the depiction of outliers and increase the legibility of the clusters. These are the author's own elaboration, uploading the results of the Spearman test in Power BI:

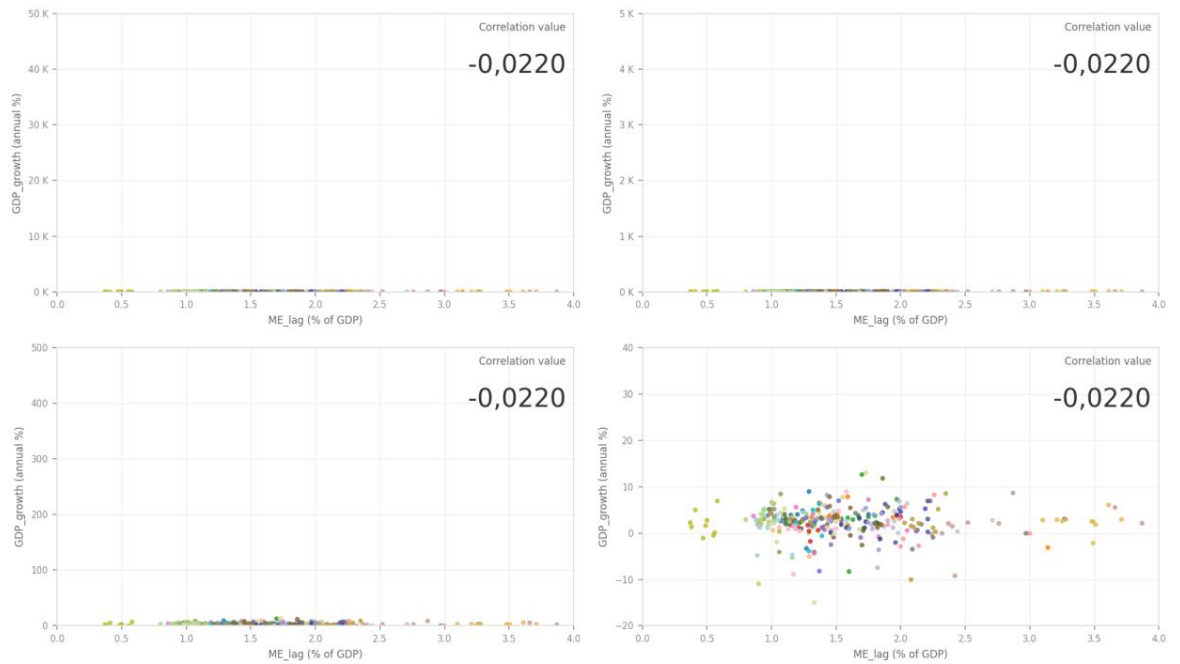


Figure 1: Scatter plot of lagged military expenditure [ME_lag, % of GDP] against GDP growth [GDP_growth, annual %]

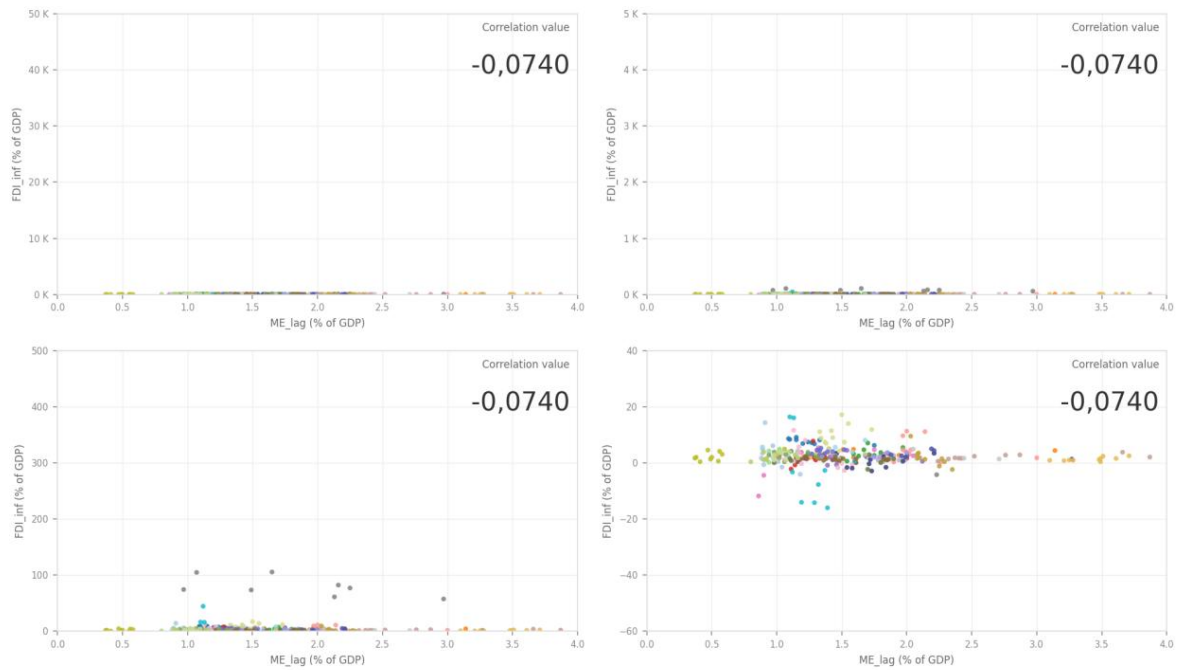


Figure 2: Scatter plot of lagged military expenditure [ME_lag, % of GDP] against inward FDI normalised by GDP [FDI_inf, % of GDP]

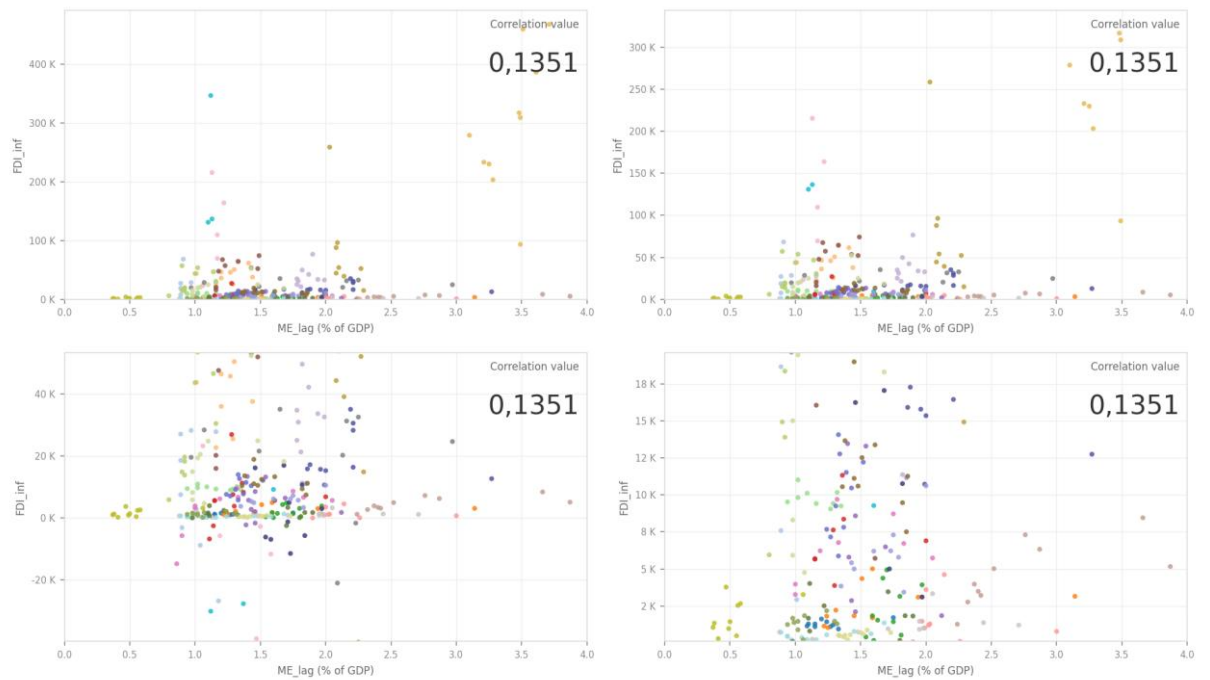


Figure 3: Scatter plot of lagged military expenditure [ME_lag, % of GDP] against inward FDI [FDI_inf]

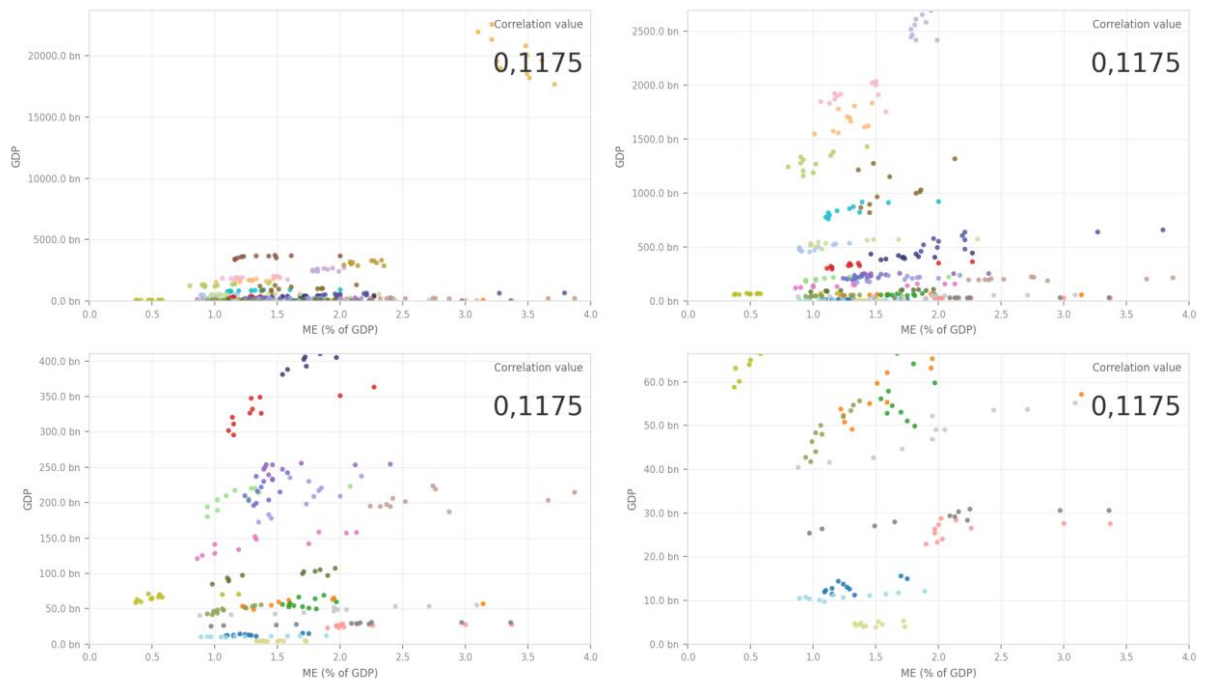


Figure 4: Scatter plot of military expenditure [ME, % of GDP] against the level of GDP [GDP]

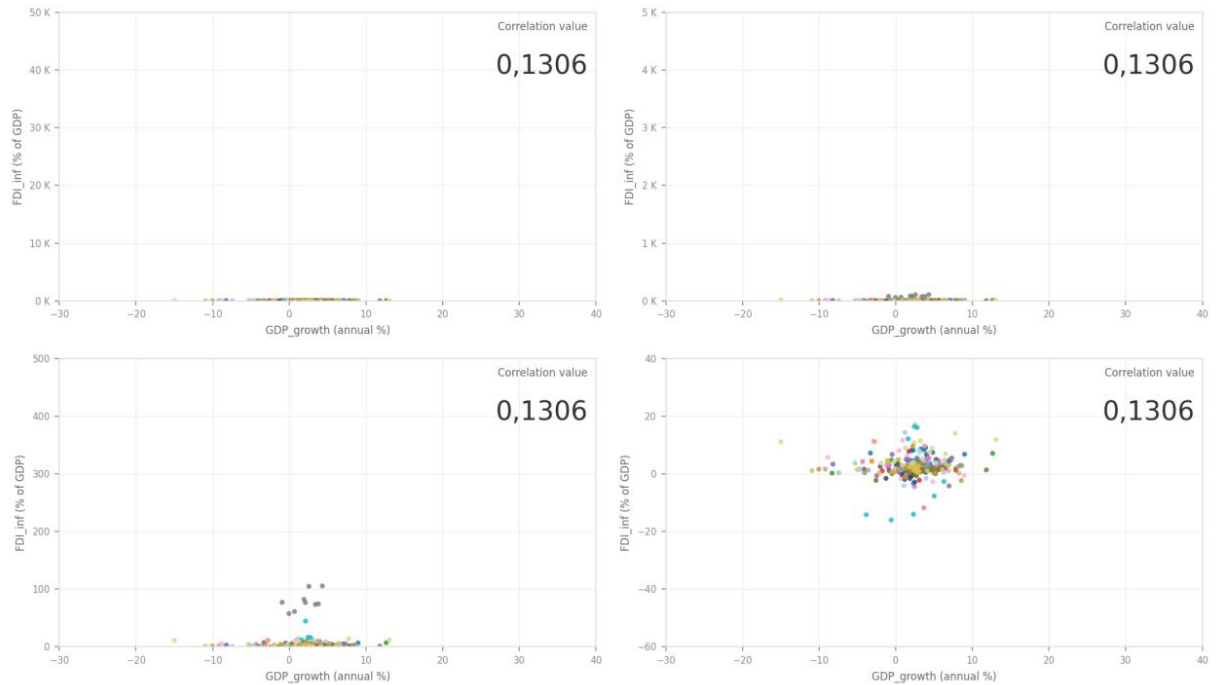
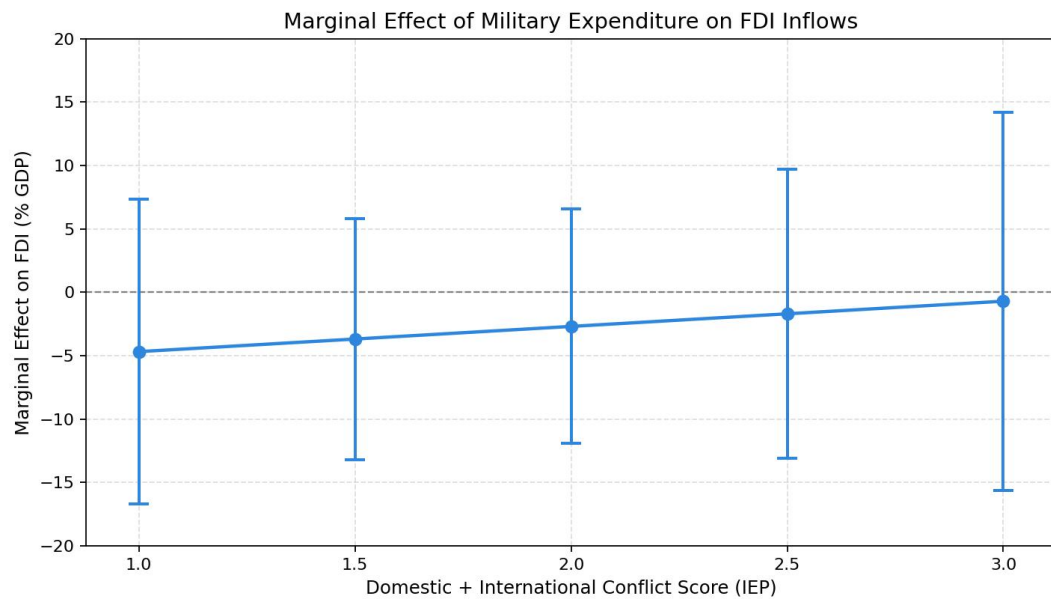


Figure 5: Scatter plot of GDP growth [GDP_growth, annual %] against inward FDI normalised by GDP [FDI_inf, % of GDP]

Annex C – Marginal Effect of ME on FDI (interaction variable)

The following graph displays the marginal effect of ME upon FDI inflows when moderated by Ongoing Domestic and International Conflict, the interaction variable that integrates equation (1):



Graph 1: Marginal effect of ME on FDI inflows moderated by conflict (StataCorp, 2025)

Annex D – Spearman Correlation Matrix

	1	2	3	4	5	6
1 ME_% of GDP	1.000					
2 ME _{lag} _% of GDP	0.934	1.000				
3 GDP	0.117	0.117	1.000			
4 GDP_growth (annual %)	-0.086	-0.022	-0.161	1.000		
5 FDI_inf	0.143	0.135	0.606	-0.079	1.000	
6 FDI_inf (% of GDP)	-0.071	-0.074	-0.421	0.131	0.305	1.000

Table 4: Results for Spearman rank correlation test

Annex E – Econometric Regression Calculations

For each variable the estimated coefficient values are reported, followed by each country-clustered robust SE below – in parentheses; for equation (4), the values in-between square brackets represent the bootstrap CI of the mediated effect. A dash indicates that the variable does not integrate the given equation. Each level of significance is identified as follows: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Additionally, the fixed country and year effects (TWFE) are included:

	Total effect – ME on FDI	Eq. (1) – moderation FDI ($n=31$)	Eq. (1) – moderation FDI ($n=30$)	Equation (2)	Equation (3)
ME _{lag} % of GDP	-3.795	-6.664	-7.597	0.148	-3.755
	(4.584)	(9.799)	(10.313)	(0.562)	(4.641)
GDP_growth	–	-0.272	-0.273	–	-0.275
		(0.164)	(0.186)		(0.165)
ME _{lag} × Ong_diconfl	–	1.989	2.675	–	–
		(4.854)	(5.071)		
Ong_diconfl	–	-3.215	-4.303	–	–
		(8.564)	(9.072)		
ln(GDP)	-2.273	3.418	3.156	23.524***	4.190
	(14.119)	(13.906)	(14.385)	(5.737)	(13.728)
Td_open	-0.016	-0.017	-0.045	0.019	-0.011
	(0.053)	(0.052)	(0.070)	(0.022)	(0.051)
Infl_rate	0.072	0.046	0.052	-0.122***	0.038
	(0.131)	(0.121)	(0.126)	(0.033)	(0.122)
Gov_effective	-0.095	-0.385	-0.629	-0.994	-0.368
	(3.131)	(3.251)	(3.330)	(1.178)	(3.257)
Equation (4) – mediated effects, computed from (2) and (3); not estimated					
(2) × (3) = -0.041					
95% bootstrap CI [-0.30; 0.45]					
Observations	310	310	300	310	310
n	31	31	30	31	31
R ² within	0.048	0.050	0.052	0.756	0.050
Country-year FE	Yes	Yes	Yes	Yes	Yes

Table 5: Results of the econometric regressions conducted on Stata, $n = 30/31$, 2014–2024 (StataCorp, 2025)

	Eq. (3) – GDP_growth (<i>t</i>)	Eq. (3) – GDP_growth (<i>t</i> -1)
ME _{lag} % of GDP	-3.755	-3.764
	(4.641)	(4.423)
GDP_growth (<i>t</i>)	-0.275	—
	(0.165)	
GDP_growth (<i>t</i> -1)	—	0.034
		(0.248)
ln(GDP)	4.190	-2.903
	(13.728)	(17.508)
Td_open	-0.011	-0.017
	(0.051)	(0.055)
Infl_rate	0.038	0.073
	(0.122)	(0.136)
Gov_effective	-0.368	-0.119
	(3.257)	(3.239)
Observations	310	310
R ² within	0.050	0.048

Table 6: Robustness check of GDP growth against lagged GDP growth, conducted on Stata, $n = 31$, 2014–2024 (StataCorp, 2025)

Test	<i>p</i> -value	Decision
VIF (multicollinearity)	medium 1.49; max 2.06 (lnGDP); ME _{lag} 1.25, GDP_growth 1.05, Td_open 1.68, Infl_rate 1.13, Gov_effective 1.77	No multicollinearity (all < 5)
Hausman FE <i>vs</i> RE – Eq. (2)	$\chi^2(5) = 38.29$ ($p < 0.001$)	Reject RE → FE
Hausman FE <i>vs</i> RE – Eq. (3)	$\chi^2(6) = 5.13$ ($p = 0.528$)	RE adequate; FE adopted for cohesion
Wooldridge (serial autocorrelation)	Eq. (3): $F(1,30) = 419.95$; Eq. (2): $F(1,30) = 97.56$ ($p < 0.001$)	Present → robust standard errors
Modified Wald (heteroskedasticity)	Eq. (3): $\chi^2(31) = 83518$; Eq. (2): $\chi^2(31) = 834.99$ ($p < 0.001$)	Present → clustered SE
Pesaran CD (cross-section dependence)	Eq. (2): -1.24 ($p = 0.215$); Eq. (3): 23.48; Eq. (1): 22.94 ($p < 0.001$)	Driscoll-Kraay (dependence in FDI equations)
Driscoll-Kraay (robustness)	GDP_growth to FDI_inf: -0.275 (SE 0.145, $p = 0.091$); ME _{lag} to FDI_inf: insignificant	GDP_growth/FDI_inf marginally significant at 10%; <u>Main conclusion unaltered</u>

Table 7: Diagnostic tests, conducted on Stata, $n = 30/31$, 2014–2024 (StataCorp, 2025)

	Total effect – ME/FDI	Equation (2)	Equation (3)
ME _{lag} % of GDP	-3.795	0.148	-3.755
	(2.849)	(0.544)	(2.877)
GDP_growth	—	—	-0.275
			(0.145)
ln(GDP)	-2.273	23.524*	4.190
	(14.351)	(10.561)	(11.387)

Table 8: Robustness – standard errors of Driscoll-Kraay, conducted on Stata, $n = 30/31$, 2014–2024 (StataCorp, 2025)

Model	Coefficient	Estimate	95% CI
Total effect – ME/FDI	ME _{lag}	−3.795	[−13.157, 5.567]
Equation (2)	ME _{lag}	0.148	[−1.000, 1.296]
Equation (3)	ME _{lag}	−3.755	[−13.232, 5.723]
Equation (3)	GDP_growth	−0.275	[−0.612, 0.063]
Interactive variable – Eq. (1)	ME _{lag} × Ong_diconfl	1.989	[−7.924, 11.902]
GDP_growth ($t-1$)	GDP_growth _{lag}	0.034	[−0.473, 0.542]
Driscoll-Kraay – total effect	ME _{lag}	−3.795	[−10.241, 2.651]
Driscoll-Kraay – Eq. (2)	ME _{lag}	0.148	[−1.082, 1.378]
Driscoll-Kraay – Eq. (3)	ME _{lag}	−3.755	[−10.263, 2.754]
Driscoll-Kraay – Eq. (3)	GDP_growth	−0.275	[−0.603, 0.054]

Table 9: Confidence Intervals for every calculation within the econometric regression component, conducted on Stata, $n = 30/31$, 2014–2024 (StataCorp, 2025)