

CROSSING BORDERS, CREATING VALUE

**FINANCIAL AND OPERATIONAL EFFECTS OF NORDIC
M&A IN CEE's CRITICAL SECTORS**

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Crossing Borders, Creating Value: Financial and Operational Effects of Nordic M&A in CEE's Critical Sectors

Abstract:

This thesis examines whether cross-border acquisitions by Nordic investors improve the financial and operational performance of firms in critical sectors in Central and Eastern Europe. Motivated by Europe's growing focus on strategic autonomy, geopolitics, and friendshoring, the study assesses outcomes in industries such as energy, transport, and digital infrastructure as defined by European investment-screening and critical-entities frameworks. Using international transaction data matched to detailed firm-level financials, the analysis constructs a panel of Nordic-acquired and comparable domestic firms and applies propensity-score matching, difference-in-differences estimation, and event-study techniques to evaluate post-acquisition changes in profitability, efficiency, asset utilization, and revenue growth. The results show that Nordic ownership does not yield uniform improvements across all sectors, but several industries exhibit clear and economically meaningful gains. Transport and storage stand out with consistent improvements across margins, returns, and revenue growth, though evidence mainly applies to small, specialized firms. Construction and professional, scientific and technical activities also show medium-run improvements: despite short-run profitability pressures due to restructuring, event studies reveal later gains in asset utilization and subsequent profitability. Agriculture similarly shows a delayed but positive trajectory. By contrast, information and communication technology, administrative services, and parts of manufacturing display limited or negative effects, suggesting weaker complementarities and greater integration challenges. Overall, the findings indicate that Nordic cross-border acquisitions can strengthen important segments of Central and Eastern Europe's critical sectors, particularly where sector conditions support operational upgrading and target firms possess latent improvement potential, even as impacts remain strongly sector-dependent.

Keywords:

Cross-border M&A, Nordic investors, Critical sectors, Financial performance, Operational performance, Foreign investment screening, Strategic autonomy.

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1. Introduction

Cross-border mergers and acquisitions (M&A) have gained strategic prominence in the increasingly fragmented global landscape post-2022. Russia's invasion of Ukraine and rising great-power tensions have elevated geopolitical risk from a peripheral concern to an important factor in corporate decision-making (Li et al., 2025). In response, Europe (EU) has advanced resilience and strategic-autonomy agendas, tightening foreign-investment screening to safeguard critical sectors (Bencivelli et al., 2023). Since 2020, the EU Investment Screening Regulation has linked openness to investment with security safeguards when acquisitions involve strategic assets, reflecting a view that ownership of critical infrastructure is a security issue as much as an economic one (European Commission, 2021).

These developments have renewed interest in the firm-level performance of strategic assets. Long-run resilience depends not only on where critical infrastructure is located and who owns it, but also on how efficiently it is operated. This aligns with the rise of friendshoring, in which firms and governments reorient trade and investment toward politically aligned or geographically proximate partners (Ahn et al., 2023). Cross-border M&A is thus both a mechanism for shifting ownership toward trusted investors and a potential channel for improving the financial and operational performance of firms central to EU's energy transition, digital resilience, and defense readiness (European Commission, 2023). In this thesis, critical industries follow EU definitions under the Foreign Direct Investment (FDI) Screening Regulation and the Critical Entities Resilience (CER) framework, encompassing sectors such as energy, transport, and digital infrastructure (European Parliament & Council of the European Union, 2019).

Nordic investors form a particularly relevant group within this context. Firms from Denmark, Finland, Iceland, Norway, and Sweden operate in highly digitalized, innovation-intensive economies with strong organizational and operational capabilities (Hajighasemi et al., 2022). Nordic strengths in low-carbon electricity systems, grids, smart-energy technologies, and secure digital infrastructure align closely with EU priorities in decarbonization, energy security, and cyber-resilience (Birkinshaw & Mol, 2006). Nordic private equity (PE) investors and corporates also have extensive experience in operational improvement and active ownership, making them well-positioned to upgrade acquired firms (Swedish Private Equity & Venture Capital Association, 2022).

Central and Eastern Europe (CEE), defined in *Appendix 1*, is a natural host region for such acquisitions. The war in Ukraine highlighted long-standing dependencies in energy, technology, and infrastructure, prompting stricter FDI screening across CEE under an "open but protective" framework (European Parliament & Council of the European Union, 2019). At the same time, friendshoring has elevated the role of politically aligned intra-EU investors such as Nordic firms (Attinasi et al., 2023). CEE economies also exhibit lower Gross Domestic Product (GDP) per capita and weaker firm performance relative to EU-15 benchmarks, yet foreign investments from advanced EU partners have been associated with faster growth and substantial improvements for underperforming firms – those that may turn "from lemons to cherries" following foreign takeovers (Casseli, 2023).

Performance in critical industries has direct economic and security implications. More efficient energy or utility networks can lower system costs and support decarbonization, while better-performing digital-infrastructure operators can strengthen cybersecurity and reduce service disruptions (European Parliament & Council of the European Union, 2022; European Commission, 2023b). However, M&A does not automatically generate such improvements.

Empirical studies show heterogeneous post-acquisition outcomes, with gains often contingent on selection, integration quality, and sector-specific constraints (Damijan et al., 2015; Gregori et al., 2021).

Against this backdrop, the thesis examines whether Nordic acquisitions in CEE's critical sectors are associated with measurable improvements in target firms' financial and operational performance. Performance is assessed using profitability indicators (operating margin, Return on Assets (ROA), Return on Capital Employed (ROCE)), efficiency and asset-utilization measures (cost-to-sales ratio, asset turnover), and revenue growth. These three lenses are selected because they together capture the core channels through which acquisitions may affect firm performance: the ability to generate returns on existing operations, the capacity to streamline cost structures and deploy assets more effectively, and the potential to expand commercially through new markets or enhanced capabilities. Taken together, they provide a balanced view of how firms convert resources into value following ownership change (Gugler et al., 2003). By studying realized transactions involving politically trusted, technologically advanced Nordic investors, the thesis contributes to an ongoing policy and academic question: **do cross-border acquisitions in strategic sectors deliver tangible performance improvements at the firm level?**

To answer this question, the thesis constructs a matched panel of 318 Nordic acquisitions and 2,428 comparable domestic CEE firms. The analysis applies propensity-score matching, difference-in-differences, and event-study methods to trace post-acquisition changes in profitability, efficiency and asset utilization, and growth. The results reveal no uniform performance effect across all critical sectors, underscoring the importance of sectoral conditions when evaluating the strategic value of foreign investment. Instead, outcomes are highly heterogeneous. The strongest improvements emerge in transportation and storage, where acquired firms exhibit consistent gains in profitability, operational efficiency, and revenue growth, one of the most complete transformation profiles in the sample. A brief caveat is warranted: Nordic investors in this sector typically acquire small, specialized firms, and excluding micro-firms in robustness checks removes transportation and storage from the estimable sample. Other sectors, including construction, wholesale trade, and professional and technical services, display gains in growth or asset utilization but face short-run pressure on margins due to integration, while information and communication technology (ICT), administrative services, and parts of manufacturing exhibit deteriorating performance relative to domestic counterparts. Event-study dynamics further show that Nordic investors often acquire underperforming firms and improve them gradually, with asset-utilization and growth effects preceding profitability gains.

Taken together, the findings show that cross-border acquisitions in critical sectors cannot be assumed to deliver uniform upgrades but instead depend on sectoral context, firm characteristics, and the acquirer's capacity for operational improvement. These insights contribute to academic and policy debates on friendshoring, strategic-sector resilience, and the evolving role of foreign investment in safeguarding EU's critical infrastructure.

2. Literature Review

Research on cross-border M&A, foreign ownership, and firm performance is extensive across corporate finance domain. Yet most studies focus on large home countries, emerging-market multinationals, or aggregate FDI, so the specific configuration of Nordic investors, CEE host countries, and EU-defined critical sectors has received limited attention. This thesis addresses that gap by analyzing how Nordic cross-border M&A in these sectors is associated with changes in target firms' post-acquisition performance, using accounting-based measures of profitability, operational efficiency and asset utilization, and revenue growth. The following review first situates Nordic investors in the EU M&A landscape, then examines CEE's role as host to EU-defined critical sectors and finally summarizes theoretical and empirical work on how foreign acquisitions affect firm-level performance, providing the background for interpreting the thesis findings.

2.1. Role of Nordic investors

In the universe of cross-border acquirers, Nordic companies (from Norway, Sweden, Finland, Denmark, and Iceland) stand out for several reasons relevant to this study. Their organizational and technological capabilities, sectoral strengths in EU-defined critical industries, and established approach to cross-border M&A make them a meaningful group for examining performance effects.

Nordic welfare and skills systems support innovation while maintaining competitiveness, complementing firm-level capability development (Hajighasemi et al., 2022). Sweden is classified as an "innovation leader", while Finland and Denmark rank among the EU's top performers; all three regularly score near the top of the EU's Digital Economy and Society Index (DESI) for connectivity and business digitization (European Commission, 2024, 2025). These frontier conditions support advanced data-driven operating models, and mature management practices that can be transferred to acquired firms (Birkinshaw & Mol, 2006).

Firm-level evidence from the Nordic corporate finance ecosystem reinforces this view. Swedish venture capital (VC) and PE are associated with operational improvements and stronger financial performance at portfolio companies, driven by active ownership, professionalization, and technology adoption (Swedish Private Equity & Venture Capital Association, 2022). Nordic scale-ups also exhibit sustained employment and turnover growth as they expand across regions, consistent with operations-first scaling models that transfer well to neighboring markets (OECD, 2023). In CEE, where firms often operate with lower technological intensity and legacy organizational structures, this creates scope for substantial operational and financial upgrades when targets are acquired by experienced investors using transferable operating playbooks (European Commission, 2023a).

Nordic industrial specializations further align with EU priorities in energy transition and security. Their predominantly low-carbon electricity systems and strengths in wind, offshore energy, grids, and smart-energy technologies correspond directly to EU decarbonization and energy-security goals (European Commission, 2023). In digital infrastructure, Nordic countries consistently top EU digital readiness measures and anchor key 5G and secure-network platforms, supporting strategic digital technologies and cyber resilience (European Commission, 2024). In advanced manufacturing, Nordic groups specialize in high-end industrial equipment and automation – capabilities relevant for upgrading CEE firms toward more efficient, financially stable and resilient operations.

Capital market patterns reinforce this sectoral fit. Nordic VC is concentrated in ICT and life sciences – sectors characterized by high external-equity dependence, substantial research and development (R&D) intensity, and strong efficiency spillovers (Swedish Private Equity & Venture Capital Association, 2022). Meanwhile, CEE has experienced a rebound in PE investment and buyout activity, particularly in technology, telecommunications, and industrials, the domains where Nordic capabilities are strong (Invest Europe, 2024). Pan-EU analyses similarly report stable tech- and telecom-related deal flow and longer holding periods, consistent with value-creation strategies focused on operational improvements rather than short-term financial engineering (EY-Parthenon, 2025).

Nordic investors also bring substantial M&A experience and scale. Nordic PE funds rank among the world’s largest. The 2025 PEI 300 lists Sweden’s EQT as the second-largest global firm, highlighting the depth of Nordic capital. Relative to GDP, the region is one of the EU’s most active PE markets, with mature general partners applying repeatable operating-improvement playbooks in neighboring economies (Swedish Private Equity & Venture Capital Association, 2022). EU-wide deal activity strengthened through 2024, with longer holding periods and persistent activity in technology and industrials – areas of longstanding Nordic operational expertise (EY-Parthenon, 2025). CEE mirrors these trends: PE investment and buyouts rose again in 2024, led by technology, telecommunications, and industrials (Invest Europe, 2025). Cross-border league tables place Sweden among the top inbound acquirers by volume and Denmark among the top by disclosed value, underscoring the strong Nordic presence in CEE M&A (Forvis Mazars & Mergermarket, 2025).

Taken together, the advanced capabilities of Nordic economies, their strengths in energy, digital infrastructure, and advanced manufacturing, and their established M&A scale provide a strong rationale for focusing on Nordic acquirers when assessing the financial and operational effects of cross-border M&A in critical sectors.

2.2. Importance of CEE focus

CEE is a natural focus for this thesis because it combines high geopolitical relevance, significant investment needs, and a central position in the EU’s resilience agenda. Since 2022, the region has been at the frontline of EU security challenges while still showing structural gaps in capital deepening and firm performance relative to Western EU. Russia’s invasion of Ukraine exposed long-standing dependencies in energy and technology, prompting countries such as Poland, the Baltic states, and Romania to reassess ownership structures in energy, defense, and telecommunications. At the same time, most CEE countries expanded FDI screening between 2020 and 2024, with the number of reviewed transactions roughly quadrupling (European Parliament & Council of the European Union, 2019; Berg et al., 2025).

Although tighter screening can restrict some acquisitions, it also encourages investment from EU and aligned partners under the EU’s “open but protective” framework. This shift is reinforced by friendshoring strategies, as firms and governments reorganize supply chains and ownership along geopolitical lines. In this context, cross-border M&A from Nordic investors is often viewed as a channel for strengthening resilience through capital, technology, and governance improvements (Boersch & Guenther, 2025; Grover & Vézina, 2025). The EU’s REPowerEU initiative further supports such flows by linking energy security, industrial modernization, and strategic autonomy.

CEE’s investment and capability gaps increase the potential impact of foreign acquirers. GDP per capita and firm performance remain below Western EU levels, reflecting

lower capital intensity and slower technological diffusion (Casseli, 2023). Empirical evidence confirms substantial gains from foreign investment: Hanzl-Weiss and Jovanovic (2022) show that a 1% rise in FDI stock relative to GDP is associated with a 0.2-percentage-point increase in GDP growth, particularly when the investment originates from advanced EU economies. At the firm level, Damijan et al. (2015) find that smaller or initially weaker companies often experience marked improvements after foreign takeovers due to capital infusion, managerial reform, and integration into global value chains. Nordic investors operating in renewable energy, telecommunications, and advanced manufacturing are therefore well positioned to generate operational and financial improvements in CEE firms.

Beyond convergence dynamics, CEE is strategically important for the EU's goals of energy independence, technological sovereignty, and defence readiness. Cross-border acquisitions offer a rapid mechanism to upgrade infrastructure and transfer expertise by shifting critical assets, such as grids or telecom networks, to owners with advanced capabilities. Governments in CEE closely examine such transactions yet generally support intra-EU acquisitions that enhance operational resilience, creating a regulatory environment that both safeguards sovereignty and facilitates high-quality ownership transitions (Schönherr Rechtsanwälte, 2023). For this thesis, this context is essential: if Nordic acquisitions improve the financial and operational performance of firms in critical sectors, these gains contribute not only at the firm-level but also to wider EU objectives in security and strategic autonomy.

2.3. Cross-Border M&A and target firm performance

To link these geopolitical dynamics to firm-level outcomes, this section shifts from who is investing and where to what happens inside acquired companies. If cross-border M&A is increasingly shaped by security and resilience considerations, a central question is whether foreign ownership meaningfully changes how targets operate, innovate, and allocate resources. The review covers the motives for M&A and the role of performance improvements within them, the theoretical channels through which acquisitions can influence firms' financial and operational outcomes, the integration frictions that may limit these effects, and the empirical evidence from prior studies.

2.3.1. M&A motives and performance implications

M&A is driven by a broad set of motives spanning both neoclassical and behavioral theories. Neoclassical perspectives view M&A as value-maximizing responses to synergy and efficiency opportunities (Arikan & Stulz, 2016; Copeland et al., 2004), encompassing strategic acquisitions that generate operating synergies through horizontal or vertical integration (Hillier et al., 2008; Ross et al., 2013), financial acquisitions aimed at unlocking value in undervalued targets, and diversifying deals motivated by financial synergies such as risk reduction, increased debt capacity, or improved internal capital allocation (Lewellen, 1971; Maksimovic & Phillips, 2002). Behavioral theories, by contrast, emphasize non-value-maximizing drivers: agency problems arising from empire building or excess free cash flow (Jensen & Meckling, 1976; Jensen, 1986), and hubris, where overconfident managers overestimate target value and overpay (Roll, 1986; Malmendier & Tate, 2008). Empirical work shows both agency-driven and hubris-driven deals can erode value, particularly when weak governance amplifies managerial bias (Harford, 1999; Hayward & Hambrick, 1997).

Given this wide range of motives – some efficiency-enhancing, others potentially value-destroying – it becomes essential to examine whether cross-border acquisitions translate

into improved firm performance, as only empirical evaluation can reveal whether such transactions create real economic value rather than merely reallocating assets, entrenching managers, or amplifying risks, all of which have important implications for firms, investors, and host-country policymakers. Financial and operational performance indicators offer a tractable way to evaluate whether cross-border ownership generates meaningful improvements through mechanisms such as technology transfer, managerial upgrading, capital deepening, or integration into global production and innovation networks (Guadalupe et al., 2014). Although these measures are not equivalent to structural concepts such as total factor productivity (TFP), they capture the observable outcomes through which operational enhancements typically appear in firms' accounts. Improvements in profitability, efficiency and asset-utilization, growth indicators reflect the firm's enhanced ability to convert labor, capital, and organizational capabilities into economic output more efficiently. In this sense, accounting-based indicators translate underlying operational and efficiency gains into concrete financial outcomes that are directly comparable across firms and over time. Focusing on these metrics therefore provides a practical and theoretically grounded means of evaluating both private value creation and broader economic contribution of Nordic M&A in CEE's strategic sectors.

2.3.2. Mechanisms behind performance effects

Economic theory highlights several channels through which cross-border acquirers may improve the financial and operational performance of target firms. In the ownership-advantage framework (Dunning, 1988), multinational enterprises hold intangible assets – advanced technologies, managerial know-how, brand capital, and superior processes – that can be transferred to acquired firms. Such transfers may occur through upgraded equipment, IT systems, or R&D collaboration, and empirical evidence shows that foreign-acquired firms often increase R&D intensity following takeover (Jung, 2021).

A second mechanism is the diffusion of better management practices. Multinationals typically use more efficient systems – such as lean production, quality control, or marketing – developed through global experience. After acquisition, they may introduce stronger governance and training, and evidence shows that US multinationals apply higher managerial standards abroad, raising affiliate efficiency (Blah, 2023). Foreign owners may also deploy technical staff or provide training, while integration into global networks can expand access to suppliers and markets. In CEE, foreign takeovers have been linked to greater export orientation and higher export shares (Hrinko, 2022).

Capital infusion is another channel. Acquirers often modernize assets, expand capacity, and strengthen financial resources, improving operational efficiency (Schiffbauer et al., 2009). They may also streamline processes, raise quality standards, or rationalize supply chains. However, these gains are not guaranteed. Cross-border M&A can generate cultural frictions and temporary performance declines during integration (Campagnolo & Reuer, 2022). Misalignment between parent practices and local conditions, or acquisitions driven more by strategic asset motives than operational upgrading, may limit improvements. Multinationals may also reallocate activities within their networks, including offshoring or downsizing.

Overall, while the channels for productivity-related performance gains – technology transfer, better management, capital infusion, global market access – are well-theorized, net outcomes depend critically on integration quality and strategic intent.

2.3.3. Empirical evidence

Empirical studies on M&A and firm performance paint a nuanced picture: foreign acquisitions can enhance financial and operational outcomes on average, but effects vary widely across countries, sectors, and deal types. Early work found broadly positive impacts of foreign ownership: Lichtenberg and Siegel (1987) documented post-acquisition performance improvements in firms from the United States (US); Conyon et al. (2002) showed that foreign-acquired firms in the United Kingdom (UK) outperformed domestic ones, with much of the gap attributable to ownership differences; and Arnold and Javorcik (2009) reported substantial post-acquisition gains in Indonesian plants, driven by restructuring, higher investment, and wage growth. Evidence from transition economies shows similar patterns. Damijan et al. (2015) found that smaller, less efficient firms in new EU member states benefited most from foreign takeovers, suggesting that investors upgrade weaker targets through restructuring and capital inflows. Ashyrov et al. (2024), comparing Estonia, Latvia, and Norway, likewise identified positive performance effects of foreign takeovers, with larger improvements in Estonia and Latvia than in Norway, consistent with greater catch-up potential in less advanced host economies and with variation by sector and investor origin.

Other studies, however, report limited or even negative post-acquisition performance effects. Harris and Robinson (2003) showed that in the UK, foreign investors often acquire already high-performing firms that do not improve further, suggesting “cherry-picking” rather than strong causal impacts. Navaretti and Venables (2004) likewise found that the link between foreign ownership and firm outcomes weakens once selection is considered, and Girma and Görg (2007) documented industry-specific patterns with positive effects in some sectors and negative in others. Large-scale EU evidence is similarly mixed. Using Joint Research Centre data, Gregori et al. (2021) reported declines in acquired firms’ operational performance within three years post-acquisition, especially in manufacturing and services, and particularly negative results when acquirers originated from emerging economies or offshore financial centers. Findings from emerging-economy contexts reinforce this heterogeneity: Liu et al. (2024) found that improvements in over 500 Chinese cross-border deals depended on host-country technological distance and market size, with short-term stagnation and longer-run gains only where absorptive capacity was high. Carril-Caccia (2020) and Imbriani et al. (2011) similarly reported that acquisitions by emerging-market investors in EU sometimes led to weaker firm performance, especially in high-tech or knowledge-intensive sectors.

Part of the inconsistency reflects differences in empirical methods, time horizons, and outcome measures. Studies using rigorous panel techniques, such as fixed effects or staggered difference-in-differences, often detect little or no improvement in firm performance once selection and timing are carefully controlled for (Tanaka, 2025). By contrast, matching approaches and event-study designs that follow firms several years after a takeover tend to find more gradual improvements (Karpaty, 2023). Recent evidence on Swedish firms, for example, shows that financial and operational gains materialize only over a longer horizon, and matched event studies in manufacturing report rising wages alongside reduced employment, underscoring that different performance dimensions can move in opposite directions (Görg & Lehr, 2024). Several contributions also indicate that some improvements, such as those linked to expanded capital investment, reflect capital deepening rather than operational efficiency improvements, helping to explain the mixed patterns observed in the literature (Tanaka, 2025).

Heterogeneity in acquirer type and context is therefore central. When buyers originate from more advanced economies and actively upgrade their targets, performance improvements are more likely. Evidence from Sweden illustrates this: French and Finnish acquirers generated

the strongest post-acquisition gains in Swedish firms, while other investor origins had no significant effects (Bandick et al., 2010). This pattern aligns with the expectation that Nordic investors bring stronger managerial and technological capabilities, whereas acquisitions motivated mainly by market power or undertaken by less advanced investors may fail to improve operations or even weaken target performance.

Another recent Nordic-focused evidence further underscores this heterogeneity. A study of 176 Nordic small and medium-sized enterprise (SME) acquisitions between 2015 and 2018 finds no systematic performance differences for both cross-border and domestic deals, with post-merger ROA largely driven by firm-specific factors such as pre-merger profitability and industry relatedness rather than geographic scope and M&A in place (Olausson & Rados, 2025). Similarly, an analysis of 229 acquisitions by Nordic listed firms between 2004 and 2018 reports no significant operating performance improvements, whether measured through EBITDA-to-assets, sales-to-assets, or asset turnover, and even documents small negative drifts relative to matched peers, suggesting that Nordic acquirers often fail to generate measurable efficiency gains in their targets (Rikka, 2025). These findings align with the broader literature's caution that financial and operational performance effects of foreign ownership are conditional rather than automatic. Even in high-governance, high-capability Nordic settings, cross-border acquisitions do not consistently translate into stronger post-acquisition performance.

2.4. Critical sector definition

Before concluding the literature review, it is useful to clarify what is meant by “critical sectors” in this thesis and why M&A in these sectors merits special attention. The term refers to industries considered essential for national security, economic resilience, or public welfare, where disruptions or foreign control can entail significant risk. The definition follows recent EU frameworks, notably the EU FDI Screening Regulation and the 2022 EU CER Directive (European Parliament & Council of the European Union, 2019, 2022). The CER Directive highlights sectors such as energy, transport, health, water, digital infrastructure, public administration, space, and food, while the FDI Screening Regulation adds categories such as critical infrastructure (including defense and communications), critical technologies (AI, semiconductors, robotics, cybersecurity), critical inputs (energy, raw materials, food), access to sensitive data, and media (European Parliament & Council of the European Union, 2019; Kaufmann et al., 2025). Our sample covers industries falling under these umbrellas, more information on that in *Section 4.1*.

M&A in these industries matters because performance shifts can have broad externalities. Efficiency improvements in electricity networks or digital infrastructure can lower system costs and improve service quality, whereas weak performance can undermine security or essential services. Given the high regulation and capital intensity of these sectors, acquisitions, rather than greenfield entry, are a primary channel for bringing in foreign capital and advanced capabilities such as smart-grid technologies or cybersecurity systems.

These transactions, however, face heightened scrutiny and political sensitivity. Governments may impose tight review processes, ring-fencing, or limits on integration, especially in defense-related areas (Schönherr Rechtsanwälte, 2023). Public concern over foreign ownership of strategic assets can also slow restructuring. The literature on critical-infrastructure M&A highlights that such deals affect not only firm outcomes but also broader security and policy objectives (UNCTAD, 2019). Within this context, the thesis asks whether Nordic-led acquisitions in CEE's critical sectors generate financial and operational efficiency-related performance gains and thereby contribute to EU's resilience objectives.

3. Hypothesis Development

This thesis investigates whether Nordic cross-border acquisitions in CEE's EU-defined critical sectors are associated with changes in the financial and operational performance of target firms. The analysis focuses solely on target outcomes and evaluates performance through profitability (operating margin, ROA, ROCE), efficiency and asset utilisation (cost-to-sales ratio, asset turnover), and revenue growth. The empirical design compares acquired firms to a matched group of domestically owned CEE firms using a difference-in-differences framework, capturing short- and medium-term post-acquisition dynamics. The thesis does not attempt to identify specific causal channels, such as technology transfer or managerial upgrading, but interprets observed changes as reduced-form outcomes consistent with mechanisms highlighted in the literature on foreign ownership and cross-border M&A.

Prior studies show mixed evidence regarding the impact of foreign acquisitions in CEE, with improvements often dependent on sectoral characteristics, integration frictions, and the capability profile of the acquirer. Nordic investors, although not detailly analyzed as a separate group in CEE context, typically operate with advanced managerial, digital, and organisational practices that may translate into performance gains for acquired firms. Given this background, the hypotheses below consider the baseline effect of Nordic ownership, the sectoral variation in outcomes, and the temporal dynamics of different performance dimensions.

3.1. Baseline effects of Nordic acquisitions

The first hypothesis assesses whether, on average, Nordic acquisition targets exhibit stronger post-acquisition financial and operational performance than comparable domestically owned firms. Nordic acquirers generally operate in highly digitalized, innovation-intensive economies and possess advanced organizational, managerial, and technological capabilities. Firms in CEE critical sectors, by contrast, often display legacy operational structures and substantial scope for upgrading. These complementarities suggest that Nordic ownership may enhance profitability, efficiency and utilization, and revenue growth. At the same time, integration frictions, regulatory constraints, or strategic motives unrelated to operational improvement may attenuate or delay such effects, making the magnitude of any improvement inherently difficult to predict *ex ante*. Overall, however, the expectation is that Nordic acquisitions exert a positive influence across the full set of performance indicators.

Hypothesis 1: Firms in CEE's critical sectors acquired by Nordic investors exhibit greater post-acquisition improvements in accounting-based financial and operational performance indicators, relative to comparable domestically owned firms.

3.2. Sectoral heterogeneity in baseline effects

Foreign acquisition outcomes often differ across industries due to variations in regulatory intensity, capital requirements, technological maturity, competitive pressures, and operational flexibility (Haucap et al., 2019; Gregori et al., 2021). These structural characteristics shape both the channels through which foreign ownership can influence firm performance and the ease with which organizational or technological improvements can be implemented. In the context of EU critical sectors – which range from highly regulated domains such as energy or healthcare to more commercially flexible sectors such as ICT or logistics –

there is reason to expect that Nordic ownership may translate into more pronounced performance changes in some industries and less pronounced effects in others. Examining sectoral heterogeneity therefore provides a meaningful extension to the baseline analysis, offering insight into whether improvements associated with Nordic acquisitions are concentrated in particular segments of the critical-sector landscape or more broadly distributed. For this reason, performance is again treated holistically, with the expectation that the empirical results under Hypothesis 2 will indicate which sectors exhibit statistically significant effects across one or more components of financial and operational performance.

Hypothesis 2: Nordic acquisitions do not generate a uniform shift in performance across EU critical sectors; instead, the sign and statistical significance of treatment coefficients on profitability, efficiency, and growth indicators are expected to differ by sector, with meaningful effects concentrated in a limited number of industries.

3.3. Temporal dynamics of post-acquisition performance

Once Hypothesis 2 identifies the sectors in which Nordic acquisitions generate significant effects, it becomes relevant to consider how different performance dimensions adjust over time. Prior work shows that post-acquisition gains, when present, rarely appear immediately, as integration, restructuring, and organisational alignment often require several accounting cycles to take effect. Nordic acquirers, in particular, tend to employ structured, medium-term operating models that emphasise gradual capability transfer and process stabilisation rather than rapid, disruptive transformation. In the short run, integration costs and transitional disruptions may temporarily depress financial outcomes, even when the underlying trajectory is positive. At the same time, certain “quick-win” adjustments, such as cost rationalisation, procurement harmonisation, or improved commercial coordination, may lead to earlier observable improvements. Reflecting these mixed dynamics, and given the short- to medium-term horizon of this thesis, it is plausible that revenue growth improves earliest (often visible by $t+1$), efficiency and utilisation strengthen thereafter (typically around $t+2$ and $t+3$), and profitability improves last (often emerging from $t+4$ or $t+5$ onward) as integration costs subside and synergies accumulate. The following hypotheses therefore apply conditionally to the sectors identified under Hypothesis 2 to be meaningful and significant.

Hypothesis 3a: In sectors where Nordic acquisitions generate significant effects, revenue growth improves earlier in the post-acquisition period, often visible by $\tau+1$, relative to comparable domestically owned firms.

Hypothesis 3b: In sectors where Nordic acquisitions generate significant effects, efficiency and asset utilization improve over the medium term, typically around $\tau+2$ and $\tau+3$, relative to comparable domestically owned firms.

Hypothesis 3c: In sectors where Nordic acquisitions generate significant effects, profitability improves later in the post-acquisition period, generally from $\tau+4$ or $\tau+5$ onward, relative to comparable domestically owned firms.

4. Data

This section outlines the construction of the dataset used in the empirical analysis. The dataset integrates information from two commercial data providers widely employed in empirical corporate-finance research. Mergermarket, a leading global M&A intelligence platform, supplies structured transaction-level records with detailed metadata on acquirers, targets, geographies and deal characteristics, and is commonly used to identify cross-border acquisitions in EU settings (e.g., Cioli et al., 2020; Chandrika, Mahesh, & Gupta, 2022). Complementing this, the analysis uses firm-level financial data from Orbis, a database compiled by Bureau van Dijk (BvD) that provides harmonized EU company accounts and consistent firm identifiers for multi-year analysis, as applied in Gregori et al. (2021). Combining Mergermarket’s deal-level coverage with Orbis’ financial panels enables the construction of a coherent dataset containing Nordic-acquired CEE firms and a systematically comparable group of domestically owned firms operating in same countries, industries and size ranges across CEE.

4.1. Transaction data

The treatment sample is constructed using Mergermarket by extracting all M&A transactions in which the acquirer is headquartered in a Nordic country (Denmark, Finland, Iceland, Norway or Sweden) and the target (acquiree) is domiciled in CEE. Russia and Belarus are excluded in line with the geographical scope of the thesis and the broader geopolitical context. The target sectoral scope follows the EU-level definitions of “critical” activities set out in the EU FDI Screening Regulation and the CER Directive, covering domains central to economic resilience and security as discussed in *Section 2.4*. These domains include, among others, energy systems, transport infrastructure, digital networks, water and utilities, key manufacturing and industrial technologies, defense-related activities, and essential inputs such as food and chemicals.

Because Mergermarket employs its own proprietary target sector taxonomy, these EU-defined critical activities must be translated into its sector and subsector structure to ensure consistency with the thesis’ analytical framework. This operationalization manually maps each Mergermarket subsector to the relevant EU critical-sector domain identified above, allowing the retention of only those transactions in which the target operates within the sectors recognized as critical at EU level. This ensures that the resulting transaction universe aligns with the policy framework motivating the study and follows the type of sectoral filtering applied in empirical work combining transaction datasets with firm-level information for the analysis of cross-border acquisitions (Gregori et al., 2021).

Table 1. Mapping of EU Critical Sector Domains to Mergermarket Subsectors

EU Critical Sector Domain	Mapped Mergermarket Subsectors
Agriculture & Food Security	Crop cultivation; industrial/agri-biotechnology; food ingredients; dairy; meat; fresh/frozen produce
Chemicals, Materials & Construction	Petrochemicals; fine and specialty chemicals; cement; concrete; glass; aggregates; construction materials

EU Critical Sector Domain	Mapped Mergermarket Subsectors
Defense & Aerospace	Armored vehicles; missiles and guidance systems; naval and shipbuilding; security and safety systems
Advanced Industrial Equipment & Machinery	Robotics; process-control systems; compressors and pumps; industrial instrumentation; batteries and power supplies
Energy & Utilities	Power generation; transmission and distribution; water and wastewater systems; alternative energy; pollution and recycling
Digital Infrastructure & ICT	Telecom carriers; network equipment; software and systems; semiconductors; fiber-optic cabling; data processing
Transport & Logistics	Rail stock; aviation and airports; shipping; freight operators; bus and road-transport services
Healthcare & Life Sciences	Drug development and manufacture; medical equipment; hospitals and healthcare providers

The initial screening of Mergermarket using the geographic and sectoral restrictions described above yields 663 transactions over the full period covered by the database (31 December 1997 to 7 October 2025). All transactions meeting these criteria are retained irrespective of whether deal values were disclosed, as private-firm acquisitions in CEE frequently lack public valuation data. From this initial universe, several refinements are applied to ensure that the remaining observations represent clear and analytically meaningful changes of control. As a first refinement, multi-country transactions in which the acquirer purchases a multinational target with operations dispersed across several jurisdictions are excluded. Such transactions do not provide a clean link between a Nordic investor and a specific operating entity in a single CEE economy, and their inclusion would reduce the comparability of post-acquisition outcomes across firms. This approach mirrors the emphasis in empirical M&A research on identifying transactions where ownership changes pertain to well-defined corporate units rather than complex group structures (Kyei-Mensah, 2019).

Next, transactions involving investment consortia or multi-sponsor syndicates are also removed, including cases where Nordic investors appear but do not hold a controlling role, as such structures obscure the attribution of post-acquisition effects to a single acquirer and introduce governance heterogeneity. Consistent with the aim of analyzing majority-control acquisitions, asset-only transactions – including individual factories, renewable parks, land parcels or other non-corporate assets – are excluded because they do not involve a standalone legal entity that can be consistently traced in Orbis. Minority and VC investments are likewise removed because they do not confer substantial strategic or operational influence on the Nordic buyer.

After these screening steps, 473 transactions remain. These are then subjected to a detailed manual data-quality validation, addressing inconsistencies in target country codes, acquirer origin labels, sector classifications and duplicated target names. This manual refinement is essential in analyses involving private firms in CEE, where naming conventions and corporate structures can vary substantially, and follows the careful data-validation procedures used in empirical work combining transaction databases with firm-level sources such as Orbis (Gregori et al., 2021). To ensure that post-acquisition developments can be observed in financial reporting, all transactions announced after 31 December 2023 are excluded.

The dataset is then deduplicated, retaining only the earliest Nordic acquisition for any target appearing multiple times due to follow-on ownership changes, recapitalizations or sequential Nordic investors. This avoids overweighting individual targets in the dataset with multiple entries due to many follow-on acquisitions with the same target and follows the conventions applied in event-based M&A studies (Zhou, Lan, Hu, & Liu, 2024). This step reduces the sample to 432 unique Nordic–CEE acquisitions. Finally, applying Mergermarket’s deal-status filter and removing all withdrawn or pending transactions yields 336 completed acquisitions, which form the final treatment sample used for Orbis firm-level financial data matching.

Table 2. Summary of Dataset Construction

Stage of construction	Refinement applied	Firms remaining
Initial Mergermarket extraction	Nordic to CEE deals in EU-defined critical sectors (1997–2025)	663
Transaction-type and quality screening	Removal of consortium deals, VC/minority deals, asset-only transactions; correction of misclassified entries; exclusion of deals announced after 2023	473
Deduplication by target identity	Earliest Nordic acquisition per firm retained	432
Restriction to completed deals	Removal of pending or withdrawn transactions	336

4.2. Financial data and ownership

The next step is to identify, in Orbis, the legal entities corresponding to the 336 Mergermarket targets and to construct firm-level characteristics panels for each. Orbis, compiled by Bureau van Dijk, provides unconsolidated financial statements, NACE Rev. 2 sector codes, legal status variables and detailed ownership structures. In line with Gregori et al. (2021), unconsolidated accounts are used wherever possible, as they capture performance at the level of the operating entity rather than at a consolidated group level.

For each transaction, the target identified in Mergermarket serves as the starting point for a systematic manual search in Orbis. The matching process requires triangulating multiple identifiers – current and historical company names, local-language variants, legal-form suffixes, registration details and geographic markers – to ensure that the Orbis entity corresponds precisely to the firm acquired in the transaction record. This approach reflects the complexity of privately held firms in CEE, where name changes, restructurings and translation inconsistencies are common. In several instances, Mergermarket reports the target at the level of a holding company or group structure, whereas Orbis distinguishes between a parent entity and one or more underlying operating subsidiaries. When such discrepancies arise, the operating subsidiary that carries the primary business activity of the acquired firm is selected as the analytical unit (based on operating revenues), as unconsolidated financial statements at the operating-entity level provide the most accurate representation of the firm’s underlying economic activity and align with established empirical practice in Orbis-based research (Gregori et al., 2021).

Crucially, the candidate Orbis match is only accepted once the acquisition can be verified through historical ownership information. Using the Corporate Ownership – Shareholder History module of Orbis, a match is confirmed if a Nordic investor appears as the Global Ultimate Owner (GUO) around the M&A completion date with an ultimate ownership stake exceeding 50%. In Orbis, the GUO represents the entity that exercises ultimate strategic control over the firm, even when the ownership chain contains multiple subsidiary layers – as is common in both horizontal and vertically structured acquisitions. The target does not need to be a direct subsidiary of the acquirer; what matters is that the Nordic owner ultimately controls the corporate group to which the operating entity belongs. This ensures that the acquired firm is subject to the Nordic owner’s group-wide governance, capital allocation decisions and integration practices, even if several legal entities sit in between. This GUO-based identification mirrors the approach used in Gregori et al. (2021) and provides a consistent criterion for distinguishing treated firms from domestically controlled firms in complex cross-border ownership structures.

If the target entity has been dissolved following the acquisition, it is nonetheless retained in the treatment sample provided that Orbis history confirms that the dissolution does not reflect a reorganization under a different legal name or integration into a Nordic parent. This is verified using Orbis’ historical names, legal events and predecessor–successor records. As long as the GUO history confirms the Nordic takeover and at least one post-acquisition financial period is available, the entity remains in the dataset. Retaining dissolved firms in this manner mitigates survivorship bias and aligns with empirical practice in studies that keep inactive or delisted firms in post-event panels when financial information remains observable.

Applying this matching and verification procedure results in 318 successfully matched acquired firms with usable Orbis financial data. For these firms, annual financial statements and ownership records are collected for as many years as available over the period 1996-2024. Standard cleaning steps are applied, inspired by the Orbis treatment in Gal (2013) and Bajgar et al. (2020): duplicate observations by firm-year-consolidation status are removed, clearly erroneous financial entries (such as negative total assets) are dropped, and variables are expressed in euros wherever necessary.

Table 3. Final Treatment Sample Refinements

Stage of construction	Refinement applied	Firms remaining
Restriction to completed deals	Removal of pending or withdrawn transactions	336
Orbis matching and verification	Successful identification of acquired operating entities with usable financial data	318

4.3. Domestic control sample

The control sample is constructed independently in Orbis and is designed to mirror the structural characteristics of the acquired firms. The procedure begins by segmenting the Nordic acquisition sample by country and sector and then establishing the revenue range represented by targets in each segment. For each country-sector cell, a corresponding control pool is extracted from Orbis by retrieving all domestically owned firms operating in the same country and same NACE Rev. 2 main sector, whose revenues in the latest available reporting year – fall within the size interval defined by the acquired firms in that segment. Revenue is selected

as the size criterion because it is the most consistently reported and comparable metric across CEE jurisdictions. At this stage, the procedure does not match individual treated and control firms, as this matching is performed econometrically through the propensity-score methodology described in *Section 5.4*. Instead, the aim of this step is to construct systematic country-sector-size strata, within which all eligible firms are retained as potential controls. To avoid survivorship bias, the control dataset includes both active and inactive firms provided that financials for the relevant size-filter year are available. All firms additionally must satisfy a verified domestic GUO requirement to ensure the absence of foreign acquisition events during the observation window.

The defining feature of the control sample is its ownership structure. Following Gregori et al. (2021), only firms with a domestic GUO are retained. A firm is classified as domestically owned if Orbis reports a domestic individual or domestic corporate entity as GUO with at least 25.01% ultimate ownership, and if there is no evidence of a foreign GUO at any point across the available years. Firms are excluded from the control pool if (i) their GUO is foreign in any year, (ii) GUO information is missing or ambiguous, (iii) multiple GUOs include any foreign owner, or (iv) the firm is publicly listed, and ultimate ownership is too diffuse to be reliably identified. This procedure ensures that the control firms are not affected by cross-border ownership changes analogous to the treatment and that they remain under local ultimate control.

Applying these filters to the Orbis universe across all included countries and critical sectors yields 26,687 domestic firms that meet the country-sector-size and domestic-GUO criteria. All outstanding overlaps, if any, between the treatment and control lists are further removed to guarantee disjointed samples. The same financial variables and cleaning rules are applied to control firms as to treated firms, ensuring comparability in the construction of performance and efficiency measures used in the empirical analysis.

Table 4. Overview of Final Treatment and Control Samples

Sample Group	Description	Number of Firms
Treatment sample	Nordic-acquired CEE firms successfully matched and verified in Orbis (majority-control acquisitions with usable financial data)	318
Control sample	Domestic CEE firms meeting country–sector–size criteria and verified to have a domestic GUO	26,687

4.4. Final sample

The resulting dataset provides a uniquely granular foundation for assessing post-acquisition developments among Nordic-acquired firms in EU-designated critical sectors in CEE. The treatment sample captures verified majority-control transactions, systematically screened and validated using deal-level metadata from Mergermarket and multi-year financial and legal records from Orbis, following the standards employed in empirical work such as Cioli et al. (2020), Gregori et al. (2021), and the broader cross-border M&A literature emphasizing careful sample construction and ownership verification (e.g., Javorcik, 2004; Schiffbauer et al., 2009).

5. Methodology

5.1. Dependent variables – Financial performance indicators

In recent empirical research on cross-border M&A, scholars often rely on observable financial-statement indicators to evaluate post-acquisition changes in firm performance. These measures provide tractable, comparable evidence of whether firms improve their ability to generate profits, manage costs, or utilize assets more effectively after an acquisition.

By contrast, total factor productivity (TFP), while theoretically appealing as a comprehensive efficiency metric, faces significant practical limitations in cross-country M&A settings. TFP estimation requires detailed, harmonized information on labor, capital stocks, intermediate inputs, and factor prices, which is often unavailable or inconsistently reported across countries. Moreover, TFP estimates are highly sensitive to modelling choices and identification challenges: production-function specification, simultaneity between inputs and unobserved productivity (Levinsohn & Petrin, 2003), and the need for proxy-variable or control-function corrections (Wooldridge, 2009). In addition, ownership changes themselves complicate TFP measurement. Acquisitions frequently involve asset revaluations, restructuring, shifts in organizational boundaries, and changes in reporting standards, all of which alter measured inputs and outputs without necessarily reflecting real operational change. Empirical M&A work in the EU has shown that post-acquisition TFP movements can partly reflect these accounting adjustments rather than underlying performance (Gregori et al., 2021). For these reasons, and consistent with widely used approaches in M&A studies (e.g., Healy et al., 1992; Gugler et al., 2003; Cioli et al., 2020), this thesis relies on financial-statement-based metrics that are transparent, auditable, and comparable across firms.

Taken together, the literature identifies a consistent, financial-statement-based toolkit to operationalize post-acquisition firm performance. To provide structure, these indicators are grouped into three categories: (1) profitability metrics, (2) efficiency and utilization metrics, and (3) growth metric. This division follows established empirical M&A studies, which evaluate post-deal outcomes along both profitability and operational-efficiency dimensions because improvements in one dimension do not necessarily coincide with improvements in the other (Healy et al., 1992; Gugler et al., 2003)

1. Profitability metrics

Metric	Formula	Explanation
Operating margin	$\frac{EBIT}{Revenue}$	Captures core operating performance and reflects how much operating profit (EBIT) is generated per unit of revenue. EBIT rather than EBITDA is used, as EBITDA is a non-IFRS measure, is reported inconsistently across countries, and excludes depreciation and amortization – economically meaningful costs in capital-intensive sectors.
Return on assets (ROA)	$\frac{Profit\ Before\ Tax}{Total\ Assets}$	Links net income to the firm's asset base and indicates how much profit is generated from existing assets. Because ROA can also shift due to balance-sheet or risk changes after acquisition, it serves as broad performance indicator rather than pure operational metric.

Metric	Formula	Explanation
Return on capital employed (ROCE)	$\frac{EBIT}{Capital\ Employed}$	ROCE measures the return generated on capital employed. It reflects how effectively capital is used in operations, though changes may stem from both operational improvements and shifts in capital structure.

2. Efficiency and Utilization Metrics

Metric	Formula	Explanation
Cost-to-sales ratio	$\frac{Direct\ Costs\ (COGS)}{Revenue}$	Indicates the share of revenue absorbed by cost of goods sold. Declines in the ratio reflect improved cost discipline. For example, more efficient overhead management, procurement, or process improvements.
Asset turnover	$\frac{Revenue}{Total\ Assets}$	Asset turnover measures how intensively the firm uses its assets to generate revenue. A higher ratio suggests better capacity utilization or more efficient deployment of assets.

3. Growth metric

Metric	Formula	Explanation
Revenue growth	$\frac{Revenue_t - Revenue_{t-1}}{Revenue_t}$	Captures scale expansion or increased demand for the firm's products. Higher sales do not automatically indicate efficiency improvements, since they may also result from higher prices or changes in product mix. Therefore, revenue growth is used as a complementary, output-side indicator, particularly informative when interpreted alongside margins and utilization ratios.

Across the M&A literature, these financial statement metrics are observable, comparable across jurisdictions, and map closely onto the main mechanisms through which acquisitions may influence firm performance, as discussed in *Section 2.3.2*. Improvements in management practices and organizational processes – for example, tighter cost control, better procurement, or upgraded governance – are expected to show up in higher operating margins and ROA and in lower cost-to-sales ratios. Technology transfer, capital infusion and asset modernization should primarily affect ROCE and asset turnover, by enabling a given capital base to generate more output or returns. Enhanced market access and integration into the acquirer's commercial networks are most likely to be reflected in stronger revenue growth. In this way, the selected indicators translate channels such as superior management, upgraded technology, and capital deepening into concrete balance-sheet and income-statement patterns that can be measured consistently across firms and over time, providing a practical basis for evaluating post-acquisition performance in this setting. Healy et al. (1992) document improvements in operating returns after US mergers, attributing these to higher asset utilization. Cioli et al. (2020) find significant post-deal improvements in EU acquirers using margins and turnover ratios. Khan and Kalisz (2024) show that ROA improves following cross-border acquisitions by French firms. Studies emphasizing integration processes similarly rely on cost and utilization metrics to capture operational restructuring (Chaturvedi & Weigelt, 2024; Campagnolo & Vincenti, 2022).

Together, these indicators provide a practical, well-established framework for evaluating post-acquisition performance in environments where direct TFP estimation is unreliable.

5.2. Independent variables – Control covariates

The empirical analysis incorporates a set of pre-acquisition firm characteristics that control for systematic differences between acquired and non-acquired firms. These variables are constructed directly from Orbis and capture core dimensions of firm scale and baseline financial performance that may influence both acquisition likelihood and post-acquisition financial trajectories. Their inclusion follows standard practice in empirical studies of cross-border M&A and foreign ownership, where conditioning on observable firm fundamentals is essential to avoid confounding acquisition effects with pre-existing differences in firm size or performance (Gregori et al., 2021; Khan & Kalisz, 2024).

All variables are calculated as firm-specific medians over the pre-acquisition period, rather than using a single year. This choice is deliberate. Private firms in CEE often exhibit substantial year-to-year fluctuations in revenues, employment or profitability due to incomplete reporting, non-synchronized accounting cycles and real operational volatility. Using medians reduces the influence of temporary idiosyncratic shocks and measurement noise – an approach also employed in empirical work using Orbis to stabilize firm-level characteristics prior to treatment (Gal, 2013; Bajgar et al., 2020). Medians also limit the risk of mechanically attributing a pre-deal trend (such as a one-year downturn or spike) to post-acquisition outcomes, thereby strengthening identification by ensuring that pre-treatment covariates reflect structural firm characteristics rather than transitory deviations.

Firm size is a central determinant of acquisition probability, but it is inherently multi-dimensional. No single indicator fully captures the different aspects of a firm's scale that may matter for foreign investors – commercial footprint, capital intensity, and organizational capacity often evolve differently across firms. For this reason, the analysis includes three complementary size measures: revenue, total assets and employment. Revenue reflects the firm's market activity and demand conditions; total assets capture the scale of the capital base available for production or service delivery; and employment represents organizational scale and labor input. Rather than approximating a single construct with multiple proxies, these three variables jointly characterize distinct dimensions of size that may independently influence both the likelihood of acquisition and subsequent performance. This approach follows standard practice in empirical M&A research, where size is treated as a multifaceted characteristic rather than a single scalar measure (Desyllas & Hughes, 2010; Gregori et al., 2021).

Profitability indicators capture firms' baseline financial health and operational efficiency. These variables address the possibility that foreign buyers may cherry-pick well-performing firms or, alternatively, target underperformers with restructuring potential – patterns observed in the literature on foreign acquisitions (Bebenroth & Chen, 2018). ROA and operating margin (OM) represent standard proxies for these dimensions.

Table 5. Control Covariate Description

Variable	Definition & Construction	Economic Interpretation	Supporting Literature
ln(Rev_med)	Natural logarithm of the median operating revenue across all pre-deal years	Measures market activity, demand conditions and commercial visibility	Gregori et al. (2021); Desyllas & Hughes (2010)
ln(TA_med)	Natural logarithm of the median total assets across pre-deal years	Captures capital scale, asset base and balance-sheet depth	Desyllas & Hughes (2010); Börjesson (2019)
ln(Empl_med)	Natural logarithm of the median number of employees across pre-deal years	Proxy for organizational scale and labor input; reflects operational complexity	Gregori et al. (2021)
ROA_med	Median ratio of profit before tax to total assets over pre-deal years	Captures overall financial performance and efficiency in utilizing the asset base	Börjesson (2019); Bebenroth & Chen (2018)
OM_med	Median operating margin (EBIT / operating revenue) across pre-deal years	Represents core operating profitability and cost efficiency	Desyllas & Hughes (2010); Gregori et al. (2021)

Natural logarithms are applied to the size variables to address the strong right-skewness typical of firm-level financial data and to improve comparability across firms of different scale. Log-transformations reduce the influence of extreme values, stabilize variance and allow coefficients to be interpreted in relative (percentage) terms, which is standard practice in empirical firm-level studies using Orbis and in the broader M&A literature (Gregori et al., 2021; Desyllas & Hughes, 2010).

All continuous variables are also winsorized at the 1st and 99th percentiles across the full panel, reducing distortions from extreme observations – an approach used in both efficiency estimation and firm-level panel analyses with Orbis (Bajgar et al., 2020). The same cleaned controls are used in propensity-score estimation and, in robustness checks, are added directly to difference-in-differences models alongside firm and year fixed effects.

5.3. Model specification

The empirical strategy proceeds in three steps. First, the likelihood of acquisition by a Nordic investor is modelled using propensity-score matching (PSM) based on pre-acquisition covariates described in *Section 5.2*. Second, the effect of acquisition on firm-level financial outcomes is estimated using a two-way fixed effects difference-in-differences (DiD) model. Finally, the dynamic adjustment path around the acquisition event is analyzed using a staggered DiD event-study specification. This combination follows best practice in empirical work on cross-border acquisitions and foreign ownership using Orbis and similar datasets (Gregori et al., 2021; Javorcik, 2004; Bajgar et al., 2020).

5.3.1. Propensity-Score Model (Acquisition Probability)

To account for observable pre-acquisition differences between treated and control firms, the analysis first estimates the probability that a firm is acquired by a Nordic investor. This acquisition probability is modelled using a binary response model – estimated as a logit specification (with results robust to a probit formulation) - of the form:

$$P(T_i = 1|X_i) = \Pr(T_i = 1|X_i) = \Lambda(\alpha_0 + \alpha_1 \ln(Rev_{i,med}) + \alpha_2 \ln(TA_{i,med}) + \alpha_3 \ln(Empl_{i,med}) + \alpha_4 ROA_{i,med} + \alpha_5 OM_{i,med} + \gamma_{c(i)} + \gamma_{s(i)}) \quad (1)$$

where $T_i = 1$ denotes a Nordic acquisition, X_i is the vector of pre-acquisition medians for size and profitability, and $\gamma_{c(i)}$ and $\gamma_{s(i)}$ represent country and sector fixed effects. This approach is consistent with the M&A identification strategies used in Gregori et al. (2021), who model foreign-acquisition probabilities using Orbis-based pre-treatment characteristics.

The propensity score is estimated globally across the full CEE sample, rather than separately within country-sector strata. This approach avoids the sparsity and logit non-convergence problems that frequently arise in disaggregated samples of privately held CEE firms, while still controlling for systematic regional heterogeneity through country and sector fixed effects. A similar regionwide estimation strategy is adopted in Gregori et al. (2021) when modelling foreign acquisitions across EU economies. Prior to estimating the score, all continuous covariates undergo full-panel winsorisation at the 1st and 99th percentiles, following the treatment of Orbis variables as in Gal (2013) and Bajgar et al. (2020), to reduce the influence of measurement noise and extreme observations.

Matching is implemented using nearest-neighbor matching on the propensity-score distance, with many-to-one matching and replacement, allowing each treated firm to be matched with up to $K = 10$ control firms. Matching with replacement improves match quality when the pool of suitable controls is uneven across countries or sectors, a rationale consistent with the matching approaches used in the M&A literature (King, 2018). To ensure that treated and control firms are only compared within regions of sufficient overlap, matching is restricted to the common-support region: control firms outside the range of treated firms' propensity scores are excluded, and treated firms without close domestic counterparts are dropped. This restriction is standard in modern matching estimators and helps avoid extrapolation bias (Rosenbaum & Rubin, 1983; Abadie & Imbens, 2016).

Taken together, these design features generate a matched sample that aligns treated and control firms along the key pre-treatment dimensions of size, financial performance and sector-country structure, and is consistent with best-practice implementations in empirical studies of cross-border ownership and acquisition effects (Gregori et al., 2021; Javorcik, 2004).

5.3.2. Baseline Difference-in-Differences (Two-Way Fixed Effects Model)

After constructing the matched treatment and control samples, the effect of Nordic acquisitions on firm-level outcomes is estimated using a two-way fixed effects (TWFE) difference-in-differences (DiD) specification. This panel framework exploits variation in acquisition timing and within-firm changes over time, and is standard in empirical work on foreign ownership and cross-border acquisitions (Gregori et al., 2021; Javorcik, 2004).

Let Y_{it} denote a performance indicator for firm i in year t , and let $DealYear_i$ be the acquisition year. Define a post-acquisition indicator:

$$Post_{it} = 1\{t \geq DealYear_i\}$$

The baseline specification is:

$$Y_{it} = \beta(T_i \times Post_{it}) + \delta_i + \lambda_t + \varepsilon_{it} \quad (2)$$

where $T_i = 1$ for acquired firms and 0 for controls, δ_i are firm fixed effects absorbing all time-invariant firm characteristics, and λ_t are year fixed effects capturing macroeconomic fluctuations, country-level business cycles and sector-wide shocks. Estimation is performed on the matched and reweighted sample produced by the propensity-score procedure in Section 5.3.1.

The parameter of interest, β , identifies the average treatment effect on the treated (ATT):

$$ATT = E[Y_{it}(1) - Y_{it}(0)|T_i = 1]$$

where $Y_{it}(1)$ is the potential outcome after acquisition and $Y_{it}(0)$ the counterfactual outcome had the firm not been acquired.

To strengthen balance further, the TWFE model is estimated using inverse probability weights (IPW) derived from the propensity score in equation (1). Weights are defined as:

$$w_i = \begin{cases} \frac{1}{\hat{p}_i}, & \text{if } T_i = 1 \\ \frac{1}{1 - \hat{p}_i}, & \text{if } T_i = 0 \end{cases}$$

where $\hat{p}_i$ is the estimated acquisition probability.

IPW ensures that firms with a low ex-ante likelihood of being in their observed treatment status receive higher weight, thereby improving covariate balance across the matched sample. This doubly robust DiD estimator – combining matching, weighting and fixed effects – follows established practice in the empirical foreign-ownership literature (Rosenbaum & Rubin, 1983; Abadie & Imbens, 2016; Gregori et al., 2021).

5.3.3. Event-Study Specification (Staggered Difference-in-Differences)

While the baseline DiD model provides a single average post-acquisition effect, acquisitions occur in different years across firms, and the impact of Nordic ownership may evolve gradually rather than instantaneously. To capture these dynamics, the analysis employs an event-study specification, which traces the evolution of firm outcomes in the years leading up to and following the acquisition. This approach is now standard in empirical studies evaluating ownership changes using Orbis (Gregori et al., 2021) and forms a key diagnostic for assessing the validity of the parallel-trends assumption underlying the baseline DiD.

For each firm i , define event time as the difference between calendar year t and the firm's acquisition year:

$$\tau = t - DealYear_i$$

The dynamic effect of acquisition is then estimated using:

$$Y_{it} = \sum_{\tau=-K}^L \beta_{\tau} \times 1\{\tau = t - DealYear_i\} + \delta_i + \lambda_t + \varepsilon_{it} \quad (3)$$

where $1\{\tau = t - DealYear_i\}$ is an indicator for each event year τ , and the coefficients β_τ trace the dynamic impact of acquisition relative to a pre-defined baseline period. In this thesis, the deal year $\tau = 0$ is omitted and serves as the reference category. This choice reflects the empirical reality that acquisition effects cannot ordinarily materialize within the same financial reporting cycle in which the deal is completed, as post-acquisition restructuring, integration activities and operational changes typically occur only in the subsequent fiscal periods. Similar practice is adopted in foreign-acquisition studies using Orbis, where the deal year is treated as a transitional period and excluded from the estimation of dynamic coefficients (Gregori et al., 2021; Fons-Rosen et al., 2021).

Another practical consideration in implementing this specification is the selection of the event-time horizon. Empirical studies evaluating foreign acquisitions typically adopt relatively short windows, often spanning three to five years before the deal and five to seven years after, reflecting both the limited historical depth available for private firms and the medium-run horizon over which post-acquisition integration effects tend to emerge (Gregori et al., 2021; Görg & Lehr, 2024). In line with this practice – and consistent with the distribution of years available in Orbis for the firms in the sample – this thesis employs an event window of three years prior to acquisition and five years following it. This choice balances sample retention with the ability to capture anticipation effects, immediate ownership transitions, and medium-term post-acquisition adjustments.

This event-study design yields two key insights. First, the coefficients for the years prior to acquisition ($\tau < 0$) serve as a formal test of the parallel-trends assumption. If the treated and control firms followed similar paths before the acquisition – as should be the case after matching and reweighting – these coefficients should be close to zero. Second, the post-acquisition coefficients ($\tau \geq 0$) reveal the dynamic pattern of adjustment, showing whether performance effects emerge immediately, accumulate over time, or dissipate after the initial ownership change.

Because acquisitions in the sample occur at different calendar years, the staggered timing must be handled carefully to avoid the well-known biases that arise when using traditional two-way fixed effects estimators in staggered designs. To address these concerns, the estimation follows recent advances in the econometrics of staggered treatment timing (Callaway & Sant’Anna, 2021; de Chaisemartin & d’Haultfoeuille, 2020; Borusyak et al., 2021). These methods ensure that the dynamic treatment effects β_τ are identified only from comparisons between treated firms and appropriate not-yet-treated or never-treated firms, avoiding contamination from firms already in post-treatment periods. In practice, the matched and inverse-probability-weighted sample is used in combination with firm and year fixed effects to implement these more robust estimators.

This event-study specification complements the baseline DiD results by providing a transparent depiction of the temporal evolution of outcomes. It allows the analysis to distinguish between immediate post-acquisition restructuring effects, medium-term operational improvements, or potentially delayed performance changes associated with the integration of CEE firms into Nordic ownership structures. The resulting dynamic profile offers a richer interpretation of the acquisition effects and strengthens the credibility of the identification strategy.

5.4. Descriptive statistics

5.4.1. Propensity-score distribution and covariate balance

This section provides a detailed overview of the matched sample used in the empirical analysis. It documents the quality of the propensity-score matching (PSM), evaluates covariate balance between treated and control firms, and presents descriptive statistics on firm characteristics and financial indicators. While no causal interpretation is assigned at this stage, the descriptive patterns offer an initial perspective on how Nordic-acquired CEE firms compare to their domestic counterparts prior to difference-in-differences analysis.

Propensity scores represent the estimated probability that a firm is acquired by a Nordic investor, conditional on observable characteristics such as size, profitability, and sector. Examining the distribution of these scores is important because good matching requires that treated and control firms have comparable predicted acquisition probabilities, ensuring that each treated firm is compared to a control firm that could realistically have been acquired. Close overlap in score distributions therefore indicates that the counterfactual matching is credible.

Table 6 reports the distribution of estimated propensity scores for the 283 treated firms and 2,428 matched control firms that remain after enforcing the common-support requirement. As described in *Section 4*, the treatment sample originally consisted of 318 Nordic-acquired CEE firms successfully identified and validated in Orbis. The reduction to 283 treated observations reflects the trimming of firms whose estimated propensity scores fall outside the support of the domestic control distribution. This step is standard in PSM and avoids assigning matches to treated firms for which no sufficiently similar domestic counterpart exists (Rosenbaum & Rubin, 1983; Abadie & Imbens, 2016). The resulting sample thus retains approximately 89% of all identified acquired firms.

The score distributions for treated and control firms are tightly aligned. Both groups share nearly identical minimum and maximum scores (0.0004 and 0.1627), and their means differ only slightly (0.028 among treated firms versus 0.025 among controls). The treated mean is marginally higher because treated firms, by definition, exhibit characteristics associated with a higher predicted acquisition probability, such as larger size or stronger financial performance in some strata. This pattern is expected in PSM applications and does not signal imbalance; rather, the narrow difference between means and the nearly identical interquartile ranges indicate substantial common support and close comparability between the two groups.

This strong alignment in propensity-score distributions reflects the structure of the global logit model used to estimate acquisition probabilities. Conditioning on country and sector fixed effects reduces sparsity and improves comparability across diverse CEE markets, particularly in smaller economies where acquisitions are less frequent. The resulting overlap is consistent with high-quality matching designs in cross-border acquisition studies using Orbis microdata (Gregori et al., 2021; Javorcik, 2004).

Table 6. Propensity score summary

Variable	Treated firms (N = 283)	Control firms (N = 2,428)
count	283	2,428
mean	0.027856	0.024808
std	0.024480	0.021268
min	0.000412	0.000414
10%	0.005467	0.004879

25%	0.011164	0.009410
50%	0.019334	0.018372
75%	0.038473	0.033442
90%	0.066901	0.058553
max	0.162713	0.162713

To further assess match quality, *Table 7* reports standardized differences between treated and control firms for key pre-acquisition variables across each propensity-score quintile. Standardized differences measure how far the mean of a covariate differs between groups relative to its pooled standard deviation, and they are commonly used to evaluate balance in matched samples. Values close to zero indicate that treated and control firms exhibit similar distributions of these characteristics. Showing these differences allows to verify that the matching procedure equalized the key variables that might otherwise confound the acquisition decision or post-acquisition performance.

Across log revenues, log assets, log employment, median ROA, and median operating margins, the standardized differences cluster tightly around zero in almost all quintiles. Most absolute differences fall well below the conventional ± 0.10 benchmark, and only a few exceed ± 0.20 in thinner strata. These patterns indicate strong multivariate balance between treated and control firms after matching and suggest that observable differences in size and profitability were effectively controlled for.

Together with full common support, the balance diagnostics confirm that the matched sample provides a credible empirical foundation for the difference-in-differences and event-study estimators implemented in *Section 6*.

Table 7. Standardized Differences by Propensity-Score Quintile

Variable	pscore_quintile	std_diff	n_treated	n_control
ln_assets	0	-0.126	52	491
ln_assets	1	-0.128	53	489
ln_assets	2	-0.084	57	485
ln_assets	3	0.02	53	489
ln_assets	4	0.219	68	474
ln_emp	0	0.048	52	491
ln_emp	1	-0.02	53	489
ln_emp	2	0.172	57	485
ln_emp	3	0.038	53	489
ln_emp	4	-0.187	68	474
ln_rev	0	-0.284	52	491
ln_rev	1	-0.212	53	489
ln_rev	2	0.157	57	485
ln_rev	3	0.204	53	489
ln_rev	4	0.071	68	474
margin_median	0	0.127	52	491
margin_median	1	-0.07	53	489
margin_median	2	0.029	57	485
margin_median	3	-0.259	53	489
margin_median	4	-0.111	68	474
roa_median	0	0.001	52	491
roa_median	1	0.024	53	489
roa_median	2	0.106	57	485
roa_median	3	-0.154	53	489
roa_median	4	0.096	68	474

5.4.2. Matched sample – Firm-level financial characteristics

Table 8 reports summary statistics for core financial variables in the matched sample, covering all available firm-year observations for both treated and control firms.

Table 8. Firm-level Financial Descriptive Statistics

Variable	Unit	Control (M&A = No)				Treatment (M&A = Yes)			
		Obs	Mean	Std	Median	Obs	Mean	Std	Median
Revenue	EUR thousands	22,380	23,818	31,059	11,538	2,625	30,938	38,738	12,246
Gross profit	EUR thousands	13,671	6,706	8,976	3,015	1,688	9,316	10,837	4,707
Total assets	EUR thousands	22,498	19,957	27,152	8,916	2,630	24,530	31,690	9,391
Working capital	EUR thousands	19,266	5,050	7,585	2,035	2,125	5,694	8,566	2,048
EBITDA	EUR thousands	21,731	2,102	3,167	870	2,507	2,534	3,793	959
Profit before tax	EUR thousands	22,362	1,343	2,400	452	2,624	1,610	2,940	552
EBIT	EUR thousands	22,317	1,442	2,459	517	2,626	1,721	2,978	594
Net income	EUR thousands	22,358	1,121	2,059	375	2,625	1,350	2,572	445
Employees	Headcount	18,570	171	211	85	2,251	194	233	99
Current ratio	Ratio	22,282	2.92	4.71	1.63	2,601	2.88	4.57	1.72
Operating margin	EBIT / Revenue	22,143	0.06	0.15	0.05	2,582	0.04	0.21	0.05
Return on assets (ROA)	Percent	22,233	9.21	14.11	6.51	2,575	8.97	19.28	6.41
Return on capital employed	Percent	15,313	16.88	23.1	12.71	1,309	15.02	35.15	11.95
Net assets turnover	Ratio	21,696	4.04	7.75	2.20	2,484	4.21	8.03	2.40
Revenue growth	Natural logarithm	19,645	0.31	1.52	0.08	2,297	0.27	1.41	0.07
Cost ratio	1 – GP / Revenue	13,584	0.63	0.28	0.71	1,668	0.60	0.31	0.69

The two groups exhibit broadly comparable baseline profiles, with treated firms displaying only moderately greater scale. Mean revenues and total assets are higher for acquired firms, reflecting the presence of a few large Nordic-led CEE transactions, but median values remain closely aligned across groups – around EUR 12 million for revenue and EUR 9 million for assets. Employment follows a similar pattern: treated firms show larger means but nearly identical medians, indicating that the matching procedure succeeded in pairing firms within similar country-sector-size strata.

Profitability indicators reinforce this comparability. Median EBIT for both groups is within a narrow range (approximately EUR 0.52–0.59 million), and operating margins and ROA show nearly identical central tendencies. Although differences in means emerge due to the heavy-tailed nature of private-firm accounting data, the similarity in medians suggests that Nordic acquirers do not systematically target either underperforming or exceptionally profitable firms across the panel. Instead, acquired firms resemble their domestic peers in core operating performance.

Operational measures also align closely. Liquidity levels, as captured by the current ratio, show identical medians of roughly 1.7 in both groups. Cost ratios and revenue growth distributions likewise display similar central values, despite substantial dispersion typical of CEE privately held firms. Net asset turnover is modestly higher among treated firms, but the overlap in distributions remains substantial.

Overall, the matched sample exhibits strong comparability across key financial indicators. Aside from expected differences in scale driven by a handful of larger targets, acquired and domestic firms demonstrate very similar profitability, liquidity and operational profiles. These descriptive patterns support the empirical validity of the matching procedure and provide a solid foundation for the subsequent difference-in-differences analysis.

Table 9 provides the distribution of firms and firm-year observations across the 14 CEE countries represented in the matched dataset. Several clear patterns emerge.

Table 9. Country Composition of the Matched Sample

Country	Firm years (Control)	Firm years (Treatment)	Firm years (Total)	Number of firms (Control)	Number of firms (Treatment)	Number of firms (Total)
Poland	29,754	2,291	32,045	1,026	79	1,105
Czech Republic	12,122	1,073	13,195	418	37	455
Romania	6,206	638	6,844	214	22	236
Lithuania	5,945	725	6,670	205	25	230
Slovakia	3,538	435	3,973	122	15	137
Estonia	2,001	1,363	3,364	69	47	116
Bulgaria	3,045	232	3,277	105	8	113
Latvia	2,233	522	2,755	77	18	95
Croatia	1,363	174	1,537	47	6	53
Hungary	1,073	406	1,479	37	14	51
Ukraine	1,334	58	1,392	46	2	48
Serbia	1,102	87	1,189	38	3	41
Slovenia	609	145	754	21	5	26
Montenegro	87	29	116	3	1	4
North Macedonia	0	29	29	0	1	1
TOTAL	70,412	8,207	78,619	2,428	283	2,711

The geographic structure of the matched sample closely reflects both the economic weight of CEE host economies and the historical pattern of Nordic outward investment. Poland is by far the largest contributor, with 1,105 firms (79 treated and 1,026 controls) and more than 32,000 firm-year observations, representing over 40% of the sample. Its prominence is consistent with Poland's role as the region's largest economy and a major destination for Nordic acquisitions in manufacturing, ICT, logistics and utilities.

A second tier – the Czech Republic, Romania, Lithuania and Slovakia – contributes between 137 and 455 firms each, with treated-firm shares of roughly 10–20%. These countries host sizeable manufacturing and ICT sectors that align closely with Nordic investors' strategic interests, and their firm-year distributions demonstrate strong panel coverage across the full period.

A third group – Estonia, Bulgaria, Latvia, Slovenia, Croatia and Hungary – collectively provides around 15–20% of firm-year observations. Although smaller in absolute size, these markets often contain specialized industries (e.g. digital infrastructure in Estonia or food and materials production in the Baltics), explaining the presence of Nordic acquisitions even in relatively small economies.

Finally, Ukraine, Serbia, and Montenegro together represent fewer than 5% of firms, but each still contains matched treated entities. Their inclusion highlights that Nordic investment extends beyond the largest and most advanced CEE markets. Importantly, even in these countries, the domestic control pools remain sufficiently large to support credible matching.

Overall, the country composition preserves the heterogeneity of the CEE region while closely mirroring actual Nordic investment patterns. This reinforces the need for country fixed effects in the empirical specification and underscores the study's focus on sector-level rather than country-specific acquisition dynamics.

Table 10. Industry Composition of the Matched Sample

Industry	Firm years (Control)	Firm years (Treatment)	Firm years (Total)	Number of firms (Control)	Number of firms (Treatment)	Number of firms (Total)
C - Manufacturing	27,753	2,407	30,160	957	83	1,040
G - Wholesale and retail trade; repair of motor vehicles and motorcycles	19,401	1,653	21,054	669	57	726
J - Information and communication	3,915	1,653	5,568	135	57	192
M - Professional, scientific and technical activities	4,495	493	4,988	155	17	172
N - Administrative and support service activities	3,103	261	3,364	107	9	116
H - Transportation and storage	2,900	290	3,190	100	10	110
F - Construction	2,581	406	2,987	89	14	103
A - Agriculture, forestry and fishing	2,320	174	2,494	80	6	86
Q - Human health and social work activities	1,479	232	1,711	51	8	59
L - Real estate activities	1,479	145	1,624	51	5	56
D - Electricity, gas, steam and air conditioning supply	725	290	1,015	25	10	35
B - Mining and quarrying	145	58	203	5	2	7
S - Other service activities	58	87	145	2	3	5
O - Public administration and defense; compulsory social security	58	29	87	2	1	3
P - Education	0	29	29	0	1	1
TOTAL	70,412	8,207	78,619	2,428	283	2,711

The industry distribution of the matched sample reflects both the structural composition of CEE economies and the sectoral focus of Nordic investors. Manufacturing (C) and Wholesale & Retail Trade (G) dominate the sample, together accounting for more than half of all firms. Manufacturing alone includes 1,040 firms (83 treated), consistent with the centrality of industrial production, machinery, and components in Nordic acquisition strategies. Wholesale and retail activities, with 726 firms, capture the role of Nordic investors in regional supply chains and distribution networks.

The Information and Communication sector (J) is another major contributor, with 192 firms (57 treated), reflecting strong Nordic engagement in ICT, digital infrastructure, and software-related activities – categories designated as critical sectors under EU frameworks. Similarly, sectors such as Professional and scientific activities (M), Administrative services (N), Transport and storage (H) and Construction (F) show substantial representation, illustrating the breadth of critical-sector coverage in the dataset.

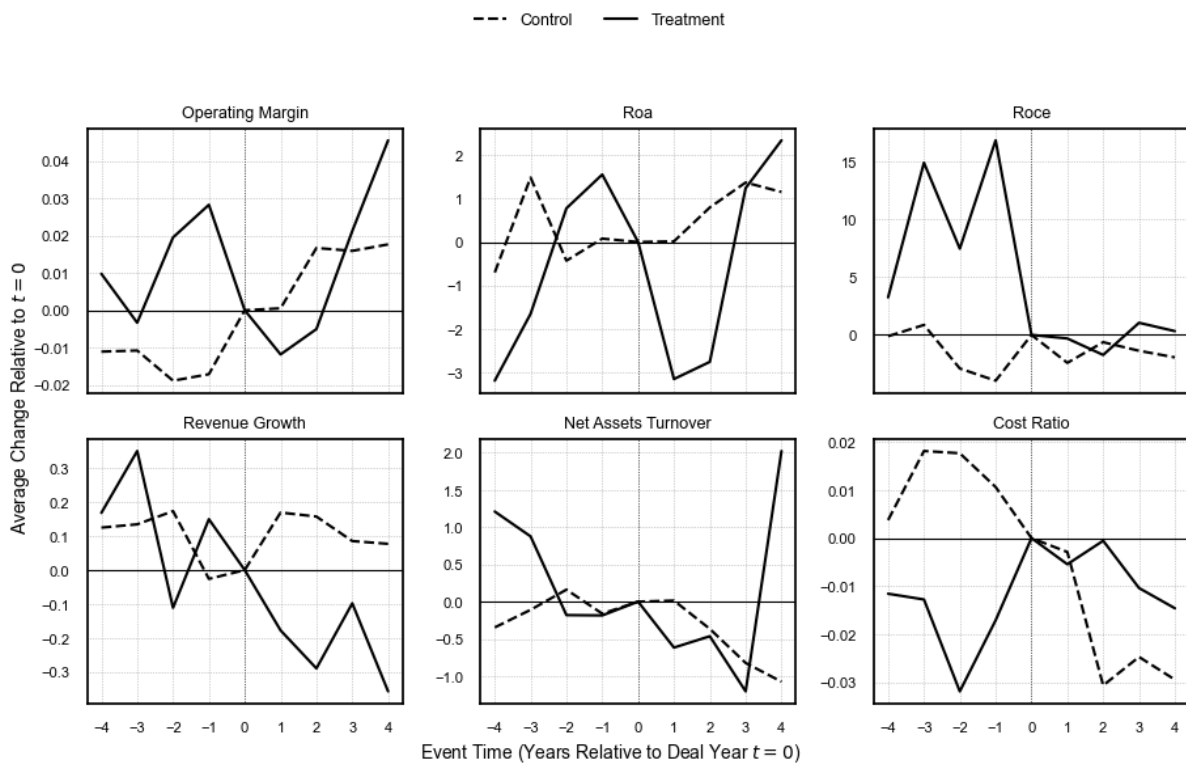
Infrastructure-related sectors – including Electricity and utilities (D), Health and social work (Q), and Real estate (L) – appear in smaller absolute numbers but feature a relatively high presence of treated firms, aligning with Nordic investment patterns in energy networks, environmental services and specialized facilities. By contrast, Education (P) and Public administration (O) contribute only marginally, reflecting their limited relevance as acquisition targets.

To provide a model-free view of how firms evolve around the acquisition event, *Figure 1* plots event-time trajectories for treated and control firms across six KPIs. The figure is constructed by aligning each firm relative to an acquisition reference point and then expressing performance in each year as the deviation from its own value in the deal year ($\tau = 0$). For treated firms, the reference year is the actual deal year. Control firms, which lack a deal year, are instead assigned the median deal year of the treated firms to which they are matched in the PSM procedure, ensuring that each control firm is aligned to a comparable point in its lifecycle. For every KPI, the analysis then computes the change relative to $\tau = 0$ and averages these

changes across firms by event year τ , yielding a simple descriptive picture of performance trajectories from $\tau = -4$ to $\tau = +4$.

Interpreting these trajectories requires acknowledging two important data features. First, observations become sparser as we move further away from the deal year, particularly for $\tau = -4$ and -3 , because many privately held CEE firms do not report sufficiently long pre-acquisition histories in Orbis. This naturally increases volatility in the plotted means for both treated and control firms. Second, all financial variables are winsorised at the 1st and 99th percentiles to limit the influence of extreme accounting values. This step mitigates – but does not fully eliminate – the noise that can arise in periods with thinner data. Crucially, however, the data are not driven by a handful of large transactions: most Nordic acquisitions in the sample target small and medium-sized enterprises, and additional diagnostics confirm that no individual firm materially shifts the group averages.

Figure 1. Event-time trajectories around the acquisition year



Before acquisition, treated and control firms appear broadly similar in central tendency, but the treated group exhibits noticeably higher year-to-year volatility across several indicators. For example, operating margins, ROA, and ROCE fluctuate more sharply among targets at $\tau = -3$ and -2 , whereas the corresponding control trajectories follow smoother paths. This pattern does not signal systematic underperformance among treated firms; rather, it reflects that targets often operate in more dynamic or transitional environments, consistent with typical acquisition motives such as restructuring potential or growth repositioning. The pre-treatment trajectories are informative but not conclusive; formal tests of pre-trend comparability are conducted only within the regression-based event-study framework in *Section 6*.

After acquisition, the trajectories of treated and control firms begin to diverge in ways that are consistent with short-run integration dynamics followed by gradual adjustment. Around $\tau = +1$, treated firms experience a modest dip in operating margins, ROA and log revenue growth relative to their own baseline values, and their paths remain more volatile than

those of the controls. This pattern accords with the empirical literature on M&A integration, which often documents temporary disruptions associated with restructuring costs, systems integration, or management turnover. From approximately $\tau = +2$ onward, however, several KPIs for treated firms show signs of recovery and medium-run strengthening. Operating margins trend upward and exceed the control trajectory by $\tau = +4$; ROA exhibits a parallel improvement; and net-assets turnover rises sharply in the later post-deal period, suggesting emerging efficiency gains as operational adjustments take effect. Cost ratios decline more steeply among controls, but the treated trajectory stabilizes and begins to narrow the gap, indicating that initial cost pressures dissipate over time.

Taken together, these descriptive event-time patterns provide an intuitive first look at the dynamics underlying the econometric results presented later in the thesis. Although they do not allow causal inference, they highlight two important themes that reappear in the formal difference-in-differences and event-study estimates. First, treated firms tend to exhibit greater volatility – both before and shortly after acquisition – than otherwise similar domestic firms. Second, several performance dimensions show gradual medium-run improvement beginning around $\tau = +2$, consistent with delayed but meaningful post-acquisition adjustment. These patterns offer a useful foundation for interpreting the timing and sectoral heterogeneity of the causal effects estimated in *Section 6*.

6. Results

6.1. Baseline DiD estimates

Table 11 reports the average treatment effect of Nordic acquisitions on the six performance indicators for the full PSM-matched and IPW-reweighted panel. The coefficients on the Treat×Post indicator are small in magnitude and generally statistically insignificant. Operating margin, ROA and ROCE all load with negative but imprecisely estimated effects (-0.03, -6.45 and -7.74 respectively), with large standard errors and within-R² close to zero. In other words, when pooling all critical sectors and CEE host economies, there is no robust evidence that Nordic ownership systematically improves or worsens profitability relative to comparable domestically owned firms.

Table 11. Pooled baseline TWFE DiD estimates

	(1) Operating margin	(2) ROA	(3) ROCE	(4) Ln_Revenue growth	(5) Net assets turnover	(6) Cost ratio
Treat×Post	-0.027	-6.449	-7.742	-0.379**	2.518	0.026
(Std. Error)	(0.033)	(5.55)	(8.597)	(0.173)	(2.363)	(0.031)
Observations	24,725	24,808	16,622	21,942	24,180	15,252
Firms	2,711	2,711	2,066	2,696	2,711	1,796
R-squared (within)	0.002	0.011	0.004	0.007	0.006	0.004
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes

The only KPI that attains conventional significance in the baseline is log revenue growth. The Treat×Post coefficient of -0.379 (significant at the 5% level) implies that, on average across all sectors, acquired firms experience post-deal revenue growth that is around 0.38 log points lower than that of matched domestic firms, i.e. roughly 30-35% weaker cumulative growth over the post-acquisition window. By contrast, the estimated effects on net-assets turnover and the cost ratio are positive but imprecise and economically modest. Taken together, these pooled results suggest that Nordic acquisitions of CEE firms in EU-critical sectors are not associated with large uniform performance shifts when averaging across very heterogeneous industries and host economies. This motivates the more disaggregated sectoral analysis that follows.

6.2. Sectoral baseline DiD estimates

Table 12 (Sector-level TWFE DiD estimates by NACE section) decomposes the baseline DiD specification by main NACE Rev.2 section, allowing treatment effects to vary across broad industries while retaining firm and year fixed effects and IPW weighting. Several patterns emerge.

Table 12. Baseline sector-level TWFE DID estimates by NACE section

	(1) A - Agriculture, forestry and fishing	(2) C - Manufacturing	(3) D - Electricity, gas, steam and air conditioning supply	(4) F - Construction	(5) G - Wholesale and retail trade; repair of motor vehicles and motorcycles	(6) H - Transportation and storage	(7) J - Information and communication	(8) L - Real estate activities	(9) M - Professional, scientific and technical activities	(10) N - Administrative and support service activities	(11) Q - Human health and social work activities
Operating margin	-0.142*** (0.047)	-0.039 (0.028)	0.012 (0.014)	-0.165** (0.065)	-0.010 (0.047)	0.103*** (0.020)	-0.118** (0.056)	0.026 (0.118)	-0.127 (0.077)	-0.396** (0.174)	-0.065 (0.062)
ROA	-11.814*** (4.161)	-3.662 (2.541)	34.210*** (5.798)	-35.353*** (8.400)	-1.126 (6.156)	35.720*** (4.111)	-5.822 (6.267)	2.707 (8.390)	-27.602*** (5.320)	-27.012** (13.315)	-21.023 (22.577)
ROCE	-28.038*** (6.863)	-12.505*** (4.847)	n/a	2.498 (9.071)	-7.841 (9.787)	118.093*** (15.533)	-13.899 (18.210)	-14.134* (7.915)	-55.989*** (19.222)	n/a	- 42.268*** (4.483)
Ln_Revenue growth	0.175 (0.169)	0.251 (0.276)	n/a	2.007*** (0.464)	0.233* (0.126)	0.846** (0.405)	-0.660** (0.278)	-0.212* (0.124)	-1.025 (0.761)	-0.154** (0.070)	0.108 (0.084)
Net assets turnover	-0.987 (0.667)	0.400 (0.855)	0.396 (0.432)	5.533*** (2.099)	-1.244 (1.730)	-14.742* (7.857)	-3.912 (2.998)	0.659 (1.044)	7.331* (4.410)	18.143 (11.037)	2.865 (2.010)
Cost ratio	0.176*** (0.054)	0.032 (0.023)	n/a	0.050 (0.070)	-0.063** (0.026)	0.042 (0.036)	0.091** (0.041)	0.098*** (0.033)	0.167* (0.099)	0.225*** (0.037)	0.008* (0.005)
Observations	4,287	52,564	884	5,239	32,760	4,863	8,527	2,300	7,337	4,646	2,403
R-squared (avg.)	0.073	0.008	0.129	0.101	0.011	0.105	0.023	0.019	0.13	0.113	0.059
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

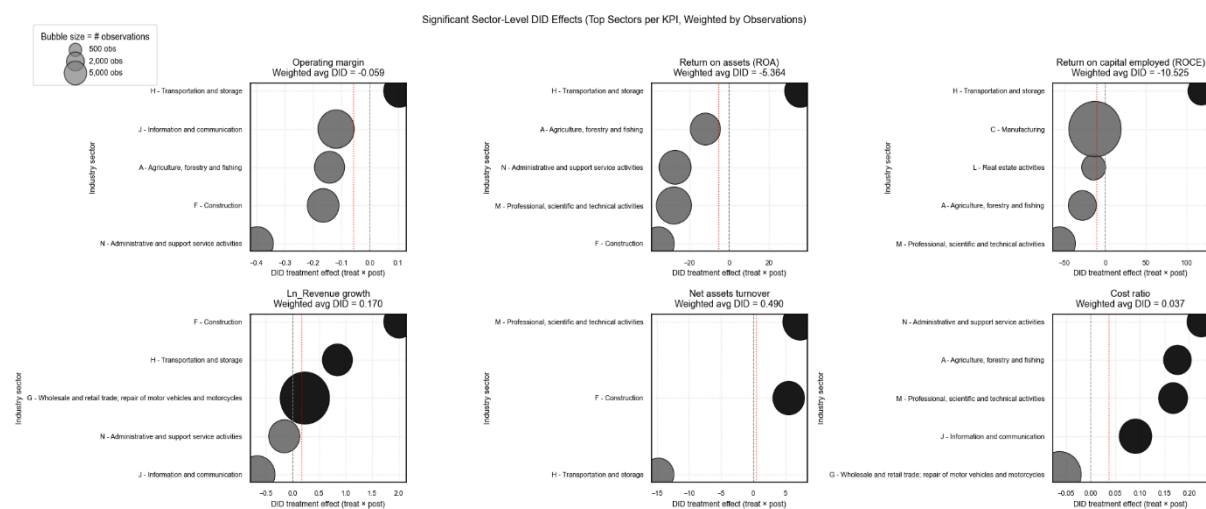
Note: Robust standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

First, profitability effects are clearly heterogeneous across sectors. For operating margins, significant negative effects appear in agriculture (A), construction (F), information and communication (J) and administrative and support services (N), where the $Treat \times Post$ coefficients range from about -0.12 to -0.40 percentage-points. In contrast, transportation and storage (H) exhibits a positive and statistically significant margin effect of roughly +0.10, indicating that in this sector Nordic-acquired CEE firms expand their operating margin relative to domestic peers after the deal. A similar pattern is visible for ROA and ROCE: in selected infrastructure- and capital-intensive sectors – electricity and gas (D), transportation and storage (H), and healthcare and social services (Q) – acquisitions are associated with sizeable positive and significant post-treatment returns on assets and capital, while in agriculture (A), manufacturing (C), construction (F) and professional and technical services (M) the point estimates are negative and significant.

Second, the growth and efficiency indicators show a more clearly pro-growth pattern in a subset of sectors. For log revenue growth, positive and statistically significant coefficients are found in wholesale and retail trade (G), construction (F) and transportation and storage (H), whereas some service segments display negative or insignificant effects. Likewise, net-assets turnover – our measure of how effectively fixed and working capital are used to generate sales – rises significantly in construction (F) and professional, scientific and technical activities (M), but falls in transportation and storage (H).

Figure 3 (Significant sector-level DiD effects) summarizes this heterogeneity by plotting, for each KPI, the significant sectoral $Treat \times Post$ coefficients for the five largest sectors by observation count. Bubble size reflects the number of firm-year observations, and a vertical dotted line shows the observation-weighted average coefficient across all sectors (used here purely as a descriptive summary, not as a separate causal estimand). The figure highlights three central messages.

Figure 3. Significant sectoral DiD effects



Growth and asset utilization: For log revenue growth and net-assets turnover, the bulk of large and significant sectors lie to the right of zero, and the weighted average DiD is positive ($\approx +0.17$ for log revenue growth and $\approx +0.49$ for net-assets turnover). In particular, construction, wholesale and retail trade (supply chain), and transportation and storage show strong positive growth effects, while construction and professional services also exhibit higher post-acquisition asset turnover relative to controls. This indicates that in these industries Nordic

investors tend to push acquired firms onto faster top-line expansion paths and make more intensive use of their asset base.

Profitability compression: In contrast, the weighted averages for operating margin, ROA and ROCE are negative (around -0.06 (by -6 percentage points), -5.4 and -10.5 percentage points respectively), and several large sectors – including agriculture, manufacturing and parts of business services – show significant declines in profitability measures. Combined with the positive growth and efficiency effects, this pattern is consistent with a strategy in which Nordic owners prioritize expansion and asset rationalization, accepting lower short- to medium-term profitability while restructuring and scaling the acquired operations.

Costs and restructuring: The cost ratio, defined as 1 – gross-profit-to-revenue, tends to rise in administrative services, agriculture and professional services, suggesting higher operating and direct cost shares in these sectors post-acquisition, whereas wholesale and retail trade exhibits a negative (cost-reducing) effect. This again fits with an interpretation of front-loaded integration and investment costs in some segments, partly offset by efficiency gains elsewhere.

Overall, the sectoral DiD evidence reveals that the near-zero baseline averages mask economically meaningful heterogeneity. Nordic acquisitions appear to be associated with revenue acceleration and more intensive asset use in specific tradable and infrastructure-related sectors, while profitability impacts are more mixed and often negative in the short run, especially in agriculture and selected service industries.

Table 13. Summary of significant sector–KPI effects and interpretation

Pattern	Sector (NACE)	Significant KPI Effects (coef, stars)	Econometric Interpretation	Economic Interpretation
Growth & asset utilization	F – Construction	Log Revenue growth +2.007***; Net-assets turnover +5.533***	Large positive coefficients; precisely estimated with relatively high within-sector R ² (0.1); strong sample size enhances precision (5000+).	Nordic owners accelerate sales expansion and intensify asset utilization, consistent with scaling and operational restructuring.
	G – Wholesale & retail trade	Log Revenue growth +0.233*; Cost ratio -0.063**	Positive, statistically meaningful growth effect; slight cost reduction, modest R ² (0.01).	Strong procurement synergies reduce operating costs while supporting sales growth.
	H – Transportation & storage	Log Revenue growth +0.846**; Operating margin +0.103***; ROA +35.720***; ROCE +118.093***	Four positive and precisely estimated effects (R ² 0.1+); among the clearest post-treatment improvements.	Integration of fleet, route density and logistics capabilities yields rapid efficiency gains and improved returns.
	M – Professional, services	Net-assets turnover +7.331*	Coefficient large and significant; relatively high R ² (0.13), robust across specifications.	Asset-light firms increase project utilization and service throughput post-acquisition.
Profitability compression	A – Agriculture	Operating margin -0.142***; ROA -11.814***; ROCE -28.038***; Cost ratio +0.176***	Negative coefficients, all highly significant.	Short-run profitability declines due to volatile input markets and integration.
	C – Manufacturing	ROCE -12.505***	Estimated average negative returns effect post deal relative to controls.	Capital deepening and restructuring depress returns in early post-deal years.
	F – Construction	Operating margin -0.165**; ROA -35.353***	Strong average negative profitability effects despite positive growth KPIs; precisely estimated.	Integration and capex requirements dilute profitability while firms scale operations.
	J – ICT	Operating margin -0.118**; Log Revenue growth -0.660**; Cost ratio +0.091**	Three robustly negative effects.	High human-capital and technology investment raises costs, slowing scale-up and reducing margins.
	M – Professional services	ROA -27.602***; ROCE -55.989***; Cost ratio +0.167*	Large negative returns and cost increases; high statistical precision.	Integration raises operating costs and compresses margins.
	N – Administrative & support	Operating margin -0.396**; ROA -27.012**; Log Revenue growth -0.154**; Cost ratio +0.225***	Consistent, multi-KPI significance; negative coefficients with good precision.	Intensive restructuring and consolidation reduce profitability and growth.
Cost restructuring effects	A – Agriculture	Cost ratio +0.176***	Strongly significant cost increase post deal relative to controls.	Higher direct and operational cost intensity during transformation.

Pattern	Sector (NACE)	Significant KPI Effects (coef, stars)	Econometric Interpretation	Economic Interpretation
	J – ICT	Cost ratio +0.091**	Strongly significant cost increase post deal relative to controls.	Technology upgrading and human-capital integration drive cost increases.
	M – Professional services	Cost ratio +0.167*	Strongly significant cost increase post deal relative to controls.	Organizational scaling and integration raise operating cost burden.
	N – Administrative services	Cost ratio +0.225***	Very strong statistical precision; among the largest increases.	Absorption of services and overhead expansion increase cost share.
	G – Wholesale & retail trade	Cost ratio -0.063**	Small but precise negative coefficient.	Efficiency gains in procurement and distribution reduce cost intensity.

6.3. Dynamic effects – Event-study evidence for selected sectors

The event-study estimations in *Table 14* unpack these baseline significant sectoral DiD effects by tracing dynamic treatment effects from three years before to five years after the deal year ($\tau = -3; +5$). Coefficients measure the difference between treated and control firms in a given sector–KPI-year relative to the deal year ($\tau = 0$), conditional on firm and year fixed effects and IPW weights. Model fit is higher than in the pooled baseline, with average within- R^2 between 0.16 and 0.24 in sectors such as agriculture (A), construction (F) and professional services (M), indicating that time-varying treatment effects explain a non-trivial share of within-firm variation in these industries.

6.3.1. Revenue growth dynamics

For log revenue growth, the event-study confirms that growth responses are highly sector-specific rather than uniformly negative, as suggested by the pooled baseline. In construction (F), coefficients are strongly negative and highly significant throughout the pre-deal window ($\tau = -3$ to -1 , between -1.49^{***} and -3.38^{***}), indicating that future targets already underperform matched domestic peers in the run-up to acquisition. Around the deal date and in the first two post-deal years ($\tau = +1, +2$) growth remains depressed, but the trajectory reverses from year three onwards: $\tau = +3$ is positive and significant ($\approx +1.21^*$), and the dynamic path in *Figure 4* shows a sustained catch-up phase where log revenue growth of acquired construction firms overtakes that of controls. This pattern is consistent with the sectoral baseline result of a large positive average effect in F, but clarifies that this is driven by medium-run post-deal acceleration following a pronounced pre-deal slowdown.

Wholesale and retail trade (G) exhibits milder dynamics. Pre-treatment coefficients are close to zero and insignificant, lending support to the parallel-trends assumption in this sector. Post-deal coefficients are modestly positive but imprecise, while *Figure 4* shows a small but persistent upward shift in log revenue growth from $\tau \approx +1$ onwards.

Table 14. Event-study dynamic treatment DID (staggered DID)

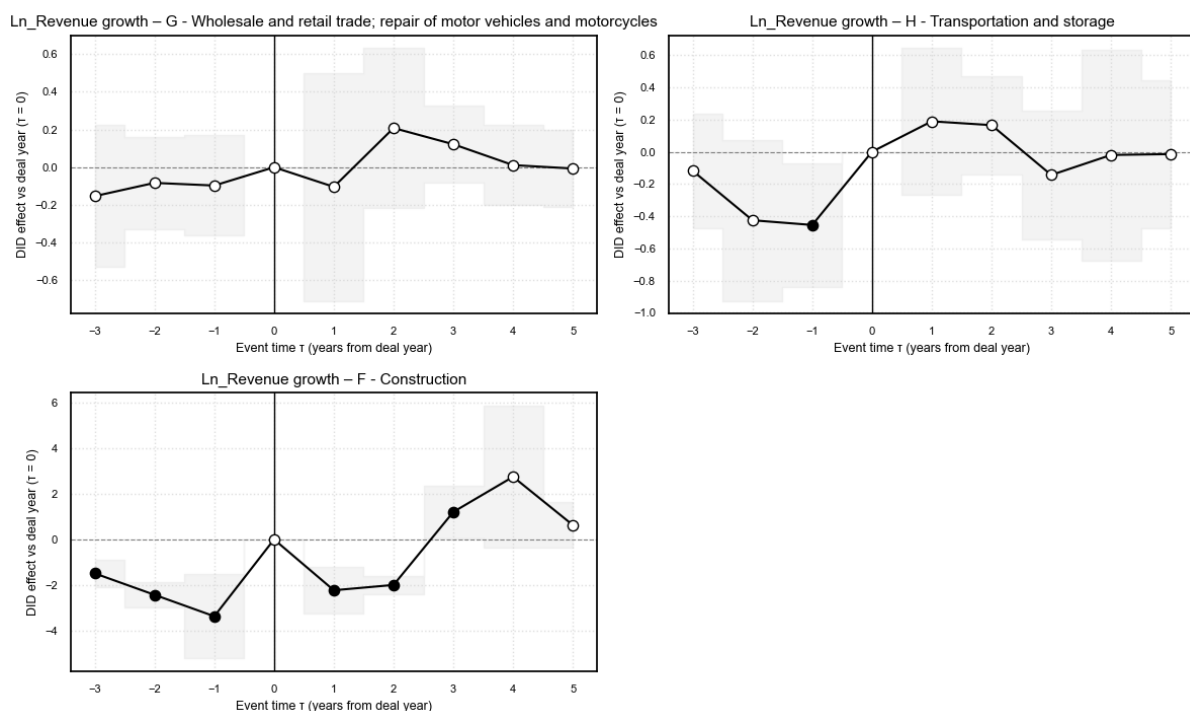
	(1) A - Agriculture, forestry and fishing	(2) C - Manufacturing	(3) F - Construction	(4) G - Wholesale and retail trade; repair of motor vehicles and motorcycles	(5) H - Transportation and storage	(6) J - Information and communication	(7) M - Professional, scientific and technical activities	(8) N - Administrative and support service activities
Operating margin								
t-3	0.183* (0.111)	0.018 (0.025)	-0.008 (0.100)	0.028 (0.022)	-0.047 (0.064)	0.079** (0.040)	0.063 (0.058)	<i>Collinearity with FE.</i>
t-2	0.091 (0.096)	0.052** (0.023)	0.451 (0.319)	0.012 (0.020)	0.008 (0.020)	0.023 (0.053)	0.300*** (0.099)	<i>Collinearity with FE.</i>
t-1	-0.016 (0.064)	0.091 (0.060)	-0.004 (0.081)	0.028 (0.024)	-0.014 (0.018)	0.089** (0.036)	0.148* (0.079)	<i>Collinearity with FE.</i>
t+1	-0.040 (0.051)	-0.004 (0.022)	-0.420*** (0.156)	0.034 (0.039)	0.132*** (0.027)	-0.106 (0.086)	0.012 (0.054)	<i>Collinearity with FE.</i>
t+2	-0.079 (0.070)	0.026 (0.038)	0.350 (0.242)	0.027 (0.047)	0.238*** (0.041)	-0.122 (0.088)	0.065 (0.041)	<i>Collinearity with FE.</i>
t+3	-0.008 (0.107)	-0.010 (0.035)	0.013 (0.062)	0.029 (0.035)	0.103 (0.079)	0.090 (0.057)	0.091 (0.056)	<i>Collinearity with FE.</i>
t+4	0.062* (0.032)	0.026 (0.054)	-0.000 (0.030)	0.067 (0.050)	0.088 (0.090)	0.021 (0.053)	0.020 (0.059)	<i>Collinearity with FE.</i>
t+5	0.101 (0.085)	-0.010 (0.018)	0.031 (0.060)	0.065 (0.048)	0.141 (0.089)	-0.014 (0.076)	-0.007 (0.077)	<i>Collinearity with FE.</i>
ROA								
t-3	10.932 (7.258)	-0.932 (2.553)	19.834*** (3.997)	4.967 (3.065)	-4.718 (8.517)	10.813* (6.358)	-3.266 (11.338)	<i>Collinearity with FE.</i>
t-2	4.952 (6.723)	0.381 (2.887)	9.613*** (3.508)	2.714 (2.789)	-4.681* (2.752)	8.524** (4.190)	44.227*** (12.558)	<i>Collinearity with FE.</i>
t-1	-9.182* (5.414)	4.027 (2.814)	-4.482 (7.458)	7.043*** (2.392)	-5.987 (5.745)	5.195 (7.494)	19.217*** (4.481)	<i>Collinearity with FE.</i>
t+1	-7.599* (4.434)	-1.875 (2.186)	-2.706 (7.451)	3.536 (4.677)	33.507*** (3.429)	-6.198 (4.629)	-17.676** (8.403)	<i>Collinearity with FE.</i>
t+2	-8.804* (5.14)	-2.822 (3.019)	-18.231 (20.935)	6.347 (6.165)	33.394*** (5.443)	-8.729 (8.139)	5.337 (6.907)	<i>Collinearity with FE.</i>
t+3	-1.344 (9.138)	-6.861** (3.393)	0.915 (10.677)	4.364 (5.404)	11.871* (6.689)	7.543 (7.899)	13.433*** (4.617)	<i>Collinearity with FE.</i>
t+4	6.257* (3.447)	0.852 (3.158)	-0.944 (5.773)	10.597 (8.047)	29.129* (15.257)	-2.433 (3.804)	14.170** (5.993)	<i>Collinearity with FE.</i>
t+5	21.085* (12.364)	-1.897 (2.819)	4.426 (5.276)	7.382 (7.127)	24.529 (18.125)	-22.566 (14.495)	13.428*** (2.665)	<i>Collinearity with FE.</i>
ROCE								
t-3	45.604*** (13.800)	0.360 (3.798)	-7.844 (13.599)	9.858 (7.399)	<i>Collinearity with FE.</i>	53.241*** (13.688)	3.450 (12.593)	<i>Collinearity with FE.</i>
t-2	15.627** (7.771)	6.814 (6.701)	-3.380 (16.039)	0.390 (7.934)	<i>Collinearity with FE.</i>	13.496 (20.759)	14.339 (10.838)	<i>Collinearity with FE.</i>
t-1	-6.859 (10.475)	18.080** (7.700)	23.686*** (8.511)	17.375 (14.161)	<i>Collinearity with FE.</i>	16.358 (26.178)	24.596* (13.294)	<i>Collinearity with FE.</i>
t+1	23.599 (19.481)	-3.942 (3.915)	9.233 (12.700)	-1.216 (9.506)	<i>Collinearity with FE.</i>	20.832 (15.888)	-13.890*** (5.179)	<i>Collinearity with FE.</i>
t+2	5.525 (13.862)	-8.298 (5.309)	59.992*** (7.611)	8.594 (10.862)	<i>Collinearity with FE.</i>	62.703* (32.414)	1.046 (12.968)	<i>Collinearity with FE.</i>
t+3	8.640 (10.032)	-8.347* (4.633)	33.040*** (12.488)	4.329 (11.158)	<i>Collinearity with FE.</i>	42.342 (30.092)	8.298 (7.821)	<i>Collinearity with FE.</i>
t+4	10.261 (8.635)	-15.763** (7.852)	37.242*** (5.150)	18.753 (11.747)	<i>Collinearity with FE.</i>	-15.949 (18.803)	12.849 (8.393)	<i>Collinearity with FE.</i>
t+5	-7.358 (5.673)	-5.181 (8.501)	18.024* (9.255)	2.544 (9.727)	<i>Collinearity with FE.</i>	-5.106 (17.829)	-7.784 (6.187)	<i>Collinearity with FE.</i>
Ln_Revenue growth								
t-3	-0.567*** (0.186)	-1.020 (0.728)	-1.492*** (0.359)	-0.153 (0.229)	-0.119 (0.215)	-0.298 (0.623)	-0.078 (0.356)	0.979*** (0.160)
t-2	-0.332 (0.277)	-0.350 (0.283)	-2.435*** (0.348)	-0.083 (0.149)	-0.426 (0.304)	-0.276 (0.577)	0.360** (0.161)	0.470*** (0.100)
t-1	0.614* (0.328)	-0.378 (0.236)	-3.376*** (1.128)	-0.097 (0.162)	-0.455* (0.233)	-0.134 (0.297)	0.836 (0.783)	0.262*** (0.068)
t+1	-0.034 (0.193)	-0.785 (0.540)	-2.234*** (0.632)	-0.104 (0.367)	0.189 (0.277)	-0.535** (0.237)	-0.326 (0.240)	-0.020 (0.123)
t+2	-0.344 (0.228)	-0.326 (0.310)	-2.000*** (0.235)	0.208 (0.259)	0.165 (0.185)	-0.629** (0.246)	0.259** (0.119)	-0.060 (0.086)
t+3	0.390** (0.174)	-0.223 (0.189)	1.206* (0.697)	0.122 (0.124)	-0.144 (0.243)	-0.263 (0.289)	0.409* (0.247)	-0.031 (0.059)
t+4	0.008 (0.190)	-0.200 (0.182)	2.750 (1.901)	0.011 (0.129)	-0.020 (0.398)	-0.021 (0.451)	0.038 (0.281)	0.110 (0.077)
t+5	0.150 (0.268)	-0.083 (0.137)	0.631 (0.609)	-0.007 (0.123)	-0.015 (0.278)	0.271 (0.397)	-0.824 (0.913)	-0.070 (0.067)
Net assets turnover								
t-3	-1.733 (2.447)	-1.151** (0.512)	0.248 (0.456)	-2.785 (2.280)	-16.654*** (4.460)	2.962 (2.807)	-4.276** (1.737)	<i>Collinearity with FE.</i>
t-2	0.414 (0.927)	-1.048* (0.614)	-1.288 (0.977)	3.954 (4.948)	-28.612*** (10.842)	-2.668*** (1.024)	-8.859*** (1.834)	<i>Collinearity with FE.</i>
t-1	2.039 (2.502)	-1.134** (0.519)	-1.006 (0.700)	0.084 (1.666)	-17.831*** (4.960)	1.924 (4.372)	-9.123*** (2.113)	<i>Collinearity with FE.</i>
t+1	0.813 (1.902)	-0.548 (0.680)	5.184*** (1.803)	-1.316 (1.190)	-18.883** (8.907)	-5.298** (2.080)	0.245 (4.047)	<i>Collinearity with FE.</i>
t+2	-1.235 (0.825)	-1.15* (0.68)	-2.658 (1.914)	-1.202 (0.865)	-19.252 (12.942)	-3.861*** (1.236)	1.809 (3.164)	<i>Collinearity with FE.</i>
t+3	2.952 (2.633)	-1.295 (0.970)	-1.426 (0.908)	-3.358* (1.93)	0.204 (6.560)	-2.345 (2.444)	-0.405 (4.453)	<i>Collinearity with FE.</i>
t+4	16.345 (12.505)	-0.148 (1.295)	1.213 (0.906)	0.712 (2.859)	3.097 (10.415)	-3.87* (2.119)	13.558*** (2.294)	<i>Collinearity with FE.</i>
t+5	-5.974 (5.630)	-0.181 (1.117)	2.727*** (0.673)	-2.631* (1.558)	6.398 (10.946)	-0.550 (1.677)	14.803*** (2.480)	<i>Collinearity with FE.</i>
Observations	803	10,016	993	6,497	920	1,694	1,473	916
R-squared (avg.)	0.233	0.028	0.225	0.032	0.161	0.093	0.236	0.011
FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note: Bolded results represent significant sector-KPI strings from Sectoral-level baseline DiD. Robust standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Model could not be estimated for certain sector-KPIs due to multicollinearity.

Transportation and storage (H) also shows negative but insignificant coefficients in the pre-deal period, followed by an improvement around $\tau = +1$ to $+2$. In the event-study plots, treated firms in H move from slightly lower growth pre-acquisition to a higher growth path of about 0.1-0.2 log points above controls, which is in line with the positive average DiD effect estimated in the sectoral baseline.

By contrast, some service sectors (notably administrative and support services, N) show significantly higher revenue growth already in the pre-deal window and weaker growth thereafter. Although these sectors contributed to the negative baseline effect on revenue growth, the presence of pre-trend differences suggests that those particular dynamic estimates should be interpreted cautiously and mainly as descriptive patterns rather than fully causal responses.

Figure 4. Log Revenue growth event-time trajectories around the acquisition year

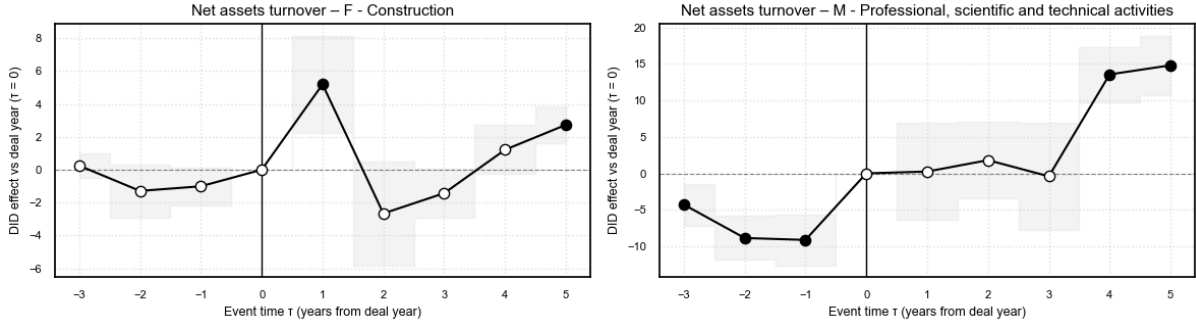


Note: Full bullets represent statistically significant estimators at $p < 0.10$.

6.3.2. Net-assets turnover and asset utilization

The event-study results for net-assets turnover sharpen the growth-and-asset-use narrative identified in the sectoral DiD. In construction (F), treated firms start with slightly lower or comparable turnover to controls, but from $\tau = +1$ onwards coefficients become large and positive: $+5.18^{***}$ at $\tau = +1$ and remaining significantly positive through $\tau = +5$ (about $+2.73^{***}$ ratio increase relative to controls post deal). The corresponding chart shows a clear upward shift: after a short dip in the first post-deal year, the turnover of acquired firms rises by roughly 3-4 points relative to the deal year and stays above the control path. This indicates persistent improvements in the ability of construction targets to generate sales per unit of assets, consistent with tighter project management and more intensive use of fixed capital.

Figure 5. Net assets turnover event-time trajectories around the acquisition year



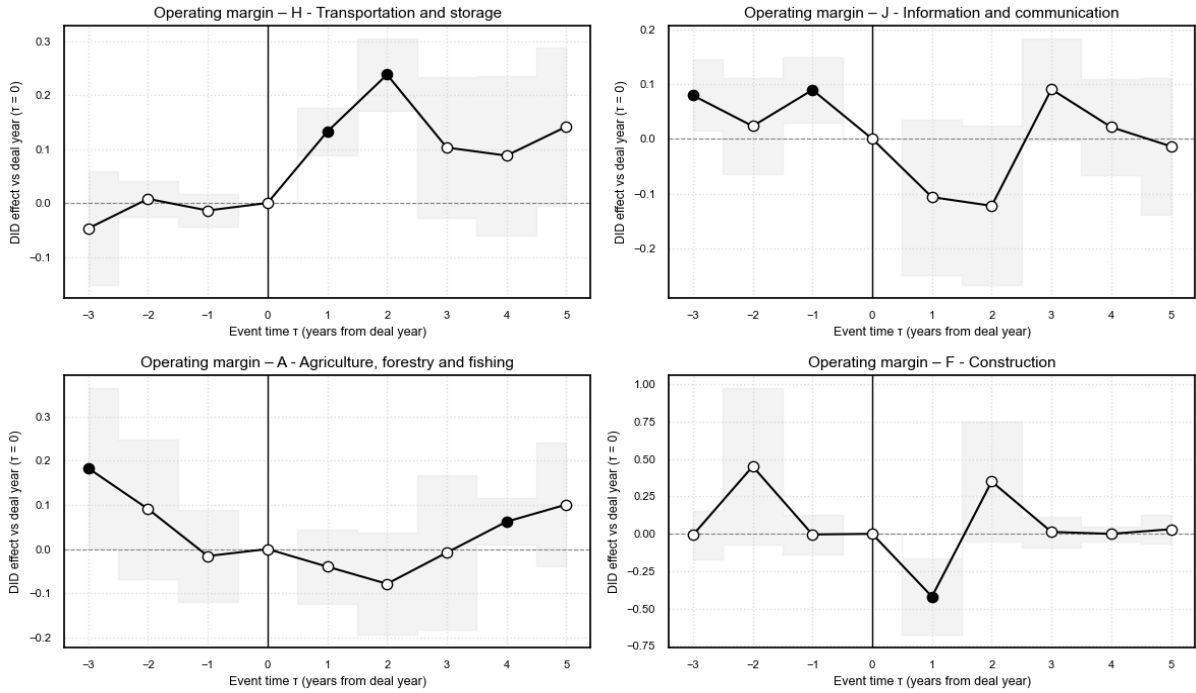
In professional, scientific and technical activities (M), the pre-deal coefficients for net-assets turnover are significantly lower relative to domestic firms (around -4^{**} to -9^{***} for $\tau = -3$ to -1), suggesting that Nordic investors tend to acquire firms with under-utilized assets in this sector. Post-deal, the pattern reverses sharply: turnover coefficients turn positive and significant from $\tau = +4$ onwards ($\approx +13.56^{***}$ at $\tau = +4$ and $+14.80^{***}$ at $\tau = +5$). The event-study plots display a steep upward trajectory in later years, indicating that asset-light professional service firms experience substantial efficiency gains relative to domestic firms once integration and scaling have taken place. Together with the positive sectoral DiD, this supports the interpretation that Nordic owners use acquisitions to unlock latent capacity and intensify utilization in knowledge-intensive activities.

6.3.3. Profitability and return dynamics

The dynamic profiles for operating margins and ROA show how the initial profitability compression seen in the sectoral baseline is concentrated in early post-deal years and in specific industries, with signs of recovery or reversal over longer horizons uncovered via the event study.

In transportation and storage (H), the event-study confirms that this is one of the clearest success cases for Nordic-CEE M&A. Pre-treatment coefficients for operating margin and ROA are small and mostly insignificant, while the post-deal years display large, precisely estimated gains. Operating margins increase by about 0.13^{***} (or 13 percentage points increase) at $\tau = +1$ and 0.24^{***} at $\tau = +2$ relative to controls, and remaining above zero thereafter. ROA responds even more strongly, jumping by roughly $+33$ - 34^{***} percentage points in $\tau = +1$ and $+2$ and staying significantly positive in later years relative to controls. *Figures 6 and 7* illustrate a discrete break at the deal year, with treated firms in H moving from near-parity with controls to a sustained profitability premium. Combined with the positive ROCE response documented in the sectoral baseline (omitted in event-study due to event dummy collinearity with fixed effects), this supports the interpretation that Nordic acquirers generate substantial efficiency and return improvements in logistics and transport infrastructure.

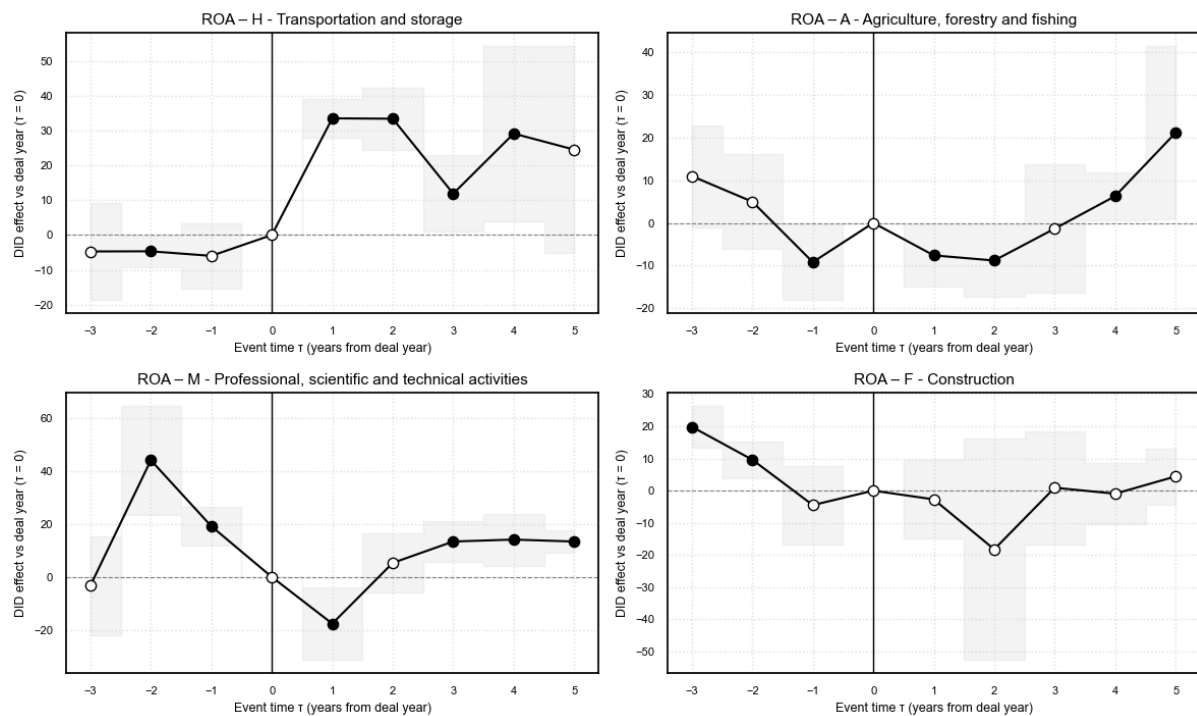
Figure 6. Operating margin event-time trajectories around the acquisition year



Construction (F) displays a more complex pattern. Operating margins show a sharp deterioration in the immediate post-deal year ($\tau = +1$: -0.42^{***} (42 percentage points lower)), and only gradually normalize towards zero by $\tau = +4$ and $+5$. ROA is significantly negative both before and shortly after the acquisition, but coefficients become less negative and eventually turn positive (and weakly significant) by $\tau = +5$. ROCE tells a different story: it becomes strongly positive from $\tau = -1$ onwards, with effects above $+30$ - 60^{***} percentage points higher than relative controls at $\tau = -1$ to $+3$, before settling at still-positive levels. The event-study plots mirror this pattern: profitability in construction targets is initially compressed around the deal, yet returns on capital improve early and remain high, while revenue growth and net-assets turnover strengthen in later years. Put differently, construction acquisitions appear to be used to rationalize the asset base and scale operations, with near-term margin pressure but medium-term improvements in asset utilization and returns.

Agriculture (A) and professional services (M) help explain the negative average profitability effects in the baseline. In (A), ROA and ROCE coefficients are strongly relatively negative around $\tau = -1$ to $+2$, but the event-study shows a gradual recovery, with ROA turning positive and significant by $\tau = +4$ and $+5$. This suggests that agricultural targets suffer a prolonged adjustment phase – consistent with high capex and volatile input prices – before profitability reverts towards or above the counterfactual. In (M), ROA is sharply negative in the first post-deal year (around -18^{**} percentage points lower than relative controls), yet becomes significantly positive from $\tau = +3$ onwards ($\approx +13$ - 14^{***} p.p. higher than controls), echoing the delayed but strong improvement in net-assets turnover. Together, these sectors illustrate that the cross-sectional DiD captures mainly the early, adjustment-intensive years, while the event-study reveals more favorable longer-run trajectories.

Figure 7. ROA event-time trajectories around the acquisition year



6.4. Synthesis

Taken together, the event-study results refine the sectoral DiD evidence in three ways. First, they show that in the key “growth and asset-utilization” sectors – construction (F), wholesale and retail trade (G), transportation and storage (H) and professional services (M) – the positive baseline treatment effects on revenue and net-assets turnover are driven by medium-run improvements that emerge after an initial period of adjustment. Second, they clarify that much of the observed profitability compression is front-loaded: in several sectors, ROA and operating margins deteriorate within one to two years of the deal but recover or turn positive three to five years later, especially where asset turnover also rises. Third, they highlight a small number of sectors (notably ICT and manufacturing) in which both the baseline and dynamic estimates point to more persistent declines in profitability and higher cost intensity.

Overall, the combined DiD and event-study evidence suggests that Nordic acquisitions in CEE EU-critical sectors are best characterized as medium-term restructuring and growth strategies rather than short-term margin extraction. Acquirers appear willing to accept weaker profitability in the early post-deal period in order to accelerate top-line growth and raise asset utilization, with clear and durable gains in sectors such as transport/logistics and, with a lag, construction and professional services.

Table 15. Summary of consolidated performance sector-KPI effects and interpretation

Pattern	Sector (NACE)	Econometric Interpretation	Economic Interpretation
1. Clear and durable post-acquisition performance gains	H – Transportation & storage	Significant in baseline DiD; clean pre-trends; event study shows immediate break at $\tau=0$ and persistent gains through $\tau=+5$.	Nordic buyers unlock strong scale synergies (fleet, routes, logistics). Performance jumps immediately and remains superior on all core KPIs – the strongest success-case in the data.
	F – Construction	Strong sectoral DiD effects; event study shows severe pre-deal underperformance but medium-run reversal with sharp and sustained improvements.	Fixer-upper acquisitions: targets are initially weak, but restructuring yields major efficiency & growth acceleration by years +3 to +5.
	M – Professional services	Baseline DiD + event-study align: pre-deal under-utilization, post-deal large and late ($\tau=+4,+5$) efficiency gains.	Integration unlocks latent capacity. Nordic owners scale workload and productivity in asset-light service firms.
2. Early post-acquisition profitability compression followed by recovery	A – Agriculture	Baseline DiD clearly negative; event study shows long adjustment cycle but eventual profitability reversal.	High input volatility + capex cause early margin squeeze, but restructuring stabilizes, and profitability converges and turns positive in medium run.
	F – Construction	Early negative margins and returns; event-study shows slow normalization and ROA turning positive by $\tau=+5$.	Short-run integration costs depress profitability, but efficiency gains (seen in turnover) drive late profitability normalization.
	M – Professional services	Very negative early years followed by large positive reversals in event study.	Initial integration and scaling costs compress returns, but once capacity is utilized firms swing into strong profitability.
3. Persistent underperformance and higher cost intensity (no medium-run recovery)	J – Information & communication (ICT)	Strong baseline negatives; event study confirms repeated margin erosion + slower growth.	High-tech, high-labor investments raise costs and depress early & medium-run profitability – no evidence of turnaround.
4. Capital-heavy restructuring with weak returns	C – Manufacturing	Consistently negative in baseline; event study shows no systematic post-deal upturn.	Manufacturing deals resemble long-horizon capital repositioning with little short- or medium-term payoff.

6.5. Robustness

This subsection examines the robustness of the baseline DiD estimates to alternative sample and matching choices. Following the strategy in Gregori et al. (2021), who stress the need to verify that their staggered DiD results are not driven by the immediate post-crisis years, the inclusion of micro firms, or specific PSM settings, three complementary exercises are implemented.

First, the panel is restricted to post-2011 observations, thereby excluding the highly volatile early crisis period in which balance-sheet data are noisier and macro conditions less comparable across CEE economies. Second, micro firms – defined in line with the EU recommendation as firms with fewer than 10 employees and either turnover or total assets below EUR 2 million – are removed from the matched sample. Gregori et al. (2021) argue that Orbis coverage and accounting quality for such firms are weaker and may generate confounding noise in treatment estimates. Third, the propensity-score matching is re-estimated with a tighter nearest-neighbor configuration ($k = 5$ instead of the baseline $k = 10$), and the IPW-weighted TWFE DiD is recomputed on the corresponding matched panel. This mirrors their sensitivity checks that vary the number of neighbors and matching method to show that results are not an artefact of a particular PSM implementation.

6.5.1. Robustness of pooled DiD estimates

Across all three checks, the pooled $\text{Treat} \times \text{Post}$ coefficients remain small in magnitude and largely insignificant, confirming the main conclusion from *Section 6.1* that Nordic

acquisitions do not generate sizeable average performance shifts once all sectors and host countries are pooled.

For profitability indicators, the signs of the coefficients are stable and remain negative. Operating margin is slightly less negative in the post-2011 window (-0.024 vs -0.027) and becomes marginally more negative when micro firms are excluded (-0.038*, now significant at the 10% level). ROA and ROCE coefficients remain negative in all specifications; the ROCE effect becomes more pronounced when trimming micro firms (-16.87***), and remains negative and significant under the stricter PSM (-10.42**). Thus, if anything, dropping micro firms or tightening the match tends to strengthen the evidence for modest profitability compression at the pooled level, rather than overturning it.

For the growth and efficiency indicators, the patterns are also consistent with the baseline. The negative effect on log revenue growth is essentially unchanged in the post-2011 specification (-0.390**, compared to -0.379**), while becoming somewhat smaller and statistically insignificant once micro firms are removed and in the $k = 5$ PSM sample (-0.17 and -0.20, respectively). Net-assets turnover remains positive but imprecisely estimated in all robustness checks, with point estimates close to the baseline 2.52, and the cost ratio stays close to zero except when micro firms are excluded, where it rises to a small but statistically significant 0.067**. Overall, these alternative pooled specifications confirm that the lack of strong average treatment effects is not driven by the early crisis years, the inclusion of micro firms or the particular matching configuration; the only clearly robust pooled result remains the moderate deterioration in revenue growth and, in some specifications, in ROCE.

6.5.2. Robustness of sectoral DiD estimates

The sector-level TWFE DiD results are likewise broadly robust to these perturbations, and the main narrative of heterogeneous, sector-specific impacts is preserved.

Restricting the window to post-2011 hardly changes the pattern of significant sector-KPI effects. In agriculture (A), the strong negative effects on operating margin, ROA and ROCE are virtually unchanged. Construction (F) continues to display a combination of negative margins and returns with positive growth and net-assets turnover; if anything, the positive effects on revenue growth (+2.13***) and turnover (+6.46***) become slightly larger. Transportation and storage (H) retains its status as a “success case”: the positive and highly significant coefficients on operating margin, ROA and ROCE are essentially identical to the baseline, and the growth effect on log revenue remains positive and significant. In information and communication (J) and in professional services (M), the negative profitability and higher cost ratios also persist. The main change is that the ROA effect for administrative and support services (N) is no longer significant in the post-2011 sample, although the point estimate remains negative, suggesting loss of precision rather than a reversal of sign.

Excluding micro firms induces some rebalancing of sector coverage but does not overturn the core sectoral patterns. The agriculture, manufacturing and electricity/gas estimates are almost unchanged, and agriculture continues to exhibit large negative effects on all profitability measures plus a higher cost ratio. In construction, the operating margin effect becomes more negative (-0.281***), and ROA remains sharply negative, while revenue growth and net-assets turnover stay strongly positive though with slightly higher standard errors. Wholesale and retail trade (G) retains its negative cost ratio (-0.075**), although the revenue-growth effect becomes imprecise. The positive asset-utilization and growth effects in professional services (M) become less precisely estimated and, for net-assets turnover, lose

statistical significance, but coefficients remain positive. A practical consequence of dropping micro firms is that some smaller sectors, notably transportation and storage (H), no longer meet the minimum firm and observation thresholds; hence their sectoral coefficients are not identified in this robustness specification. This reflects sample limitations rather than a change in underlying effects and is consistent with Gregori et al. (2021), who also note that trimming micro firms can reduce sectoral coverage while leaving core patterns intact.

Finally, re-estimating the PSM with $k = 5$ neighbors yields a smaller matched sample but delivers sectoral DiD estimates that are qualitatively similar to the baseline. The strongest profitability effects – negative in agriculture (A) and professional services (M), positive in transportation and storage (H) – remain sizable and statistically significant. The increases in the cost ratio in agriculture, professional services and administrative services (N), and the cost reductions in wholesale and retail trade (G), are also preserved. Some marginal results, however, become sensitive to the matching choice. The large positive growth effect in construction (F) and the positive net-assets-turnover effect in professional services (M) lose statistical significance under $k = 5$, even though their point estimates remain positive. Conversely, some effects become slightly stronger: for example, the negative ROA and ROCE coefficients in construction remain sizeable, and the negative net-assets-turnover effect in transportation (H) becomes more precisely estimated. These shifts are consistent with the modest reduction in sample size and reweighting induced by the alternative PSM, and mirror the finding in Gregori et al. (2021) that varying the number of neighbors or matching algorithm affects precision but not the qualitative pattern of treatment effects.

Taken together, the robustness exercises confirm that the main empirical messages of the analysis are not artefacts of specific sample cuts or matching choices. At the pooled level, Nordic acquisitions in CEE critical sectors continue to exhibit weak average effects on profitability and efficiency, with some evidence of lower post-deal revenue growth and ROCE that is broadly stable across specifications. At the sectoral level, the key patterns identified in *Sections 6.2-6.4* – strong positive post-acquisition performance in transportation and storage, mixed but ultimately favorable dynamics in construction and professional services, and persistent profitability compression and cost increases in ICT and administrative services – remain clearly visible once pre-2011 observations are dropped, micro firms are excluded, and the PSM is tightened. A few sector-KPI combinations at the margin of significance (e.g. revenue growth in construction and wholesale trade, or net-assets turnover in professional services) become sensitive to specific robustness choices, and these are interpreted more cautiously in the discussion.

7. Discussion

This thesis examined whether Nordic acquisitions of CEE firms operating in EU-defined critical sectors are associated with changes in financial and operational performance. Building on a matched DiD design, the analysis focused on profitability, revenue growth and efficiency/asset utilization, and explored both sectoral and dynamic patterns. In contrast to a simple “Nordic premium” narrative, the findings reveal a more nuanced picture: on average, Nordic ownership does not generate uniform performance improvements, but instead produces heterogeneous, often delayed effects that depend strongly on sectoral context and the timing of integration.

7.1. Discussion of Hypothesis 1

Hypothesis 1: Firms in CEE’s critical sectors acquired by Nordic investors exhibit greater post-acquisition improvements in accounting-based financial and operational performance indicators, relative to comparable domestically owned firms.

Hypothesis 1 proposed that Nordic acquirers would, on average, improve the financial and operational performance of CEE target firms, reflecting the transfer of advanced managerial and organizational capabilities into environments with scope for upgrading. The pooled results do not support this expectation. Across all EU-critical sectors and host economies, post-acquisition differences between acquired and matched domestic firms are small, statistically weak, and inconsistent across profitability, efficiency and cost measures. Profitability indicators remain slightly negative but imprecise, suggesting no systematically pooled effect of Nordic ownership.

The only consistently estimated shift is a modest decline in revenue growth among acquired firms. This is consistent with the broader M&A literature, where integration costs, organizational restructuring and commercial realignment often depress top-line performance in the short run. It also reflects the fact that pooling highly heterogeneous sectors can obscure meaningful, positive effects in some industries while blending them with negative effects in others.

Robustness exercises nuance this interpretation. While the overall pattern of weak pooled effects remains unchanged, the modest baseline decline in revenue growth loses significance once the sample is trimmed, indicating that this result is not systematic. Conversely, profitability – most notably ROCE – remains negative across all robustness checks and becomes more precisely estimated in the stricter specifications. These patterns confirm that Nordic acquisitions do not generate short-run performance improvements at the pooled level and that the absence of strong average effects is not caused by sample noise, data coverage issues, or matching choices. Instead, the muted pooled averages primarily reflect substantial underlying sectoral heterogeneity and timing differences that only become visible once the analysis is disaggregated. For this reason, Hypothesis 1 is not supported in its aggregate form, motivating a closer sector-specific and dynamic examination of post-acquisition adjustments.

7.2. Discussion of Hypothesis 2

Hypothesis 2: Nordic acquisitions do not generate a uniform shift in performance across EU critical sectors; instead, the sign and statistical significance of treatment coefficients on profitability, efficiency, and growth indicators are expected to differ by sector, with meaningful effects concentrated in a limited number of industries.

The first cluster of sectors – most clearly transportation and storage, construction, wholesale and retail trade, and parts of professional services – shows positive shifts in growth and asset utilization after acquisition. In transportation and storage, improvements also extend to profitability, indicating one of the most complete transformation profiles in the sample. However, this result should be interpreted with caution due to the sector's firm-size structure. Nordic investors in CEE logistics typically acquire small, specialized firms, and excluding micro firms in one robustness check causes transportation and storage (H) to drop from the estimable sample. This indicates that the identified effects primarily reflect smaller-scale firms. Its results are therefore informative but should be interpreted with awareness of the sector's inherently small-firm composition.

A common feature of the sectors in first cluster is that they may allow Nordic acquirers to act on relatively clear operational levers. In transportation and storage (H), improvements could plausibly stem from the integration of routing or fleet-management systems. In construction (F), the pattern of strong growth and utilization gains, despite more variable short-run profitability, may reflect a period of operational stabilization followed by more efficient project execution. Retail trade (G) shows modest but steady improvements, potentially linked to procurement or inventory-management adjustments, while parts of professional services (M) may benefit from workflow optimization. Although the mechanisms cannot be observed directly, these sectors appear to offer conditions where imported managerial routines translate more readily into tighter asset use and scalable operations.

A second group of industries, including agriculture (A), manufacturing (C), information and communication (J), and administrative and support services (N), exhibits persistent profitability pressures and higher cost ratios after acquisition. These industries often involve volatile input markets, long investment horizons, or complex organizational structures, which may make integration more demanding and delay performance improvements. The consistent pattern of short-run profitability declines across these sectors suggests that their structural characteristics limit the ease of post-acquisition adjustment.

A third group, such as real estate activities and healthcare, shows no systematic changes. This may indicate that Nordic owners intervene more selectively, or that regulatory and operational constraints restrict the potential for observable effects within the available timeframe.

Overall, the sector-level patterns support Hypothesis 2: performance effects differ meaningfully across industries. Improvements tend to arise where operational processes are more amenable to reorganization, while sectors with more complex or rigid structures show weaker or no detectable shorter-run impacts.

7.3. Discussion of Hypothesis 3

Hypothesis 3a: In sectors where Nordic acquisitions generate significant effects, revenue growth improves earlier in the post-acquisition period, often visible by $\tau+1$, relative to comparable domestically owned firms.

Hypothesis 3b: In sectors where Nordic acquisitions generate significant effects, efficiency and asset utilization improve over the medium term, typically around $\tau+2$ and $\tau+3$, relative to comparable domestically owned firms.

Hypothesis 3c: In sectors where Nordic acquisitions generate significant effects, profitability improves later in the post-acquisition period, generally from $\tau+4$ or $\tau+5$ onward, relative to comparable domestically owned firms.

The event-study evidence provides a detailed view of how post-acquisition performance evolves and shows that sectors follow distinct adjustment paths rather than the uniform sequence anticipated by Hypotheses 3a-3c. As noted under Hypothesis 2, transportation and storage (H) briefly drop out of one robustness check due to its small-firm composition, so its trajectories should be interpreted with that limitation in mind; whenever estimable, however, its dynamic patterns remain highly stable.

Revenue growth (H3a) improves early only in a limited subset of industries, and the timing of these shifts differs across sectors. Transportation and storage (H) display a clear upward trajectory shortly after acquisition whenever the series is estimable, although these movements are not statistically significant within the event-study framework; however, the corresponding sectoral DiD results do show significant positive effects overall. Retail trade (G) exhibits a similar pattern: a modest but steady post-acquisition increase in the event study without statistical significance. Construction (F), by contrast, follows a markedly different dynamic. Future targets underperform well before acquisition, continue to weaken in the immediate post-deal years, and only begin to recover several years later – this delayed rebound is statistically significant in the event study. Taken together, these heterogeneous trajectories indicate that only a subset of sectors experience the early uplift predicted by H3a, while others exhibit delayed or non-linear adjustment paths. Accordingly, H3a is only partially supported.

Efficiency and asset utilization (H3b) also evolve along sector-specific timelines, and the event-study results show clear improvements in the subset of industries already highlighted in the sectoral DiD analysis. In Construction (F), net-assets turnover increases sharply after acquisition, with significant improvements pronounced at $\tau = 1$ and $\tau = 5$, indicating that operational efficiency strengthens both immediately and in the medium-to-long-term. Professional, scientific and technical activities (M) follow a more gradual adjustment pattern: utilization remains relatively flat in the early post-deal years but rises substantially from $\tau = 4$ onward, suggesting that project-based firms require a longer integration horizon before capacity and workflow enhancements materialize. Consequently, H3b is only partially supported.

Profitability (H3c) further illustrates heterogeneous adjustment windows. Construction (F), agriculture (A) and professional services (M) follow the expected sequence of early compression followed by later strengthening (with varying levels of significance). Transportation and storage (H) again diverge, showing immediate profitability gains whenever

estimable. In contrast, ICT (J) does not exhibit recovery at any point. As only certain sectors display the anticipated late improvement, H3c is also only partially supported.

The dynamic results help clarify why several static DiD estimates under Hypothesis 2 differ in sign or magnitude from the event-study patterns. Static DiD average all post-acquisition years, blending periods of disruption with later recovery, which can obscure timing differences. Event studies instead reveal whether performance dips, rebounds or stabilizes over time – information that static coefficients cannot capture.

Overall, the event-study and robustness evidence indicates that Nordic acquisitions do not follow a single temporal trajectory. Some sectors respond quickly, others require multi-year restructuring, and a few show limited measurable change. While Hypotheses 3a–3c capture aspects of these processes, their predicted timing does not hold consistently across industries. Each hypothesis is therefore only partially supported, with sectoral context, integration frictions and firm-size structure shaping the pace and direction of results.

7.4. Overall synthesis

The combined evidence shows that Nordic acquisitions do not generate a uniform performance premium in CEE critical sectors. The pooled analysis under Hypothesis 1 reveals only weak and inconsistent average effects, with a modest decline in revenue growth as the only recurring shift. Rather than indicating an absence of value creation, these muted averages reflect substantial underlying heterogeneity. Hypothesis 2 confirms this: some sectors, such as transportation and storage (H), construction (F), retail trade (G) and parts of professional services (M), display clear improvements in growth or efficiency. These sectors form a subset where Nordic ownership appears particularly effective, producing either immediate gains (as in transportation and storage), strong medium-term turnarounds (as in construction), or late but substantial efficiency improvements (as in professional services). Meanwhile, others, including agriculture (A), manufacturing (C), and information and communication (J), experience persistent profitability pressures with medium-to-long-term recovery and improvement, or no meaningful change. These contrasts highlight that sectoral conditions – including operational flexibility, legacy constraints and firm-size structure – strongly shape the scope for post-acquisition adjustment and help explain why certain industries emerge as clear beneficiaries while others undergo longer or more complex adjustment trajectories.

Hypothesis 3 further shows that even within improving sectors, the timing of effects varies considerably. Event-study results reveal no common trajectory of early growth, medium-run efficiency gains and late profitability recovery. Instead, sectors follow distinct adjustment paths: some respond almost immediately, others recover only after several years, and several exhibit limited change throughout. These dynamic differences also explain why static DiD averages obscure important movements, blending early disruptions with later improvements or vice versa. Overall, the synthesis of H1-H3 indicates that Nordic ownership produces selective, context-dependent and often delayed transformations, rather than broad and immediate performance gains across CEE's critical sectors. At the same time, where improvements do materialize – most notably in transportation and storage, construction, professional services, and agriculture – they tend to be substantial, durable, and economically meaningful, demonstrating that Nordic acquirers can deliver significant value in sectors where operational conditions allow effective integration and restructuring.

8. Limitations and Further Research

While this thesis provides new evidence on the performance effects of Nordic acquisitions in CEE critical sectors, several practical and methodological constraints should be acknowledged. Many of these stem from the inherent limitations of available data and the necessarily narrow scope of a single study, especially given the limited time frame and the breadth of issues surrounding cross-border M&A in critical sectors.

A first set of limitations concerns data availability and coverage. Although Mergermarket and Orbis provide broad datasets, gaps remain, particularly for privately held firms in CEE, where reporting practices differ and panel lengths are uneven. Financial ratios may also be affected by accounting adjustments, integration costs, or restructuring events that cannot be fully observed. The performance metrics used in this thesis – ROA, ROCE, margins, cost ratios, asset turnover, and revenue growth – enable consistent cross-firm comparison but do not capture all operational changes following acquisitions. As a result, improvements in areas such as service reliability, operational quality, cybersecurity, long-term investment capacity, or ESG-related value creation, where Nordic investors often exhibit relatively strong reporting and governance standards, may be understated or not captured. Constructing the firm-level panel further required manual screening of transactions, harmonization of legal entity names, and matching to Orbis, which ensured accuracy but introduces scope for incomplete matching. Finally, differences between the EU's critical-sector taxonomy and the industrial classifications in Mergermarket and Orbis necessitated manual alignment, which was performed systematically but could be refined as taxonomies evolve.

Second, the final sample composition reflects methodological necessities rather than an exhaustive mapping of the M&A landscape. Focusing on Nordic-led acquisitions in EU-defined critical sectors ensures a coherent analytical frame and supports a consistent identification strategy but naturally limits generalizability to the broader universe of transactions. The study concentrates on deals where Nordic investors held a controlling or clearly influential role, although ownership thresholds and deal structures could differ across cases. Matching on observable characteristics improves internal validity, yet unobservable differences between acquired and non-acquired firms may remain – a challenge well known in empirical M&A research and especially relevant in heterogeneous sectors.

These limitations do not undermine the value of the results but instead point to several avenues for future research. First, future studies could incorporate richer qualitative and operational firm-level information – such as post-acquisition integration updates, strategy or restructuring announcements, project-level investment documentation, or systematic business news scraping – to capture performance adjustments not visible in accounting data. Second, researchers could examine alternative performance measures (e.g., innovation output, export intensity, digital maturity, customer satisfaction, ESG scores) or extend the analysis to industries beyond the EU-defined critical sectors studied here. Third, broadening the scope to other acquirer groups, including non-Nordic EU or global investors, would allow assessment of whether the observed patterns generalize across buyer types. Distinguishing PE-led transactions from corporate acquisitions represents a further natural extension, enabling more granular insight into ownership-specific mechanisms. Fourth, expanding geographic coverage beyond CEE to other EU host markets could shed light on how institutional and sectoral environments shape post-acquisition trajectories. Finally, longer time horizons would allow assessment of whether performance effects strengthen, weaken, or evolve as integration progresses and investment plans mature.

9. Conclusion

This thesis examines whether Nordic cross-border acquisitions enhance the financial and operational performance of firms operating in EU-defined critical sectors in CEE. In a context where strategic autonomy, geopolitics, and trusted ownership have become central to EU policy priorities, understanding whether such acquisitions strengthen the functioning of critical industries is of both academic and policy relevance. Using a combined dataset of 318 Nordic-acquired CEE firms and 2,428 comparable domestically owned firms, matched through propensity scores and analyzed via two-way fixed effects staggered difference-in-differences models, the study evaluates post-acquisition developments across profitability, efficiency and asset utilization, and revenue growth.

The empirical results show that Nordic ownership does not produce uniform improvements across all sectors. Instead, performance outcomes vary substantially depending on sectoral characteristics, initial firm conditions, and the potential for operational upgrading. This heterogeneity aligns with a growing body of evidence that foreign acquisitions are not inherently performance-enhancing but depend on the complementarity between acquirer capabilities and target-sector dynamics.

A number of sectors exhibit clear and economically meaningful positive effects. Transport and storage stand out with improvements across margins, returns, and revenue growth, forming a strong Nordic-CEE success case in the dataset. These findings indicate that Nordic investors can unlock substantial operational synergies – particularly in logistics coordination and fleet optimization – where structural conditions allow rapid scaling. However, these results require careful qualification. The sector is dominated by very small, specialized firms, and once micro-firms are excluded in robustness checks, the entire sector drops out of the estimable sample. While Nordic investors appear particularly effective at professionalizing and systematizing these operators, the evidence cannot be generalized to medium or larger firms in the same industry.

Other sectors demonstrate more gradual, medium-run improvements that point to meaningful operational transformation over time. In construction and in professional, scientific and technical activities, targets often underperform domestic peers temporarily post-acquisition and experience short-run profitability compression immediately afterward. Yet event-study results show that these firms begin to exhibit stronger asset utilization and, eventually, improved profitability several years after acquisition. Such patterns suggest a restructuring-driven model in which Nordic investors take on firms with latent capacity and deploy multi-year operating improvements rather than seeking rapid margin gains. Agriculture similarly shows a delayed profitability recovery, ultimately surpassing domestic controls in later post-deal years, indicating that Nordic ownership can also deliver benefits in capital-intensive and volatile environments once early adjustment pressures ease.

By contrast, several industries, including ICT, administrative and support services, and parts of manufacturing, show persistently negative or insignificant effects across profitability and cost indicators. Higher cost ratios, weaker margins, and limited growth responses imply that integration challenges, labor-intensive structures, or limited complementarities may constrain the ability of Nordic acquirers to generate measurable improvements in these CEE settings.

The broader implication of these findings is that the contribution of Nordic investment to the resilience and performance of CEE's critical sectors is conditional rather than systemic.

Nordic acquirers do deliver meaningful gains where their operational strengths align with the characteristics of the sector – such as logistics optimization, multi-year restructuring in construction, and capacity utilization in asset-light professional services – and in settings where target firms possess latent improvement potential. However, expectations of systematic performance upgrading across all critical industries are not supported by the evidence. Sectoral context, absorptive capacity, and pre-acquisition firm characteristics remain decisive.

For policymakers, the results imply that investment screening and friendshoring frameworks should account for sector-specific potential for operational improvement rather than assuming uniform benefits from trusted foreign ownership. For firms and investors, the findings highlight the importance of selecting targets where integration and capability transfer are feasible and recognizing that value creation often unfolds over a multi-year horizon, particularly in restructuring-intensive industries.

Finally, the thesis underscores the need for further research on non-financial performance dimensions – such as service reliability, infrastructure resilience, cybersecurity posture, and long-term investment behavior – which cannot be captured with accounting measures alone but are crucial for evaluating outcomes in critical sectors. Extending the analysis to these dimensions, as well as exploring variation in integration strategies and regulatory environments across CEE, can offer a richer understanding of how foreign ownership shapes strategic-sector resilience.

Overall, this thesis shows that Nordic cross-border acquisitions can strengthen important segments of the EU's critical industrial base, but the effects are uneven. Their impact is shaped by sectoral characteristics, target-firm profiles, and the scope for operational transformation – factors that must remain central in both academic analysis and policy design.

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Appendix

Appendix 1. List of CEE countries

Central Europe	• Czech Republic
	• Hungary
	• Poland
	• Slovakia
	• Slovenia

Eastern Europe	• Estonia
	• Latvia
	• Lithuania
	• Bulgaria
	• Romania
	• Croatia
	• Serbia
	• Montenegro
	• Bosnia and Herzegovina
	• North Macedonia
	• Albania
	• Moldova
	• Ukraine

Appendix 2. Pooled baseline DiD robustness checks

<i>Time window (post-2011)</i>	Operating margin	Return on assets (ROA)	Return on capital employed (ROCE)	Revenue growth	Net assets turnover	Cost ratio
Treat×Post	-0.024	-6.609	-6.692	-0.390**	2.791	0.021
(Std. Error)	(0.035)	(5.784)	(9.092)	(0.178)	(2.416)	(0.031)
Observations	24,444	24,534	16,418	21,736	23,906	15,041
Firms	2,701	2,701	2,059	2,687	2,701	1,790
R-squared (within)	0.002	0.011	0.003	0.008	0.009	0.003
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes

<i>No micro firms (med emp<10, med assets<2 EURm)</i>	Operating margin	Return on assets (ROA)	Return on capital employed (ROCE)	Revenue growth	Net assets turnover	Cost ratio
Treat×Post	-0.038*	-3.317	-16.867***	-0.17	-0.763	0.067**
(Std. Error)	(0.021)	(2.92)	(5.45)	(0.19)	(1.296)	(0.027)
Observations	23,346	23,427	16,063	20,729	22,926	14,467
Firms	2,526	2,526	1,960	2,513	2,526	1,671
R-squared (within)	0.006	0.003	0.021	0.001	0.001	0.027
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes

<i>PSM k = 5</i>	Operating margin	Return on assets (ROA)	Return on capital employed (ROCE)	Revenue growth	Net assets turnover	Cost ratio
Treat×Post	-0.011	-1.908	-10.417**	-0.2	0.227	0.025
(Std. Error)	(0.019)	(1.866)	(4.35)	(0.123)	(0.662)	(0.021)
Observations	12,077	12,103	7,932	10,711	11,791	7,324
Firms	1,321	1,321	977	1,309	1,321	863
R-squared (within)	0	0.001	0.011	0.001	0	0.003
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Appendix 3. Sectoral baseline DiD robustness checks (time-window)

<i>Time window (post-2011)</i>	(1) A - Agriculture, forestry and fishing	(2) C - Manufacturin g	(3) D - Electricity, gas, steam and air conditioning supply	(4) F - Construction	(5) G - Wholesale and retail trade; repair of motor vehicles and motorcycles	(6) H - Transportatio n and storage	(7) J - Information and communicatio n	(8) L - Real estate activities	(9) M - Professional, scientific and technical activities	(10) N - Administrativ e and support service activities	(11) Q - Human health and social work activities
Operating margin	-0.142*** (0.047)	-0.029 (0.028)	0.012 (0.014)	-0.185** (0.075)	-0.009 (0.049)	0.103*** (0.020)	-0.112** (0.057)	0.026 (0.118)	-0.127 (0.077)	-0.131*** (0.039)	-0.064 (0.062)
Return on assets (ROA)	-11.814*** (4.161)	-3.819 (2.502)	34.210*** (5.692)	-40.900*** (5.276)	-0.945 (6.460)	35.720*** (4.100)	-5.508 (6.257)	2.707 (8.381)	-27.602*** (5.312)	-10.348 (6.702)	-21.112 (22.640)
Return on capital employed (ROCE)	-28.038*** (6.863)	-11.213** (4.756)		-10.377 (6.591)	-7.369 (11.205)	118.093*** (15.502)	-13.899 (18.156)	-14.134* (7.915)	-55.989*** (19.189)		-42.268*** (4.468)
Revenue growth	0.175 (0.169)	0.285 (0.291)		2.134*** (0.417)	0.202* (0.115)	0.846** (0.404)	-0.706** (0.276)	-0.212* (0.124)	-1.025 (0.760)		0.108 (0.084)
Net assets turnover	-0.987 (0.667)	0.365 (0.900)	0.396 (0.423)	6.461*** (2.068)	0.673 (1.018)	-14.742* (7.834)	-3.891 (3.012)	0.659 (1.043)	7.331* (4.403)	0.872 (0.647)	2.872 (2.004)
Cost ratio	0.176*** (0.054)	0.030 (0.023)		0.049 (0.070)	-0.062** (0.026)	0.042 (0.036)	0.091** (0.041)	0.098*** (0.033)	0.167* (0.099)	0.221*** (0.036)	0.008* (0.005)
Observations	4,287	51,819	854	5,101	32,519	4,845	8,422	2,296	7,292	3,693	2,378
R-squared (avg.)	0.073	0.007	0.129	0.116	0.011	0.105	0.022	0.019	0.13	0.019	0.059
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Appendix 4. Sectoral baseline DiD robustness checks (no micro-firms)

<i>No micro firms (med emp<10, med assets<2EURm)</i>	(1) A - Agriculture, forestry and fishing	(2) C - Manufacturing	(3) D - Electricity, gas, steam and air conditioning supply	(4) F - Construction	(5) G - Wholesale and retail trade; repair of motor vehicles and motorcycles	(6) J - Information and communication	(7) L - Real estate activities	(8) M - Professional, scientific and technical activities	(9) N - Administrative and support service activities	(10) Q - Human health and social work activities
Operating margin	-0.142*** (0.047)	-0.039 (0.028)	0.012 (0.014)	-0.281*** (0.044)	-0.048 (0.042)	-0.054 (0.041)	0.033 (0.119)	-0.034 (0.074)	-0.393** (0.175)	-0.011 (0.027)
Return on assets (ROA)	-11.814*** (4.161)	-3.647 (2.540)	34.210*** (5.798)	-35.497*** (9.049)	-5.042 (4.896)	-5.776 (6.325)	3.013 (8.450)	-9.628** (4.836)	-27.008** (13.322)	-5.038 (5.192)
Return on capital employed (ROCE)	-28.038*** (6.863)	-12.530*** (4.843)		2.517 (9.070)	-10.242 (10.826)	-23.298 (18.819)	-14.257* (7.974)	-54.674*** (18.757)		-45.903*** (1.714)
Revenue growth	0.175 (0.169)	0.253 (0.276)		1.802*** (0.391)	0.225 (0.151)	-0.441 (0.307)	-0.191 (0.121)	-0.642 (0.537)	-0.153** (0.070)	0.241*** (0.062)
Net assets turnover	-0.987 (0.667)	0.394 (0.857)	0.396 (0.432)	4.740** (1.937)	-1.756 (2.342)	-4.858 (3.022)	0.691 (1.042)	1.795 (1.630)	18.166* (11.025)	3.433 (2.830)
Cost ratio	0.176*** (0.054)	0.032 (0.023)		0.211*** (0.011)	-0.075** (0.032)	0.121* (0.068)	0.089*** (0.032)	0.149*** (0.046)	0.226*** (0.037)	0.005 (0.009)
Observations	4,287	52,117	884	5,093	30,249	7,934	2,134	6,095	4,356	2,049
R-squared (avg.)	0.073	0.008	0.129	0.215	0.017	0.025	0.019	0.077	0.119	0.03
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Appendix 5. Sectoral baseline DID robustness checks (PSM k = 5)

<i>PSM k = 5</i>	(1) A - Agriculture, forestry and fishing	(2) C - Manufacturing	(3) D - Electricity, gas, steam and air conditioning supply	(4) F - Construction	(5) G - Wholesale and retail trade; repair of motor vehicles and motorcycles	(6) H - Transportation and storage	(7) J - Information and communication	(8) L - Real estate activities	(9) M - Professional, scientific and technical activities	(10) N - Administrative and support service activities	(11) Q - Human health and social work activities
Operating margin	-0.118** (0.050)	-0.021 (0.019)	0.023 (0.019)	-0.381*** (0.141)	0.029 (0.041)	0.093*** (0.022)	-0.035 (0.041)	-0.008 (0.115)	-0.073 (0.094)	-0.420** (0.206)	-0.059 (0.048)
Return on assets (ROA)	-8.079** (3.393)	-2.951 (2.069)	22.425* (12.627)	-26.636** (12.036)	-0.611 (3.117)	37.865*** (2.303)	-3.729 (5.275)	-1.656 (9.057)	-8.389 (7.322)	-27.071* (15.934)	-10.392 (14.523)
Return on capital employed (ROCE)	-18.969*** (6.586)	-11.212*** (4.144)		-8.801 (8.823)	-3.677 (7.189)	98.647*** (13.804)	-17.908 (15.376)	-5.511 (5.467)	-30.657 (22.956)		-49.830*** (3.635)
Revenue growth	-0.014 (0.094)	0.026 (0.119)		0.868 (1.124)	0.306* (0.176)	0.565 (0.533)	-0.486 (0.301)	-0.795* (0.421)	-1.007 (0.756)	-0.176** (0.077)	0.137 (0.121)
Net assets turnover	-0.717 (0.676)	0.031 (0.483)	0.122 (0.261)	2.153 (2.597)	0.604 (1.266)	-14.873*** (4.187)	-2.786* (1.667)	0.204 (1.344)	3.795 (3.167)	19.970 (12.806)	0.864 (1.624)
Cost ratio	0.178*** (0.061)	0.015 (0.017)		0.173*** (0.042)	-0.093** (0.045)	0.045 (0.035)	0.026 (0.047)	0.096* (0.053)	0.157** (0.076)	0.209*** (0.043)	0.017 (0.015)
Observations	1,911	26,155	597	2,177	15,058	2,177	4,943	990	3,591	2,081	1,177
R-squared (avg.)	0.053	0.004	0.064	0.048	0.012	0.051	0.011	0.008	0.049	0.073	0.051
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Appendix 6. AI Disclosure

In this thesis, generative AI tools, specifically OpenAI's ChatGPT, were used in a limited way to support both text refinement and the implementation of Python code. AI was used to improve grammar, clarity, and coherence in selected parts of the thesis, while all substantive ideas, arguments, and interpretations were written by us. ChatGPT was also used to help identify the sources of errors in Python scripts and to suggest clearer or more efficient ways of structuring code when technical issues arose.

These uses contributed to a smoother research process by improving the readability of the text and reducing time spent resolving routine technical problems. In practice, using ChatGPT for these minor tasks allowed us to devote more attention to the quality-enhancing aspects of the thesis – such as reviewing literature, interpreting results, and refining our empirical approach – rather than becoming stalled by time-consuming searches for coding errors. Importantly, AI did not influence methodological choices, generate theoretical content, or shape our empirical conclusions.

We also acknowledge the risks involved when using AI. Suggested wording may be inaccurate or stylistically inconsistent, and proposed code adjustments may be incomplete or unsuitable. To address this, every AI-assisted suggestion was carefully reviewed and, when necessary, rewritten to ensure quality and correctness. Final code was manually checked against the underlying data to confirm that outputs were accurate. Overall, AI served only as a monitored support tool rather than a creator of content, and the intellectual contribution of this thesis remains fully our own.