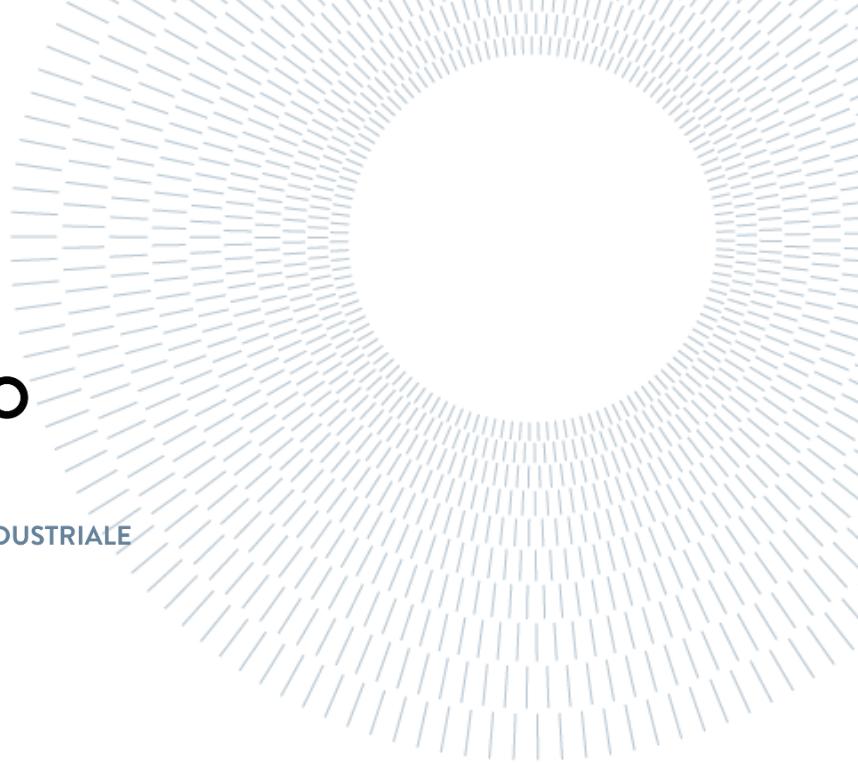




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Ownership Similarity and Investor Identity: A Quantitative Study on Family Office and Private Equity Deals

TESI DI LAUREA MAGISTRALE IN
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Abstract

Family Offices (FOs) have emerged as increasingly active investors in private markets, often engaging in direct acquisitions and adopting strategies traditionally associated with Private Equity (PE) funds. Despite their growing economic relevance, Family Offices remain under-researched in academic literature, especially from a quantitative perspective. This thesis addresses that gap by conducting one of the first large-scale empirical comparisons between FO and PE investment behavior and their post-deal effects on target firms.

The study focuses on ownership similarity, defined as the alignment between acquiror and target in terms of ownership structure, governance logic, and strategic orientation (Bettinazzi *et al.*, 2020), and tests its influence on target selection, deal structure, and post-deal performance. A dataset of 314 transactions involving global investors and Italian targets was manually constructed, including both partial or total exits of family-owned firms and comparable deals involving non-family firms. Investor classification followed a rigorous multi-source procedure. The analysis applies descriptive statistics, logistic regression, robust linear models, and a Heckman two-step correction to account for selection bias.

Findings show no significant evidence that FOs are more likely than PEs to invest in family-owned firms. Ownership similarity does not appear to drive short-term performance. The study underscores the limits of short-term analysis and encourages future research adopting longer horizons and qualitative governance variables.

Key-words: Family Offices, Private Equity, Ownership Similarity, Family Business, Corporate Transactions, Post-Deal Performance.

Abstract in Italiano

I Family Office (FO) stanno emergendo come investitori sempre più attivi nei mercati privati, spesso coinvolti in acquisizioni dirette e nell'adozione di strategie tipiche dei fondi di Private Equity (PE). Nonostante la crescente rilevanza economica, i FO restano poco analizzati nella letteratura accademica, soprattutto da una prospettiva quantitativa. Questa tesi mira a colmare questo gap attraverso una delle prime analisi empiriche su larga scala che confronta il comportamento di investimento dei FO con quello dei PE e i relativi effetti post-deal sulle imprese target.

Lo studio si concentra sul concetto di ownership similarity, inteso come l'allineamento tra acquirente e target in termini di struttura proprietaria, governance e strategia (Bettinazzi *et al.*, 2020), e ne analizza l'impatto sulla scelta delle target, sulla struttura dei deal e sulla performance. È stato costruito manualmente un dataset di 314 operazioni con investitori globali e target italiani, comprendente sia exit parziali o totali di imprese familiari, sia operazioni comparabili di imprese non familiari. La classificazione degli investitori ha seguito una procedura rigorosa a fonti multiple. L'analisi utilizza statistiche descrittive, regressioni logistiche, modelli lineari robusti e una correzione a due stadi di Heckman per il bias di selezione.

I risultati non mostrano evidenze che i FO investano più spesso dei PE in imprese familiari. L'ownership similarity non sembra influenzare la performance di breve periodo. Lo studio sottolinea i limiti delle analisi a breve termine e incoraggia ricerche future con orizzonti più ampi e variabili qualitative di governance.

Parole chiave: Family Office, Private Equity, Ownership Similarity, Imprese Familiari, Operazioni di mercato privato, Performance Post-Deal.

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Introduction

In recent years, Family Offices (FOs) have become increasingly significant players in private investments, managing substantial wealth and engaging in direct company acquisitions. Originally established to preserve and grow family fortunes across generations, FOs have evolved beyond traditional wealth management, increasingly adopting private equity-style investment strategies (Schickinger *et al.*, 2022; Rottke and Thiele, 2018). Their growing presence has led scholars to question whether FOs serve merely as passive wealth managers or as active investors with distinct strategic approaches compared to Private Equity (PE) firms (Welsh *et al.*, 2013). Despite their rising economic significance, academic research on FOs remains relatively scarce, especially compared to the extensive literature on PE firms.

While numerous studies have analyzed PE investment models, highlighting their use of financial engineering, operational restructuring, and value maximization through exit-driven strategies (Ljungqvist, 2024; Acharya *et al.*, 2013), research on FOs is fragmented and largely qualitative. The existing literature suggests that FOs differ from PE firms by adopting a long-term, patient capital approach, with investments often aimed at capital preservation rather than rapid value creation (Schickinger *et al.*, 2022; Block *et al.*, 2019). Direct empirical comparisons between FO and PE investment strategies remain limited, leaving critical questions unanswered regarding their differential impact on target companies (Schickinger *et al.*, 2022; Block *et al.*, 2019; Rottke and Thiele, 2018).

Italy represents a particularly relevant context for investigating these dynamics. The country hosts many family-owned firms, often characterized by strong identity, intergenerational continuity, and concentrated ownership structures (Minichilli, Brogi and Calabò, 2016). At the same time, the Family Office sector in Italy is less institutionalized compared to other European markets, with limited regulatory frameworks and scarce public data (Family Office Observatory, 2024; Schickinger *et al.*, 2022). These features make the Italian setting ideal for exploring whether FOs behave differently from PE funds when investing in family firms, and how such differences may influence post-deal outcomes.

A key but underexplored aspect in this comparison is ownership similarity, defined by Bettinazzi *et al.* (2020) as the extent to which the investor and the investee firm share common ownership structures, governance principles, and strategic priorities. Ownership similarity is thought to influence post-investment firm performance, as investors with governance models aligned to the target firm's structure may reduce

integration frictions, enhance strategic synergies, and mitigate conflicts (Bettinazzi *et al.*, 2020). Given that family-owned businesses often exhibit strong governance traditions and long-term strategic orientations (Anderson and Reeb, 2003; Villalonga and Amit, 2006), FOs being rooted in similar governance logics may have a comparative advantage over PE firms when investing in such businesses. There is little empirical evidence verifying whether FOs are actually more likely than PE firms to invest in family businesses or whether their involvement leads to superior firm performance over time.

While PE firms are often associated with rapid operational improvements and financial restructuring, their investment strategies may be less aligned with the long-term governance models of family businesses, potentially leading to higher turnover in management, shifts in strategic direction, and ownership fragmentation (Block *et al.*, 2019; Rottke and Thiele, 2018). The extent to which FO-backed firms experience different post-investment dynamics compared to PE-backed firms remains unclear, as most existing studies focus either on qualitative case analyses or broad theoretical discussions rather than large-scale empirical assessments (Schickinger *et al.*, 2023).

Another critical gap in the literature concerns the lack of quantitative research on FOs. While PE firms have been extensively analyzed through large investment datasets, studies on FOs rely on interviews, case studies, and anecdotal evidence, making it difficult to assess their investment behavior systematically (Schickinger *et al.*, 2022; Zellweger, Nason and Nordqvist, 2012). Only a few papers directly compare FOs and PE firms, with most studies treating them as distinct entities without systematically examining their differences in investment selection, ownership strategies, and post-investment firm outcomes (Schickinger *et al.*, 2022; Block *et al.*, 2019; Rottke and Thiele, 2018).

By leveraging a quantitative dataset of FO and PE investments, this study aims to fill these research gaps, providing empirical evidence on:

- Whether FOs invest more frequently in family businesses than PE firms, or if PE firms are equally or more active in this space.
- The role of ownership similarity in investment decisions and firm performance.
- The differential impact of FO and PE ownership on financial stability and growth in target firms.

The analysis is based on a manually constructed dataset of 314 transactions involving global investors and Italian target companies. Investor types were identified through a multi-source classification process, drawing on databases such as Orbis and Zephyr, as well as corporate records and news sources. The study adopts a quantitative approach, combining descriptive statistics, logistic regression, and performance models, including a Heckman two-step procedure to account for selection bias. This methodology enables a structured comparison between Family Offices and Private

Equity funds in terms of investment behavior, ownership logic, and post-deal outcomes.

This thesis makes several contributions to both theory and practice. On the theoretical side, it extends Family Office research by offering one of the first large-scale quantitative comparisons with Private Equity investors, a field that has so far been dominated by qualitative approaches. It also advances the discussion on ownership similarity, a concept still underexplored in empirical settings, by operationalizing it and testing its impact on target selection, deal structure, and post-deal outcomes. In addition, the thesis develops a methodological contribution by introducing a systematic classification procedure for Family Offices and demonstrating how econometric methods can be effectively implemented in this field.

On the practical side, the study provides relevant implications for investors, family firms, and advisors. For Family Offices, the findings suggest that ownership similarity does not automatically translate into short-term performance advantages, encouraging a more cautious and long-term oriented approach. For Private Equity funds, the results highlight the continued importance of fundamentals such as industry dynamics and financial structures. For family businesses and their advisors, the evidence offers a more balanced assessment of external capital, stressing that cultural or governance alignment with investors should be considered alongside strategic capabilities, resources, and expected post-deal involvement.

The remainder of this thesis is structured as follows. Chapter 1 reviews the main theories and concepts, focusing on Family Offices, Private Equity, ownership similarity, and governance in family firms. Chapter 2 develops the research hypotheses, translating the literature into clear propositions to be tested. Chapter 3 explains the methodology, describing the data sources, the criteria used to classify investors, and the steps of data cleaning and preparation. Chapter 4 presents the empirical analysis, starting with descriptive statistics and exploratory checks, and then moving to econometric models and robustness tests. Chapter 5 discusses the results, relates them to the existing literature, and draws the main theoretical contributions, practical implications, and study limitations, also suggesting directions for future research. Chapter 6 concludes by summarizing the overall findings and reflecting on their broader relevance for both academics and practitioners.

1 Literature Review

The growing prominence of Family Offices (FOs) and Private Equity (PE) firms as influential investment entities has generated increasing academic and professional interest (Ljungqvist *et al.*, 2024; Rivo-López *et al.*, 2017; Schickinger *et al.*, 2022; Welsh *et al.*, 2013; Wright, Gilligan and Amess, 2009; Fenn, Liang and Prowse, 1997). While Family Offices have traditionally been associated with long-term wealth preservation and private wealth management, Private Equity firms have been recognized for their active investment strategies and structured value creation models. Despite the distinct characteristics of these investor types, their increasing participation in private markets, corporate governance, and firm development raises questions about their respective roles, decision-making structures, and long-term impact on target firms.

This literature review aims to provide a comprehensive synthesis of existing research on these two investor types, analyzing their investment strategies, governance frameworks, and comparative performance. The review is structured as follows:

1. Family Offices: this section explores the historical evolution, governance models, and investment objectives of Family Offices, emphasizing their dual focus on long-term wealth preservation and active growth strategies. It also examines their capital structure and funding approaches, which primarily rely on internal financing and patient capital.
2. Private Equity: this section presents the defining features of Private Equity firms, their governance models, and investment methodologies. It discusses their emphasis on short-to-medium-term value creation, their structured fund models (general vs. limited partners), and their role in financial engineering and corporate restructuring.
3. Comparative analysis of FO and PE investments: while Family Offices and Private Equity firms operate in overlapping investment spaces, they exhibit fundamental differences in governance structures, investment horizons, and post-investment strategies. This section analyzes their differing approaches to leverage, decision-making processes, and long-term performance outcomes.
4. Ownership similarity and governance implications: a critical yet underexplored area of research is the role of ownership similarity in influencing investment decisions, governance models, and firm outcomes. This section examines whether Family Offices prefer investing in family-controlled businesses due to shared governance logics and strategic alignment, compared to PE firms, which may emphasize performance incentives and managerial interventions.

5. Summary and research gap: the final section summarizes key findings from the literature, discusses the limitations of existing research, and proposes future research directions, particularly emphasizing the need for quantitative, data-driven analysis of FO and PE investments.

1.1. Family Offices

1.1.1. Definition and Historical Evolution

Family offices (FOs) are private wealth management entities established to oversee and administer the assets of high-net-worth families. Unlike traditional financial institutions, FOs are structured to provide personalized investment management, estate planning, tax optimization, and succession planning, aligning financial strategies with the long-term vision of the family. These entities can manage a broad range of assets, including financial portfolios, direct investments, real estate holdings, and philanthropic activities (Schickinger *et al.*, 2022; Rivo-López *et al.*, 2017).

Rivo-López *et al.* (2017) explored the historical evolution of Family Offices beyond their modern financial role, emphasizing their deep-rooted connection to aristocratic wealth management systems, merchant dynasties, and private banking networks in Europe. According to their findings, the first documented forms of family wealth stewardship date back to Ancient Rome, where wealthy landowners employed financial managers (major domus) to oversee their estates. A similar model persisted throughout the Middle Ages and the Renaissance, particularly among European merchant families such as the Medici in Italy and the Rothschild banking dynasty in the 18th century. These families created early versions of investment and wealth protection structures, which later influenced the development of modern Family Offices.

The Industrial Revolution represented a turning point in family wealth management, particularly in the United States, where entrepreneurial wealth accumulation among industrialists led to the creation of private financial institutions dedicated to wealth preservation and strategic investment (Welsh *et al.*, 2013). This period saw a shift from informal estate planning to the systematic development of structured wealth management entities, resulting in the establishment of Rockefeller & Co. in 1882, often cited as the prototype of the modern Family Office (Welsh *et al.*, 2013). By professionalizing wealth management beyond personal accountants and legal advisors, Rockefeller & Co. set the foundation for dedicated investment strategies, structured governance, and long-term capital preservation, which continue to define Family Offices today.

Throughout the 20th century, Family Offices evolved in response to economic shifts, globalization, and increasing wealth concentration among entrepreneurial families. The rise of multi-generational wealth transfer and the growing complexity of financial markets led to a more institutionalized approach in FO structures. Traditionally, ultra-high-net-worth families managed their wealth informally, but the legal, fiscal, and operational challenges of modern investment landscapes necessitated specialized wealth management structures (Rivo-López *et al.*, 2017).

By the late 20th and early 21st centuries, Family Offices became increasingly influential as alternatives to private banks, asset management firms, and Private Equity funds. With the increased participation of families in direct investments, venture capital, and impact investing, FOs moved beyond passive wealth preservation to adopt active ownership strategies (Schickinger *et al.*, 2023). This transition represented a shift in their role within financial markets, positioning FOs as key institutional investors capable of influencing entire industries.

A key driver behind the expansion of Family Offices is the growing wealth of high-net-worth individuals (HNWIs) worldwide. The accumulation of private wealth has led to an increased demand for structured wealth management solutions that extend beyond traditional banking services. As illustrated in Figure 1, the wealth of HNWIs in Europe has grown consistently from 9.5 trillion USD in 2009 to 18.9 trillion USD in 2023, highlighting the increasing financial power of ultra-affluent individuals. This rise has boosted the demand for tailored financial management services, reinforcing the importance and proliferation of Family Offices in global investment landscapes.

The rapid growth of the global Family Office sector has been driven by technological advancements, regulatory changes, and intergenerational wealth transitions. The number of Single-Family Offices (SFOs) and Multi-Family Offices (MFOs) has grown rapidly, particularly in Europe, North America, and Asia (Rivo-López *et al.*, 2017). This trend highlights the increasing recognition of Family Offices as major investment entities capable of competing with Private Equity firms, institutional investors, and sovereign wealth funds.

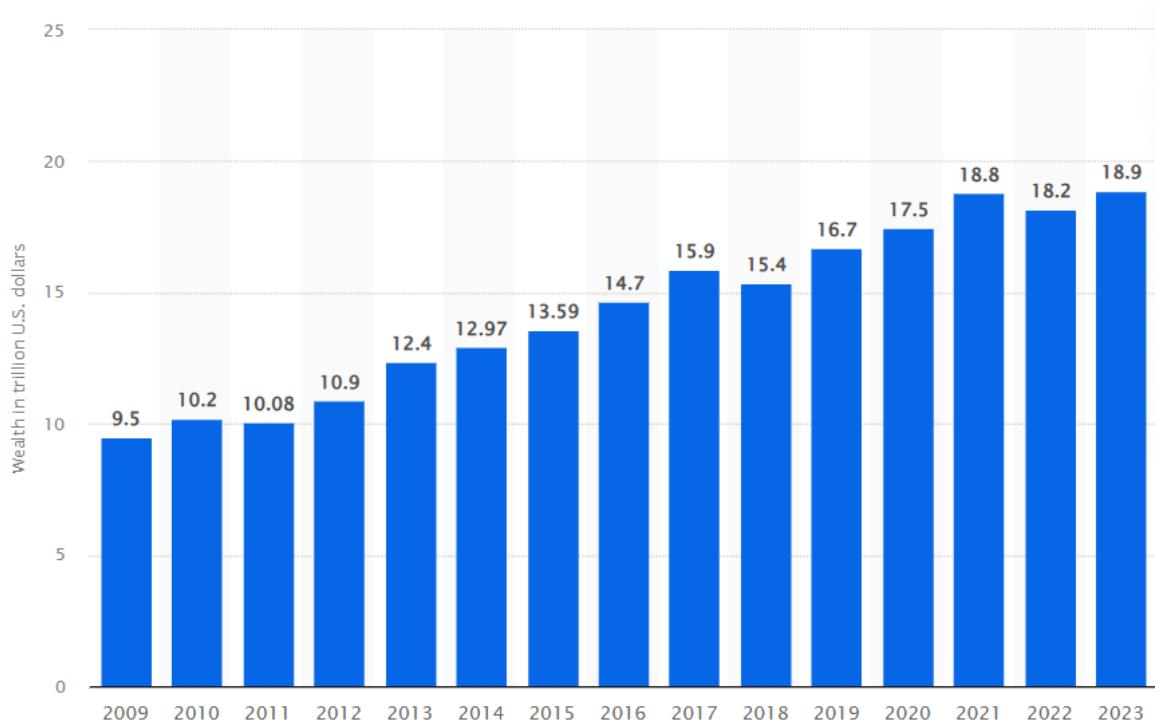


Figure 1: Wealth of high-net-worth individuals in Europe from 2009 to 2023 (in trillion U.S. dollars) (Statista¹).

The historical evolution of Family Offices demonstrates a clear trajectory: from informal wealth management within aristocratic and entrepreneurial families to sophisticated, highly structured investment entities that play a significant role in global financial markets. This transformation reflects not only the need for more efficient governance and financial oversight but also the growing ambition of Family Offices to exert influence beyond private wealth management into corporate governance, Private Equity, and venture capital (Schickinger *et al.*, 2022).

1.1.2. Archetypes and Structural Differences

Family Offices can generally be categorized into Single-Family Offices (SFOs) and Multi-Family Offices (MFOs). The distinction between these two structures lies in their ownership, management style, and scope of services provided (Rivo-López *et al.*, 2017). While this traditional classification is useful, recent research has shown that SFOs themselves exhibit substantial variation in their governance structures, investment strategies, and risk preferences (Schickinger *et al.*, 2023).

¹ <https://www.statista.com/statistics/323747/uk-europe-high-net-worth-individuals-wealth/>

Single-Family Offices (SFOs) are designed to manage the wealth and financial affairs of a single high-net-worth family. These entities offer a high level of customization and confidentiality, ensuring that the investment strategies and wealth planning align exclusively with the needs and values of the founding family. SFOs typically provide estate planning, philanthropic advisory, legal structuring, and direct investment opportunities, all tailored to the unique objectives of the family (Luna Glucksberg and Roger Burrows, 2016). Due to their personalized nature, SFOs require significant financial resources to justify operational costs, making them more common among families with assets exceeding \$100 million (Rivo-López *et al.*, 2017).

Multi-Family Offices (MFOs) serve multiple affluent families, pooling resources to deliver cost-effective and professional financial services. These structures allow families to share administrative and investment management costs, providing them with access to expertise that would be too expensive for an individual SFO. MFOs often operate similarly to private wealth management firms but with a more client-centered approach that emphasizes intergenerational wealth preservation and governance continuity (Luna Glucksberg and Roger Burrows, 2016). Given their shared infrastructure, MFOs can provide a more diverse range of investment opportunities, including access to alternative investments, Private Equity, and co-investment deals (Rivo-López *et al.*, 2017).

While this classification of SFOs vs. MFOs is useful, recent research highlights significant differences among SFOs themselves, challenging the notion that they represent a homogeneous group. Schickinger *et al.* (2023) identify key dimensions that drive heterogeneity among SFOs, focusing on the stage in the generational cycle and the relationship with the original family business.

Their findings indicate that SFOs differ significantly in their investment strategies, governance priorities, and approach to entrepreneurship. Later-generation SFOs tend to emphasize wealth preservation, structured governance mechanisms, and transgenerational wealth transfer, while founder-led SFOs display a greater propensity for risk-taking, entrepreneurial investment, and shorter investment horizons. SFOs still linked to the original family firm show different governance and investment behaviors compared to those that operate independently (Schickinger *et al.*, 2023).

The research further classifies SFOs into four distinct archetypes based on these characteristics. Preserver SFOs focus heavily on wealth preservation and governance, favoring long-term stability over high-risk investments. Optimizer SFOs, while still emphasizing governance, show a more balanced approach between financial and non-financial goals, including moderate risk-taking and transgenerational wealth transfer. Entrepreneurial Nucleus SFOs, on the other hand, adopt a much more aggressive

stance, prioritizing entrepreneurship and investment in high-growth opportunities while still maintaining strong governance structures. Founder SFOs, typically controlled by the first generation, exhibit the highest level of risk-taking, shortest investment horizons, and the strongest focus on business expansion, resembling venture capital firms more than traditional wealth management entities.

Further research by Wessel *et al.* (2014) expands on this heterogeneity, identifying additional dimensions that differentiate Family Offices beyond ownership and generational control. Their findings highlight that Family Offices vary significantly based on ownership, management structure, and client base. They propose that while some offices remain family-managed, others shift toward professionally managed structures (Professional Family Offices - PFOs) where external professionals take leadership roles. While some Family Offices exclusively serve the founding family, others adopt open structures and offer services to multiple high-net-worth clients, like traditional wealth management firms. These distinctions reinforce the idea that not all Family Offices adhere to the same governance logic or investment philosophy. These findings suggest that the traditional one-size-fits-all approach to define Family Offices does not capture the strategic and structural variations that exist within the sector.

1.1.3. Investment Objectives

Family Offices operate with varying investment objectives, which typically fall along a continuum between long-term wealth preservation and active growth strategies. The strategic direction of a FO is influenced by generational goals, risk tolerance, and financial legacy planning (Schickinger *et al.*, 2023).

Those prioritizing long-term wealth preservation tend to focus on capital conservation, low-risk investments, and intergenerational wealth transfer. Their portfolios often include fixed-income securities, conservative real estate investments, and diversified blue-chip equity holdings² to minimize volatility and ensure stable returns over decades (Zellweger, Nason and Nordqvist, 2012).

At the opposite end of the spectrum, Family Offices with an active growth orientation adopt a more entrepreneurial and risk-taking approach, seeking higher returns through Private Equity, venture capital, and direct business ownership (PwC Family Office Survey, 2024). These FOs often engage in co-investments, impact investing, and alternative assets, leveraging their private networks to access exclusive investment

² Blue-chip equity holdings refer to shares in large, reputable, and financially stable companies with a track record of consistent performance, often chosen for their reliability and long-term growth potential (<https://www.borsaitaliana.it/borsa/glossario/blue-chip.html>).

opportunities (Schickinger *et al.*, 2023). The decision between wealth preservation and active growth is not static; many Family Offices adjust their investment strategies over time depending on economic conditions, generational transitions, and family governance structures (Zellweger, Nason and Nordqvist, 2012).

Rivo-López *et al.* (2017) categorize Family Office activities into three primary functions:

1. Investment-related: asset allocation, portfolio diversification, and performance evaluation.
2. Family-related: succession planning, philanthropy, and financial education.
3. Administration-related: risk management, legal compliance, and taxation strategies.

This framework aligns with the dual investment philosophy of Family Offices, where some prioritize intergenerational wealth preservation, while others pursue growth-oriented, entrepreneurial investments. Building on this, Family Offices are not purely financial vehicles but also serve as strategic governance institutions that shape the economic and social influence of wealthy families.

A clear illustration of these differing investment priorities can be seen in the asset allocation trends of Family Offices worldwide. As shown in Figure 2, Family Offices allocate 28% of their assets to equities and 22% to private equity, demonstrating their commitment to growth-oriented investments. A significant portion is also allocated to fixed income (19%) and cash (10%), reflecting a conservative approach aimed at wealth preservation. The remaining allocations include real estate (10%), hedge funds (5%), and alternative investments such as infrastructure and private debt.

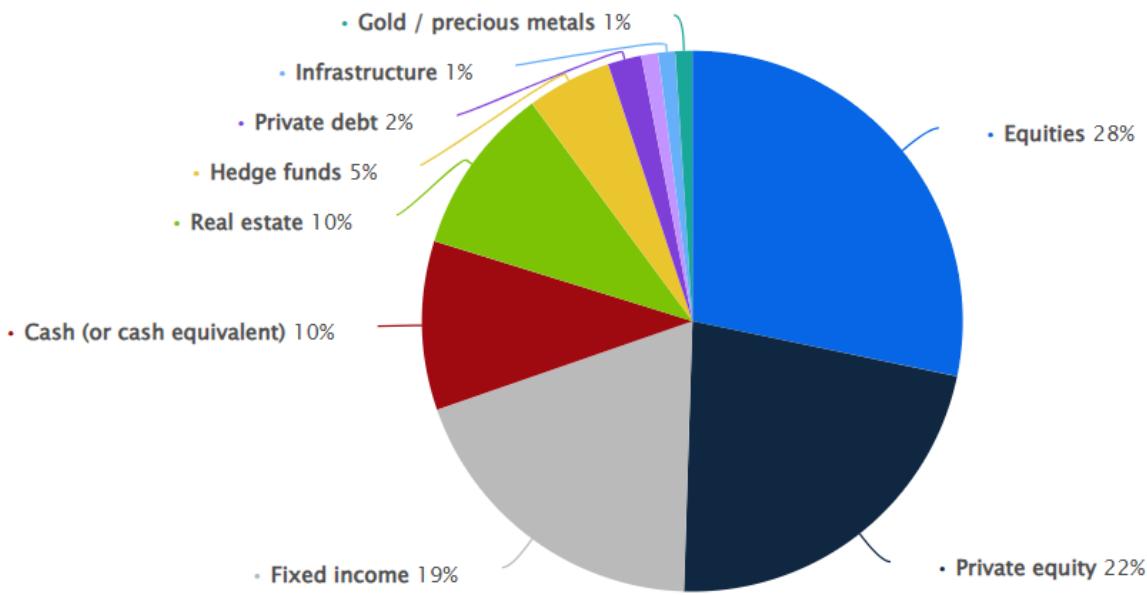


Figure 2: Asset allocation of Family Offices worldwide in 2023 (Statista³).

This diversification highlights the dual nature of Family Office investment strategies, where balancing risk and return is essential for maintaining financial stability while pursuing long-term growth objectives.

Reinforcing these objectives, the primary mission of Family Offices globally remains centered on capital appreciation for multigenerational wealth transfer (80%) and wealth preservation (52%) (Figure 3). Other critical missions include diversification of concentrated wealth (29%), legacy creation through philanthropy (23%), and succession planning (16%). These priorities directly influence how Family Offices structure their investment portfolios and governance models.

³ <https://www.statista.com/statistics/1072706/family-offices-asset-allocation-worldwide/>

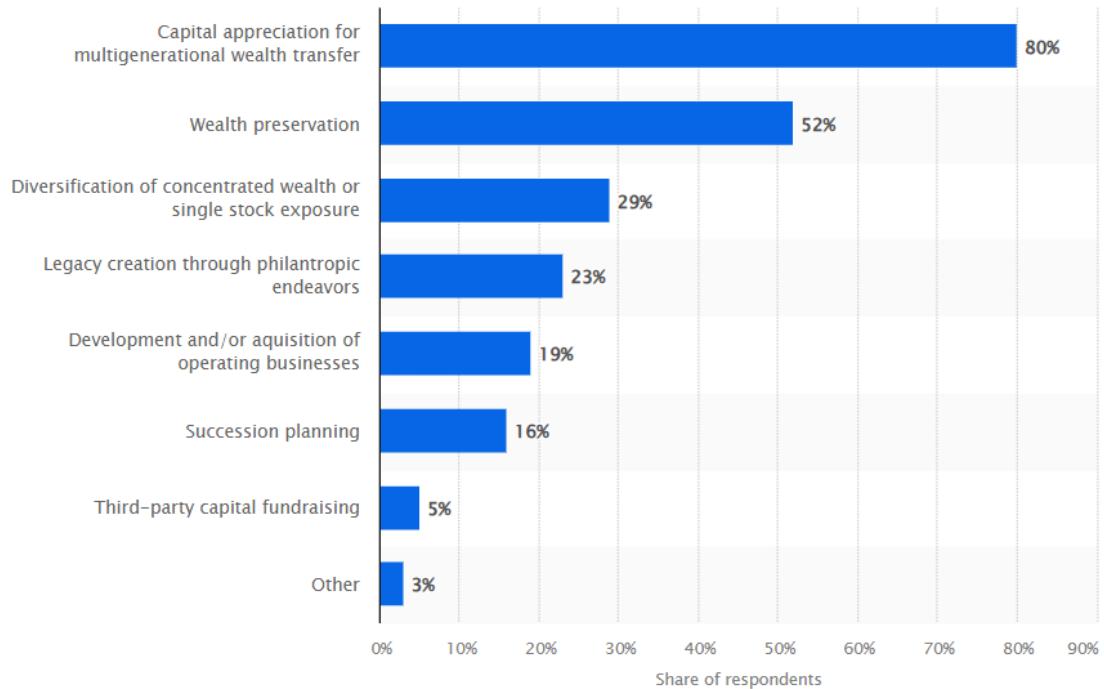


Figure 3: Primary mission of Family Offices worldwide in 2021 (Statista⁴).

The investment philosophy of a Family Office is also strongly influenced by generational dynamics. According to Welsh *et al.* (2013), the entrepreneurial orientation of Family Offices tends to decline across generations, which has a direct impact on investment strategies. First-generation Family Offices, typically managed by the founders, exhibit a strong preference for high-risk, high-reward opportunities, often investing in venture capital, startup incubation, and expansionary growth initiatives. These founders see themselves as stewards of family wealth, ensuring their continued growth through aggressive and entrepreneurial investment choices.

Later generations tend to prioritize stability and wealth conservation, leading to lower allocations toward high-growth investments and a stronger preference for traditional asset classes such as bonds, blue-chip equities, and real estate. This shift is often associated with an increase in structured governance mechanisms, with more reliance on investment committees and professionalized management (Welsh *et al.*, 2013).

The decline in entrepreneurial risk-taking across generations may also explain why some Family Offices behave similarly to venture capitalists, whereas others resemble institutional wealth managers.

⁴ <https://www.statista.com/statistics/1258302/family-offices-strategies-worldwide/>

1.1.4. Governance Structure and Decision-Making Processes

Governance plays a critical role in the effectiveness and longevity of Family Offices. The governance structures within FOs are designed to ensure efficient decision-making, transparency, and alignment with the family's long-term interests (Carney, 2005). Family Offices often adopt governance models that include family councils, investment committees, and advisory boards, which help structure decision-making processes (Connelly *et al.*, 2010).

A key governance challenge is balancing professional management with family control. While some families maintain direct involvement in investment decisions, others delegate responsibilities to external managers or a board of directors (Foss *et al.*, 2021). This distinction often depends on the complexity of the family's wealth and their level of financial expertise. Family Offices with strong governance frameworks tend to mitigate conflicts and ensure the continuity of long-term investment strategies. Some adopt family constitutions and governance frameworks that establish formal guidelines for decision-making, asset management, and succession planning (Connelly *et al.*, 2010).

Rivo-López *et al.* (2017) highlight the governance role of Family Offices, emphasizing that they act as structured mechanisms for wealth continuity across generations. Their research identifies that governance within FOs is shaped by:

- Decision-making models: some Family Offices maintain full control within the family, while others delegate governance to external managers.
- Governance structures: family councils, advisory boards, and professional executive teams play a key role in ensuring accountability and long-term alignment with family objectives.
- Succession planning: a major governance challenge is the smooth transition of leadership between generations, often requiring formalized policies to prevent conflicts and ensure continuity.

Further research by Wessel *et al.* (2014) adds another layer of complexity, showing that governance models in Family Offices also vary based on the degree of professionalization and external advisory involvement. While some Family Offices maintain tight family control, others integrate external advisory boards or even transition into professionally managed structures to improve strategic decision-making and risk management.

The integration of professional managers and external advisors in governance structures can help ensure greater investment discipline and operational efficiency, particularly as Family Offices grow in size and complexity (Wessel *et al.* 2014). This shift also raises concerns about potential misalignment between professional managers and family interests, making it crucial for Family Offices to develop clear

governance frameworks that balance external expertise with family values and long-term objectives.

Maintaining clear and structured governance processes allows Family Offices to effectively adapt to market cycles, regulatory shifts, and economic uncertainties while aligning investment strategies with the family's overarching mission (Foss *et al.*, 2021).

As mentioned before, governance in Family Offices involves succession planning, ensuring that control and decision-making authority transition smoothly across generations. Many FOs establish formalized policies and training programs to prepare younger generations for leadership roles. Mentorship programs, family governance workshops, and financial education initiatives are common tools used to instill stewardship values in heirs and equip them with the necessary skills to oversee wealth management responsibilities (Connelly *et al.*, 2010). Effective succession planning reduces uncertainty and fosters continuity, helping Family Offices maintain stability across multiple generations.

Recent survey data from Citi Private Bank further supports these governance challenges. As shown in Figure 4, Family Offices cite asset preservation (71%), preparing the next generation (59%), and ensuring shared goals (47%) as their top priorities. These findings align with the need for well-structured governance frameworks that facilitate long-term wealth management and smooth leadership transitions.

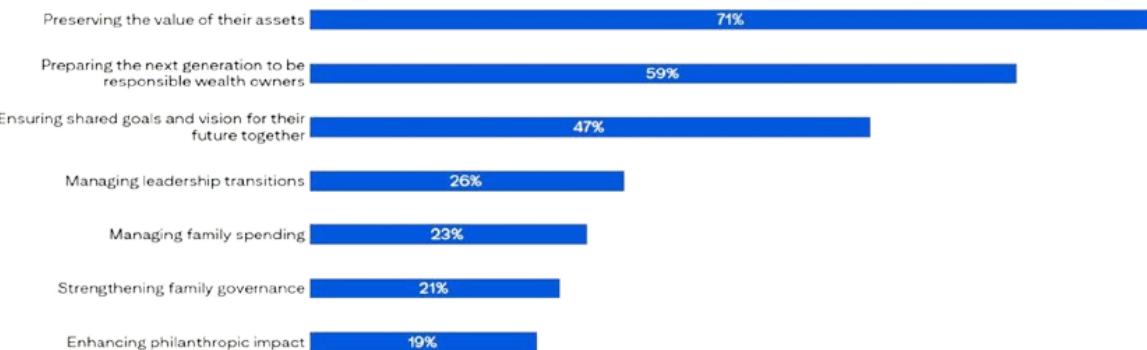


Figure 4: Governance priorities and concerns of Family Offices (Citi Private Bank, Global Family Office 2024 Survey Insights).

The focus on preparing heirs highlights why many Family Offices implement governance structures such as advisory boards, training programs, and family constitutions. By formalizing decision-making frameworks and succession planning, Family Offices ensure continuity while balancing family values with professional management practices. The survey data also reinforces the role of governance in risk

management, as concerns around leadership transitions (26%) and financial discipline (23%) indicate the importance of structured decision-making mechanisms.

1.1.5. Capital Structure and Funding Strategies

Family Offices utilize diverse capital structures to finance their operations and investments. Some rely solely on internally generated funds, reinvesting profits from existing family assets and businesses, while others incorporate external leverage to enhance returns and expand their investment capacity (Schickinger *et al.*, 2022). The choice between self-financing and external funding depends on the family's investment philosophy, risk appetite, and desired level of financial autonomy.

Rivo-López *et al.* (2017) show that Family Offices tend to favor internally sourced capital due to its flexibility and control advantages. Many FOs avoid excessive reliance on debt financing, preferring to reinvest retained earnings and dividends from their investment portfolios or operating businesses. In certain cases, FOs strategically use leverage, particularly in Private Equity and Real Estate transactions, to enhance returns and optimize tax strategies.

Data from the Global Family Office 2024 Survey of Citi Private Bank, previously mentioned, provides empirical evidence on leverage usage within FOs. Figure 5 shows that 47% of Family Offices do not employ leverage in their portfolios, reinforcing their preference for financial autonomy and risk control. 29% of respondents indicate using leverage up to 10%, while an additional 24% utilize higher levels, with some surpassing 30%. This distribution highlights that although most FOs prioritize self-financing, a substantial portion strategically integrates debt, particularly in asset-heavy investments such as Private Equity and Real Estate.

Recent academic work adds further depth to the discussion on Family Office financing choices. Block, Fathollahi and Eroglu (2024), analyzing a matched panel of Single Family Office (SFO)-owned firms and family-owned firms in the DACH region, find that SFO-owned firms exhibit a significantly higher long-term debt ratio than traditional family firms. This suggests that SFOs tend to follow the trade-off theory, like Private Equity firms, by optimizing capital structure and exploiting the tax shield and leverage effects of debt. At the same time, as noted earlier, SFO-owned firms generally avoid excessive short-term debt, which increases refinancing and bankruptcy risks. This dual pattern positions SFOs as a hybrid ownership category, combining the professionalized, return-oriented logic of Private Equity with some of the risk-averse features of entrepreneurial families.

The study also highlights the importance of heterogeneity within SFOs. The tendency to use more long-term debt is especially strong among SFOs that have sold their original family firm, as these entities are less constrained by emotional or legacy-based considerations. By contrast, SFOs that still retain ties to their founding firm display

more conservative financing behavior, closer to that of family-controlled firms. From a socioemotional wealth (SEW) perspective (Berrone, Cruz and Gomez-Mejia, 2012), this indicates that emotional attachment and legacy considerations still play a moderating role in debt choices, reinforcing the idea that financing decisions in Family Offices cannot be fully understood through financial logic alone, as non-economic objectives linked to the preservation of socioemotional wealth often mitigate risk-taking and shape preferences for autonomy over external dependence. From a portfolio diversification perspective, SFOs generally have more diversified asset bases than traditional family firms, which allows them to accept higher leverage in portfolio companies without threatening family wealth concentration (Block, Fathollahi and Eroglu, 2024).

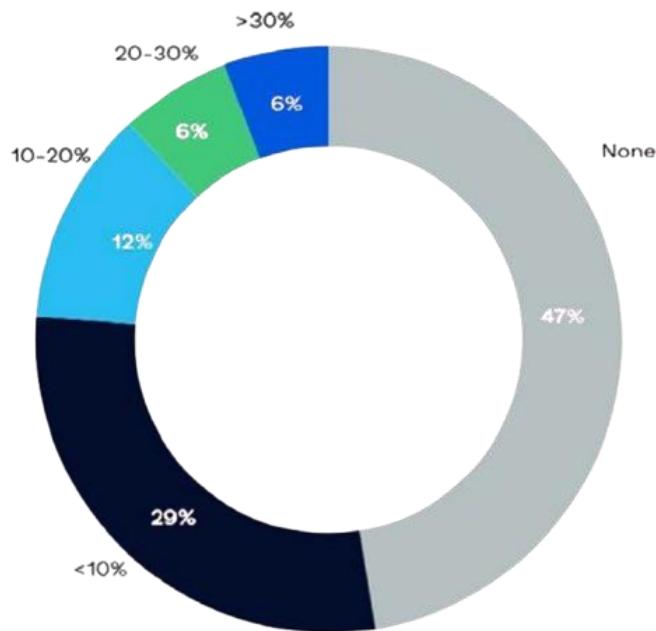


Figure 5: Amount of leverage employed by Family Offices (Citi Private Bank, Global Family Office 2024 Survey Insights).

To conclude, Family Offices also engage in co-investment strategies, partnering with other FOs, institutional investors, or Private Equity firms to gain access to larger investment deals while diversifying risk. Their strong capacity for self-financing enhances this collaborative approach, as it provides significant flexibility and allows them to adopt a long-term perspective compared to traditional institutional investors (Schickinger *et al.*, 2022). These partnerships often lead to exclusive deal flow opportunities, allowing FOs to enter private transactions, buyout deals, and alternative investments that may not be available to public markets.

1.2. Private Equity

1.2.1. Definition and Historical Evolution

Private Equity (PE) refers to investments made in privately held companies or buyouts of public companies with the aim of restructuring and increasing value before exiting through a sale or initial public offering (IPO). Unlike public markets, PE investments typically involve active ownership and strategic management interventions (Ljungqvist, 2024; Wright, Gilligan and Amess, 2009; Fenn, Liang and Prowse, 1997).

The modern PE industry has its roots in the mid-20th century, evolving from early investment structures that combined elements of venture capital and corporate buyouts. Some researchers date the first leveraged buyout (LBO) to 1955, when McLean Industries, Inc. acquired two steamship companies (Fenn, Liang e Prowse, 1997). The 1960s saw further developments in PE practices, through firms like Berkshire Hathaway and DWG Corporation, which popularized the strategy of acquiring and actively managing companies (Ljungqvist, 2024).

The expansion of the PE industry accelerated in the 1980s due to favorable regulatory and tax changes. The rise of the junk bond⁵ market enabled highly leveraged transactions, allowing firms like Kohlberg Kravis Roberts (KKR) to execute some of the largest buyouts in history, including the famous RJR Nabisco deal in 1989 (Ljungqvist, 2024). While many of these transactions were initially associated with hostile takeovers and financial engineering, the 1990s and 2000s saw a shift toward more operational improvements and value-creation strategies (Wright, Gilligan and Amess, 2009).

During the 1990s, PE firms institutionalized their practices, focusing on operational efficiencies rather than purely financial restructuring. Fund sizes grew significantly, and mega-funds became a defining feature of the industry. The collapse of the dot-com bubble of the early 2000s temporarily slowed growth, but from 2003 to 2007, the PE market boomed again, with club deals where multiple PE firms collectively acquired large companies becoming common (Ljungqvist, 2024).

The 2008 financial crisis marked another turning point, as the credit crunch severely limited access to leveraged financing, causing a slowdown in PE activity (Wood & Wright, 2009). The industry recovered in the following decade, benefiting from historically low interest rates that fueled new waves of buyouts and expansion strategies (Ljungqvist, 2024; Wood and Wright, 2009). Despite this recovery, Private

⁵ Junk bonds are high-yield, high-risk corporate bonds issued by companies with lower credit ratings. They offer higher interest rates than investment-grade bonds to compensate investors for the increased risk of default (<https://www.borsaitaliana.it/borsa/glossario/junk-bond.html>).

Equity has faced new challenges in recent years. As illustrated in Figure 6, the total deal value of Private Equity transactions has significantly declined since its peak in 2021. Global deal activity dropped by 37% from 2022 to 2023, reflecting macroeconomic uncertainty, higher interest rates, and increased regulatory scrutiny.

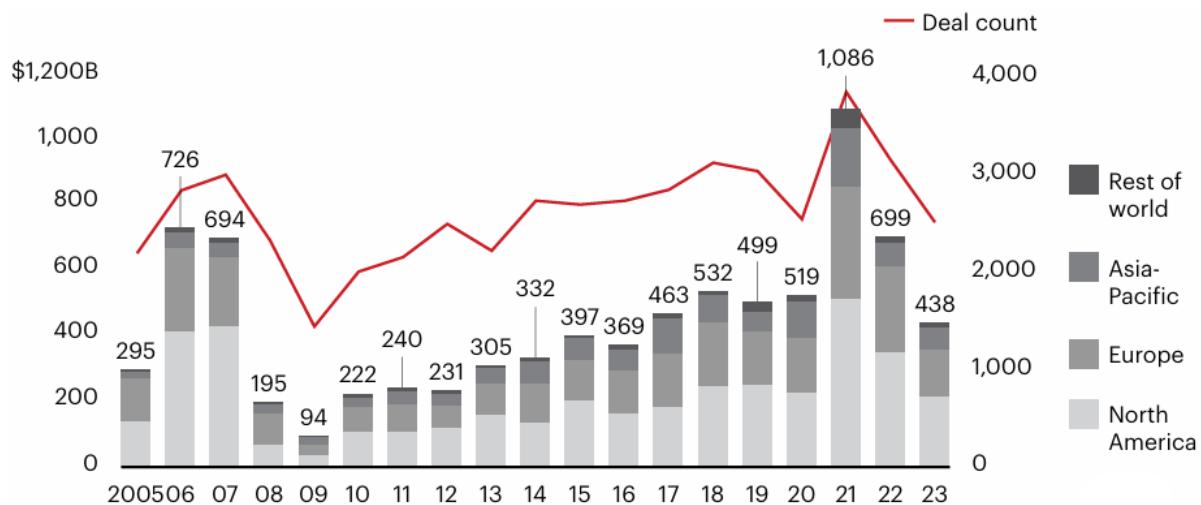


Figure 6: Private Equity Deal Value Decline by Region (2005–2023) (Bain & Company, 2024).

1.2.2. Fund Structure

Private Equity funds are typically structured as limited partnerships, consisting of general partners (GPs), who manage the fund and make investment decisions, and limited partners (LPs), who provide the bulk of the capital but have limited liability and no active role in decision-making (Acharya *et al.*, 2013). The limited partnership structure is designed to align the interests of fund managers with those of investors through performance-based compensation mechanisms, contractual restrictions, and governance provisions (Ljungqvist, 2024; Axelson, Strömberg and Weisbach, 2009).

The lifetime of a typical Private Equity fund is approximately 10 years, with the possibility of extensions up to 12–15 years. The investment period generally lasts three to five years, during which GPs actively allocate capital into portfolio companies, followed by an exit phase, during which investments are exited, and profits are distributed to LPs (Fenn, Liang and Prowse, 1997).

The GPs are responsible for sourcing, executing, managing, and exiting investments. They typically contribute 1-2% of the fund's capital to signal commitment and align incentives with LPs. Their compensation structure includes management fees (1-2% of committed capital per year) and carried interest (typically 20% of the profits), incentivizing them to maximize fund performance (Fenn, Liang and Prowse, 1997).

GPs also play a critical governance role in portfolio companies, often holding board seats, guiding strategic decisions, and implementing operational improvements. Their expertise is a key determinant of value creation in buyout deals and is particularly relevant in leveraged buyouts (LBOs), where financial and operational engineering are crucial for success (Acharya *et al.*, 2013).

LPs are typically institutional investors, including pension funds, endowments, sovereign wealth funds, insurance companies, Family Offices, and high-net-worth individuals (Ljungqvist, 2024). Unlike GPs, they do not participate in daily fund management but commit capital upfront, which is provided through capital calls once investments are executed (Axelson, Strömberg and Weisbach, 2009).

While LPs generally have limited control over fund operations, they mitigate risks through due diligence, portfolio diversification, and monitoring mechanisms such as advisory committees. They also negotiate governance clauses in limited partnership agreements (LPA), such as key-person clauses (ensuring continuity in fund management) and restrictions on fund managers engaging in competing investments (Fenn, Liang and Prowse, 1997).

To illustrate the relationships and financial flows between GPs, LPs, funds, and portfolio companies, Figure 7 presents a standard PE firm structure. This diagram visually represents capital contributions, profit distribution, interest mechanisms, and management fees flow within a Private Equity fund.

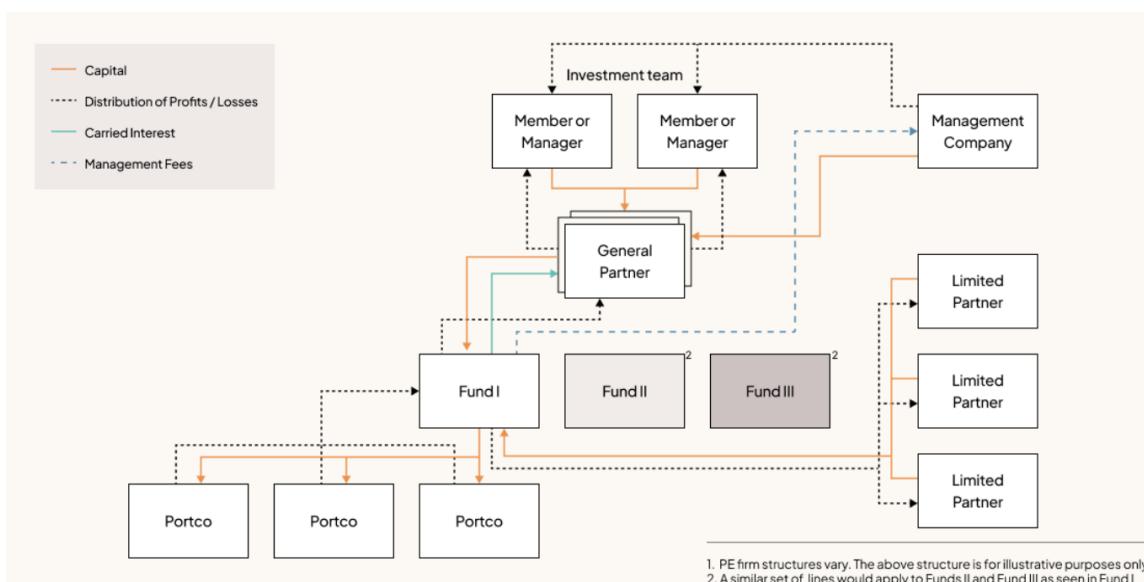


Figure 7: Private Equity fund structure: capital flows, management fees, and investment roles⁶.

⁶ <https://carta.com/learn/private-funds/private-equity/pe-fund-structures/>

In recent years, co-investment structures have gained popularity, allowing LPs to invest alongside GPs in select deals without paying additional fees. This trend enhances LP returns while reducing reliance on fund managers (Acharya *et al.*, 2013). Subscription line financing, where funds use short-term debt secured by LP commitments, has become increasingly common to smooth capital deployment and enhance reported internal rates of return (IRR) (Ljungqvist, 2024).

Another structural shift is the rise of continuation funds, where GPs extend their management of assets beyond the typical 10-year cycle, giving LPs the option to either cash out or reinvest. This allows PE firms to hold onto high-performing assets longer, optimizing returns in a volatile macroeconomic environment (Ljungqvist, 2024).

1.2.3. Investments Objectives

Private Equity investments are structured to achieve short-to-medium-term value creation, typically within three to seven years, through active ownership and financial restructuring (Ljungqvist, 2024). Unlike traditional public equity investments, which rely on incremental growth, PE firms adopt a hands-on approach, implementing operational, financial, and governance changes to maximize returns before an exit (Wright, Gilligan and Amess, 2009).

A core investment objective of PE firms is operational value creation, which involves enhancing efficiency, optimizing cost structures, and driving revenue growth. This process often requires leadership changes, performance-based incentives, and the adoption of lean management practices, digital transformation, and automation strategies to improve profitability (Acharya *et al.*, 2013). PE firms also engage in strategic restructuring, repositioning firms within industries through market expansion, mergers and acquisitions, and cost-reduction initiatives to improve competitiveness (Meles, Monferrà and Verdoliva, 2014; Fenn, Liang and Prowse, 1997).

Financial engineering remains central to PE investment models, particularly in leveraged buyouts (LBOs), where acquisitions are primarily financed through debt. This approach allows firms to amplify returns while ensuring strict financial discipline, enforcing optimized debt-to-equity ratios, effective cash flow management, and financial oversight (Cornelli and Karakas, 2008). Recent industry shifts indicate a move toward balancing financial leverage ensuring long-term sustainability, with an increasing emphasis on integrating ESG principles and risk mitigation strategies into investment decisions (Verbouw *et al.*, 2025).

The sectoral focus of Private Equity investments has also evolved, with firms increasingly concentrating on high-growth industries. As illustrated in Figure 8, technology and industrial sectors continue to dominate Private Equity deal flow,

reflecting a strategic shift toward industries with strong innovation potential and scalability. The increasing allocation to healthcare and renewable energy further highlights the alignment of PE investments with long-term economic and societal trends.

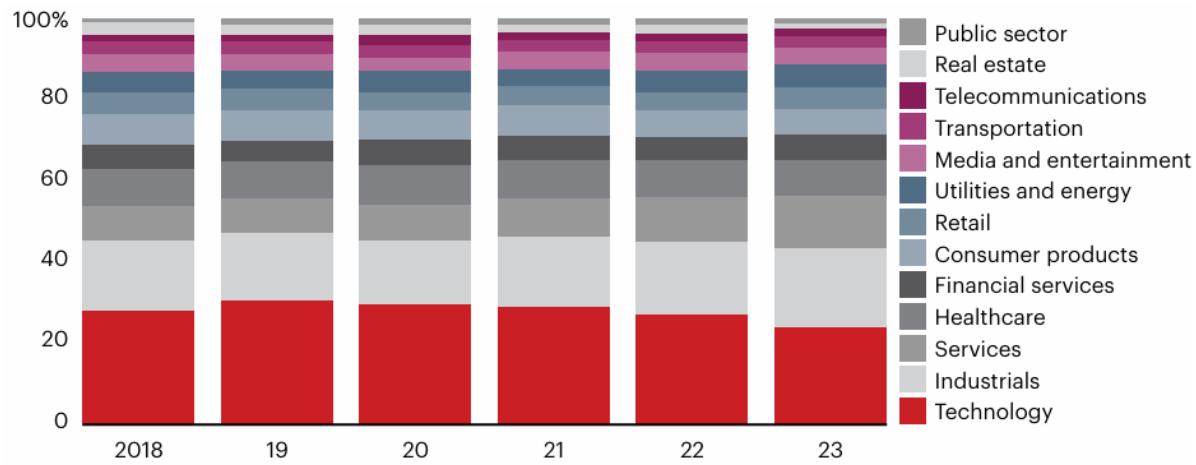


Figure 8: Share of PE Investments by Sector (Bain & Company, 2024).

The ultimate objective of PE investments is to execute profitable exits, commonly through Initial Public Offerings (IPOs), strategic sales to industry buyers, or secondary buyouts (SBOs) by other PE firms (Fenn, Liang and Prowse, 1997). Exit success depends on market conditions, portfolio company performance, and strategic positioning, with proper timing being one of the most significant determinants of overall fund performance (Ljungqvist, 2024).

1.2.4. Investments in Family Firms

PE investments in family firms present unique dynamics, particularly regarding productivity growth and governance improvements. Croce and Martí (2016) find that family firms receiving PE investment often demonstrate lower productivity growth pre-investment, particularly those under founder control. Financial constraints frequently drive family firms to accept external capital, despite concerns over ownership dilution and socioemotional wealth (SEW) preservation.

Post-investment, PE-backed family firms show significant improvements in productivity growth, with the strongest effects observed in founder-controlled firms.

PE investors enhance governance, professionalize management, and introduce financial discipline, helping family firms overcome inefficiencies. These changes facilitate better resource allocation, ensuring more effective decision-making and strategic execution (Croce and Martí, 2016).

This topic will be further examined in Section 1.4. "Ownership Similarity and Governance Implications", which explores the role of ownership structure in shaping firm outcomes. Particular attention will be given to comparing the governance and strategic implications of investments made by Private Equity firms with those made by Family Offices in family-owned companies, highlighting key similarities and differences in their approaches.

1.2.5. Governance Interventions in Portfolio Companies

Governance interventions are a key aspect of Private Equity (PE) investment strategies, as firms aim to align portfolio companies with their financial and strategic objectives. Unlike traditional investors, PE firms actively reshape corporate governance structures, implement performance-driven incentives, and enforce strict financial discipline to optimize value creation (Connelly *et al.*, 2010). These interventions are designed to mitigate agency problems, improve operational efficiency, and enhance corporate decision-making to drive superior returns.

A common governance intervention in PE-backed firms is board restructuring, where PE firms replace existing board members with industry experts, financial specialists, and representatives from the fund itself. Research shows that PE-backed firms tend to have smaller, more effective boards, enabling faster decision-making and improved strategic alignment (Fenn, Liang and Prowse, 1997). In leveraged buyouts (LBOs), PE firms often hold majority board seats, granting them significant control over corporate strategy and governance policies (Connelly *et al.*, 2010).

Beyond board changes, PE firms also influence executive leadership by replacing or restructuring management teams to ensure alignment with the investment strategy. CEOs and CFOs of PE-acquired firms are typically subject to performance-based compensation models, where their incentives are tied to EBITDA growth, revenue targets, and operational milestones (Fenn, Liang and Prowse, 1997). These incentive structures align managerial interests with investor goals, fostering a result-driven culture that prioritizes efficiency and financial performance.

PE governance interventions extend beyond leadership changes to include financial restructuring and capital efficiency measures. By optimizing debt-to-equity ratios, enforcing disciplined capital allocation, and improving cash flow management, PE firms ensure that portfolio companies maximize value creation during the investment period (Connelly *et al.*, 2010). Leveraged buyouts impose financial discipline, requiring

firms to prioritize profitability and sustainability to meet debt obligations and enhance long-term performance (Fenn, Liang and Prowse, 1997).

PE firms also utilize shareholder rights and voting control mechanisms to maintain oversight and strategic influence. Convertible preferred stock and equity ownership stakes are commonly used to align executive incentives with investor interests, ensuring that management remains accountable for delivering expected returns (Fenn, Liang e Prowse, 1997). They also introduce stricter financial reporting standards, internal audit procedures, and compliance measures to enhance corporate transparency and mitigate risks (Wood and Wright, 2009).

While PE firms are often associated with short-term value extraction, recent trends indicate a shift towards sustainable governance interventions that drive long-term performance. Studies show that firms with strong PE-driven governance structures sustain operational improvements even after PE exits, reinforcing the effectiveness of governance engineering in creating lasting value (Verbouw *et al.*, 2025).

1.2.6. Recent Research

Recent studies have revisited traditional assumptions regarding Private Equity buyouts, offering new perspectives on their effects. A meta-analysis by Verbouw *et al.* (2025) synthesized decades of empirical research and challenged the conventional wisdom that PE buyouts primarily drive efficiency gains through financial restructuring and cost-cutting. Their findings suggest that institutional factors play a crucial role in determining post-buyout outcomes, leading to varying effects on growth and efficiency. The study confirms that PE firms in countries with stronger investor protections and regulatory oversight tend to generate better post-buyout growth, as these environments encourage strategic expansion rather than short-term financial reengineering.

Verbouw *et al.* (2025) also found that PE performance is highly dependent on market maturity and industry specialization, with firms in developed markets focusing more on long-term value creation rather than aggressive cost reductions. A key hypothesis confirmed by Verbouw *et al.* (2025) is that PE buyouts have shifted from a predominantly cost-cutting model toward growth-oriented strategies, particularly in industries with high innovation potential. Contrary to earlier studies suggesting that PE ownership prioritizes financial engineering, the findings show that modern buyouts are increasingly driven by operational improvements, strategic repositioning, and market expansion efforts. This aligns with the growing importance of sector expertise and industry-specific governance interventions in PE investments.

1.3. Comparative Analysis of FO and PE Investments

After having analyzed separately the main characteristics of Family Offices and Private Equity firms, this section aims to bring together the key differences and similarities between these two types of investors. By comparing their financial strategies, governance models, and the effects they produce on the companies they invest in, it becomes possible to have a clearer and more complete view of how FO and PE operate in practice. This comparison helps highlight how the distinctive features of each investor type, already discussed in the previous sections, translate into different investment behaviors and outcomes. Understanding these differences is essential to better assess the role that FOs and PE firms play in corporate growth, stability, and long-term performance, especially when they target family businesses or companies with strong governance traditions.

1.3.1. Financial Strategies and Investment Horizons

One of the main differences between Family Offices and Private Equity firms lies in how they finance their investments and how long they plan to stay invested. FOs generally rely on internal capital, reinvesting the wealth generated from the family's assets or businesses. This allows them to avoid excessive debt and maintain full control over their investments, which aligns with their typical long-term and conservative approach (Schickinger *et al.*, 2022). Since FOs are not pressured by external investors or limited fund durations, they can hold onto investments indefinitely if they continue to perform well, making them ideal for strategies focused on wealth preservation and gradual growth (Zellweger, Nason and Nordqvist, 2012).

PE firms build their investments around the concept of financial leverage. Most PE deals, especially in the case of leveraged buyouts (LBOs), involve significant amounts of debt to finance the acquisition, with the goal of maximizing returns through financial engineering and operational improvements (Cornelli and Karakas, 2008). PE funds typically have a fixed life cycle of around ten years, which pushes them to achieve results quickly and plan an exit within a few years, usually through a sale or IPO (Ljungqvist, 2024). This creates a short-to-medium-term investment horizon, often making speed and high returns a priority.

As highlighted by Block *et al.* (2019), these different approaches to financing and investment horizons reflect two opposing mindsets: FOs prioritize stable and long-term profitability, while PE firms focus on maximizing growth and returns within a shorter time frame. These differences have a direct impact on how both investors select their targets and manage them over time.

1.3.2. Governance Models and Ownership Approaches

Governance is another key area where FOs and PE firms differ. FOs typically follow governance models rooted in family values, trust, and long-term legacy. This often results in decision-making processes that are less formal and more influenced by the family's history, culture, and strategic vision (Carney, 2005). While some FOs have professionalized their structures, introducing external advisors and investment committees, family influence remains strong, especially in defining strategic priorities and risk management (Schickinger *et al.*, 2023).

As previously discussed, PE firms apply a highly structured and professional governance model. After acquiring a company, PE investors usually intervene directly in the firm's governance, often replacing part of the management team, restructuring the board, and implementing strict performance monitoring systems (Connelly *et al.*, 2010). PE firms also introduce strong incentive systems based on financial targets to align the interests of managers with those of the fund (Acharya *et al.*, 2013). Their focus is to create measurable value quickly, which often means pushing the company towards higher efficiency, profitability, and scalability.

This difference in governance approaches is closely linked to the level of professionalization and the experience accumulated through deal activity. As shown below in Figure 9, PE investors are positioned at the highest levels in both dimensions, managing a greater number of transactions through highly formalized processes and with specialized teams. FOs, although more experienced than single Deal Investors, typically remain less formalized and maintain a stronger family influence in their operations. This intermediate position reflects their dual nature of combining family governance traditions with increasing professional investment practices (Rottke and Thiele, 2018).

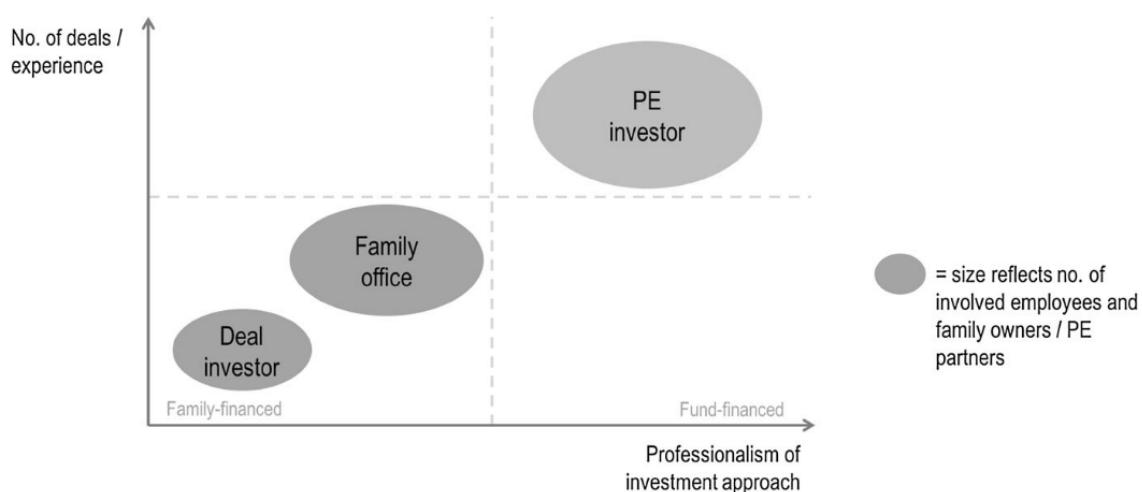


Figure 9: Professionalization tendencies of family and PE investors (Rottke and Thiele, 2018).

Rottke and Thiele (2018) emphasize that these differences in governance also affect how family firms perceive FOs and PE firms as investors. Family businesses may feel more comfortable with FOs due to shared governance values, a focus on continuity, and a lower risk of losing control over strategic decisions. PE firms may be seen as more intrusive, especially because of their typical interventions in leadership and their priority on financial performance over family legacy.

1.3.3. Impact on Portfolio Companies and Performance Outcomes

These differences in financial strategies and governance naturally influence the impact that FO and PE ownership has on portfolio companies. Generally, PE-backed firms experience rapid changes after acquisition, often involving cost-cutting, restructuring, and aggressive growth strategies aimed at preparing the company for a profitable exit (Acharya *et al.*, 2013). This can lead to significant improvements in performance in the short term, but it may also increase the company's risk exposure due to higher debt levels and intense pressure to deliver results quickly (Meles, Monferrà and Verdoliva, 2014).

FO-backed firms are more likely to prioritize stability, sustainable growth, and long-term value creation. Because FOs are not driven by the need to exit within a certain timeframe, they tend to invest in projects with longer payback periods, focusing on preserving the company's identity and strategic coherence over time (Schickinger *et al.*, 2023). This can be especially beneficial for family businesses, where continuity and legacy are essential. As Rottke and Thiele (2018) note, the alignment between FO investors and family businesses may lead to smoother transitions, fewer conflicts, and better integration, ultimately supporting consistent growth without drastic disruptions.

The choice between a FO or a PE investor often depends on the specific needs and situation of the family business (Rottke and Thiele, 2018). Figure 10 shows that factors such as financial distress, succession plans, and growth strategies play a critical role in determining the most suitable investor. For example, in cases of financial constraints or turnaround situations, PE investors are often preferred due to their experience in restructuring and capital injections. In contrast, when the goal is to preserve family control and ensure long-term continuity, family investors like FOs are usually a better fit. PE investors become more attractive when the family seeks professionalization, internationalization, or major M&A activities.

Neckebrück *et al.* (2021) further emphasize that the rationale for involving external investors varies across family firms, ranging from gradual exits to firm extension, replacement capital, or turnaround situations. Each of these scenarios creates distinct

governance challenges and determines whether PE investors, with their restructuring expertise, or Family Offices, with their patient capital and relational orientation, represent the most suitable partner.

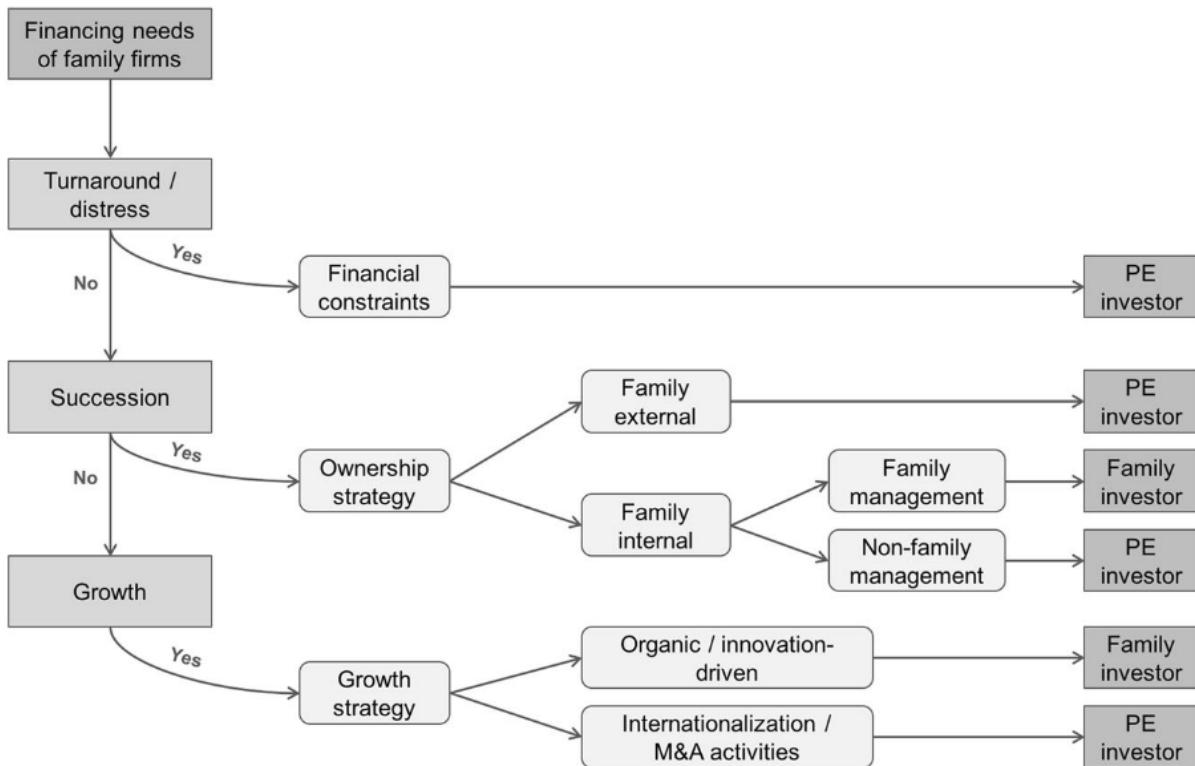


Figure 10: Model of investor fit (Rottke and Thiele, 2018).

This helps to explain why FO and PE investors tend to generate different outcomes after investment, as their approaches are often tailored to the specific strategic context of the target company. Firms seeking organic, innovation-driven growth may benefit from the patient capital of FOs, while those aiming for rapid expansion through acquisitions or restructuring might find greater value in partnering with PE investors.

When comparing performance, Block *et al.* (2019) highlight that FO and PE investments pursue different kinds of returns. While PE firms typically aim for high, short-term financial gains, FOs tend to seek stable, moderate returns over a longer horizon. This means that PE investments might outperform FOs in the short term, particularly in dynamic market conditions, but FOs may have an advantage in terms of resilience, especially during periods of economic downturn, thanks to their conservative capital structures and long-term strategies.

Importantly, Neckebrouck *et al.* (2021) argue that the performance of external equity investments in family firms should not be assessed exclusively through financial metrics. Instead, it also reflects the extent to which family-related objectives, such as ensuring succession, safeguarding control, or preserving socioemotional wealth, are achieved. In this respect, FO investments may yield superior "non-financial" outcomes compared to PE investors, particularly when family continuity and legacy are prioritized.

1.4. Ownership similarity and governance implications

1.4.1. Definition and Role of Ownership Similarity

The concept of ownership similarity has become increasingly relevant when analyzing investment dynamics, especially in contexts involving family businesses and different types of investors like Family Offices and Private Equity firms. According to Bettinazzi *et al.* (2020), ownership similarity refers to the degree of alignment between the ownership structures, governance principles, and strategic objectives of the investor and the target firm. In other words, it's about how much the investor and the company "resemble" each other in terms of how they are owned and managed.

This concept is particularly important in family businesses, where the governance structure is often based on long-term relationships, trust, and continuity. An investor that shares similar values and ownership logic, such as a FO, might find it easier to integrate into the company and support its growth without disrupting its identity. On the other hand, an investor like a PE firm, with a different governance model focused on financial performance and exit strategies, may face more challenges in working with family-controlled businesses.

The work of Bettinazzi *et al.* (2020) is especially relevant because it provides one of the first empirical studies to show how ownership similarity can influence the success of mergers and acquisitions, particularly in family firms. Their research opens the door to exploring whether this concept also applies to other types of investments beyond M&A, such as direct investments from FOs and PEs. This thesis aims to build on that foundation, looking at how ownership similarity might affect not only the choice of investor but also the performance of the companies involved.

1.4.2. Influence of Ownership Similarity on Investment Choices

Ownership similarity can have a direct impact on who invests in whom and how well the integration process works after the investment. Family businesses may prefer investors with similar governance logics because it reduces the risk of cultural conflicts and strategic disagreements. FOs, for example, often share the same long-term vision and family-oriented governance principles as the businesses they invest in. This creates a sort of "natural alignment" that makes collaboration smoother, especially in areas like succession planning, strategic decisions, and preserving the company's legacy (Rivo-López *et al.*, 2017; Zellweger, Nason and Nordqvist, 2012).

Bettinazzi *et al.* (2020) empirically confirm that ownership similarity significantly increases the likelihood of acquisition between two firms, as expressed in their Hypothesis 1: "*Ownership similarity influences positively the likelihood of acquisition between two firms*". This result highlights how shared governance logics and strategic priorities not only facilitate the formation of deals but also create the conditions for smoother collaboration throughout the investment. Ownership similarity does not stop influencing the process once the acquisition is completed. Bettinazzi *et al.* (2020) also show that when there is strong ownership similarity, post-deal integration tends to be more effective, with fewer conflicts and better strategic alignment. Applied to FOs, this suggests that their investments in family businesses might benefit from this compatibility, supporting growth and continuity without the need for radical changes.

Beyond integration, Bettinazzi *et al.* (2020) also highlight how ownership similarity influences the entire investment process, from the initial selection of a target company to the final negotiation of the deal. Their study identifies how similarities in institutional logics, priorities, and cognitive frames help reduce uncertainty and facilitate collaboration at each stage of the deal-making process. This is summarized in Figure 11.

Similarity in institutional logics	Deal selection	Deal evaluation	Deal negotiation
Similarity in priorities and goals		Perception of valued synergies in meeting mutual priorities; fewer anticipated conflicts	Agreement on goals of the acquisition and on post-acquisition integration decisions
Similarity in cognitive frames	Ability to identify and tentatively rank a potential target	Ability to understand target's subtle information and synergy possibilities and agree on a price	Better understanding in coming to final terms, and more confidence in future prospects together

Figure 11: Logics similarity and deal selection, evaluation, and negotiation (Bettinazzi *et al.*, 2020).

As shown in the figure, when investors and target firms share similar institutional logics and strategic goals, they can more easily identify attractive opportunities during the deal selection phase, recognizing potential synergies and shared objectives. This shared understanding helps in filtering potential targets more efficiently, as both sides evaluate opportunities through a similar strategic lens, minimizing misunderstandings from the beginning. During the deal evaluation phase, ownership similarity supports a deeper interpretation of the target's information, making it easier to assess not just financial data but also more intangible elements like organizational culture and strategic intentions. This reduces the risk of miscommunication and conflicting interpretations, which are often sources of tension in the due diligence process. Finally, in the deal negotiation phase, alignment of priorities and cognitive frames helps both parties reach agreements on key terms more efficiently. Similar ownership logics facilitate trust-building, allowing for smoother negotiation of sensitive aspects such as governance rights, future strategic direction, and integration plans. This alignment increases confidence in the future of the partnership, as both sides feel assured that they share compatible visions and decision-making approaches (Bettinazzi *et al.*, 2020).

These findings are particularly relevant when comparing FOs and PE firms. FOs, due to their shared values with family businesses, are likely benefit from high levels of ownership similarity, making the investment process smoother and reducing potential sources of conflict. PE firms may experience lower ownership similarity in these contexts, potentially facing more challenges in aligning goals, understanding informal knowledge within the target firm, and negotiating long-term strategic agreements.

This practical application of ownership similarity helps explain why certain types of investors may find it easier to work with specific types of companies and why

integration success often depends on more than just financial or strategic fit, it also relies on a deeper alignment of governance logics, priorities, and ways of thinking.

1.4.3. Ownership Competence and Governance Implications

Beyond ownership similarity, another important factor to consider is the competence of the owners themselves. Foss *et al.* (2021) introduce the concept of ownership competence, which focuses on the ability of owners to manage their property rights effectively to create economic value. Unlike traditional views of ownership, which primarily emphasize its incentive effects, such as aligning the interests of owners and managers, this perspective underlines that ownership itself is a strategic function that requires specific competences. These competences go beyond simply holding equity and extend into the active, skilled management of ownership responsibilities.

Foss *et al.* (2021) identify three core dimensions of ownership competence:

- Matching competence: involves the ability to understand what assets or companies to own. This includes recognizing valuable resource combinations, foreseeing strategic synergies, and identifying opportunities where ownership can create unique value.
- Governance competence: relates to the knowledge of how to manage the owned assets effectively. This includes setting up appropriate governance structures, incentive systems, and control mechanisms that align the interests of managers with those of owners, as well as managing relationships with key stakeholders.
- Timing competence: refers to knowing when to own, which includes making strategic decisions on when to acquire or sell assets, how to sequence investments, and when to exit to maximize value creation.

These competences are directly linked to the classic property rights of owners, as shown in Figure 12. Owners not only have the right to use, appropriate and transfer their assets, but they must also develop the skills to manage these rights strategically to maximize value creation.

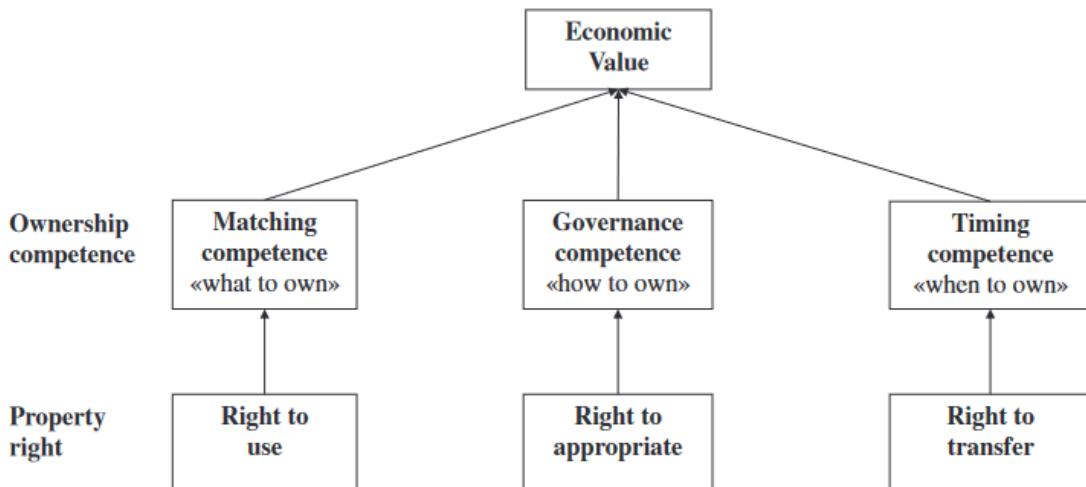


Figure 12: Property rights and ownership competence (Foss *et al.*, 2021).

In the context of FO and PE investments, these dimensions of ownership competence help explain why some investors are more successful than others in certain situations. FOs, for example, often excel in governance competence, as they have experience managing complex, long-term assets while balancing financial performance with family goals. This competence is particularly valuable when investing in other family firms, where maintaining stability, preserving identity, and managing succession are key priorities. Thanks to their shared understanding of governance logics, FOs can adapt smoothly to the needs of these firms and create value over time (Foss *et al.*, 2021).

PE firms tend to have strong timing competence, which is essential in their business model. They are skilled at identifying the right moment to invest, restructure, and exit, maximizing returns within a limited time frame. Their governance competence, however, is often standardized around financial performance metrics and may be less adaptable to the informal, trust-based governance systems of family firms. This can create challenges in contexts where ownership similarity is low and where more flexible governance is needed to align with the company culture (Foss *et al.*, 2021).

Foss *et al.* (2021) point out that ownership competence is not something static but develops and improves over time through experience and learning. This is particularly relevant for Family Offices, which often manage assets across generations, allowing them to accumulate knowledge and adapt their governance approaches as the business evolves. This long-term perspective can give FOs an advantage in managing complex situations, such as succession processes or strategic transformations, which are common in family businesses.

Ownership competence alone does not fully capture the complexity of how investors influence their target firms. To better understand these dynamics, Connelly *et al.* (2010) propose a broader framework that looks at ownership as a core component of corporate governance. According to their model, the ownership structure, whether it's internal, like family ownership, or external, like PE ownership, directly shapes the type of influence owners have on the company. This influence can take several forms, including restructuring, activism, or more passive approaches like buy-and-hold strategies. These ownership actions then lead to concrete outcomes in the firm's performance, strategy, and governance processes, creating a continuous cycle of influence and adaptation. This relationship is illustrated in Figure 13, which shows how ownership structure leads to owner influence, which then shapes firm outcomes, ultimately resulting in how ownership is structured and managed.

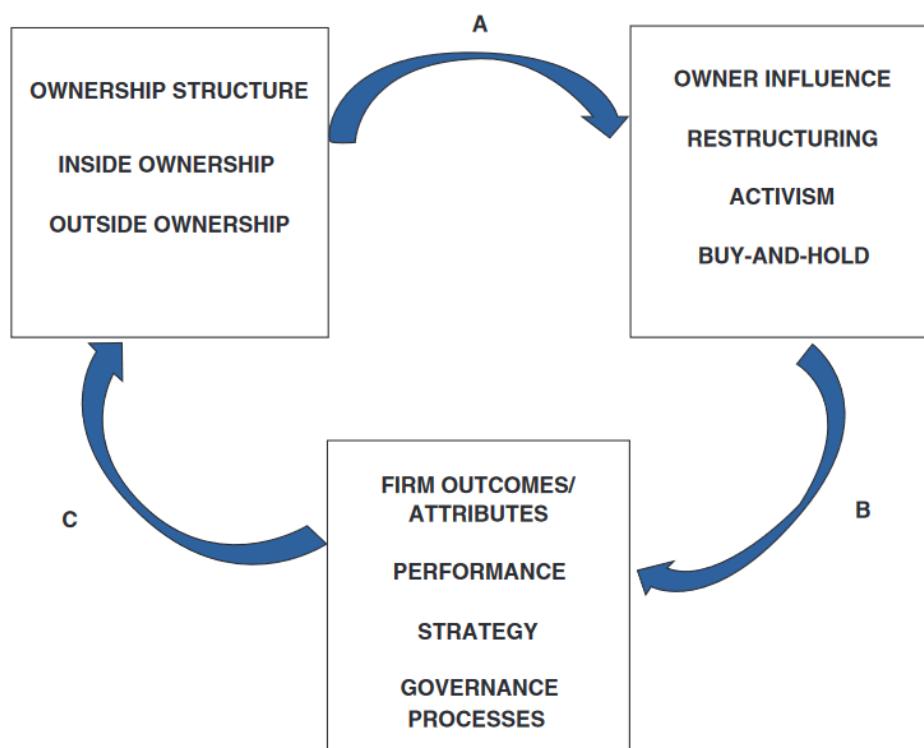


Figure 13: Descriptive framework of ownership as a form of corporate governance (Connelly *et al.*, 2010).

By combining this governance framework with the idea of ownership competence, it becomes clear that the effectiveness of an investor depends not just on structural alignment (ownership similarity) or individual capabilities (competence), but also on how they actively exercise influence through governance interventions. This means FOs and PE firms impact their portfolio companies through different approaches, shaped both by their ownership structures and by how they apply their competences to decision-making, strategic direction, and leadership.

For example, FOs tend to apply their competence in a way that supports long-term stability and gradual growth, often preferring a buy-and-hold strategy that aligns with family businesses seeking continuity. PE firms are more likely to push for restructuring and rapid strategic shifts, aiming for higher short-term performance that aligns with their fund's lifecycle goals (Connelly et al., 2010).

The intersection of ownership similarity, ownership competence, and governance actions offers a comprehensive explanation of why certain investor-firm relationships succeed while others face higher risks of conflict or underperformance. It highlights that ownership is not just a legal or financial status but a strategic function with direct consequences for corporate governance and firm outcomes.

1.4.4. Governance Logics in Family-Controlled Firms

The corporate governance system of family-controlled firms plays a crucial role in shaping their strategic decisions and relationships with external investors. According to Carney (2005), the competitive advantage of family firms does not only depend on the resources they possess but also on the unique governance structures they develop over time. His study identifies three fundamental governance logics that characterize family-controlled firms and influence how they operate and compete in the market:

- The first is parsimony, which reflects the careful and conservative use of financial resources. Family firms tend to prioritize financial stability, avoid excessive debt, and make cautious investment decisions to protect the wealth and legacy accumulated over generations. This conservative approach often makes them less attracted to high-risk strategies and aligns them more closely with investors who support long-term, stable growth rather than aggressive short-term returns.
- The second principle is personalism, referring to the strong influence of family members on the decision-making process. In family-controlled firms, key strategic and operational choices are often made based on personal relationships, trust, and informal communication rather than formal procedures. This creates a governance environment where decisions are

centralized around the family, and external investors who respect this dynamic, such as Family Offices, are generally preferred over those who push for the replacement of existing leadership or the introduction of rigid governance structures.

- The third characteristic is particularism, which means that strategies and governance practices in family firms are highly customized to the specific needs, values, and goals of the family that controls the business. Rather than following standardized management models, family firms often prioritize decisions that serve the interests of the family, such as preserving control, protecting reputations, or supporting future generations, even if these choices are not always optimal from a purely financial perspective.

These governance logics deeply influence how family firms select and interact with external investors. Investors like Family Offices, which share a similar long-term vision and an appreciation for personalized governance approaches, are typically seen as ideal partners, as they can integrate into the company without disrupting its core values and culture. Private Equity firms, whose investment strategies often focus on financial engineering, strict performance monitoring, and predefined exit plans, may find it more difficult to align with family firms' governance styles. The introduction of external management, aggressive restructuring, and short-term value extraction strategies may conflict with the principles of parsimony, personalism, and particularism, generating friction during both the investment and integration phases (Carney, 2005).

Carney's framework helps explain why ownership similarity is not only about having comparable ownership structures but also about sharing compatible governance cultures. These informal rules and deeply rooted behaviors within family firms shape not just how they operate internally, but also how they respond to and collaborate with external investors.

1.5. Summary and Research Gap

The analysis of the literature has made it possible to better understand the main characteristics of Family Offices and Private Equity firms, highlighting the differences in their investment strategies, governance models, and objectives. FOs typically operate with a long-term vision, prioritizing stability and gradual growth, often focusing on preserving family wealth and legacy through more conservative financial strategies and personalized governance approaches. PE firms are generally more oriented toward short-to-medium-term value creation, using financial leverage and active intervention in portfolio companies to quickly increase performance and

prepare for a profitable exit. These differences not only shape how they select investments but also how they manage the companies they invest in and the results they achieve over time.

The literature also shows that the concept of ownership plays a fundamental role in explaining the dynamics between investors and family firms. The idea of ownership similarity, introduced by Bettinazzi *et al.* (2020), helps explain why some partnerships work better than others, highlighting that when investors and companies share similar ownership structures and governance logics, the whole investment process tends to be smoother, with fewer conflicts and better alignment on strategic goals. This is particularly important in family firms, where informal governance models and long-term priorities often dominate decision-making. Studies like Foss *et al.* (2021) and Connelly *et al.* (2010) further deepen this view, showing how specific governance styles and ownership competences influence not just how firms are managed but also how they interact with external investors.

Despite the growing interest in these topics, the literature still presents several limitations. While there are studies that separately analyze FOs and PE firms, as well as research focused on ownership similarity in M&A contexts, there is still very limited work that compares FOs and PEs directly, especially in terms of how ownership similarity influences their impact on family-controlled firms.

For these reasons, there is a clear opportunity for future research to build on these foundations. Expanding the analysis to compare the behavior and effects of FOs and PE firms on family businesses, considering ownership similarity as a key factor, could provide new insights into which investor types are most suitable in different situations. This would contribute to filling the gaps identified in the current literature, offering a more complete picture of how ownership structures and investment strategies interact in the specific context of family-controlled firms.

2 Hypotheses Development

The existing literature highlights several important differences between Family Offices and Private Equity firms, particularly in their investment approaches, governance models, and strategic objectives. These differences become even more relevant when considering investments in family-controlled businesses, where ownership structures and governance logics play a key role in shaping the success of the investment. In this context, the concept of ownership similarity has emerged as a crucial element to understand why some investor-company relationships perform better than others.

Bettinazzi *et al.* (2020) introduce the idea of ownership similarity as the degree of alignment between the institutional logics, priorities, and cognitive frames of the acquiring and target firms. Their research shows that when investors and target companies share similar governance models and strategic visions, the entire investment process tends to benefit. From deal selection to negotiation and post-acquisition integration, ownership similarity reduces conflicts, increases mutual understanding, and creates a more stable environment for value creation. This is particularly evident in family-controlled businesses, where informal governance structures and long-term priorities are central. Investors that align with these logics, such as Family Offices, are more likely to be welcomed and to build lasting, positive relationships with the firms they acquire. This leads to the first hypothesis:

H1. Family Offices are more likely than Private Equity firms to invest in family-owned businesses.

Building on this idea, Bettinazzi *et al.* (2020) also suggest that ownership similarity may have direct implications on post-acquisition performance. When the investor and the target company share similar ownership structures, strategic goals, and governance practices, they are better able to coordinate actions, avoid misunderstandings, and work towards common objectives. This can translate into better financial performance and more stable growth after the acquisition, especially in the case of family businesses. On the other hand, when ownership similarity is low, such as when a PE firm acquires a family business, there is a higher risk of strategic misalignment, governance conflicts, and operational disruptions. Drawing from these insights, the second hypothesis is proposed:

H2. Firms backed by investors with high ownership similarity (such as Family Offices investing in family businesses) perform better post-deal than firms backed by investors with low ownership similarity (such as Private Equity firms investing in family businesses).

Beyond ownership similarity, other works in the literature reinforce the existence of structural differences between FOs and PEs in their investment behavior. Block *et al.* (2019) and Rottke and Thiele (2018) highlight how Family Offices are more inclined to take minority stakes, preferring to maintain a collaborative role without fully taking control of the companies they invest in. This approach aligns with their long-term orientation and respect for the autonomy of family businesses. Private Equity firms, in contrast, often seek majority control to implement significant strategic changes and drive rapid performance improvements through active management. Based on these considerations, the following last hypothesis is formulated:

H3. Family Offices are more likely than Private Equity firms to engage in minority-type deals, while Private Equity firms more frequently complete majority-type deals.

By structuring the hypotheses in this way, the thesis aims to provide a comprehensive comparison between Family Offices and Private Equity firms, with a particular focus on the role of ownership similarity and its impact on investment outcomes in family-controlled businesses. These hypotheses, developed from the main findings in the literature, create the foundation for the empirical analysis that will follow, with the goal of understanding how different investor types influence both the strategic and financial trajectories of the companies they invest in.

3 Methodology

3.1. Data collection and Preparation

3.1.1. Original Data Sources and Structure

The analysis began with a transaction dataset provided by the professor, in Excel format, named "*Family Transaction Merged*". This file represented the starting point of the entire study. It contains a single sheet called "*Results*", composed of 1188 observations and 21 variables, and includes information on corporate transactions.

The transactions cover a time span from 2013 to 2022, providing a ten-year overview of deal activity. The variables included in the dataset describe several key aspects of each transaction, such as:

- General information about the deal (for example, the data source and the completion date).
- Details about the target company, including name, business description, listing status, and whether the company was family-owned before the transaction.
- Information about the parties involved, such as buyers and sellers, including their legal status.
- Financial features of the transaction, such as total deal value, payment method, and percentage of ownership held after the deal.

The dataset offers a detailed picture of transactions involving family businesses (but not exclusively). It provides useful data to analyze the ownership structure before and after the deal, as well as the main characteristics of the parties involved. However, it does not include quantitative information on post-deal firm performance.

Based on this initial dataset, two additional datasets were created to support the analysis. One was focused on the targets and the other on the acquirors companies.

3.1.2. Construction of the Target Dataset

For each target company included in the initial dataset, additional financial and organizational data were collected with the aim of analyzing business performance before and after the transaction. The data extraction spanned the years 2011 to 2024, to cover the full set of deals completed between 2013 and 2022. By defining the year in which the transaction was completed as year t , the analysis focused on the period between $t-1$ and $t+1$, thus emphasizing the short-term effects of the deal.

The information collected can be grouped into four main categories:

1. Identification and company details: key identifiers were retrieved to uniquely recognize each company. These included the Latin-script name of the firm, its BvD ID number (a unique identifier provided by Bureau van Dijk), and its registered city and country. These variables were essential for correctly matching each company to the corresponding transaction in the original dataset, and for allowing regional or country-level breakdowns in later stages of the analysis.
2. Economic and financial indicators: several financial variables were collected to assess firm performance over time. These included:
 - Profitability indicators: ROE and ROA (both based on net income), EBITDA, EBITDA margin, and P&L net income.
 - Size and valuation: operating revenues, enterprise value, and market capitalization.
 - Capital structure: gearing ratio (debt-to-equity), operating cash flow, and valuation multiples such as enterprise value/EBITDA and market cap/operating cash flow.

These variables provided a comprehensive picture of the firm's financial health before and after the deal. They allowed for the monitoring of potential changes in profitability, capital structure, and market value attributable to the transaction.

3. Organizational and ownership structure: additional data on governance and ownership were also collected. This included the total number of employees, the number of executives and directors (both current and past), and the total number of shareholders.
4. Industry classification and competitive positioning: to better understand the sectoral context in which each target company operates, a wide range of variables was collected to capture both formal classifications and qualitative descriptions of business activity. A central element in this process was the "*NACE Rev. 2 classification*", which provides a standardized European framework for categorizing economic activities. For each firm, information was collected on the main NACE section, the core 4-digit code, and its corresponding activity description, enabling both high-level and granular industry-level analyses.

All data were extracted from Orbis, one of the leading global databases for corporate information. Orbis, developed by Bureau van Dijk (a Moody's Analytics company), offers standardized financial, structural, and identification data for millions of companies worldwide. Its focus on harmonizing data across countries and sectors makes it a valuable tool for comparative analysis.

According to Bureau van Dijk, Orbis aggregates information from official financial statements, company registries, regulatory authorities, and private sources, offering a reliable and historically rich dataset⁷. In academic research, Orbis is widely used for empirical studies in corporate finance and governance. Kalemli-Ozcan *et al.* (2015), for example, recognize it as one of the most comprehensive sources for building cross-country firm-level datasets.

The extraction of economic and financial data for target firms was carried out using the batch research function available in Orbis. This tool allows users to upload lists of companies and retrieve structured information for multiple entities at once.

The process began with the upload of the initial dataset, in which the names of the target companies were specified as the entities to be searched within the Orbis database. Once the procedure was launched, Orbis attempted to automatically match each firm in the uploaded list with the corresponding entity in its system. The match was based on criteria such as company name, identification codes, and other available registration details.

In several cases the system was unable to identify a direct match between the firms listed in the original dataset and those in Orbis. In these situations, manual validation was required. Each case was reviewed individually to confirm the accuracy of the suggested match, or, if no useful suggestions were provided by the platform, to manually search for the correct company. This was done by cross-checking various attributes such as country of registration, industry classification, and other distinguishing features. This manual step was essential to ensure consistency and accuracy in the final sample of target firms.

After completing the validation phase, the selection of variables to be extracted was conducted. The financial indicators and structural variables of interest were chosen from those available in Orbis, and the relevant parameters were set. For each variable, the following extraction criteria were defined:

- The time range (from 2011 to 2024).
- The currency for the values (e.g., Euro).
- The numeric format (such as thousands or millions).

Once the configuration was complete, the full dataset was exported directly from Orbis in Excel format. The result was a structured data file, ready for cleaning, processing, and subsequent analysis.

⁷ <https://www.bvdinfo.com>

3.1.3. Construction of the Acquiror Dataset

Once the data collection for the target companies was completed, the next step involved building a dedicated dataset for the acquirors involved in the transactions. This phase presented several challenges, especially regarding the accurate identification of the buyer companies.

Unlike the target firms, which were associated with a unique BvD ID number, the acquirors listed in the original dataset did not include this identifier. The BvD ID, introduced before, is a unique code assigned by Bureau van Dijk to every company in its databases, and it plays a crucial role in avoiding confusion caused by similar names, language variations, or transcription errors. As stated by Bureau van Dijk⁸:

"BvD ID numbers are unique identifiers assigned to entities within our products, enabling precise entity recognition and data integration across different datasets".

The absence of this identifier made it impossible to replicate the same automated batch research process that had been used for the target companies. In many cases, it was difficult to confidently match the acquiror to the correct entity, especially when dealing with generic names, multinational groups with multiple branches, or companies operating in different countries.

To overcome this limitation, the analysis relied on Zephyr, another database developed by Bureau van Dijk, which is specifically designed for tracking and analyzing corporate transactions on a global scale. Zephyr provides detailed information on mergers, acquisitions, leveraged buyouts (LBOs), management buyouts (MBOs), IPOs, and other corporate deals.

As described by Bureau van Dijk:

"Zephyr is the most comprehensive database of deal information, covering global M&A, IPO, and venture capital activity with detailed, structured information on deals and their participants."

The platform includes structured data covering:

- The parties involved in the transaction (acquirors, sellers, and targets).
- The deal value and structure.
- Key dates such as announcement, completion, and cancellation.
- Ownership stakes sold or acquired.
- The financing method used for the transaction.

⁸ <https://www.bvdinfo.com>

Due to its specialization in deal-level information, Zephyr was essential in reconstructing the missing details on acquirors. It made it possible to identify the buyer companies listed in the original dataset and to retrieve accurate and structured information on both the firms and the deals they completed.

The combined use of Orbis and Zephyr enabled the construction of a complete and reliable dataset, allowing for an accurate match between acquirors and target companies, despite the initial difficulties caused by the lack of unique identifiers for the acquirors.

The dataset extracted from Zephyr contains a wide range of structured information that describes both the transactions and the companies involved, with a particular focus on acquirors. The data can be grouped into several categories, each playing a specific role in the analysis.

First, each transaction is associated with a unique Deal Number, which allows for easy identification of each operation and simplifies the process of cross-referencing information across different sources or analysis stages.

The dataset also includes basic information about the target firms, such as company name, BvD ID number, city, and country of registration. These variables are essential to reconcile the targets listed in the initial dataset with the entities found in Zephyr and to enable the linking of target and acquiror data in the integrated dataset.

Regarding the acquirors, the dataset provides both basic and descriptive information, including company name, BvD ID number, location (city and country), legal status, legal form, primary business sector, and both a short and extended description of the company's core activities. These details are critical for profiling each acquiror, understanding their nature, and comparing transactions based on the type of investor involved.

In addition to qualitative attributes, the dataset includes a set of financial and structural indicators referring to the most recent available year. These indicators include equity, number of employees, market capitalization, enterprise value, total revenues, EBITDA, EBIT, net income, and total assets, all expressed in thousands of euros. This information provides an updated picture of each acquiror's size and financial condition and enables comparative analysis of transactions based on the economic characteristics of the acquiring entities.

The data extraction from Zephyr followed a careful process using its batch research function. The initial dataset was uploaded, and the target companies were used as reference entities to be searched in the database (since only they had an associated BvD ID number). Zephyr then attempted to automatically identify the companies listed, matching them with entries in its system.

During this phase some issues emerged that required manual intervention. Two main problems were encountered:

1. In some cases, Zephyr failed to find any match for the company.
2. In other cases, a match was identified, but no transaction or profile data was available for that company, making the extraction impossible.

In both situations, the company was excluded from further processing due to the absence of usable data.

After completing the matching and verification steps, Zephyr returned all transactions linked to the recognized target companies. However, not all these deals were relevant for the analysis. The output included every transaction in which the specified target had been involved, regardless of the nature or timing of the deal. While this comprehensive extraction ensured full coverage, only a subset of transactions was aligned with the research objectives. As a result, the final dataset initially included over 10000 rows, but only a smaller selection (just over 1000 deals) was needed for further analysis. These transactions represented the relevant deals to be studied and were used as the basis for classifying the acquirors.

Importantly, this data retrieved from Zephyr provided the BvD ID number for each acquiror, which had been missing from the original dataset. This made it possible to uniquely identify the acquiring entities, enabling further investigation of their characteristics and the systematic classification of acquirors in later stages of the research.

3.1.4. Acquiror Typology and Classification Criteria

As mentioned, the main objective of building the acquiror dataset using Zephyr was to identify the nature of the investors involved in the transactions, with a specific focus on distinguishing between Private Equity and Family Offices. This classification was essential for the development of the analysis, as PE and FO investors follow different strategies, behaviors, and investment goals, which can significantly influence both the dynamics and outcomes of the deals, as discussed in Chapter 1.

To ensure accurate classification, it was first necessary to extract from Zephyr all relevant information that could help characterize each acquiror. This included basic company data, industry classification, financial indicators, and qualitative information such as the variable "*Acquiror primary business description*" which reports the main activity declared by the firm.

While this variable was useful in some cases, it could not be used as the sole criterion for classification. Several companies were described as operating in the field of "*Private equity investment services*" but this did not always mean that the firm was truly a Private Equity fund. In many cases, Family Offices also engage in similar investment activities

and are often labeled more generally as investment companies, without a clear or formal distinction.

This issue is especially relevant in the Italian context, where there is no official definition or legal recognition that clearly distinguishes Family Offices from other types of investment vehicles. This ambiguity makes it particularly difficult to separate FOs from PEs based only on the descriptions provided in the databases.

For this reason, to ensure the correct classification of each acquiror, the information extracted from Zephyr was systematically complemented with a wide range of external sources. The verification process involved both structured databases and qualitative sources aimed at capturing the strategic nature, governance style, and investment philosophy of each entity.

Among the most consulted tools were Orbis, used to analyze company ownership structures and stated business activities, and official company websites, which often provide details about investment strategies, governance models, and the involvement of family members. Additionally, public regulatory registers such as those of Consob and the Bank of Italy were reviewed to verify whether the acquiror operated as a regulated investment firm (e.g., SGR), a typical form for Private Equity funds.

To further support the classification, a variety of industry publications and financial news platforms were used. These included BeBeez, which regularly tracks Private Equity and Venture Capital deals, as well as Il Sole 24 Ore, Milano Finanza, and Dealflower, which often specify the nature of the investor involved in reported transactions. These sources were particularly useful in ambiguous cases or for confirming initial findings obtained through other channels.

After identifying the relevant sources, a clear and replicable procedure was implemented to classify each acquiror with the highest possible level of accuracy. The process was managed using an Excel working file that listed all acquirors in the dataset, along with supporting information such as the company name, BvD ID number (when available), country of origin, consulted sources, and final classification.

The classification process was structured in three main steps:

1. Regulatory check: Consob and Bank of Italy registers were consulted to verify if the acquiror was registered as an SGR or similar regulated entity, which typically identifies Private Equity firms.
2. Ownership and governance analysis: Orbis and the company website were reviewed to examine ownership structures, declared business focus, board composition, and signs of family involvement, useful for identifying Family Offices.
3. Cross-verification through media sources: in ambiguous or hybrid cases, classification was cross-checked using reliable financial news platforms such as BeBeez, Il Sole 24 Ore, Milano Finanza, and Dealflower.

This organized yet flexible method allowed each acquiror to be reliably classified as PE, FO, or as part of an alternative category when neither definition was clearly applicable ("Other", specifying the type). Each classification was supported by at least one reference source, recorded in the Excel file to ensure full traceability and transparency.

Despite the accuracy and systematic structure of the adopted approach, it is important to acknowledge certain limitations related to both the methodology and the available data. The main challenge lies in the absence of a clear and universally accepted definition of Family Offices, particularly in the Italian context. Without an official registry or regulatory framework to clearly identify this category of investors, the classification had to rely on indirect evidence such as corporate structure, family ties, or declared strategy. Although the approach was rigorous, it inevitably involved a degree of subjectivity, especially in ambiguous cases or when public information was scarce or unclear.

Another limitation concerns the quality and timeliness of the sources consulted. While reliable platforms such as Orbis, Zephyr, and reputable financial news outlets were used, the information may not always have been fully up to date or sufficiently detailed to determine the exact nature of the acquiror. In some cases, companies themselves do not clearly define their identity or operate through hybrid strategies that fall somewhere between the logic of Family Offices and typical Private Equity practices.

It is also important to consider that, being a manual process based on multiple sources, the classification is exposed to the risk of human error, unintentional omissions, or inconsistent interpretations among those involved in the analysis, despite the effort made to standardize the procedure.

For these reasons, the results of the classification should be interpreted with the awareness that they represent a careful and well-documented reconstruction, but not one that can guarantee absolute certainty in every case. This is particularly relevant for acquirors with complex structures or limited transparency. In such cases, the classification was based on the best available information but may be subject to future revisions if new evidence emerges.

Despite these limitations, the methodology made it possible to build a reliable and coherent dataset, aligned with the objectives of the study. It allowed for a well-founded distinction between Private Equity firms, Family Offices, and other investor types involved in the analyzed transactions.

3.2. Data Cleaning and Preprocessing

3.2.1. Dataset Integration and Expansion

Following the construction of the separate datasets containing information on deals, acquirors, and target firms, Python was used to begin the data preparation process. This step was essential to structure a clean, integrated dataset that would later support the exploratory analysis and empirical modeling based on the hypotheses developed in the literature review.

The initial operation involved loading the three datasets and performing a duplicate check. While the deal and acquiror datasets did not contain any duplicated entries, the target dataset presented 69 duplicate rows. These were removed to ensure data quality and to avoid redundant or misleading information during the merging and analysis phases.

To prepare the datasets for merging, the deal dataset was first reshaped to account for transactions involving multiple acquirors. In its original form, such transactions were represented by a single row listing all the buyers. This structure was not suitable for analysis, as it did not allow for a clean join with the acquiror dataset. Therefore, each transaction was expanded across multiple rows, with each row corresponding to a unique acquiror. For example, if a deal involved three acquirors, the data was expanded into three identical rows (in terms of deal attributes) differing only in the acquiror name.

Once the deal dataset was expanded, a merge was performed with the acquiror dataset. Since the deal dataset did not contain a unique identifier (such as the BvD ID) for the acquirors, the merge was conducted using the acquiror name as the key. Prior to merging, a normalization step was performed to improve name matching. This included converting all names to uppercase and removing any inconsistent formatting.

After executing the merge, unmatched rows were carefully analyzed. These unmatched cases included placeholders, missing values, or generic labels that did not correspond to any identifiable entity in the acquiror dataset. The most common unmatched names included: "Investor", "Nan", "Newco", "Investors", "MBO/MBI team", "Shareholder", "Institutional Investor", "Management", "Creditors", "Existing Shareholders", "Undisclosed Private Investor", "Family Offices", "Existing Investor", "Undisclosed Bidder", "Undisclosed Business Angel(s)", "Purpose Alternative Credit Fund".

These entries were too generic or incomplete to be linked to any company and were therefore excluded from further analysis. This filtering step ensured that only clean, verifiable matches were retained in the working dataset.

Once the acquiror data had been successfully integrated, a similar expansion process was applied to deals involving multiple target firms. Each deal was duplicated across multiple rows so that every row represented a one-to-one relationship between the transaction and the specific target company. In this case, the merge was performed using the BvD ID of the target firm, which was available in both the deal and the target datasets, allowing for a more precise and reliable match.

After merging, a second review was conducted to identify any remaining unmatched rows. These cases typically referred to target companies for which data could not be retrieved from the Orbis database. Such rows were removed, as they lacked the information required for subsequent analyses.

At the end of this data integration phase, the final dataset included 1117 complete observations. Each row in the dataset corresponded to a unique combination of deal, acquiror, and target, and contained all the necessary information to perform the following cleaning, exploration, and empirical investigation.

3.2.2. Standardization and Missing Value Treatment

After merging the three datasets into a unified structure, a systematic cleaning process was performed to handle formatting inconsistencies and missing values. One of the first steps involved standardizing non-numeric placeholders that appeared throughout the dataset. In many financial and descriptive columns, missing or unavailable data was not encoded as proper NA values, but instead as strings such as: 'n.a.', 'n.a', 'n.s.', 'n.s', 'n.d.', 'n.d', 'na', 'n/a', '-', '--', and empty strings. These values were all converted to recognized missing values (NaN) in order to enable accurate computation and filtering in later steps of the analysis.

Once missing values were correctly standardized, the proportion of null entries was evaluated column by column. This allowed the identification of variables with extremely low coverage, which could compromise the robustness of the dataset. Five financial variables showed a missing rate higher than 75%, making them unsuitable for further analysis. These columns were:

- Enterprise value.
- Enterprise value / EBITDA.
- Market capitalization.
- Net Cash from Operating Activities.
- Market cap / Cash flow from operations.

Due to the extent of missing information, these variables were removed from the dataset to reduce noise and maintain analytical consistency.

In addition, a broader temporal cleanup was performed on financial variables from the target company dataset. Data for the years 2024, 2013, 2012, and 2011 were found to be highly incomplete across eight key financial metrics: ROE, ROA, EBITDA, EBITDA margin, Gearing, Operating Revenue, Net Income, and Number of Employees. For each of these metrics, again, more than 75% of the values were missing across those four years, leading to the removal of 32 columns in total. Examples include “*ROE using Net income 2024*”, “*EBITDA margin 2012*”, and “*Number of employees 2011*”, which were excluded due to insufficient data coverage. 2024 data were almost entirely missing, while the years 2011–2013 showed similarly sparse patterns.

Further cleaning steps were also applied to the deal dataset, where additional variables were removed due to redundancy or limited analytical value. Specifically, the columns “*Acquiror Entity Type*”, “*Vendor Name*”, and “*Vendor Entity Type*” were dropped because they had partial missing values and were not essential for the analysis (“*Acquiror Entity Type*” was excluded because more complete and detailed information about acquiror firms was available in the acquiror dataset, making this variable redundant). In addition, “*Initial Stake*”, “*Acquired Stake*”, and “*Final Stake*” were excluded due to a high number of “*unknown*” entries, and because their information was already represented by the “*Deal Category Type*” variable. The “*Deal Consideration*” column was removed because of inconsistent formatting and missing data, while “*Acquiror Name Clean*” was excluded as it duplicated information already available in the acquiror dataset.

The treatment of missing values and the removal of highly sparse columns represented a necessary step to improve dataset quality. It also helped reduce the risk of introducing bias or instability in the regression models and descriptive analyses that follow.

3.2.3. Variable Preparation and Structuring

Following the removal of columns with excessive missing values, the dataset was further refined through a series of structuring and variable preparation steps. These operations were intended to clarify the origin of each variable, enhance temporal analysis capabilities, and lay the groundwork for the evaluation of deal outcomes.

First, to improve the readability and traceability of variables, all column names were renamed to include a suffix indicating their original source. This naming convention followed a consistent format:

- Variables originating from the deal dataset were labeled with the suffix `_D`.
- Variables from the acquiror dataset received the suffix `_A`.
- Variables belonging to the target dataset were marked with `_T`.

This approach made it immediately clear which dataset each variable was derived from, which was particularly important given the number of similar financial indicators collected for both acquirors and targets. It also reduced ambiguity in the later stages of the analysis, especially when performing grouped computations, descriptive summaries, or regression modeling.

To enable temporal analysis and to assess how firm characteristics evolved around the time of the transaction, two new variables were created based on the deal completion date: one indicating the year of the transaction and another indicating the month. These time variables were extracted directly from the deal date column.

The creation of a dedicated deal year variable was particularly useful for aligning the financial data of the target firms along a relative time axis. For each target, the reference year of the transaction served as time point t , allowing for the construction of variables $t-1$, t and $t+1$. This time structure was essential to evaluate pre-deal conditions and post-deal developments in a consistent and comparable way across firms, with the analysis deliberately focusing on the short-term window to capture immediate deal-related effects.

The inclusion of the month variable, while not used directly in the final regression models, provided additional flexibility in the Exploratory Data Analysis. It enabled the identification of seasonal patterns in deal activity and allowed for finer granularity when comparing transaction timing across different years.

Through this variable preparation process, the dataset was structured not only for descriptive insights but also for longitudinal and causal inference techniques. It allowed for dynamic tracking of firm-level changes and supported the empirical strategy designed to test whether Family Offices and Private Equity firms differ in their preference for family-owned targets (H1), whether ownership similarity influences post-deal performance (H2), and whether investor identity is associated with majority versus minority deal structures (H3).

4 Empirical Analysis & Results

4.1. Descriptive Statistics and Exploratory Analysis

Before proceeding with the empirical tests of the hypotheses presented in Chapter 2, this section provides a comprehensive overview of the dataset through descriptive statistics and Exploratory Data Analysis (EDA). The objective is to gain a deeper understanding of the transactions, investors, and target firms involved, while identifying preliminary patterns that may support or challenge the expected relationships proposed in the hypotheses.

The analysis is divided into three subsections, each focusing on one of the datasets previously constructed. The first part describes the distribution and features of the deals, the second analyzes the acquiror profiles and their key attributes, and the third examines the main economic and organizational characteristics of the target firms. This structure reflects the three original data sources and helps to build a clear picture of the sample before proceeding with the empirical investigation.

4.1.1. Deal-Level Analysis

This section presents an overview of the transaction data included in the final dataset, with the goal of understanding the overall distribution and evolution of deal activity across time and types. The analysis covers the number of deals per year and per month, the distribution of deal values over time, and the breakdown of deal types.

The distribution of transactions over time reveals interesting trends. As shown in Figure 14, the number of deals increased steadily between 2013 and 2019, reaching a peak of 157 transactions in 2019. This suggests a period of sustained deal activity in the late 2010s, possibly supported by favorable market conditions and increased availability of capital, as seen in the literature review. In 2020, deal volume declined sharply to 102 transactions, most likely due to the global uncertainty and delays in deal execution caused by the COVID-19 pandemic. A partial recovery occurred in 2021 (127 deals), followed by another drop in 2022 (63 deals), which may reflect a combination of economic slowdown and reduced data coverage for the most recent year.

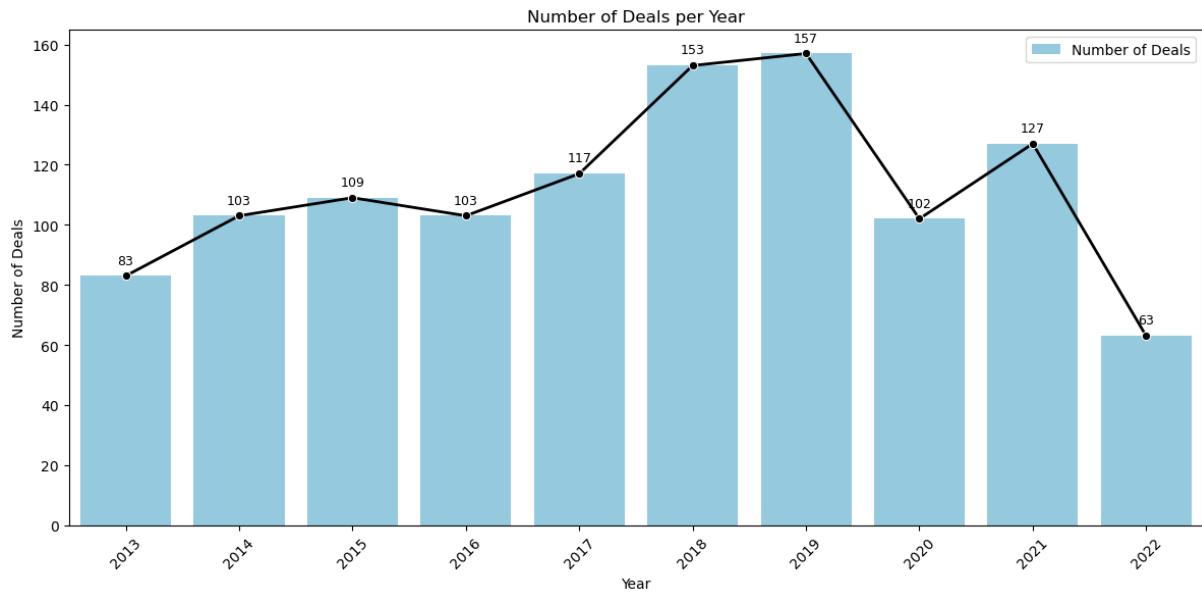


Figure 14: Number of deals per year.

In terms of seasonality, Figure 15 displays the number of deals by month, aggregated across all years. July stands out as the month with the highest frequency (129 deals), followed by May and December. These peaks may align with typical closing periods for corporate transactions, particularly around mid-year and fiscal year-end. The months of August and September record the lowest deal activity, likely reflecting reduced business operations during the summer. While not extreme, these seasonal variations offer additional context when interpreting deal timing across the sample.

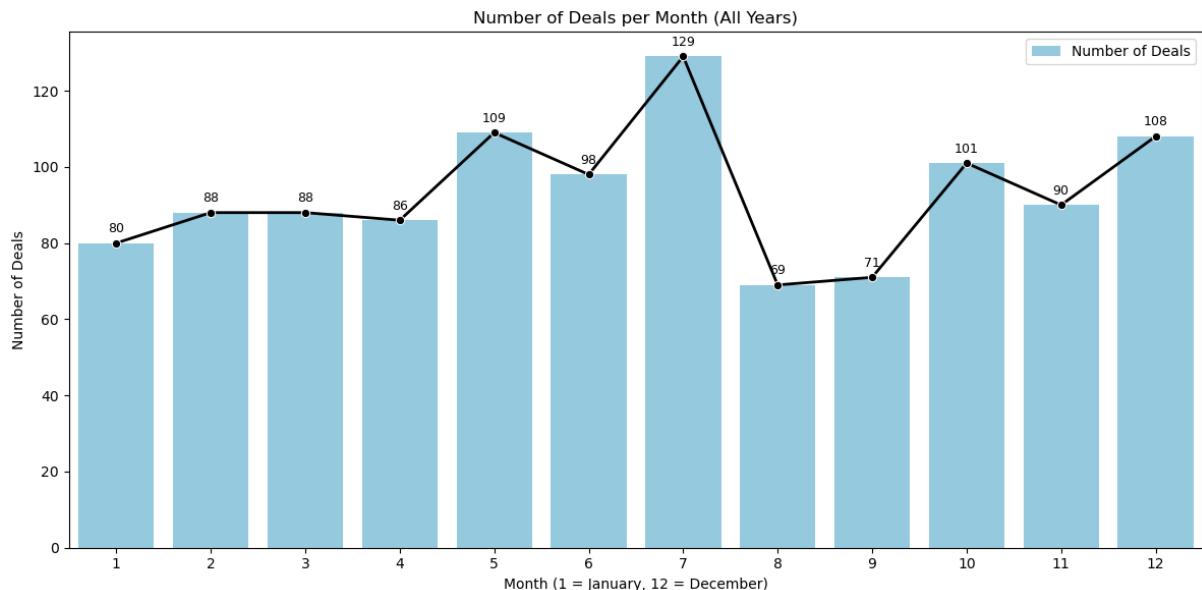


Figure 15: Number of deals per month (all years).

The financial magnitude of the transactions is illustrated in Figure 16, which shows two scatter plots of deal values over time. The left panel displays the full range of deal values, highlighting the presence of several extreme outliers, with a few transactions exceeding one billion euros. The right panel provides a zoomed-in view, limited to the lower value range, and makes it easier to observe the core distribution of deal sizes. It clearly shows that many transactions fall below €100 million, with many concentrated in the €0–50 million range. This indicates a predominance of mid-market deals and supports the idea that the dataset captures a variety of investment strategies, from relatively small strategic deals to a limited number of high-value operations.

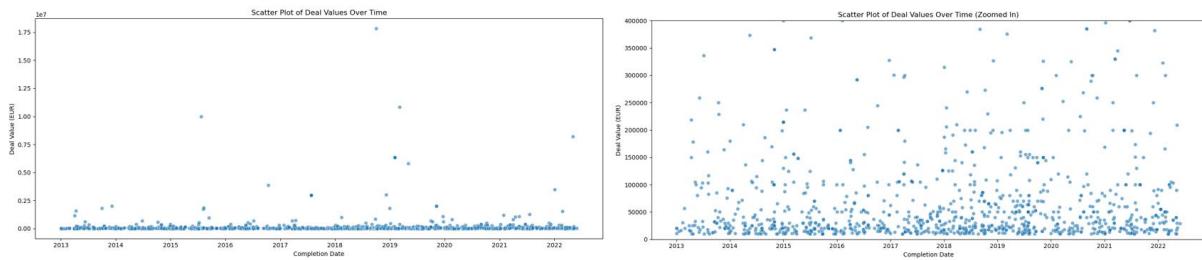


Figure 16: Deal values over time.

The final graph of this section, Figure 17, presents the breakdown of deal types. Full acquisitions are by far the most common, accounting for 683 transactions (61.1%). This is followed by minority stake investments (16.2%) and institutional buyouts (11.3%). Other deal types include acquisition increases, divestments, share placements, leveraged buyouts, and a small number of specific cases such as stock swaps, demergers, and management participations. The dominance of acquisition-based deals implies that many transactions involved a significant change in ownership or control, a relevant condition for analyzing post-deal outcomes. As will be further discussed in the hypothesis testing, this prevalence of majority acquisitions has direct implications for Hypothesis 3, which investigates whether Family Offices show a stronger preference for minority stakes compared to Private Equity investors.

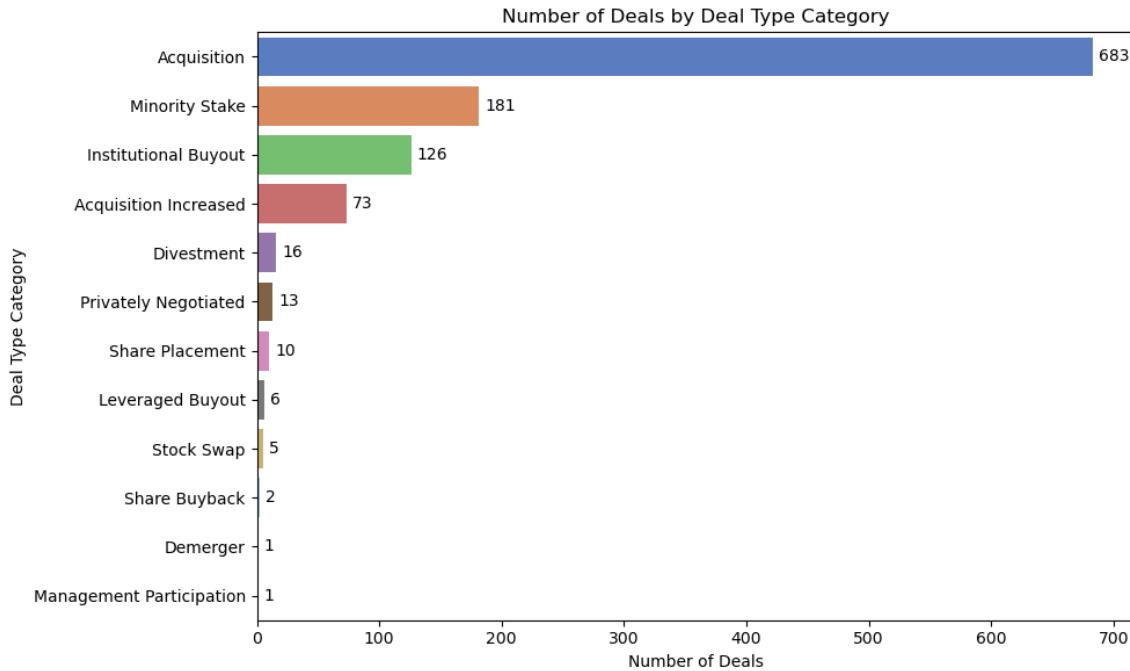


Figure 17: Number of deals by deal type category.

This deal-level overview provides important context for the subsequent analysis. The high proportion of full acquisitions, the timing of deals across years and months, and the presence of both small and large transactions contribute to a heterogeneous sample that allows for comparing different investment strategies and outcomes.

4.1.2. Acquiror Characteristics

An overview of the acquirors involved in the transactions is provided below, with particular attention to their classification and geographical distribution. The goal is to capture the diversity of investor profiles represented in the sample and to highlight the relative prevalence of Private Equity firms, Family Offices, and other types of buyers.

The dataset includes a total of 1117 acquiror entries, each corresponding to a specific deal. While some acquirors appear multiple times because they participated in more than one transaction, these are not duplicates in a strict sense, as each observation refers to a distinct deal, potentially involving different targets and time periods. However, it is also useful to consider the number of unique acquirors (922), as this provides a clearer picture in the visualizations of how many distinct investor entities were active across the entire sample.

The classification of acquirors was structured with a specific focus on identifying Private Equity (PE) funds and Family Offices (FO), as these represent the key investor types at the center of this thesis. All remaining entities that did not fall into either of

these two categories were grouped under the broader label "Other", with a clarifying descriptor in parentheses to indicate their actual nature (e.g., "Other (Corporate)", "Other (Bank)", "Other (Holding)").

The composition of these unique acquirors is illustrated in Figure 18, which breaks them down by investor type. The most representative group is "Other (Corporate)", with 305 unique entities, corresponding to 33.1% of all acquirors. This category includes industrial and service companies pursuing strategic investments. Private Equity (PE) funds are the second most common, with 169 investors (18.3%), followed by "Other (Corporate-FB)", referring to corporates with family ownership, at 138 entities (15.0%).

Family Offices (FO) are divided into two categories: "FO (Co-existing core business)", which refers to offices still connected to the original family business (57 acquirors, 6.2%), and "FO (Financialized family)", which includes more diversified or institutionalized family investors (44 acquirors, 4.8%). Taken together, Family Offices account for around 11% of unique acquirors in the dataset.

Additional categories include holdings, individuals, asset managers, banks, and venture capital funds. A long tail of smaller categories such as club deals, fiduciary structures, and prominent individuals from business families reflects the heterogeneity of the investor landscape.

These distributions confirm the presence of both strategic and financial investors, as well as a non-negligible share of family-related investment structures. The diversity in ownership form, governance structure, and investment mandate among these groups provides a valuable setting for empirical comparison and motivates the typology used throughout the analysis. In the next steps, however, the analysis will focus specifically on transactions involving Private Equity funds and Family Offices, as they are most relevant for this thesis and the hypotheses under study.

While Figure 18 retains the detailed classification of acquirors, this choice was made to ensure transparency in the diversity of entities represented in the dataset. Even though the empirical analysis will concentrate, as mentioned, on Family Offices and Private Equity funds, showing the full range of categories provides useful context and illustrates the heterogeneity of the investment landscape in which these actors operate.

At the same time, it should be noted that several categories in the figure are very small, often representing fewer than ten unique acquirors. In studies where the focus extends beyond FO and PE, these minor groups could reasonably be aggregated into broader clusters to improve clarity and highlight the most relevant investor types. For instance, corporates with different ownership forms, including industrial companies, family-owned corporates, PE-backed corporates, and holdings, could be grouped under "Corporates". Banks, insurance companies, asset managers, and other institutional investors could be merged into "Financial Institutions". Individuals, families, and family-related entities, together with club deals, could be collapsed into

“Individuals/Families”, while venture capital funds and accelerators could form a separate “Investment Funds” category distinct from PE. Fiduciary structures and other residual groups with very few observations could be combined under a single “Other/Residual” label. Such an approach would reduce the “long tail” of scarcely represented investors. For the purposes of this thesis, however, the detailed classification has been retained, as it provides a transparent picture of the dataset’s composition while keeping the empirical focus on the two investor types most relevant to the hypotheses: Family Offices and Private Equity funds.

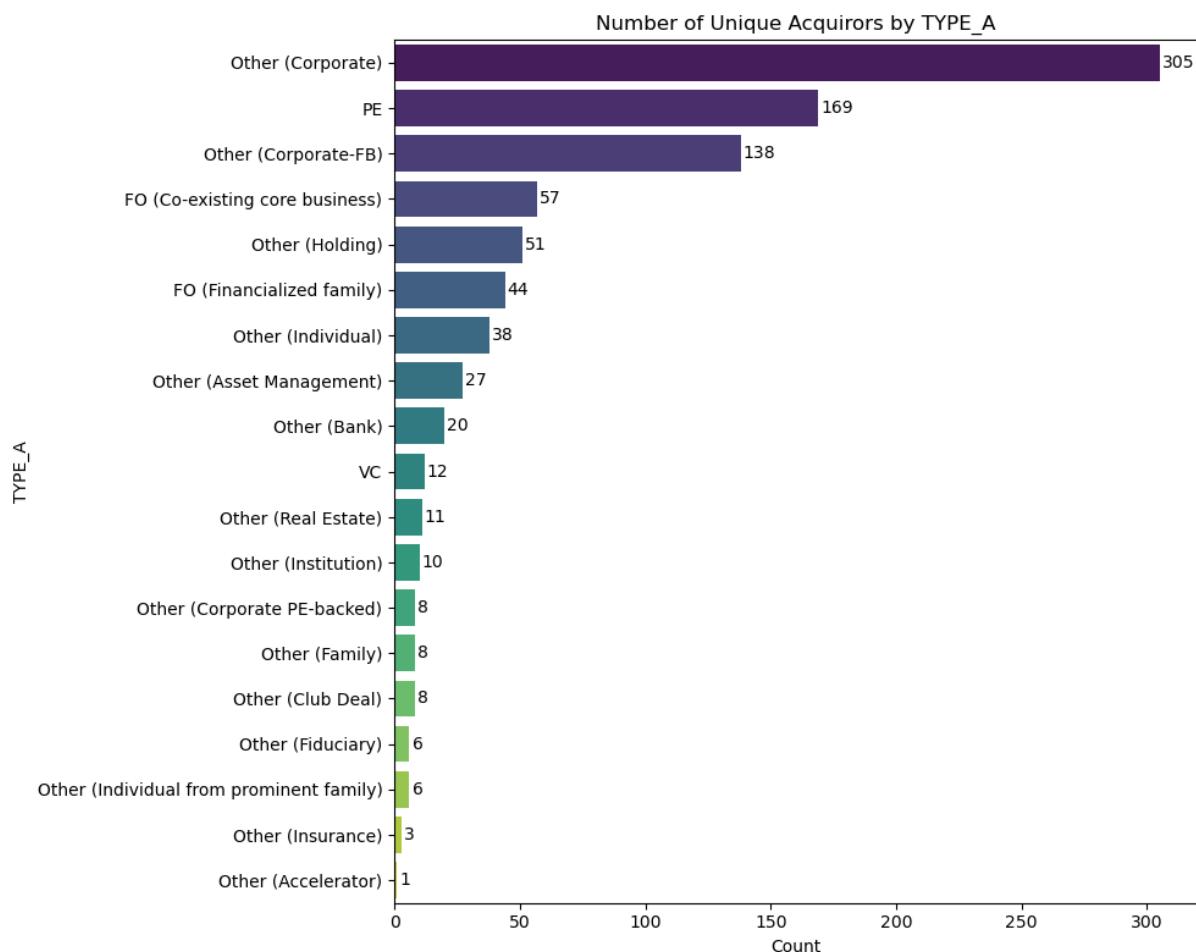


Figure 18: Number of unique acquirors by type.

Figure 19 displays the geographical distribution of unique acquirors based on their country of origin. Most investors are headquartered in Italy, with 444 unique entities, confirming the strong domestic component of the sample. Other countries with significant representation include the United States (79), the United Kingdom (47), France (31), Luxembourg (30), China (22), and Germany (21). Smaller numbers of acquirors are also based in countries such as the Netherlands, Switzerland, Sweden, Japan, and several others across Europe, Asia, and the Americas.

It is important to note that the dataset is composed of deals involving Italian target firms. The strong concentration of Italian acquirors may reflect a higher level of domestic deal activity, rather than a sample bias. At the same time, the presence of cross-border investors, particularly from the US and major European economies, indicates a degree of international interest in the Italian corporate landscape. This dual pattern underscores the relevance of Italy as both a domestic and international arena for corporate transactions.

The classification and geographic analysis of acquirors reveals a complex ecosystem of investors operating across strategic, financial, and family-related logics.

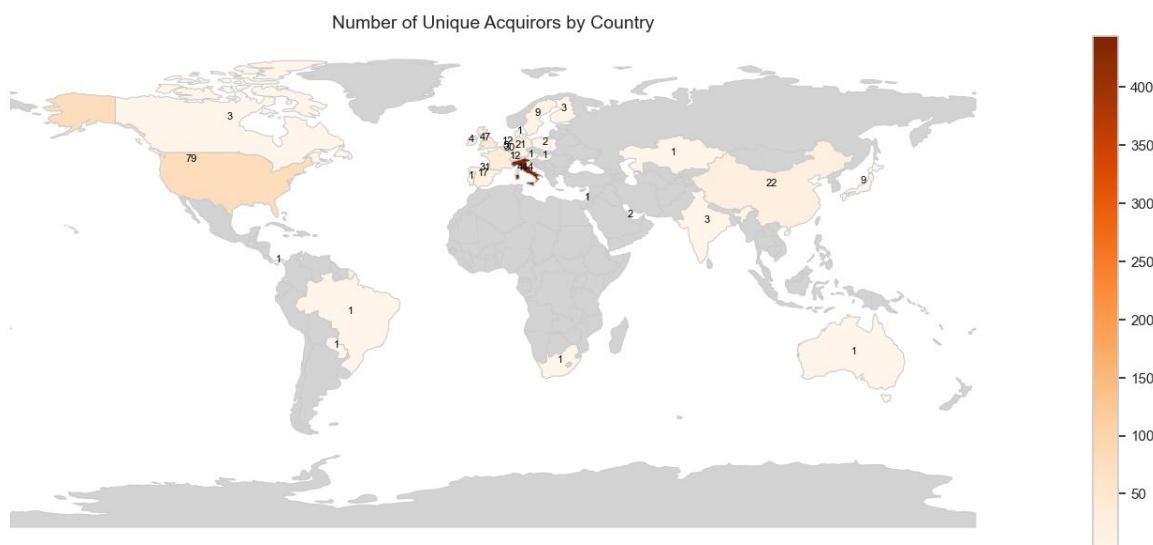


Figure 19: Number of unique acquirors by country.

4.1.3. Target Company Profiles

The analysis of target characteristics begins with an overview of the ownership structure prior to the transaction, a key variable for this research. Within the full sample of 1117 observations, 662 targets (approximately 59.3%) were classified as family-owned businesses, while the remaining 455 (40.7%) were categorized as lone-owned entities, that is, firms without relevant family ownership at the time of the deal. When considering only unique target companies (i.e., excluding repeated transactions involving the same firm), the distribution remains broadly stable: 58.1% family-owned and 41.9% lone-owned. While the unique sample offers a cleaner snapshot of ownership structures and was therefore used for the Exploratory Data Analysis, the full sample was retained for hypothesis testing. This choice reflects the fact that repeated entries correspond to distinct deals, which may differ in timing, buyer type, or transaction features.

This distinction between family-owned and non-family-owned firms is not only descriptive but crucial for the purpose of this thesis, as the research aims to assess whether ownership structure affects transaction patterns and post-deal dynamics. Understanding how different types of firms are targeted, and how they respond to investments, is central to the broader discussion on investor strategies and firm outcomes.

The geographical distribution of target companies is shown in Figure 20. The map on the left displays the number of unique targets by region, while the one on the right zooms in on provinces within Lombardy, the most represented region. As expected, the data confirms a strong northern concentration of deal activity. Lombardy alone accounts for 280 unique targets, followed by Emilia-Romagna (113) and Veneto (89). These patterns mirror the broader economic geography of Italy, where the industrial north remains the country's economic powerhouse.

Looking at the provincial details, Milan stands out with 187 unique targets, far more than any other province. This likely reflects the city's status as Italy's financial and business center, home to many medium and large firms, as well as the Italian headquarters of numerous multinational corporations. The regional concentration of deals may also be influenced by deal origination practices and the density of advisory and investment networks in northern Italy.

Beyond mere economic weight, infrastructure quality, accessibility to capital markets, and proximity to strategic services (legal, financial, technological) likely play a reinforcing role in making certain regions more "investment-prone". Milan's leadership is also consistent with the urban-centric logic of Private Equity and Family Office investments, which often prioritize geographies offering better information flows, reputational signals, and post-deal monitoring capabilities.

The relatively limited presence of targets in southern Italy underlines persistent territorial asymmetries that may influence not only economic performance but also investor visibility and confidence.

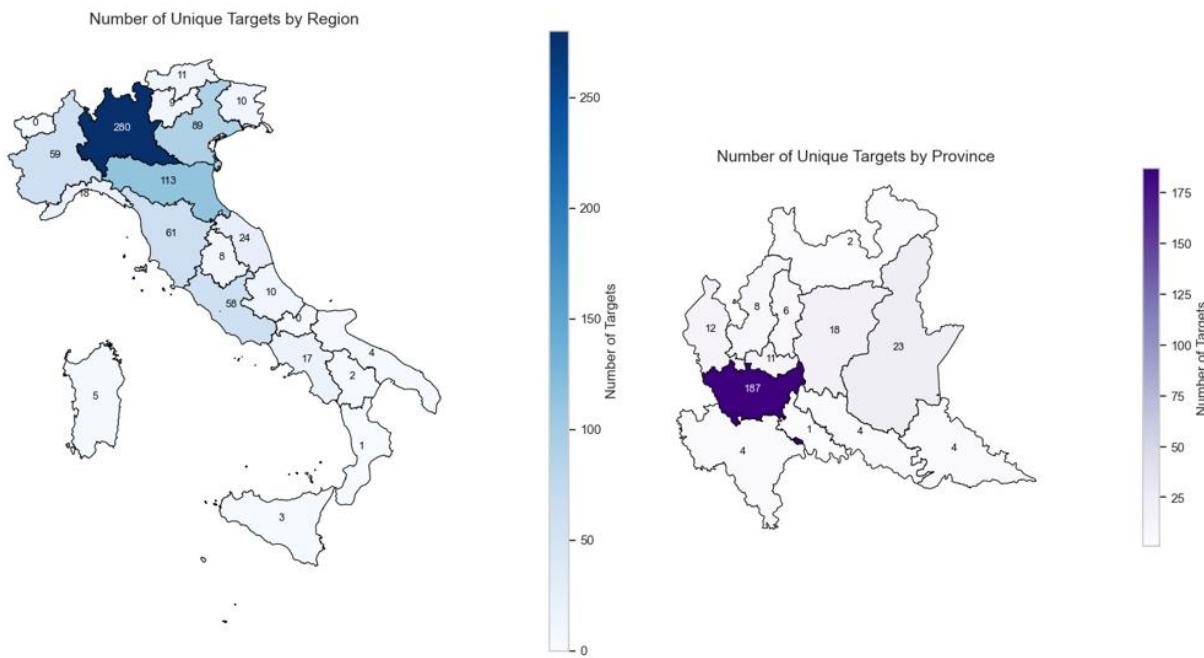


Figure 20: Number of unique targets by region (left) and province (right).

Considering the sector, the distribution of target firms by “*NACE Rev. 2 main section*” is illustrated in Figure 21. The NACE classification, developed by Eurostat, offers a harmonized framework for economic activity coding across Europe and was adopted in this study to ensure broader comparability.

As shown in Figure 21, half of the targets operate in manufacturing (Section C), confirming the sector's strategic relevance for investments. This result is in line with the historical importance of Italy's manufacturing base and the role of these companies in value creation, exports, and employment. The next most represented sectors are professional, scientific and technical activities (8.7%), wholesale and retail trade (7.7%), and information and communication (7.6%), suggesting that investment interest also extends to high-value services and knowledge-intensive sectors.

Interestingly, the relatively low share of deals in financial and insurance activities (4.5%) and real estate (2.0%), sectors often associated with purely financial transactions, may further support the idea that the deals in this dataset are not primarily motivated by speculative or asset-stripping strategies. Instead, the concentration in manufacturing and knowledge-intensive services indicates a strategic approach oriented towards industrial integration, technological capability acquisition, and long-term value creation.

The wide distribution across 20 NACE sections demonstrates sectoral heterogeneity and suggests that the acquirors, especially Family Offices and long-term investors, tend to operate with a diversified investment logic, possibly to spread risk or to leverage synergies across industries.

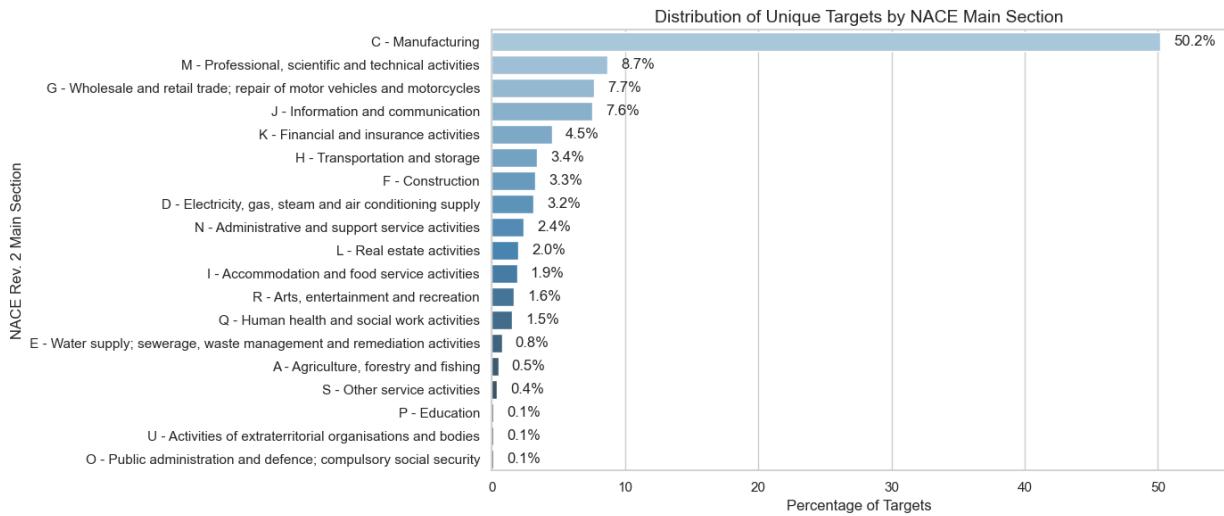


Figure 21: Distribution of unique targets by NACE main sector.

4.2. Sample Selection and Power Analysis

In the Exploratory Data Analysis (EDA), the distribution of acquirors was initially examined using the full dataset, which includes a total of 1117 transactions. As shown in Figure 18, the acquirors involved in these deals belong to a wide range of categories, including Corporates, Private Equity firms, Holdings, Family Offices, Banks, Asset Managers, Venture Capital funds, and other institutional or individual investors.

However, in line with the specific research objective of this thesis, the subsequent analysis is restricted to a clearly defined subset of deals. The analysis includes only those transactions where the acquiror is either a Private Equity firm or a Family Office (further classified into co-existing core business and financialized family models, as seen before).

Applying this filtering criterion reduces the sample to 377 observations, comprising 246 transactions led by PE firms and 131 transactions led by FOs (66 classified as co-existing core business and 65 as financialized family). It is important to clarify that, unlike in the EDA where each acquiror was counted only once, in the analytical sample every single transaction is considered separately. This means that if the same acquiror made multiple investments, each of those deals is included as a separate entry in the dataset. This choice makes sense because each transaction has its own specific characteristics, such as the target company, the deal value, the timing, and the industry involved, all of which are important for the analysis.

To ensure consistency in the financial variables used in the analysis, an additional filtering step was applied to exclude all deals completed in 2013 and 2014. As discussed in the data cleaning section, financial columns referring to the years 2012

and 2013, which represent the $t-1$ reference period for these deals, were removed due to a high percentage of missing values (over 75% across key variables such as ROA, EBITDA, Gearing, and Revenues). Without this information, it would not have been possible to include those transactions in a consistent and robust analytical framework. After this step, the final sample used includes 314 transactions: 208 led by PE firms and 106 by Family Offices, which are equally distributed between the two sub-typologies (Financialized Family and Co-existing Core Business).

To assess whether this sample size is adequate for conducting reliable statistical inference, a post hoc power analysis was carried out using G*Power, a well-established and widely adopted software developed by Faul *et al.* (2007). G*Power is designed to calculate the statistical power of a wide range of tests, including t-tests, F-tests, χ^2 -tests, z-tests, and several exact tests. The tool also enables users to compute effect sizes and visually display the outcomes of power analyses through intuitive graphical outputs.

The test configuration shown in Figure 22 was used to check whether the available sample provides sufficient power to detect meaningful differences between PE and FO acquirors:

- Test family: *t tests*, selected because the objective is to compare the means of two independent groups (PE and FO acquirors), which is a typical application of t tests in inferential statistics. This type of test is suitable for assessing whether there are statistically significant differences in average values of a given variable across two unrelated samples.
- Statistical test: “*Means: Difference between two independent means (two groups)*”, appropriate for comparing group-level differences (e.g., on performance or valuation metrics).
- Type of power analysis: “*Post hoc: Compute achieved power – given α , sample size, and effect size*”, selected because the sample size is fixed, and the aim is to assess the actual power of the analysis.
- Tail(s): *Two*, a two-tailed test was chosen to allow for differences in either direction, which is more conservative unless directional hypotheses are strongly justified.
- Effect size (Cohen’s d): 0.5, this corresponds to a medium effect size as defined by Cohen (1988), a common benchmark in empirical business research.
- Significance level (α): 0.05, the conventional 5% level used in most hypothesis testing frameworks.
- Sample size: $n_1 = 208$ (PE) and $n_2 = 106$ (FO).

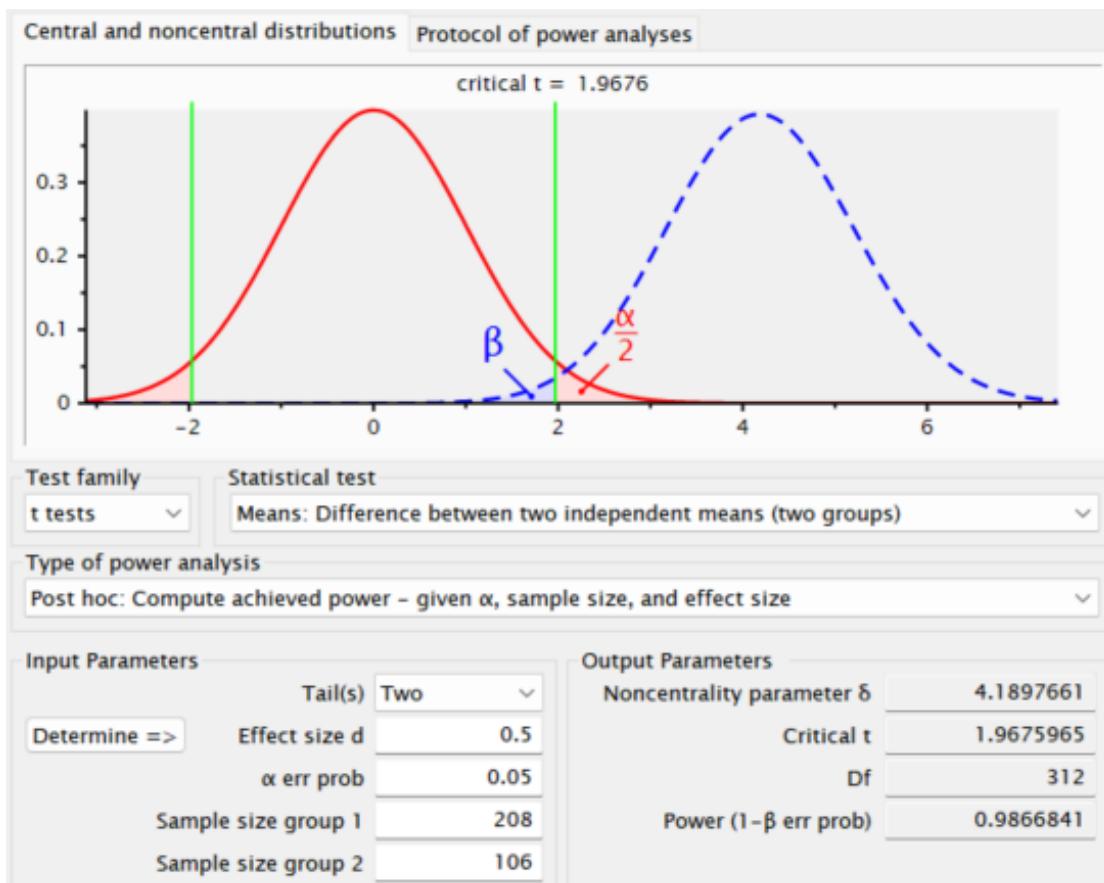


Figure 22: Power Analysis with G*Power.

With these parameters, the power analysis yields a post hoc statistical power of 0.987, which far exceeds the commonly accepted threshold of 0.80. This confirms that the study is well-powered to detect medium-sized differences between PE and FO acquirors and supports the reliability of the subsequent regression analyses.

By incorporating this validation step, the study enhances the credibility and statistical validity of its empirical findings, ensuring that any non-significant results are less likely to stem from insufficient sample size (Type II error). This aligns with best practices in rigorous empirical research, where power analysis is increasingly employed to reinforce the robustness of inferential claims (Faul *et al.*, 2007).

4.3. Variable Construction and Preprocessing

Before implementing the models designed to test hypotheses H1, H2, and H3, an extensive process of variable construction and transformation was conducted. This phase aimed to ensure that the dataset not only reflected the conceptual framework of the thesis but also met the statistical requirements needed for reliable estimation.

4.3.1. Constructing Key Analytical Variables

To test whether Family Offices are more likely to invest in family businesses (H1), whether ownership similarity enhances post-deal performance (H2), and whether Family Offices tend to invest in minority stakes more frequently than Private Equity firms (H3), several new variables were created.

Investor and Target Type (IS_FO and IS_FAMILY_TARGET)

Two binary indicators were defined to distinguish between investor and target types.

- IS_FO equals 1 if the acquiror is a Family Office and 0 if it is a Private Equity firm.
- IS_FAMILY_TARGET equals 1 if the target firm was classified as family-owned before the deal.

These variables directly reflect the dimensions central to all three hypotheses and form the basis of subsequent regression models and statistical tests.

Ownership Similarity (OWN_SIMILARITY)

To capture the degree of alignment between the governance models of the acquiror and the target firm, a new binary variable named OWN_SIMILARITY was created. This variable takes value 1 when the deal reflects a conceptual match in ownership structure, specifically in two cases:

- when a Family Office (FO) invests in a family-owned business.
- when a Private Equity (PE) investor invests in a lone-owned business.

These situations reflect cases where the investor's governance approach is more compatible with the ownership structure of the target. When the investor and the target do not share a similar ownership type (for example, FO acquiring a lone-owned firm or PE acquiring a family-owned firm), the variable takes value 0.

This variable plays a central role in the thesis, particularly in relation to Hypothesis 2, which investigates whether such ownership alignment leads to better post-deal performance. The underlying idea is that when the governance logic of the investor is

more aligned with that of the target, the integration process may be smoother, and performance outcomes more favorable, as seen in the literature review (Bettinazzi *et al.*, 2020).

Looking at the data,

- 150 deals show ownership similarity (OWN_SIMILARITY = 1).
- 164 deals do not (OWN_SIMILARITY = 0).

This almost even split suggests that ownership alignment is not overwhelmingly prevalent. Although some Family Offices invest in family-owned businesses and some PE firms prefer lone-owned targets, there are also a significant number of cases where this alignment does not occur. Among the 164 deals without similarity, it is likely that many involve Family Offices acquiring lone-owned firms or PE investors targeting family businesses. This means that investor choices are probably not based only on having a similar ownership structure. For this reason, it becomes important to study the data more closely, as will be done in the empirical analysis.

Interaction Terms

To further explore whether performance outcomes are driven by specific configurations, interaction terms were computed:

- OWN_SIM_X_FAMILY captures the effect of similarity when the target is a family firm.
- FO_X_FAMILY tests whether the combination of a Family Office and a family-owned target has distinct effects.

These variables help to better understand how certain combinations of investor and target types affect the results, especially when looking at how their effects change when combined.

Sector Dummies

The original sector classification, based on detailed NACE Rev.2 codes, was grouped into five broader macro-sectors: Industrial, Finance, Real Estate, Services, and Other. This aggregation was made to simplify the regression structure and ensure more stable results. Using very detailed sector codes would have introduced too many dummy variables, increasing the risk of overfitting, especially with a limited sample size.

Many specific sectors included only a few observations, making individual effects unreliable and hard to interpret. Grouping them into broader categories helps capture the main economic differences across industries, while keeping the model more manageable.

Control Type Classification (CONTROL_TYPE)

To test Hypothesis H3, which explores whether Family Offices and Private Equity firms differ in the type of control they invest in, each transaction was classified as either a majority or minority deal based on the deal structure.

- Majority deals include full acquisitions, institutional buyouts, leveraged buyouts, and acquisition increases. These deal types are typically associated with the transfer of ownership control and decision-making authority, a characteristic widely documented in the Private Equity literature (Acharya *et al.*, 2013; Kaplan and Stromberg, 2009).
- Minority deals include transaction types such as minority stakes, share placements, stock swaps, and privately negotiated investments. These are generally associated with non-controlling positions and often reflect a more collaborative or long-term approach, especially in the context of Family Office strategies (Block *et al.*, 2019; Rottke and Thiele, 2018).

The resulting dummy is used to assess whether FOs and PEs differ systematically in their control strategies.

4.3.2. Preliminary Variable Checks

Before proceeding with the estimation, some financial and operational variables were examined to assess their distributional properties and overall integrity. Variables were first converted into numeric format, and a series of checks was performed to evaluate the number of negative, zero, and positive values, as well as the shape of each distribution.

This step was essential to determine whether variable transformations were needed. Identifying the presence of negative or zero values was crucial for deciding whether a logarithmic transformation could be applied, as logs are only defined for strictly positive values. The presence of outliers or highly skewed distributions would also justify the use of winsorization or other normalization techniques to reduce distortion in the estimation results.

Visual inspection of the data distributions through histograms revealed strong right-skewness in variables such as "Revenue_t-1", "Employees_t-1", and "Deal Value_D", as well as extreme values in profitability measures like ROA. These patterns are typical in firm-level financial data and suggest that appropriate transformations were necessary to improve interpretability and ensure the robustness of the regression models.

A graphical summary of the initial distributions of the main financial variables is provided below in Figure 23.

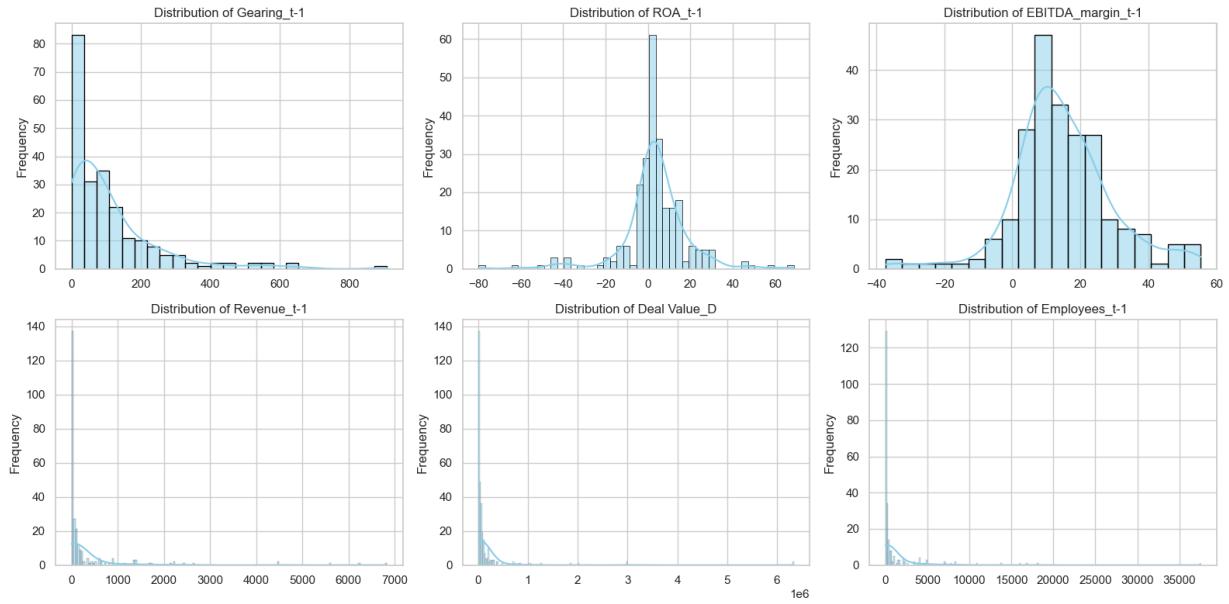


Figure 23: Distribution of key pre-deal financial and operational variables.

4.3.3. Variable Transformation

To address the issues identified above, two types of transformations were applied: logarithmic transformation and winsorization, as mentioned before.

Logarithmic Transformation

Log transformations were applied to Gearing, Revenue, Employees, and Deal Value, which all showed extreme positive skew. Taking the natural logarithm of these variables helps to:

- compress the range of large values
- reduce skewness
- bring the distribution closer to normality

This transformation is commonly used in financial research when dealing with highly dispersed firm-level data (Gujarati and Porter, 2009).

Winsorization

Variables such as ROA, which included both extreme positive and negative values, were treated using asymmetric winsorization. In the case of ROA, the distribution showed a heavier left tail (many low or negative values), so the variable was winsorized at the 5th percentile on the lower end and the 1st percentile on the upper end. This asymmetric choice was based on visual inspection of boxplots and Q-Q plots, which revealed more extreme observations on the negative side.

Winsorization was preferred over trimming to retain all observations while limiting the influence of outliers. The selected thresholds are commonly adopted in applied work, as they strike a balance between reducing distortion and preserving the underlying distribution of the data (Gujarati and Porter, 2009).

The final distributions of the transformed variables are shown in Figure 24. A clear improvement can be observed: the distributions appear more regular and closer to normality, particularly for those variables initially affected by high skewness or extreme values

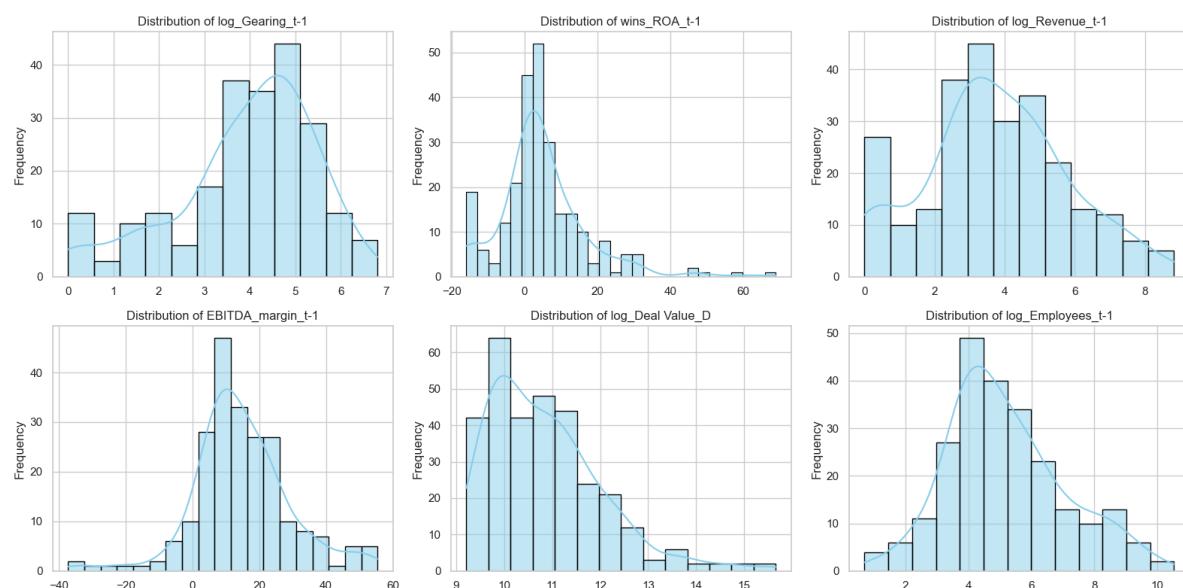


Figure 24: Distribution of transformed financial and operational variables.

4.3.4. Post-Deal Performance

To test Hypothesis H2, which investigates whether ownership similarity between acquiror and target leads to better post-deal outcomes, a new variable called “delta_ROA” was constructed. This metric is defined as the difference between a firm's return on assets (ROA) one year after the deal and its ROA one year before the deal.

ROA is widely adopted in research as a reliable proxy for operating profitability, especially in studies assessing post-M&A performance (e.g. Cumming, Siegel and Wright, 2007). Unlike stock-based measures, ROA captures fundamental changes in internal firm performance, making it more suitable for analyzing deals involving private firms or non-listed targets, which represent a large share of the sample.

On average, firms in the sample experienced a decline in profitability, with mean delta_ROA equal to approximately - 4.9 percentage points. A larger number of firms worsened their performance post-deal (157 observations) compared to those that improved (75 observations). This decline was observed in the short term, specifically within the first year after the deal ($t+1$). This result is in line with previous findings in the M&A literature, where post-deal integration challenges and governance frictions, especially in PE-backed deals, often lead to underperformance in the short term (Haleblian *et al.*, 2009).

Due to the presence of extreme values and asymmetric tails, the distribution of delta_ROA was winsorized at the 2.5th and 97.5th percentiles. This transformation helps reduce the influence of outliers while retaining the entire sample, thus preserving statistical power and allowing for more robust regression estimates.

4.3.5. Variables Considered

To ensure that the regression models were both theoretically grounded and statistically reliable, a careful selection of control variables was carried out. The final specification aimed to balance parsimony with the need to capture the most relevant firm- and deal-level characteristics commonly used in the M&A and corporate performance literature.

Variables Included in the Models

- Gearing (log_Gearing_t-1): used as a proxy for the firm's financial leverage before the investment. It controls for the extent to which firms rely on debt, which may influence their post-deal flexibility and risk exposure.
- Revenue (log_Revenue_t-1): serves as a proxy for firm size, a crucial determinant of both investment attractiveness and post-deal performance.

Larger firms may benefit from economies of scale but could also face integration complexities.

- Macro-Sector Dummies (Macro_Finance, Macro_Industrial, etc.): these variables control for broad industry-specific effects, ensuring that comparisons across deals are not biased by structural differences between sectors (e.g., capital intensity, regulation).
- IS_FAMILY_TARGET and OWN_SIMILARITY: these are key explanatory variables for the hypotheses. The former identifies whether the target was family-owned, while the latter captures alignment between investor and target ownership type.

Variables Included in Specific Models

- IS_FO: added in the logit regressions for Hypothesis 1 to distinguish between Private Equity funds and Family Offices.
- ROA (ROA_t-1): used in the models testing Hypothesis 1 as an additional control for pre-deal profitability. In the models for Hypothesis 2, instead, ROA serves as the dependent variable to capture post-deal performance.

Variables Considered but Not Included

Several additional variables were explored during the initial data inspection and EDA phase, and multiple model specifications were tested including these controls. After extensive trials, they were ultimately excluded to maintain model parsimony and statistical validity, as their inclusion often generated issues such as multicollinearity, redundancy, or model instability. These variables are the following:

- EBITDA Margin (EBITDA_margin_t-1): considered as a measure of operational efficiency but dropped due to instability and redundancy with other profitability proxies.
- Deal Year (Deal_Year_D): this variable was initially tested as a time fixed effect, but several reasons led to its exclusion. Once macro-sector dummies were introduced, deal year added little explanatory power, as broader economic and industry conditions were already being captured. In addition, across all tested specifications, deal year was never statistically significant, and model comparisons (with and without deal year) showed no relevant differences in terms of coefficients or significance of the key variables. Finally, VIF scores were consistently high, indicating multicollinearity problems and reduced model reliability.

- Deal Value (Deal Value_D): although relevant as a measure of transaction size, Deal Value showed strong correlation with firm size proxies like Revenue and Employees. Including all these variables simultaneously resulted in high Variance Inflation Factors (VIFs), indicating multicollinearity and inflated standard errors. To avoid this, Deal Value was excluded in favor of Revenue, which was more consistently available and interpretable.
- Employees (Employees_t-1): the number of employees was initially considered as an alternative measure of firm size, but its correlation with Revenue created redundancy. It also caused instability in the model due to missing values and skewed distribution.
- Geographic Dummies: while regional fixed effects could offer useful information, they were not included to avoid excessive model complexity. The inclusion of macro-sector dummies already captured key structural differences, and adding too many regional dummies would have led to overspecification and reduced degrees of freedom, especially in a dataset with limited observations.

These exclusions were made to achieve a balance between including meaningful controls and maintaining the parsimony, interpretability, and robustness of the regression models.

4.4. Empirical Strategy

This section introduces the empirical strategy adopted to test the main hypotheses. For each hypothesis, a set of models was selected based on the characteristics of the data and the nature of the expected relationships. H1 is addressed using a Chi-squared test and a logistic regression. H2 is examined through a robust regression and a Heckman two-step procedure to deal with outliers and potential selection bias. H3 is tested using a Chi-squared test, given the binary nature of the variables and the structure of the dataset. Each model is introduced in detail in the following subsections, including the rationale behind its use, the variables included, and the assumptions tested to ensure reliable results.

4.4.1. H1 – Investor Preference for Family-Owned Targets

To test the hypothesis that Family Offices are more likely than Private Equity firms to invest in family-owned businesses (H1), two complementary approaches were employed: a Chi-squared test of independence and a logistic regression model.

The first step involved creating a contingency table that cross-tabulated the type of acquiror (Family Office or Private Equity) with the ownership type of the target firm (Family or Lone owner). This table allowed a preliminary comparison of the share of deals in which each investor type targeted family-owned firms.

To statistically assess the relationship between investor type and target ownership, a Chi-squared test of independence was applied. This test evaluates whether two categorical variables are significantly associated, under the null hypothesis (H_0) that they are independent. In this context:

- H_0 : The type of acquiror (FO or PE) is independent of the ownership type of the target (Family or Lone).
- H_1 : There is a significant association between acquiror type and target ownership.

A non-significant result from the test suggests that there is no strong preference pattern, meaning that Family Offices and Private Equity firms are equally likely to invest in either type of business. If the p-value of the Chi-squared test is lower than the chosen significance level α (typically 0.05), the null hypothesis (H_0) is rejected in favor of the alternative, indicating a significant association between investor type and target ownership. If the p-value is greater than α , H_0 cannot be rejected, implying that any observed differences are not statistically significant and may be due to chance.

To further explore this hypothesis while controlling for other firm-level characteristics, a logistic regression model was estimated. The binary dependent variable IS_FAMILY_TARGET equals 1 if the target firm was family-owned before the deal,

and 0 otherwise. The key independent variable was IS_FO, which equals 1 for Family Office deals and 0 for Private Equity.

The logistic model used is defined as follows:

$$\log \left(\frac{\Pr(IS_FAMILY_TARGET_i = 1)}{1 - \Pr(IS_FAMILY_TARGET_i = 1)} \right) = \beta_0 + \beta_1 IS_FO_i + \beta_2 \log(Gearing_{i,t-1}) + \beta_3 \log(Revenue_{i,t-1}) + \beta_4 \text{wins}(ROA_{i,t-1}) + \sum_{s=1}^5 \beta_{4+s} Macro_Sector_{s,i}$$

Where:

- IS_FAMILY_TARGET is the dependent variable (1 if the target was family-owned before the deal, 0 otherwise).
- IS_FO captures the investor identity (1 = Family Office; 0 = Private Equity).
- log (Gearing_t-1): proxy for capital structure,
- log (Revenue_t-1): proxy for firm size,
- wins (ROA_t-1): profitability control (ROA winsorized at the tails).
- Sector dummies: controls for macro-industry fixed effects.

Including these controls allows the model to isolate the specific effect of investor identity (FO vs PE) while accounting for firm-level characteristics that could otherwise confound the results. This approach ensures that any observed relationship between investor type and ownership preference is not driven by differences in firm fundamentals or sector composition. Variables such as Deal Value and Employees were excluded due to multicollinearity concerns, as previously discussed in Section 4.3.5.

Before running the regression, standard checks were performed to assess multicollinearity through the Variance Inflation Factor (VIF) and correlation matrix. All values remained within acceptable thresholds, confirming the model's stability. These diagnostic checks are detailed in the following sections.

4.4.2. H2 – Ownership Similarity and Post-Deal Performance

4.4.2.1. Robust Regression

To test whether ownership similarity between the investor and the target firm is associated with superior post-deal performance (H2), a regression approach was employed. The outcome variable is delta_ROA, which captures the change in Return on Assets (ROA) from one year before to one year after the transaction. As mentioned

in section 4.3. “Variable Construction and Preprocessing”, this metric is widely used in the M&A literature as a proxy for operating performance improvements, as it reflects how efficiently a company converts assets into profit before and after the transaction (Croci and Petmezas, 2015; Acharya *et al.*, 2013).

A standard Ordinary Least Squares (OLS) model was initially estimated as a baseline approach. The results, though, appeared distorted and not fully reliable due to the presence of extreme values in the data, which affected both the coefficient estimates and the residual diagnostics. Although logarithmic transformations and winsorization were applied to improve the distributional properties of the variables, these adjustments did not fully eliminate the impact of outliers. This issue became evident when examining the financial metrics of the target firms: the dataset included some very large companies with high values of ROA, Gearing, and Revenue compared to the rest of the sample. These observations had a strong influence on the regression output, reducing the robustness of the OLS model and making it necessary to adopt a more suitable estimation method.

To mitigate the influence of such outliers on the estimated coefficients, a robust regression was conducted using Tukey’s Biweight function. The same model specification used in the OLS regression was retained, with the same set of explanatory and control variables. The choice to adopt a robust regression was motivated by the need to obtain more reliable coefficient estimates in the presence of influential observations, which could distort the results under standard OLS estimation. In firm-level datasets, where companies can vary substantially in terms of size, profitability, and leverage, robust methods are especially useful to reduce the effect of extreme but valid data points (Rousseeuw and Leroy, 2003).

Unlike OLS, which minimizes the squared residuals and is highly sensitive to large deviations, robust regression reduces the influence of observations with large residuals, resulting in more stable and representative estimates. Tukey’s Biweight was chosen over Huber’s T norm because it provides a stronger correction in the presence of outliers: while Huber’s function gradually limits their influence, Tukey’s function assigns zero weight to extreme values beyond a certain threshold. This feature makes it particularly suitable when dealing with heavy-tailed distributions, as observed not only in delta_ROA, but also in several other financial variables such as Gearing and Revenue, which display significant dispersion despite prior transformations.

The regression model used is:

$$\Delta ROA_i = \beta_0 + \beta_1 OWN_SIMILARITY_i + \beta_2 IS_FAMILY_TARGET_i \\ + \beta_3 \log(Gearing_{t-1,i}) + \beta_4 \log(Revenue_{t-1,i}) + \sum_{s=1}^5 \beta_{4+s} Macro_Sector_{s,i} + \varepsilon_i$$

Where:

- OWN_SIMILARITY is the key independent variable for H2.
- IS_FAMILY_TARGET captures the ownership model of the target firm.
- log_Gearing_t-1 and log_Revenue_t-1 control for pre-deal leverage and firm size.
- Sector dummies capture industry-specific effects.

These control variables were selected based on both theory and prior empirical research. For example, firm size and leverage are known to influence post-acquisition performance, while industry effects help account for structural factors unrelated to investor identity (Halebian *et al.*, 2009).

Multicollinearity among predictors was assessed through both the Variance Inflation Factor (VIF) and the correlation matrix. All VIF values remained within acceptable thresholds (see Table 2 in Section 4.5.), indicating that collinearity among regressors is not a concern. The correlation levels between independent variables were also limited, supporting the robustness of the model.

Robust regression specification allowed for a cleaner estimation of the effect of ownership similarity on performance, reducing the distortion from highly influential observations. The next section presents an alternative model that further addresses possible endogeneity concerns through a Heckman correction approach.

4.4.2.2. Heckman Model

After conducting a robust regression to estimate the impact of ownership similarity on performance, additional attention was devoted to correcting potential selection bias through the implementation of a Heckman two-step model. This approach was motivated by the recognition that the sample of companies invested in by Family Offices (FOs) may not be random. For example, FOs might systematically target firms with specific observable or unobservable characteristics that could also influence post-deal performance. If unaddressed, such non-random selection could distort the estimates and lead to biased conclusions.

Conceptual Motivation and Model Structure

The Heckman correction model, introduced by James Heckman (1979), is designed to correct for selection bias in regression models when the observed sample is not representative of the population of interest. It does so by modeling the selection process in the first stage and incorporating a correction term (known as the Inverse Mills Ratio) into the second-stage regression (Heckman, 1979).

While the classic use of the model distinguishes between treated and untreated groups (e.g., invested in vs. non-invested in firms), in this thesis the correction was adapted to the specific context: firms invested in by Family Offices vs. those invested in by Private Equity. The logic remains similar, correcting for the fact that being invested in by a FO may be influenced by firm characteristics that are also related to the outcome variable (performance).

The Heckman two-step approach is composed of two equations (Heckman, 1979):

1. Selection equation, estimated through a probit model, captures the probability of being included in the observed sample.
2. Outcome equation, estimated through a regression that incorporates the Inverse Mills Ratio to correct for selection bias.

Step 1: Selection Equation (Probit Model – FO vs. PE)

The first step estimates the probability of being invested in by a Family Office (as opposed to a Private Equity firm), based solely on pre-deal characteristics. This stage uses a probit model, which is appropriate for binary outcome variables.

The explanatory variables were selected based on theoretical considerations about what might influence investor preferences at the time of the investment. Specifically, ownership structure (whether the target is family-owned), firm size, financial leverage, and sectoral classification were included, as these factors are commonly cited in the literature as drivers of investor targeting decisions (Kaplan and Stromberg, 2009; Achleitner, Schraml and Tappeiner, 2008).

Before estimating the model, diagnostic checks were performed to ensure that the selected variables did not exhibit problematic multicollinearity. Both correlation matrices and Variance Inflation Factor (VIF) values were reviewed, confirming that the included controls were sufficiently independent to support a stable and interpretable model.

The structure of the probit model is defined as follows:

$$\Pr(FO_i = 1) = \Phi(\beta_0 + \beta_1 IS_FAMILY_TARGET_i + \beta_2 \log(Revenue_{t-1,i}) \\ + \beta_3 \log(Gearing_{t-1,i}) + \sum_{s=1}^5 \beta_{3+s} Macro_Sector_{s,i})$$

Where:

- $\Pr(\text{FO} = 1)$: probability that the acquiror is a Family Office rather than a Private Equity firm.
- $\Phi(\cdot)$: standard normal cumulative distribution function (probit link).
- IS_FAMILY_TARGET : dummy equal to 1 if the target firm is family-owned.
- $\log(\text{Revenue t-1})$: log-transformed revenue of the target one year before the deal, used as a proxy for firm size.
- $\log(\text{Gearing t-1})$: log-transformed financial leverage ratio of the target firm (debt over equity).
- Macro Sectors: set of dummy variables capturing industry effects across broad macro-sectors.
- ε_i : error term.

The inclusion of these variables is justified by the assumption that they may influence the investment preferences of Family Offices. For example, Family Offices may prefer to invest in family-owned firms of a certain size, with moderate leverage, and operating in specific sectors.

After estimating the probit model, the fitted probabilities are used to compute the Inverse Mills Ratio (IMR), defined as:

$$\lambda_i = \frac{\phi(\hat{p}_i)}{\Phi(\hat{p}_i)} \quad \text{if } IS_FO = 1, \quad \text{or} \quad \lambda_i = \frac{-\phi(\hat{p}_i)}{1 - \Phi(\hat{p}_i)} \quad \text{if } IS_FO = 0$$

Where:

- \hat{p}_i is the predicted probability of FO investment.
- ϕ and Φ are the standard normal density and cumulative functions, respectively.

This correction term captures the likelihood of selection into the treatment group, accounting for latent factors influencing the deal type.

The IMR adjusts for the fact that firms invested in by FOs may differ systematically (also in unobservable ways) from those invested in by PEs. By including it in the second-stage regression, the model controls for this potential selection bias, helping to isolate the true effect of ownership similarity on post-deal performance.

Step 2: Outcome Equation (Robust Regression + Mills Ratio)

The second step estimates the effect of ownership similarity on post-deal performance using the variable delta_ROA as the dependent outcome. This equation corresponds to the same robust regression model described in Section 4.4.2.1., with one key addition: the inclusion of the Inverse Mills Ratio (λ_i) as a correction term for potential selection bias.

The regression model is defined as:

$$\Delta ROA_i = \beta_0 + \beta_1 OWN_SIMILARITY_i + \beta_2 IS_FAMILY_TARGET_i \\ + \beta_3 \log(Gearing_{t-1,i}) + \beta_4 \log(Revenue_{t-1,i}) + \sum_{s=1}^5 \beta_{4+s} Macro_Sector_{s,i} + \beta_{10} \lambda_i + \varepsilon_i$$

Although traditional Heckman procedures often use OLS in the second step, it is also appropriate to apply robust regression techniques when the dependent variable exhibits non-normality or is affected by outliers (Heckman, 1979). Given the presence of influential observations in several financial metrics (as discussed earlier), the robust approach using Tukey's Biweight was preferred to ensure more reliable coefficient estimates.

All independent variables are the same as in the original robust regression, allowing for a direct comparison (financial leverage, firm size, ownership structure, and industry effects, which could influence both the investment outcome and post-deal performance). The only difference is the addition of the Mills ratio, which captures the probability of a firm being selected into the FO treatment group based on the first-stage probit model. If the λ_i term is statistically significant, it suggests that unobservable factors influencing investor selection are correlated with the error term in the outcome equation, indicating that selection bias is present and would distort the results if not corrected. By contrast, if the Mills ratio is not significant, it implies that the selection process does not bias the outcome estimates, and the uncorrected regression may still yield valid results (Heckman, 1979).

4.4.3. H3 – Deal Type and Investor Identity

The third hypothesis explores whether Family Offices and Private Equity firms differ in their approach to deal structuring, specifically in terms of acquiring majority versus minority stakes. It suggests that Family Offices are more likely to invest in minority stakes, while Private Equity firms tend to prefer majority control. This distinction, as seen in the literature review, reflects their different strategic orientations, with Family

Offices often adopting a long-term, collaborative perspective, and PE investors typically seeking control to implement value-enhancing changes.

To test this hypothesis, a Chi-squared test of independence was conducted. This non-parametric test is appropriate for evaluating the relationship between two categorical variables: the type of investor (FO vs PE) and the type of deal (majority vs minority transaction). Specifically:

- The null hypothesis (H_0) states that there is no association between the two variables, meaning that the distribution of deal types should be similar across Family Offices and PE firms.
- The alternative hypothesis (H_1) suggests that the distribution of control types is different depending on the investor identity, which would support H3.

The result of the test is interpreted by comparing the p-value with a standard significance level ($\alpha = 0.05$). If the p-value is lower than 0.05, the null hypothesis is rejected, indicating a statistically significant relationship. If the p-value is greater than 0.05, the null hypothesis cannot be rejected, meaning the observed differences in deal types may be due to random variation rather than a systematic pattern.

The test was based on a contingency table counting the number of majority and minority deals for each investor type. To ensure clarity and consistency in the analysis, deals were grouped into majority or minority types based on the nature of the transaction, following the classification created during the data preprocessing phase. Majority deals included full acquisitions, institutional and leveraged buyouts, and acquisition increases. Minority deals included all other partial deals, such as minority stakes, share placements, and private transactions.

Unlike H1, no logistic regression was applied in this case. Although a logit model could have been constructed to predict the likelihood of a minority investment based on investor type and controls, the structure of the dataset suggested limited added value. The number of observations for minority deals was relatively small, leading to an imbalance between majority and minority transactions in the dataset. This structural asymmetry reduced the usefulness of a logistic regression model, as the results would likely have mirrored those already obtained through the Chi-squared test. This, combined with the secondary role of H3 in the broader thesis, led to the decision to rely solely on the Chi-squared test. The result was considered sufficient to evaluate the relationship without introducing unnecessary model complexity.

The approach to H3 focused on a straightforward comparison of categorical outcomes, providing a clear test of whether investor identity is associated with differences in control strategy.

4.5. Estimation Results

This section presents the estimation results of the models described in the previous chapter. Specifically, the outcomes of the Chi-squared test and logistic regression for H1, the robust regression and Heckman selection model for H2, and the Chi-squared test for H3 are reported. Each subsection focuses on a single hypothesis and discusses the statistical outputs and their interpretation.

4.5.1. H1 – Investor Preference for Family-Owned Targets

The contingency table shows that 50% of Family Office deals involved family-owned targets, while the other 50% involved lone-owned businesses. For Private Equity firms, 53.4% of the deals targeted family-owned firms and 46.6% involved lone-owned targets. This suggests that PE firms invested slightly more than FOs in family businesses. The difference is modest but goes against the initial expectation that FOs would show a stronger preference for family firms. The distribution is also shown in Figure 25, where the proportions appear relatively balanced across both investor types. These results offered a preliminary insight into investor preferences and were further tested with statistical methods.

To assess whether this observed difference in ownership preferences is statistically meaningful, a Chi-squared test of independence was conducted. The test produced a Chi-squared statistic of 0.198 and a p-value of 0.656, which is well above the standard significance threshold of 0.05. As a result, the null hypothesis (H_0) of independence between acquiror type and target ownership cannot be rejected. This means that the data does not provide sufficient evidence to support a systematic relationship between investor type (FO vs PE) and the likelihood of acquiring a family-owned firm. In other words, the ownership status of the target appears to be independent of whether the acquiror is a Family Office or a Private Equity firm. While small differences exist in the percentages observed, they are not large enough to be considered statistically significant.

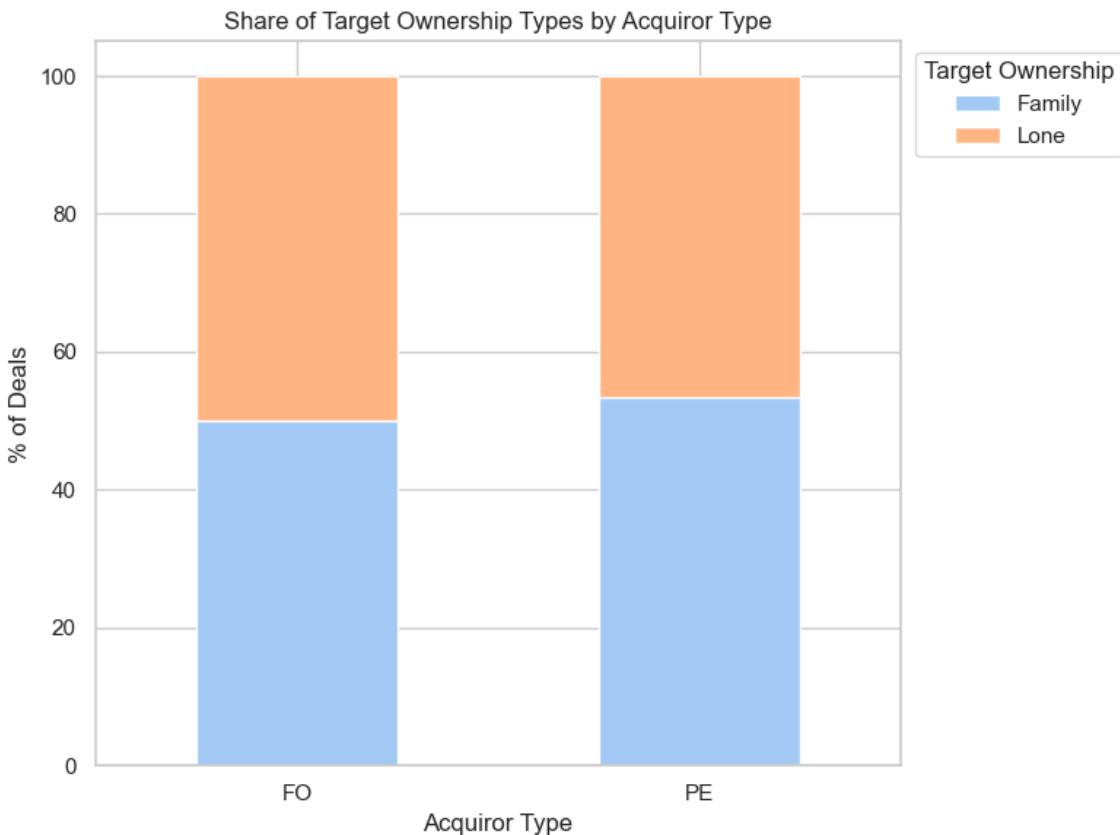


Figure 25: Share of target ownership types by acquiror type.

The logistic regression results confirmed the findings of the Chi-squared test. The coefficient for the main explanatory variable, IS_FO, was negative (-0.458), but not statistically significant ($p = 0.166$). This means that, after controlling for other factors, there is no evidence that Family Offices are more or less likely than Private Equity firms to acquire family-owned targets.

Several control variables were statistically significant and provided additional insights. The sector dummies for Macro_Finance ($p = 0.024$) and Macro_Industrial ($p = 0.032$) showed positive and significant coefficients, suggesting that firms in these sectors are more likely to be family-owned before the investment. The winsorized ROA in the year before the deal was also significant ($p = 0.035$) and negative, indicating that more profitable firms were less likely to be family-owned at the time of the transaction.

Other variables such as log_Gearing, log_Revenue, and the remaining sector dummies were not statistically significant, implying that capital structure, size, and some industry differences did not have a clear impact on ownership status in this context.

The Pseudo R-squared of the model is 0.1168. Although this value might seem relatively low, it is common for logistic regressions with binary outcomes and firm-level data to have modest explanatory power. The value still indicates that the model

captures some relevant variation, especially when paired with the significance of specific control variables. The full summary is reported below in Figure 26.

Logit Regression Results						
Dep. Variable:	IS_FAMILY_TARGET	No. Observations:	224			
Model:	Logit	Df Residuals:	214			
Method:	MLE	Df Model:	9			
Date:	Tue, 05 Aug 2025	Pseudo R-squ.:	0.1168			
Time:	12:54:32	Log-Likelihood:	-135.99			
converged:	True	LL-Null:	-153.98			
Covariance Type:	nonrobust	LLR p-value:	4.004e-05			
	coef	std err	z	P> z	[0.025	0.975]
const	0.1144	0.636	0.180	0.857	-1.132	1.361
IS_FO	-0.4581	0.330	-1.387	0.166	-1.106	0.189
log_Gearing_t-1	-0.0870	0.125	-0.698	0.485	-0.331	0.157
log_Revenue_t-1	0.0942	0.091	1.032	0.302	-0.085	0.273
wins_ROA_t-1	-0.0303	0.014	-2.112	0.035	-0.058	-0.002
Macro_Finance	2.5713	1.142	2.252	0.024	0.333	4.810
Macro_Industrial	0.9000	0.421	2.138	0.032	0.075	1.725
Macro_Real Estate	-0.8238	1.241	-0.664	0.507	-3.256	1.608
Macro_Services	-0.1482	0.510	-0.291	0.771	-1.147	0.851
Macro_Other	-1.0251	0.675	-1.520	0.129	-2.347	0.297

Figure 26: Results of the logistic regression for H1.

Taken together, the results from both the Chi-squared test and the logistic regression indicate that there is no clear preference by Family Offices for acquiring family-owned firms compared to Private Equity. This suggests that, at least in this dataset, ownership similarity does not significantly influence the initial investment decision. As a result, the hypothesis formulated under H1: “*Family Offices are more likely than Private Equity firms to invest in family-owned businesses*” cannot be confirmed. These findings will be further discussed and interpreted in Chapter 5. “Discussion & Implications”, considering the literature and possible explanations.

4.5.2. H2 – Ownership Similarity and Post-Deal Performance

4.5.2.1. Robust Regression

As introduced before, to assess H2, which states that “*Firms backed by investors with high ownership similarity (such as Family Offices acquiring family firms) perform better post-deal than those backed by dissimilar investors (e.g., Private Equity)*”, a robust regression was estimated using Tukey’s Biweight estimator. This approach mitigates the influence of

extreme residuals without removing any observations, making it particularly appropriate for financial data sourced from Orbis, where outliers may reflect real economic heterogeneity rather than data entry errors.

Figure 27 presents the results of the robust regression. The dependent variable is the change in Return on Assets (delta_ROA) following the investment. The main independent variable of interest is OWN_SIMILARITY, which quantifies the similarity between the ownership type of the acquiror and the target.

The estimated coefficient for OWN_SIMILARITY is positive (0.2136), which is directionally consistent with Hypothesis 2 and suggests that higher ownership similarity could be associated with improved post-deal performance. However, the effect is not statistically significant ($p = 0.861$), and the wide confidence interval (-2.185 to +2.613) highlights the high degree of uncertainty. This means that, within this specification, there is no empirical evidence supporting H2. Ownership similarity does not appear to lead to significantly better post-deal performance in the short term, when measured by ROA, although the positive sign remains aligned with the theoretical expectation.

The dummy variable IS_FAMILY_TARGET, which captures whether the invested in firm is family-owned, is not statistically significant (coefficient = 1.3452, $p = 0.291$). This indicates that, on average, family-owned targets do not exhibit systematically better or worse post-deal performance compared to non-family firms. The positive coefficient is directionally consistent with the idea that family firms may benefit from distinctive governance mechanisms or long-term orientation, but the lack of significance and the wide confidence interval suggest that this potential effect cannot be empirically confirmed in the present sample.

When considering firm-level and sectoral controls, certain variables emerge as significant, while others show interesting associations:

- log_Gearing_t-1 (coefficient = 1.1767, $p = 0.012$) is positively and significantly related to post-deal performance, suggesting that firms with higher pre-deal financial gearing tend to improve performance more, potentially due to stronger financial discipline or greater access to financing under the new ownership.
- log_Revenue_t-1 (coefficient = 0.5603, $p = 0.112$) is positively associated with post-deal performance, although the effect is not statistically significant. This result indicates that larger firms may benefit from economies of scale and greater resilience to integration shocks, but these advantages appear to be mitigated by higher organizational complexity, limiting their overall impact.
- Most macro-sector dummies are not statistically significant, indicating that post-deal performance does not systematically differ across industries once firm-level characteristics are controlled for. The only exception is Macro_Real

Estate (coefficient = 9.1274, p = 0.041), which is positively and significantly associated with post-deal performance. This effect may be linked to sector-specific dynamics such as asset revaluation, structural growth, or the presence of acquirors with specialized expertise in real estate.

- The constant is significantly negative (-13.1060, p < 0.001), reflecting a general tendency for ROA to decline post-deal when other variables are held constant, potentially due to short-term restructuring effects or integration challenges.

Robust linear Model Regression Results						
Dep. Variable:	wins_delta_ROA	No. Observations:	210			
Model:	RLM	Df Residuals:	200			
Method:	IRLS	Df Model:	9			
Norm:	TukeyBiweight					
Scale Est.:	mad					
Cov Type:	H1					
Date:	mar, 05 ago 2025					
Time:	13:13:23					
No. Iterations:	50					
	coef	std err	z	P> z	[0.025	0.975]
const	-13.1060	2.380	-5.506	0.000	-17.771	-8.441
OWN_SIMILARITY	0.2136	1.224	0.175	0.861	-2.185	2.613
IS_FAMILY_TARGET	1.3452	1.275	1.055	0.291	-1.154	3.844
log_Gearing_t-1	1.1767	0.469	2.511	0.012	0.258	2.095
log_Revenue_t-1	0.5603	0.352	1.590	0.112	-0.130	1.251
Macro_Finance	3.1511	3.366	0.936	0.349	-3.447	9.749
Macro_Industrial	0.9363	1.750	0.535	0.593	-2.493	4.366
Macro_Real Estate	9.1274	4.472	2.041	0.041	0.362	17.892
Macro_Services	2.5353	2.155	1.176	0.239	-1.689	6.759
Macro_Other	1.2685	2.613	0.485	0.627	-3.853	6.390

Figure 27: Results of Robust Regression for H2.

The robust regression does not support Hypothesis 2, as ownership similarity between acquiror and target does not significantly influence post-deal operating performance. Being a family-owned target also does not appear to systematically affect ROA outcomes. It is worth noting that the estimated coefficients for ownership-related variables are directionally consistent with the theoretical expectation, suggesting that ownership similarity could play a positive role under different conditions or over a longer time horizon. These results refer to the short-term horizon, where performance is likely to be influenced by restructuring processes, integration challenges, and transitional costs that may temporarily depress operating results. In this context, firm-specific financial characteristics and sector affiliation, particularly in real estate,

emerge as more meaningful drivers of post-deal performance. A more detailed interpretation of these short-term dynamics is provided in Chapter 5, "Discussion & Implications". The next section presents the results of the Heckman two-step model, which accounts for potential selection bias in the investment process.

4.5.2.2. Heckman Model

Step 1: Selection Equation (Probit Model – FO vs. PE)

The first stage of the Heckman two-step procedure estimates the probability that a firm is invested in by a Family Office rather than a Private Equity investor. This selection equation is essential for calculating the inverse Mills ratio, which is later used in the second stage to correct for potential selection bias in the outcome regression.

The results of the probit model, shown in Figure 28, indicate which firm characteristics are significantly associated with the likelihood of being backed by a Family Office. The dependent variable is a binary indicator (IS_FO) equal to 1 if the acquiror is a Family Office, and 0 if it is a Private Equity firm.

Among the explanatory variables, only a few coefficients are statistically significant:

- log_Revenue_t-1 has a positive and highly significant effect (coefficient = 0.2084, $p < 0.001$), suggesting that larger target firms are more likely to be invested in by Family Offices. This may reflect the preference of FOs for more established or financially stable businesses. It could also indicate that FOs, which often operate with leaner structures compared to PE funds, may favor larger firms where governance frameworks and reporting standards are already in place, reducing the burden of active monitoring.
- Macro_Industrial has a negative and significant coefficient (coefficient = -0.5696, $p = 0.025$), indicating that companies operating in industrial sectors are less likely to be invested in by Family Offices, possibly due to lower sectoral familiarity or greater capital intensity. An additional explanation may be that industrial firms often require larger-scale operational turnarounds and complex restructuring, which align more closely with the expertise and shorter-term strategies of PE investors rather than the patient capital approach of FOs.

Other variables do not show statistically significant effects in this selection equation:

- IS_FAMILY_TARGET, which captures whether the target firm is family-owned, is not a significant predictor of being invested in by a Family Office ($p = 0.284$). This is particularly relevant, as it suggests that Family Offices do not systematically prefer family-owned firms over others, at least within the observable characteristics included in the model (as already seen in Hypothesis 1).

- log_Gearing_t-1 is also not significant ($p = 0.063$), though it approaches the 10% level, potentially hinting at a weak negative association between leverage and FO investments. This could suggest that FOs are somewhat cautious toward highly leveraged firms, as their investment philosophy tends to prioritize financial stability and long-term capital preservation.
- The remaining macro-sector dummies (Finance, Services, Other) are not statistically significant, suggesting that, apart from the industrial sector, sectoral affiliation does not strongly differentiate investment choices between FOs and PEs in this sample.

The overall model fit is modest, with a pseudo R² of 0.072, but the likelihood ratio test is significant (LLR p-value = 0.0038), indicating that the model provides explanatory power beyond the intercept alone.

Probit Regression Results						
Dep. Variable:	IS_FO	No. Observations:	224			
Model:	Probit	Df Residuals:	216			
Method:	MLE	Df Model:	7			
Date:	mar, 05 ago 2025	Pseudo R-squ.:	0.07224			
Time:	13:14:32	Log-Likelihood:	-134.89			
converged:	True	LL-Null:	-145.40			
Covariance Type:	nonrobust	LLR p-value:	0.003760			
	coef	std err	z	P> z	[0.025	0.975]
const	-0.1720	0.326	-0.527	0.598	-0.812	0.468
IS_FAMILY_TARGET	-0.2055	0.192	-1.072	0.284	-0.581	0.170
log_Revenue_t-1	0.2084	0.054	3.865	0.000	0.103	0.314
log_Gearing_t-1	-0.1321	0.071	-1.859	0.063	-0.271	0.007
Macro_Industrial	-0.5696	0.254	-2.245	0.025	-1.067	-0.072
Macro_Finance	0.3621	0.479	0.756	0.450	-0.577	1.301
Macro_Services	-0.3415	0.313	-1.092	0.275	-0.954	0.272
Macro_Other	-0.3630	0.368	-0.986	0.324	-1.084	0.358

Figure 28: Results of Probit Model – Heckman Step 1 for H2.

Step 2: Outcome Equation (Robust Regression + Mills Ratio)

The second stage of the Heckman procedure includes the inverse Mills ratio from the first-stage probit model to account for potential selection bias in the investor type (Family Office vs. Private Equity). The outcome equation models the change in ROA following the investment, using a robust regression approach to control for outliers and influential observations.

The most notable result is the positive and highly significant coefficient of the Mills ratio (3.1042, $p < 0.001$). This confirms the presence of selection bias in the investment process: the characteristics influencing whether a firm is invested in by a FO or a PE also affect post-deal performance. Firms are not randomly assigned to different investor types and failing to control for this would bias the estimates even when using robust regression models. This highlights the importance of accounting for investor self-selection, as FOs and PEs may systematically target firms with distinct financial and organizational profiles, which in turn shape post-deal outcomes.

Looking at the other results below in Figure 29, the overall pattern of coefficients is consistent with the robust regression discussed in the previous section.

Robust linear Model Regression Results						
	Dep. Variable:	wins_delta_ROA	No. Observations:	210		
Model:		RLM	Df Residuals:	199		
Method:		IRLS	Df Model:	10		
Norm:		TukeyBiweight				
Scale Est.:		mad				
Cov Type:		H1				
Date:		mar, 05 ago 2025				
Time:		13:14:42				
No. Iterations:		42				
	coef	std err	z	P> z	[0.025	0.975]
const	-12.0718	2.375	-5.083	0.000	-16.727	-7.417
OWN_SIMILARITY	-1.4374	1.237	-1.162	0.245	-3.862	0.987
IS_FAMILY_TARGET	0.6424	1.273	0.505	0.614	-1.852	3.137
log_Gearing_t-1	1.5689	0.468	3.351	0.001	0.651	2.487
log_Revenue_t-1	0.3737	0.352	1.063	0.288	-0.315	1.063
Macro_Finance	1.8354	3.360	0.546	0.585	-4.750	8.421
Macro_Industrial	0.4513	1.746	0.258	0.796	-2.972	3.874
Macro_Real Estate	8.1740	4.539	1.801	0.072	-0.723	17.071
Macro_Services	1.8919	2.151	0.879	0.379	-2.325	6.108
Macro_Other	2.0667	2.607	0.793	0.428	-3.043	7.176
mills_ratio	3.1042	0.779	3.984	0.000	1.577	4.631

Figure 29: Results of Robust Regression – Heckman Step 2 for H2.

Specifically:

- The main independent variable of interest, OWN_SIMILARITY, now shows a negative but still non-significant coefficient (-1.4374, $p = 0.245$). This reinforces the lack of support for Hypothesis 2. Interestingly, the coefficient switches from positive in the baseline robust regression to negative after correcting for selection bias with the Mills ratio. This shift suggests that part of the initial

positive association may have been driven by selection effects rather than a genuine performance advantage. Still, the relationship remains statistically weak and imprecise, preventing firm conclusions.

- Likewise, IS_FAMILY_TARGET remains statistically insignificant ($p = 0.614$), suggesting that family-owned targets do not outperform their peers one year after the deal.
- Among the financial controls, log_Gearing_t-1 remains positive and significant ($p = 0.001$), confirming that firms with higher pre-deal leverage tend to perform better after the deal. The stability of this result across model specifications strengthens its credibility and is in line with prior literature linking higher debt levels to stronger post-deal financial discipline and efficiency gains (Kaplan and Stromberg, 2009).
- Macro_Real Estate again shows a large positive coefficient, now borderline significant ($p = 0.072$), pointing to stronger post-deal performance in this sector.
- Other macro-sector controls remain statistically insignificant, as in the previous specification.

The non-significance of OWN_SIMILARITY and IS_FAMILY_TARGET even after correcting for selection bias invites further reflection. One possible explanation lies in the short time horizon used in this analysis: performance is measured only one year after the deal, a period often marked by post-deal integration, restructuring, and uncertainty. During this transition phase, the potential strategic benefits of ownership alignment, such as shared values, long-term orientation, or smoother governance, may not yet materialize. Short-term outcomes may reflect operational disruptions or early-stage investments that have not yet yielded returns.

The insignificance of IS_FAMILY_TARGET suggests that family firms are not inherently more resilient or efficient in the early phase after a change in ownership, particularly when cultural or control adjustments are still underway. At the same time, even if Family Offices follow patient capital strategies, potential advantages may only emerge in the medium to long term, beyond the one-year horizon of this study.

The second stage of the Heckman model confirms that selection bias is present in the sample, validating the use of the two-step procedure. The corrected regression does not support Hypothesis 2, as ownership similarity remains unrelated to short-term performance. These findings point to the complex and time-dependent nature of post-deal outcomes and highlight the importance of considering both firm-specific dynamics and temporal factors in evaluating deal success. It is also possible that the impact of ownership alignment manifests first in qualitative dimensions such as governance stability or cultural fit, which are not captured by ROA, before translating into financial results.

4.5.3. H3 – Deal Type and Investor Identity

To test whether Family Offices are more likely to invest in minority stakes while Private Equity firms tend to prefer majority control, the distribution of deal types by investor identity was analyzed. The results show that 26.9% of Family Office deals involved a minority stake, compared to only 19.8% for Private Equity. Majority acquisitions accounted for 73.1% of FO deals and 80.2% of PE deals. These findings, also visualized in Figure 30, suggest that Family Offices are more inclined to pursue non-controlling positions.

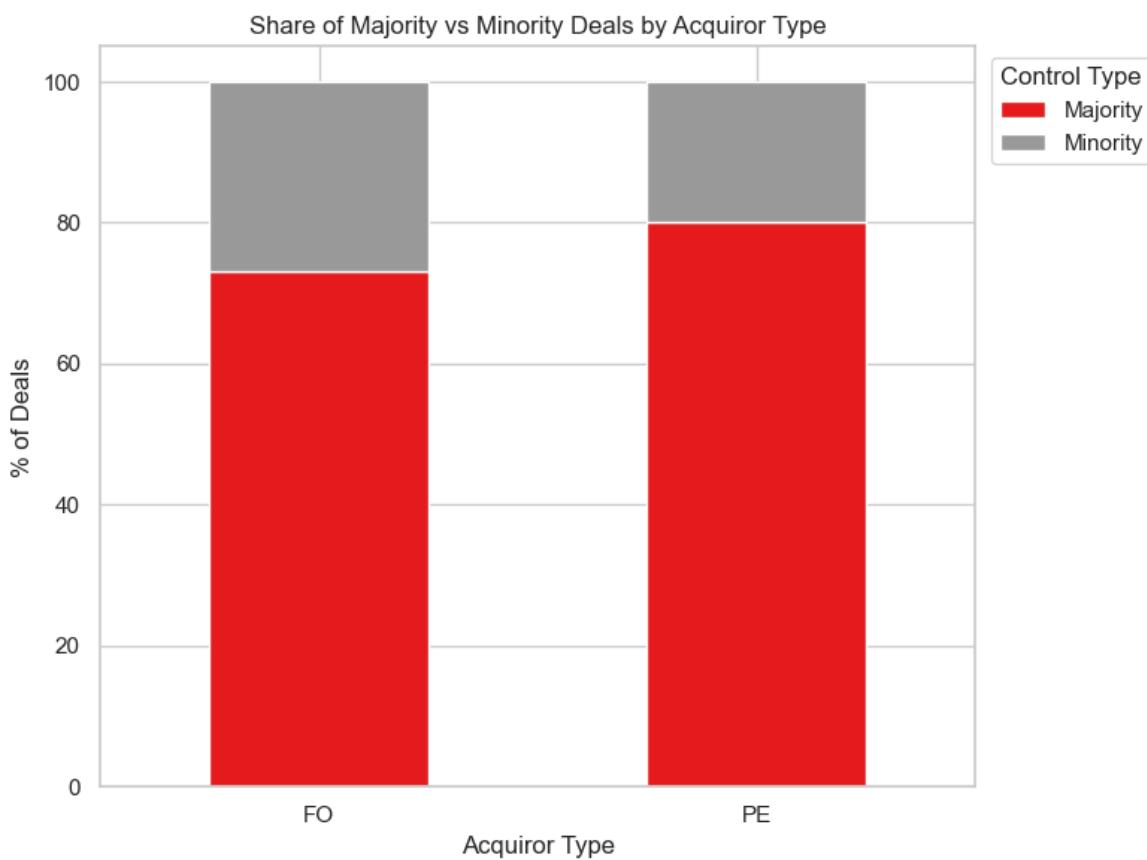


Figure 30: Share of majority vs minority delas by acquiror type.

To assess whether this difference is statistically significant, a Chi-squared test of independence was conducted using raw deal counts. The test yielded a Chi-squared statistic of 1.64 and a p-value of 0.200, which exceeds the conventional 0.05 threshold. As a result, the null hypothesis of independence between investor type and deal type cannot be rejected. In statistical terms, there is no significant evidence of an association between being a Family Office or a Private Equity firm and the likelihood of acquiring a majority or minority stake.

Although the difference is not statistically significant, the direction of the results aligns with expectations from the literature: Family Offices tend to show greater openness to invest in minority positions, while Private Equity firms are typically more focused on majority control. One possible reason for the lack of significance is the structure of the dataset itself. Over 60% of the deals involve majority acquisitions, which limits the variation needed to detect stronger effects. With a more balanced sample in terms of deal type, the hypothesis might have shown clearer statistical support.

Based on these findings, Hypothesis 3: "*Family Offices are more likely than Private Equity firms to engage in minority-type deals, while Private Equity firms more frequently complete majority-type deals*". cannot be confirmed. The descriptive evidence is consistent with theoretical expectations, but the statistical test does not provide sufficient support. This result will be further discussed in Chapter 5.

4.6. Robustness Checks & Model Validation

To ensure the reliability of the empirical findings, several diagnostic checks and validation procedures were conducted for the models used to test each hypothesis. This section presents the robustness checks and model validation steps performed for H1, which relies on a logistic regression model, and for H2, which is tested through both a robust regression and a Heckman two-step selection model. These checks aim to assess issues such as multicollinearity, model fit, and potential selection bias. Since H3 was examined using only a Chi-squared test of independence, no regression-based diagnostics were required in that case.

4.6.1. H1 – Investor Preference for Family-Owned Targets

To ensure the robustness of the logistic regression model used to test H1, several diagnostic checks and validation steps were carried out.

The first step was to examine multicollinearity, as it can inflate standard errors and make it difficult to interpret the effect of each independent variable. This was done using the Variance Inflation Factor (VIF). All variables had VIF values below the commonly accepted threshold of 10, with the highest values observed for log_Gearing_t-1 (7.1) and log_Revenue_t-1 (6.9), both within acceptable limits. These results (Table 1) indicate that multicollinearity is not a serious issue in this model and that the estimates can be considered reliable. This finding was further supported by the correlation matrix of the independent variables (Figure 31), which showed only moderate correlations. The highest correlation observed was between log_Gearing_t-1 and log_Revenue_t-1 (0.50), which is not large enough to be problematic. The low

VIF values and limited correlations between variables confirm that the explanatory variables are not excessively collinear.

Table 1: Variance Inflation Factors (VIF) for the Logistic Regression Model (H1).

Feature	VIF
IS_FO	1.686
log_Gearing_t-1	7.114
log_Revenue_t-1	6.893
wins_ROA_t-1	1.180
Macro_Finance	1.176

Feature	VIF
Macro_Industrial	3.618
Macro_Real Estate	1.136
Macro_Services	1.724
Macro_Other	1.157

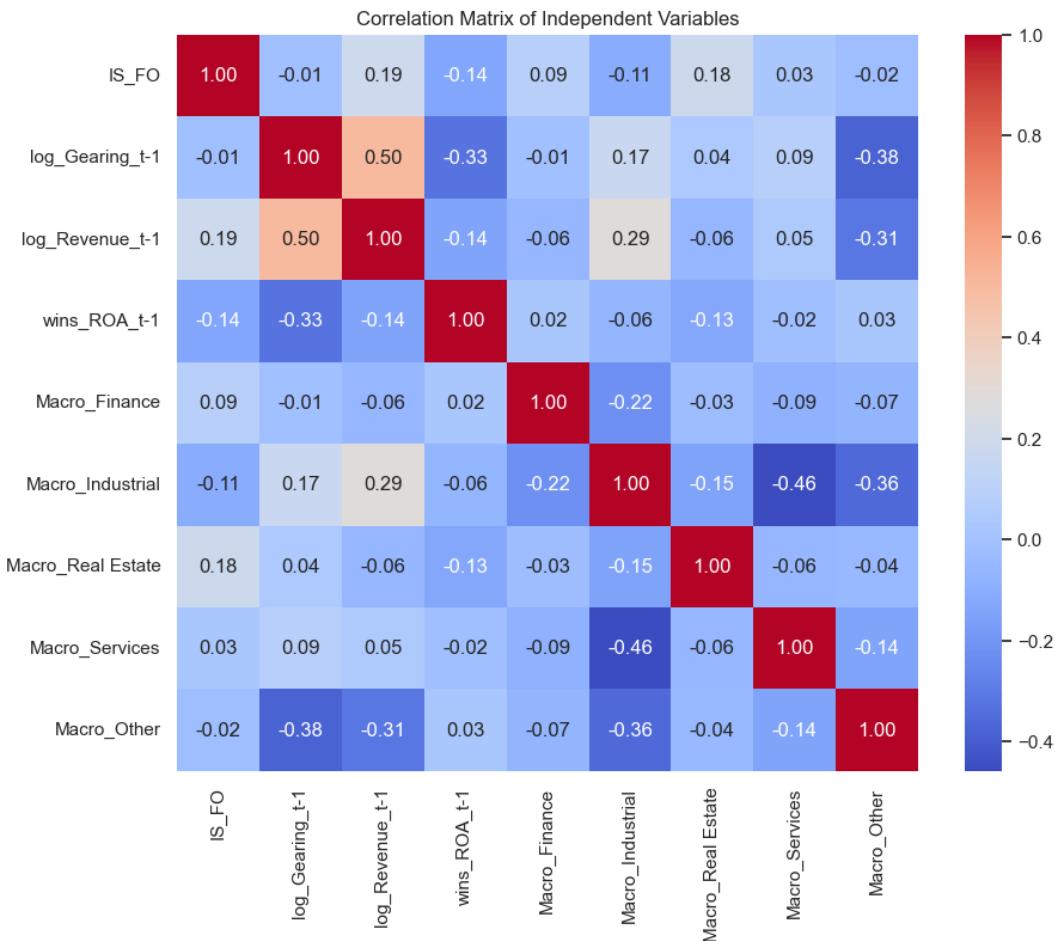


Figure 31: Correlation matrix of explanatory variables (H1).

To evaluate the predictive power of the model, both the Receiver Operating Characteristic (ROC) curve and the Area Under the Curve (AUC) were used. The AUC score was 0.73, which indicates a good ability to distinguish between family-owned and non-family-owned targets. An AUC above 0.7 is generally considered acceptable in classification problems, suggesting that the logistic regression performs reasonably well in capturing meaningful patterns in the data (this indicates a good level of separability and suggests that the model performs better than random guessing.). The ROC curve (Figure 32) further illustrates this result, showing that the model maintains a solid trade-off between true positive and false positive rates.

The model achieved an accuracy of 66.5%, meaning it correctly predicted the target ownership type in about two-thirds of the cases. This reinforces the idea that, despite its simplicity, the model has a fair level of predictive performance and can separate the two classes better than random guessing.

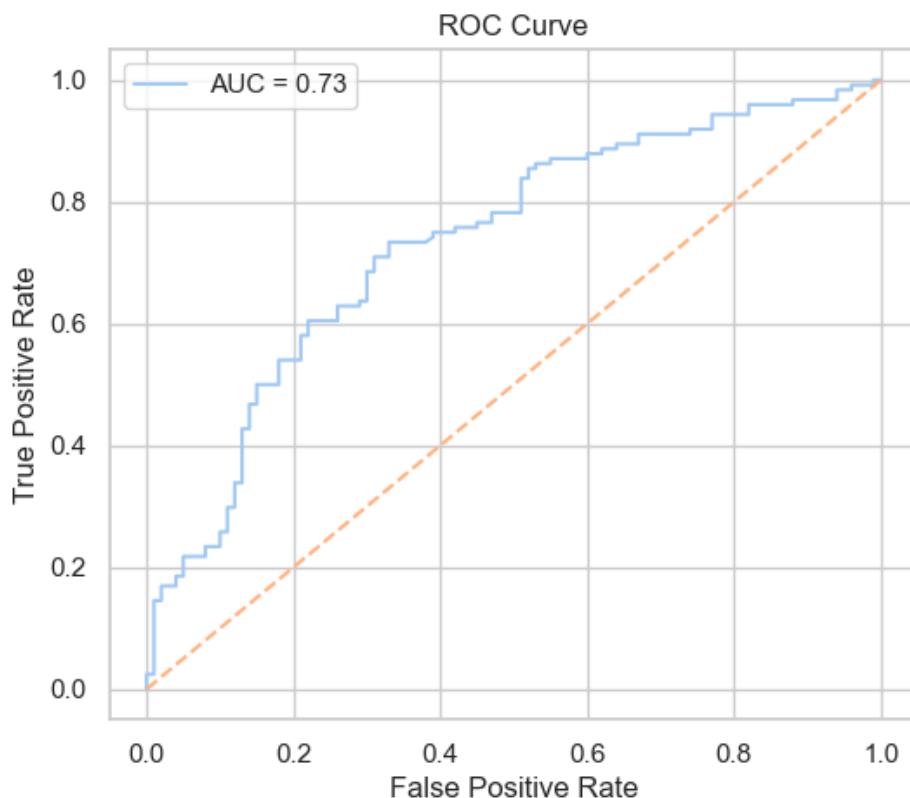


Figure 32: ROC Curve and AUC Score for the logistic regression model (H1).

These robustness checks confirm that the logistic model is statistically reliable, correctly specified, and free from major issues such as multicollinearity or influential outliers. The predictive performance is also solid. Therefore, although the variable IS_FO was not statistically significant, the overall model can be considered valid, and the results can be interpreted with confidence.

4.6.2. H2 – Ownership Similarity and Post-Deal Performance

To ensure the validity of the Heckman model adopted to test H2, a series of robustness checks and diagnostic tests were conducted. The goal was to evaluate whether key assumptions were met and to identify any possible distortions due to multicollinearity or influential observations.

The first check focused on multicollinearity, using both the Variance Inflation Factor (VIF) and the correlation matrix of independent variables, as in the case of the logistic regression. All VIF values, shown in Table 2, were well below the common threshold of 10, with the highest values observed for log_Gearing_t-1 (8.4) and log_Revenue_t-1 (6.7), which are considered acceptable given their theoretical relevance. The correlation matrix (Figure 33) confirms that the variables are not excessively correlated, with the highest correlation (0.49) between log_Gearing_t-1 and log_Revenue_t-1. These results indicate that multicollinearity is not a major concern and that coefficient estimates can be interpreted with confidence.

Table 2: Variance Inflation Factors (VIF) for the Robust Regression Model (H2).

Feature	VIF
OWN_SIMILARITY	1.918
IS_FAMILY_TARGET	2.634
log_Gearing_t-1	8.446
log_Revenue_t-1	6.704
Macro_Finance	1.242

Feature	VIF
Macro_Industrial	4.169
Macro_Real Estate	1.127
Macro_Services	1.684
Macro_Other	1.199
mill_ratio	1.062

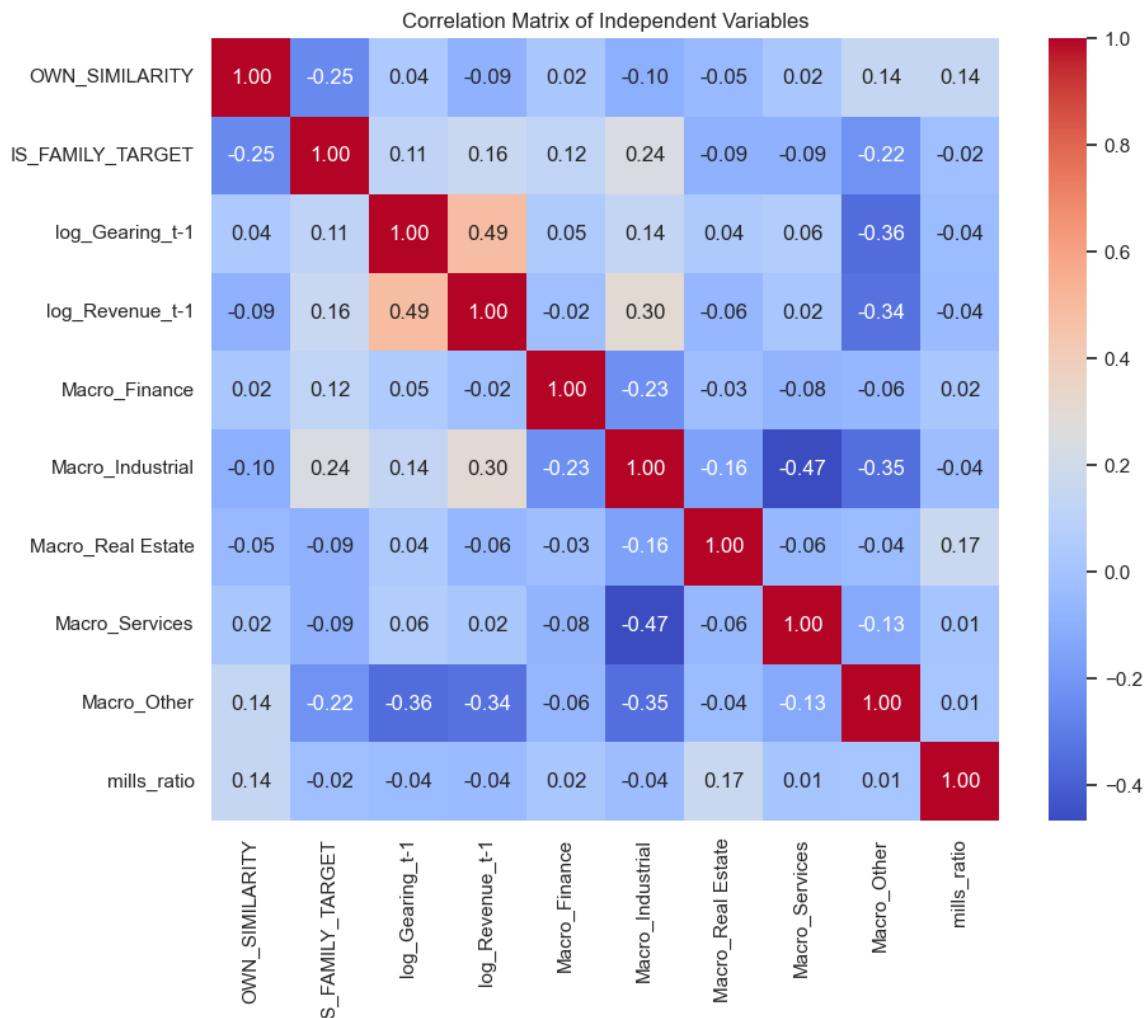


Figure 33: Correlation matrix of explanatory variables (H2).

A second check was carried out by examining the robust weights assigned to each observation. In robust regression, observations with large residuals or high leverage receive lower weights. As shown in Figure 34, most observations have weights close to 1, indicating that they contribute fully to the estimation. A limited number of points, however, are assigned to much lower weights, meaning their influence on the model has been reduced. This confirms that the model successfully limits the impact of outliers without excluding any data from the analysis, ensuring more stable and reliable coefficient estimates.

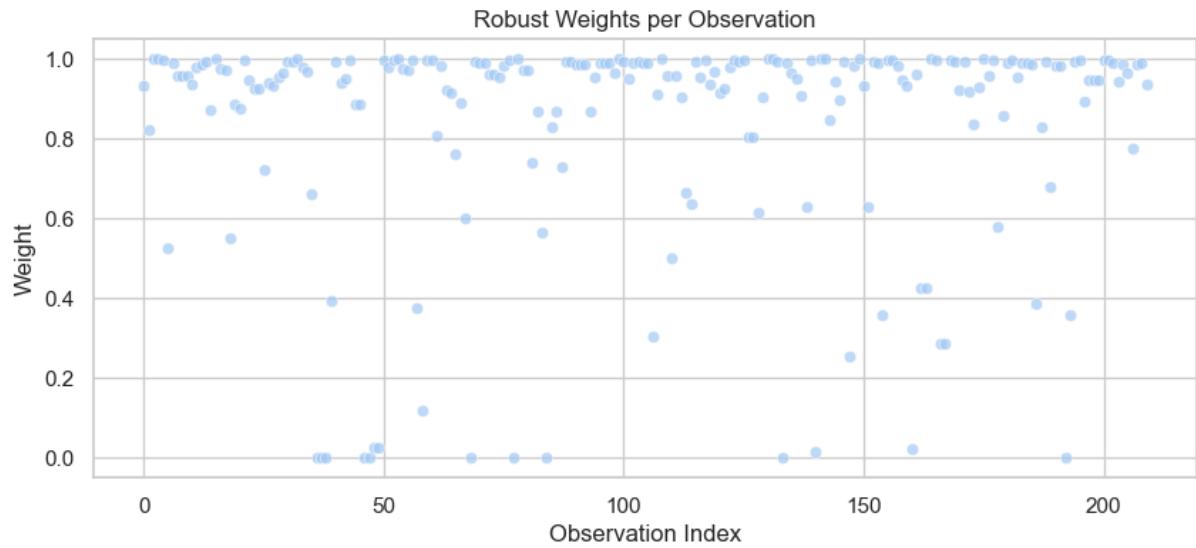


Figure 34: Robust Weights per Observation - Heckman Model.

To explore the residual behavior, several plots were generated, as shown in Figure 35. The Normal Q-Q plot shows moderate deviations from the diagonal at both tails, and the histogram of residuals displays a slightly right-skewed distribution. It is important to note that, in robust regression, normality of residuals is not a required assumption. These plots were produced not to check normality, but to better understand the residual distribution and detect any strong asymmetries or anomalies. The presence of outliers is visible in the graphs; however, rather than being eliminated, their impact was reduced with robust regression, ensuring that the estimates remain reliable despite influential observations.

Residuals vs. fitted values and residuals vs. observation index plots show that residuals are reasonably centered around zero, with no visible patterns suggesting heteroscedasticity or autocorrelation. These visual checks help confirm that the model performs well and is not affected by major violations in residual behavior. The diagnostic tests suggest that the Heckman model provides reliable estimates and is robust to common issues such as outliers and multicollinearity.

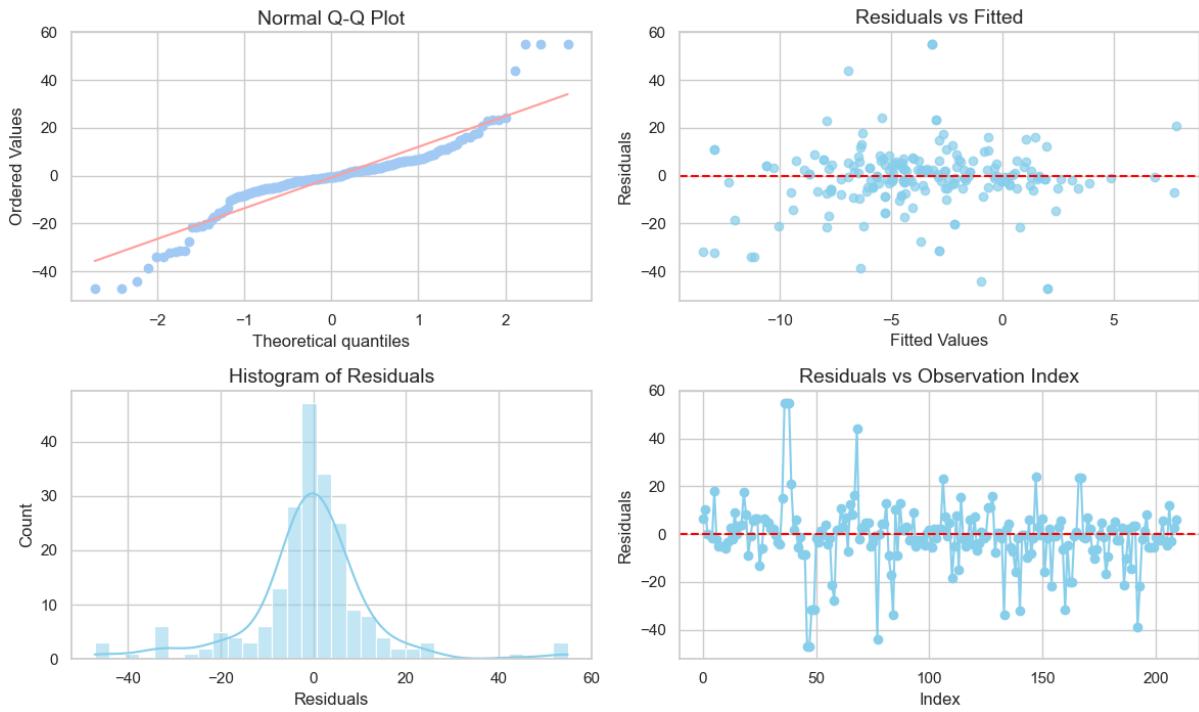


Figure 35: Residual Diagnostics - Heckman Model.

In addition to visual inspection, the Breusch-Pagan test was conducted to assess the presence of heteroscedasticity. The test returned a p-value of 0.957, providing strong support for the null hypothesis (H_0) of constant variance of the residuals. The alternative hypothesis (H_1) would imply heteroscedasticity, meaning that the variance of the residuals changes across observations. Since the p-value is very high, the test indicates that the assumption of homoscedasticity holds, supporting the validity of the regression estimates.

No formal tests of autocorrelation such as ACF and PACF plots were used. This is because the dataset is cross-sectional, meaning that each observation refers to a different firm, and not to repeated measurements over time. Autocorrelation diagnostics like ACF and PACF are designed for time-series data, where the temporal order of observations is relevant. In cross-sectional settings, there is no such structure, so these tests are not appropriate. Instead, as seen, residual plots were used to visually assess whether any patterns or structure appeared in the residuals.

4.7. Additional Analysis: Heterogeneity within Family Offices

Beyond the three main hypotheses, an additional analysis was performed to explore whether Family Offices with different backgrounds behave differently in their investment choices. As outlined in Section 4.1.2., Family Offices in the dataset were divided into two subgroups: (i) financialized FOs, created by entrepreneurial families that have divested their original family firm and now operate primarily as financial investors, and (ii) co-existing core-business FOs, which remain directly linked to an ongoing family enterprise. The analysis aimed to test whether these two subgroups differed in their preference for family-owned versus non-family-owned targets, and in their likelihood of pursuing majority versus minority stakes. These dimensions are aligned with those analyzed in H1 and H3, where Family Offices were compared against Private Equity investors.

The descriptive evidence suggested that financialized FOs may be slightly more inclined towards family-owned targets and minority stakes, while co-existing FOs more frequently pursue non-family firms and majority acquisitions. Yet these differences were not statistically significant. With only 53 observations per group, the post-hoc power analysis reached 0.72, below the conventional 0.80 threshold that is typically considered the minimum acceptable level for reliable inference (Cohen, 1988). This indicates a substantial risk of Type II error, meaning that true differences could exist but were not detected with the available data. Moreover, the classification of Family Offices into the two subgroups is inherently complex. Relying on Orbis shareholder records and publicly available information may not fully capture indirect ownership structures, historical family ties, or cases where the original family business is managed through holding companies. These limitations increase the possibility of misclassifying some investors, especially when the boundary between financialized and core-business Family Offices is blurred.

For these reasons, and since this test is not directly linked to the main hypotheses, the detailed analysis is presented in Appendix A, which covers the classification criteria, methodology, results and discussion. The decision to place the complete results in the appendix reflects both the exploratory nature of the test and the limitations in terms of sample size and statistical power. Future research could build on this preliminary evidence by relying on larger datasets and more refined classifications of Family Offices, potentially drawing on typologies such as those proposed by Schickinger *et al.* (2023), in order to better capture intra-FO heterogeneity.

5 Discussion & Implications

This chapter discusses the main findings of the thesis and their broader implications. It begins by briefly restating the research motivation, the theoretical gaps addressed, the research questions formulated, and the methodological approach adopted throughout the study. Then it provides an in-depth interpretation of the results, relating them to the existing literature and theoretical frameworks. This is followed by a discussion of the theoretical and managerial implications of the findings, offering insights for Family Offices, family-owned businesses, financial intermediaries, and policymakers. The chapter continues with a critical reflection on the methodological approach and openly acknowledges the study's limitations. It concludes by identifying promising directions for future research, derived from both the findings and the constraints of the current analysis.

5.1. Research Motivation and Scope

The objective of this research is to study the role of ownership similarity in private market transactions, with a focus on how it influences investor preferences, deal structures, and post-deal outcomes. The analysis explores whether the alignment between the ownership structure of the investor and that of the target, such as a Family Office acquiring a family firm, affects both investment choices and post-deal performance.

This comparison is built around two investor types that are structurally different but often operate in the same market: Family Offices and Private Equity funds. The concept of ownership similarity has been introduced only recently in the literature, particularly by Bettinazzi *et al.* (2020), and remains relatively unexplored in empirical studies. Its potential influence on investment decisions and post-deal value creation, especially in the context of family firms, has not yet been fully examined.

The motivation for the study comes from the growing presence of Family Offices in the private capital market and the limited empirical research available on their behavior. Unlike Private Equity funds, Family Offices are less regulated, more heterogeneous, and often operate under the radar, making them harder to study. As a result, while Private Equity has been extensively analyzed from both a strategic and financial perspective (Kaplan and Stromberg, 2009), Family Offices remain understudied, especially when it comes to their interaction with family-owned businesses.

To address this gap, a set of hypotheses was developed covering three areas: investor preferences (such as the likelihood of acquiring a family firm), post-deal outcomes (including performance like ROA), and deal characteristics (such as stake size and ownership control).

The empirical analysis is based on a manually constructed dataset of 314 transactions involving either Family Offices or Private Equity funds acquiring Italian companies between 2013 and 2022. Different econometric techniques were applied to test the three hypotheses: Chi-squared tests and a logistic regression for H1 (investor preference for family firms), a robust regression and a two-stage Heckman model for H2 (performance implications of ownership similarity) and a Chi-squared tests for H3 (stake size and control). This design ensures that each hypothesis is assessed with the most suitable analytical framework while accounting for potential selection bias.

5.2. Interpretation of Results

5.2.1. Investor Preferences

H1. Family Offices are more likely than Private Equity firms to invest in family-owned businesses.

The hypothesis was not supported by statistical evidence. The Chi-squared test showed no significant association between investor type and target ownership structure. Additionally, the logistic regression with IS_FAMILY_TARGET as the dependent variable and IS_FO among the predictors indicated that being a Family Office did not significantly increase the likelihood of acquiring a family-owned firm. These findings suggest that Family Offices do not show a systematic preference for family-owned targets compared to Private Equity funds.

Although the effect was not statistically significant, the estimated coefficient for IS_FO was negative (-0.458), corresponding to an odds ratio of about 0.63. This would imply that, if the effect were real, Family Offices would be about 37% less likely than Private Equity funds to acquire family-owned targets. While this direction is opposite to what ownership similarity theory predicts, the lack of statistical support means that this result cannot be interpreted as evidence of a systematic pattern. This opposite sign adds further support to the idea that other factors, such as deal characteristics or organizational professionalization, may override ownership considerations in Family Office investment decisions.

This result therefore contrasts with the assumption derived from the concept of ownership similarity, which implies that investors might be more likely to invest in targets that resemble them in terms of ownership structure and governance logic. Bettinazzi *et al.* (2020) introduced this concept in the context of family business studies, highlighting its potential to explain investment alignment and value creation in M&A.

There are several possible explanations for this unexpected finding:

1. The result may reflect the internal heterogeneity and increasing professionalization of Family Offices. While many Family Offices were originally created to manage private wealth with a long-term, family-centered perspective, recent years have seen the rise of more structured and institutionalized FOs (Wessel *et al.*, 2014). These newer vehicles often hire professional managers, adopt formal investment committees, and follow strategies similar to those of Private Equity funds (Wessel *et al.*, 2014; Rivo-López *et al.*, 2017). As a result, the alignment with other family-owned businesses may no longer be a priority in their investment decisions. Additionally, Schickinger *et al.* (2023) emphasize that FOs cannot be treated as a homogeneous investor category, since their strategies and governance priorities vary widely depending on generational stage, governance professionalization, and the degree of connection with the original family. Some FOs, particularly founder-led or entrepreneurial ones, display strong affinity with family firms and may value relational and identity-based factors when selecting targets. Others, especially later-generation or highly institutionalized FOs, tend to behave in ways similar to Private Equity funds, focusing on financial performance and diversification. When aggregated, these contrasting logics may cancel each other out, making it difficult to detect a systematic preference for family-owned firms in the data. This heterogeneity is increasingly recognized in the literature as a key feature of the Family Office sector and represents a critical driver behind the mixed empirical results observed in this study (Block *et al.*, 2019; Schickinger *et al.*, 2023; Wessel *et al.*, 2014).
2. Deal characteristics such as size, industry, and geography may weigh more heavily than ownership type in the target selection process. Especially in competitive private market transactions, investors often prioritize strategic fit, growth potential, or timing over relational compatibility. Family Offices, like other investors, may choose targets primarily based on opportunity and risk-return profiles rather than ownership identity (Achleitner, Schraml and Tappeiner, 2008). This suggests that in practice FOs may act opportunistically, adapting their strategies to market dynamics and competing on similar grounds as Private Equity funds. Another point to highlight is that many FOs develop sector- or geography-specific expertise, which can further reduce the influence of ownership similarity in their investment decisions (Schickinger *et al.*, 2022).

3. The absence of significance could also be related to limitations in the ownership variable. Although the classification of family firms was based on trusted sources and was already present in the dataset, it remains a binary indicator. This may oversimplify more complex realities. As De Massis *et al.* (2018) emphasize, family firms are highly heterogeneous, and a simple binary classification risks overlooking key differences in governance, generational involvement, and strategic orientation. A firm can be formally family-owned yet have little operational involvement from the family. Other factors, such as generational stage, succession plans, or board composition, may have a stronger influence on whether a Family Office sees the target as strategically similar. These dimensions are not captured in the variable used and could lead to a misalignment between theoretical expectations and empirical results. This limitation echoes a broader issue in family business research, where definitions of family firms vary widely and often fail to capture the heterogeneity in ownership, governance, and family involvement (Astrachan and Shanker, 2003; De Massis *et al.*, 2018).

While the theoretical argument behind ownership similarity remains conceptually valid, its effect on target selection appears less pronounced than expected in the data analyzed. It is possible that ownership similarity matters only under specific conditions, such as when the target is undergoing succession or when the Family Office is more “legacy-oriented”, which could be investigated in future studies through more granular variables or qualitative data. It should also be noted that these conclusions refer to the specific sample of 314 transactions analyzed. Although the power analysis confirmed that the sample size was sufficient for detecting medium effects, it remains relatively modest compared to large-scale international deal datasets, which may limit the detection of more subtle patterns.

5.2.2. Post-Deal Outcomes

H2. Firms backed by investors with high ownership similarity (such as Family Offices investing in family businesses) perform better post-deal than firms backed by investors with low ownership similarity (such as Private Equity firms investing in family businesses).

The results do not support Hypothesis 2. In the robust regression, the coefficient for the variable measuring ownership similarity is positive but not statistically significant. Even after correcting for potential selection bias using the Heckman two-step procedure, the coefficient turns negative and remains non-significant. These findings

suggest that ownership similarity between the acquiror and the target does not significantly influence post-deal performance, at least when measured by the change in ROA one year after the deal.

In the baseline model, the estimated coefficient for OWN_SIMILARITY was 0.214, which would imply a modest positive association with post-deal ROA if the effect were real. As mentioned, after correcting for selection bias through the Heckman selection model, the coefficient turned negative (-1.437) but remained statistically weak and imprecise. This change of sign suggests that the initial positive pattern may have been partly driven by selection effects rather than a genuine performance advantage, but in both cases the estimates lack statistical support and cannot be interpreted as evidence of a systematic effect. While the estimated effect sizes are not large in economic terms, their wide confidence intervals reflect high uncertainty, further supporting the decision to interpret them with caution.

From a theoretical perspective, this result contrasts with the expectation that strategic and cultural alignment between the investor and the target, especially in terms of ownership type, should lead to smoother integration and better operating results. The notion of ownership similarity, introduced by Bettinazzi *et al.* (2020), suggests that investors sharing similar governance logics and long-term perspectives with their targets can more effectively manage the transition phase and generate value. The lack of support for this hypothesis invites further interpretation.

One possible explanation lies in the short time frame considered in the analysis. Performance was measured only one year after the investment. This period is often marked by post-deal restructuring, integration challenges, and temporary disruptions, which may obscure any long-term benefits stemming from strategic alignment. Several studies on post-M&A performance (e.g., Halebian *et al.*, 2009) have shown that the positive effects of compatibility or fit often emerge only in the medium to long term. This is particularly relevant in the case of Family Offices, whose patient-capital orientation may delay the realization of performance gains, making them less visible in short-term accounting measures such as ROA at $t+1$. This interpretation is consistent with Le Breton-Miller and Miller (2006), who argue that family-controlled firms derive competitive advantage from long-term investments in people, relationships, and mission-driven capabilities. Such benefits typically materialize only over extended horizons, reinforcing the idea that ownership similarity effects may be obscured in short-term analyses.

A second explanation concerns the nature of performance itself. In this study, performance is measured exclusively through the change in ROA. While this is a widely accepted proxy (Cumming, Siegel and Wright, 2007), it might not capture other important aspects of value creation such as innovation, strategic repositioning, or ESG-related improvements (Zollo & Meier, 2008). Family Offices may pursue goals beyond short-term profitability, which are harder to quantify in the immediate aftermath of a

transaction. They may emphasize qualitative dimensions of value creation, such as governance stability, intergenerational continuity, or reputation building, that are not reflected in short-term accounting ratios (Neckebruck *et al.*, 2021). As a result, performance advantages linked to ownership similarity could manifest in ways that traditional financial metrics fail to detect.

Third, the role of ownership similarity may depend on deal-specific factors that are not observable in the dataset. These may include the presence of succession plans, the level of post-deal involvement by the previous owners, or the degree of autonomy granted to the invested in firm. If these contextual factors vary widely across deals, they may weaken the average effect of ownership similarity on short-term outcomes.

A related point is that, as mentioned, Family Offices themselves are highly heterogeneous. Differences in governance logics and investment orientation across FO archetypes may dilute any systematic effect of ownership similarity on short-term outcomes. While some FOs adopt patient-capital approaches aligned with family firms, others pursue entrepreneurial or institutionalized strategies that resemble PE funds, making aggregate performance effects harder to detect (Schickinger *et al.*, 2023; Wessel *et al.*, 2014). Similarly, family firms are far from homogeneous. As De Massis *et al.* (2018) emphasize, differences in governance structures, generational involvement, and strategic orientation shape their international and growth behavior, making them more or less compatible with different investor types. This heterogeneity on the target side may further dilute the average effect of ownership similarity observed in short-term post-deal outcomes.

Interestingly, while ownership similarity does not appear to affect post-deal performance, other variables do show significant effects. Pre-deal financial leverage (\log_{10} Gearing_t-1) is positively associated with post-deal performance in both the robust and Heckman-corrected regressions. This may indicate that more financially disciplined firms, or those with better access to capital, are better equipped to manage transitions. Sector affiliation also plays a role, with real estate firms showing superior performance compared to other sectors. These findings highlight the importance of firm-level and industry-specific factors in explaining performance after an investment.

Overall, the results do not support the idea that ownership similarity leads to better short-term outcomes. This does not contradict the theory itself but may indicate that its effects emerge over a longer horizon or depend on contextual elements not captured in this analysis. Future research could extend the time window or explore alternative indicators to better assess the long-term impact of ownership alignment.

5.2.3. Deal Structure

H3. Family Offices are more likely than Private Equity firms to engage in minority-type deals, while Private Equity firms more frequently complete majority-type deals.

The results do not provide statistical support for this hypothesis. Although the share of minority deals is higher for Family Offices (26.9%) than for Private Equity funds (19.8%), the Chi-squared test shows that the difference is not statistically significant ($p = 0.200$). This means that, based on the available data, there is no strong empirical evidence of a systematic association between investor type and ownership stake in the deal.

Despite the lack of significance, the direction of the results remains consistent with what is expected from the literature. Family Offices tend to show greater openness to non-controlling investments, often acting as long-term partners rather than controlling shareholders. In contrast, Private Equity funds are typically oriented toward full control, reflecting their need to implement operational and financial changes quickly and with minimal resistance (Kaplan and Stromberg, 2009; Achleitner, Schraml and Tappeiner, 2008). Even when engaging in minority deals, Private Equity investors tend to impose debt-like equity structures, veto rights, and exit pressures, reflecting their short-to-medium-term orientation. Davis, Cieniewski and Birenbaum (2016) show that such investments are often more costly and rigid than traditional bank financing, whereas Family Offices can sustain minority positions with greater flexibility and long-term commitment. These strategic differences could still influence deal structure even if not statistically evident in this sample.

One possible explanation for the lack of significance lies in the composition of the dataset, which is heavily skewed toward majority acquisitions. With over 60% of all deals classified as majority stakes, the variation across control types is limited, reducing the statistical power to detect meaningful differences. A more balanced distribution between majority and minority deals could reveal stronger associations. This skew in the dataset may therefore mask underlying strategic differences. Prior research has shown that investor preferences for control structures tend to emerge more clearly in samples with greater variation in stake sizes (e.g., Achleitner, Schraml and Tappeiner, 2008). The lack of significance in this study may be more reflective of data limitations than of the absence of a true effect.

Although descriptive evidence supports the theoretical view that Family Offices are more likely to take minority positions, this hypothesis cannot be confirmed statistically. Deal-level characteristics, investor preferences, and sample structure may all influence the observed patterns. Future studies could explore this relationship

using larger and more diversified datasets, possibly including qualitative variables on governance preferences and negotiation dynamics.

5.3. Theoretical Contributions

This thesis makes several contributions to the literature on Family Offices and ownership similarity. First, it offers one of the few quantitative studies in a research area still dominated by qualitative approaches (Hayoz, Ge and De Massis, 2023). Most prior work on Family Offices has relied on interviews, case studies, or conceptual discussions, which, while insightful, have provided limited systematic evidence. By constructing a hand-collected dataset and applying econometric analysis, this study provides a structured and data-driven perspective that complements and extends existing qualitative insights. In doing so, it helps to reduce the current empirical gap and strengthens the foundations of Family Office research.

A second contribution lies in the direct empirical comparison between Family Offices and Private Equity funds. Although many studies describe the strategic and philosophical differences between these two investor types, few have tested such claims with quantitative methods (Schickinger *et al.*, 2022). This thesis provides one of the first structured analyses that evaluates whether Family Offices behave differently from Private Equity investors in practice. By analyzing investor preferences, deal structures, and post-deal outcomes within the same empirical framework, the study generates a more rigorous understanding of how these two categories operate side by side in the private capital market.

Third, the thesis contributes to the theoretical discussion on ownership similarity. The concept, introduced in the family business literature by Bettinazzi *et al.* (2020), has remained underexplored and rarely tested in quantitative settings. By operationalizing ownership similarity and testing its relationship with target selection and post-deal outcomes, this work moves the debate forward. The results, while not statistically significant in the short term, help delineate the boundary conditions of the concept, showing where theoretical expectations align with empirical patterns and where they do not. This contribution is important because theory advances not only when results confirm hypotheses but also when empirical evidence highlights the conditions that shape them.

The fourth contribution is methodological. The thesis develops a rigorous classification procedure for identifying Family Offices, based on multiple sources and cross-validation, which can be replicated in future research. It also integrates a diverse set of statistical techniques, descriptive analysis, logistic regression, robust linear models, and a Heckman two-step correction, to address issues such as selection bias and endogeneity. Together, these methodological innovations demonstrate that the

study of Family Offices can move beyond anecdotal accounts and towards systematic, replicable empirical designs.

Finally, the thesis contributes to a broader understanding of investor heterogeneity. By situating Family Offices within the spectrum of private capital investors, it shows that they cannot be treated as a monolithic category but must be understood in comparison with other institutional investors. The evidence suggests that Family Offices operate at the intersection of entrepreneurial families and Private Equity funds, combining elements of both logics while retaining distinctive features. This perspective enriches the literature not only on Family Offices but also on family business governance and Private Equity, as it highlights the diversity of ownership forms and their implications for investment behavior.

5.4. Practical and Managerial Implications

The results of this study provide useful insights for several stakeholders involved in private capital transactions, particularly those operating in the context of family businesses.

For Family Offices, the findings suggest that investing in family-owned companies does not automatically lead to better short-term performance. This highlights the importance of setting realistic expectations in the early post-deal phase. While ownership similarity may offer long-term benefits, such as cultural fit or smoother governance, its impact might take time to emerge. Family Offices with a long-term mindset may find it helpful to combine ownership alignment with gradual integration strategies and active post-deal support.

Private Equity funds can also benefit from these insights. The absence of clear performance advantages associated with ownership similarity may reinforce their existing approach, which tends to prioritize operational control and short-term value creation. The results also show that sector characteristics and pre-deal financial structure matter. This suggests that focusing on fundamentals may be more effective than relying on assumptions about alignment.

For family businesses considering external investors, the study provides a more balanced view of potential outcomes. While Family Offices are often seen as their natural counterpart due to shared values, this alignment does not guarantee superior performance in the immediate future (short-term). Decision-makers in family firms should assess potential investors not only in terms of cultural proximity, but also based on their strategic capabilities, resources, and post-deal involvement.

Advisors and consultants working on transactions involving family firms may consider taking a broader view when assessing investor–target compatibility. While ownership similarity can be an important factor, especially in terms of cultural or

governance alignment, the evidence suggests that its short-term impact on performance is not always clear. It could be helpful to also evaluate other aspects of fit, such as industry expertise, deal structure, and the expected level of post-deal involvement. In this respect, recognizing the heterogeneity of Family Offices can be particularly useful. Advisors should not only assess cultural or governance alignment in general terms but also distinguish between more institutionalized FOs and those that remain closer to the family business legacy. Such segmentation may provide a more accurate evaluation of strategic fit and expected post-deal dynamics.

5.5. Limitations

Despite the structured and rigorous approach adopted throughout the research, several limitations must be considered when interpreting the results.

The first set of limitations concerns the identification and classification of investor types, particularly Family Offices. Due to the lack of a clear and universally accepted definition, especially in the Italian context, there is no official registry or legal framework that clearly distinguishes Family Offices from other categories of investors. The classification used in this study was based on indirect indicators such as ownership structure, declared investment strategy, family connections, and available public information. Although the process followed consistent criteria, some degree of subjectivity was unavoidable, particularly in cases where transparency was limited or investor identity was ambiguous. While the sources consulted were reliable, including Orbis, Zephyr, corporate websites, and financial news platforms, the available information was not always complete or fully updated. Some investors operate through hybrid structures that combine elements of both Family Office and Private Equity models, making the distinction more difficult. Since the classification process was manual, there is also a small risk of human error or inconsistent interpretation, despite efforts to standardize the methodology. These issues do not undermine the dataset but should be considered when evaluating the findings, especially for complex or borderline cases.

Another challenge regards the assumption of homogeneity among Family Offices. In practice, FOs display substantial diversity in their structures, goals, and governance logics (Schickinger *et al.*, 2023; Wessel *et al.*, 2014; Block *et al.*, 2019). Some prioritize wealth preservation and legacy continuity, while others resemble Private Equity funds in their professionalization and pursuit of financial returns. Treating them as a single investor category may have obscured important differences in behavior and outcomes, potentially contributing to the absence of significant effects in this study.

A further limitation relates to the geographical focus of the analysis. All target companies in the sample are based in Italy. While this choice ensures consistency

across transactions and avoids cross-country differences in regulation or reporting, it also limits the generalizability of the results. Acquirors, on the other hand, come from a wide range of countries, which introduces some heterogeneity in strategic behavior that could not be fully captured in the models.

As previously noted, the structure of the dataset also presents a degree of imbalance in deal types. Most of the transactions involve majority acquisitions, reducing the variation needed to statistically test the differences between control strategies. This may explain why the hypothesis regarding Family Offices' preference for minority stakes could not be confirmed, even though the descriptive evidence pointed in that direction.

Regarding the variables used, the analysis is based mainly on observable financial and structural characteristics. While these are essential in quantitative research, they do not account for qualitative dimensions such as governance preferences, cultural alignment, or the role of the founding family after the deal. These factors could influence both investor decisions and post-deal outcomes but remain difficult to include in standard regression models. In particular, the absence of measures capturing socioemotional wealth (SEW) or non-financial objectives may reduce the explanatory power of ownership similarity, since Family Offices and family firms often pursue goals related to legacy, continuity, and reputation alongside financial returns (Rivo-López *et al.*, 2017).

Finally, post-deal performance was measured over a one-year period. This short time frame was chosen to preserve a sufficiently large and balanced sample but may not be long enough to detect meaningful improvements, especially in cases where ownership similarity leads to gradual changes. The early post-deal phase is often characterized by adjustment and transition, which can temporarily affect performance indicators. Missing data for later years limited the feasibility of extending the time horizon, even though medium- to long-term effects might be more aligned with the patient-capital orientation of Family Offices.

5.6. Directions for Future Research

Several potential research directions emerge from the results and limitations of this study. The most immediate opportunity lies in extending the analysis over a longer time horizon. Since post-deal performance was measured only one year after the investment, the results capture an initial phase often marked by uncertainty, adaptation, and transition. Future studies could track performance over two to five years, when strategic changes and integration processes are more likely to produce visible effects. This longer perspective might substantially reshape the interpretation

of what drives value creation after an investment, potentially revealing a stronger and more persistent role for ownership similarity than what emerges in the short term.

A promising path involves the inclusion of qualitative or semi-structured data. Aspects such as cultural fit, governance preferences, and the ongoing involvement of the founding family are difficult to capture using standard financial variables but may play an important role in shaping both investor choices and post-deal outcomes. Interviews, case studies, or proprietary survey data could help enrich the understanding of investor–target dynamics in this context. Mixed-method approaches could also overcome the limitations of binary classifications by incorporating dimensions such as succession stage, socioemotional wealth preservation, or reputation concerns, which are often central in family-related investments.

Another avenue for future research lies in differentiating among types of Family Offices rather than treating them as a homogeneous group. Recent work shows that FO behavior depends strongly on generational stage, governance professionalization, and ties to the original family firm (Schickinger *et al.*, 2023; Wessel *et al.*, 2014). Segmenting FOs into archetypes, such as Preserver, Optimizer, Entrepreneurial Nucleus, and Founder SFOs, could reveal more nuanced patterns in investment preferences and post-deal performance. This line of inquiry would allow a more precise assessment of whether ownership similarity matters more for certain types of FOs than for others.

Further research could also benefit from cross-country comparisons. While this study focused on Italian target firms, applying the same framework in other institutional settings could reveal whether the role of Family Offices and the effects of ownership similarity vary across legal, cultural, or market environments. Given the unusually high prevalence of family-owned firms in Italy, extending the analysis to countries with different ownership landscapes would provide a valuable benchmark and test the generalizability of the findings.

Together, these directions highlight the need for a more comprehensive research agenda that integrates financial, organizational, and contextual dimensions to fully assess how Family Offices and Private Equity shape firm trajectories in private capital markets.

6 Conclusion

This thesis aimed to contribute to the understanding of how Family Offices operate as investors in the private capital market, and how their behavior compares to that of Private Equity funds. The analysis focused on the role of ownership similarity between acquiror and target, a concept still relatively new in academic research and rarely tested in quantitative settings.

The motivation for this study comes from the growing relevance of Family Offices, both in terms of assets managed and number of deals. Despite this trend, research on Family Offices remains limited, especially in Europe, and mostly based on qualitative methods. In this context, the thesis provides one of the few structured and data-driven contributions to the topic, with a specific focus on transactions involving family and non-family firms.

An important part of the contribution lies in the manual construction of the dataset, which involved identifying, classifying, and matching information on both target companies and investors. In a field where public data are scarce and definitions are ambiguous, the ability to map and organize a consistent set of deals becomes valuable not only for the analysis itself, but also as a basis for future research. This process required cross-referencing multiple sources, applying consistent rules, and handling uncertainty with transparency, efforts that reflect the complexity of studying Family Offices in a rigorous way.

Three hypotheses were tested, exploring investor preferences, post-deal outcomes, and deal structure. While the direction of the results was often in line with theoretical expectations, the statistical evidence was generally not strong enough to confirm the hypotheses. Ownership similarity did not significantly affect target selection or short-term post-deal performance. Similarly, Family Offices appeared more open to minority stakes than Private Equity funds, but the difference was not statistically significant, partly due to the imbalance in deal types across the sample.

These results do not reject the underlying theories but suggest that certain dynamics may only become visible over a longer time horizon or under specific conditions. The early post-deal period is often marked by integration efforts and structural adjustments, which may delay the positive effects of alignment or strategic fit. This reinforces the idea that the true distinctiveness of Family Offices may lie in their patient-capital orientation, which requires multi-year horizons to be properly assessed. Ownership similarity could still play an important role, especially when viewed through a multi-year lens or with a broader set of outcome variables. A further boundary condition emerging from this study is the internal heterogeneity of Family Offices. Aggregating founder-led, entrepreneurial, and highly professionalized

vehicles into a single category is likely to attenuate average effects; as discussed in Section 5.2, segmenting FOs is crucial when assessing alignment and expected post-deal dynamics.

Beyond its theoretical relevance, the study also offers practical insights. For Family Offices, the findings highlight the importance of professionalization, especially when acting as lead investors in complex deals. For family-owned businesses, the results provide a more nuanced perspective on choosing the right investor, emphasizing the need to look beyond perceived alignment and consider broader strategic capabilities. For advisors and policymakers, the work offers a data-driven basis to better understand the evolving role of Family Offices and to design more targeted support systems for this investor class. The absence of a clear regulatory framework for Family Offices, particularly in Italy, also highlights the need for policymakers to improve transparency and standardization, which would benefit both practitioners and researchers.

The phenomenon of Family Offices is expected to keep growing, both in market size and in academic attention. For this growth to translate into broader knowledge and better practices, future research will need to expand the available data, explore different geographies, and incorporate both quantitative and qualitative approaches. Replication and extension of this analysis, particularly over longer timeframes, could help clarify the true impact of ownership similarity and investor identity in private market transactions.

Future work could also benefit from exploring the perspective of target firms themselves. Understanding how family businesses perceive different types of investors, and how they evaluate alignment beyond financial terms, may provide additional insight into the dynamics of investor–target compatibility.

Ultimately, this thesis highlights that Family Offices are not merely an emerging investor category, but a complex and evolving phenomenon whose impact on private capital markets will require sustained scholarly and practical attention in the years to come.

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- Family office investments:

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A Appendix A

A.1. Additional Analysis: Heterogeneity within Family Offices

This appendix presents additional analyses focusing on the heterogeneity within Family Offices. These tests are not directly linked to the three main hypotheses of the study but aim to offer a preliminary view on potential differences between subgroups of family investors. Given the limited sample size and classification challenges, the results should be interpreted with caution and considered as descriptive evidence rather than conclusive findings. The analysis proceeds as follows: Section A.1.1. introduces the rationale and classification criteria used to distinguish between financialized and co-existing core-business Family Offices; Section A.1.2. outlines the methodology applied, replicating the empirical design of the main hypotheses; Section A.1.3. reports the results of both descriptive and inferential tests; Section A.1.4. discusses the implications and limitations of the findings; and Section A.1.5. concludes by highlighting directions for future research.

A.1.1. Introduction to the Analysis

While the main body of the thesis treated Family Offices (FOs) as a homogeneous investor category, prior literature has emphasized that significant heterogeneity may exist within this group. Schickinger *et al.* (2023) and Wessel *et al.* (2014) argue that family investors can follow different strategic logics depending on whether they remain tied to their original operating family business or evolve into more financialized investment vehicles. Building on these insights, this analysis distinguishes between (i) *financialized Family Offices*, defined as entities created by entrepreneurial families that have divested their original family firm and now operate primarily as financial investors, and (ii) *co-existing core-business Family Offices*, which remain directly linked to an ongoing family enterprise.

The classification was conducted by first identifying the founding family behind each FO through public information, press releases, and corporate websites, and then cross-checking shareholder structures in Orbis to verify whether the FO remained directly linked to an ongoing operating family business. FOs whose ownership structure still showed equity ties to the family firm were categorized as co-existing core-business FOs, while those without such ties were classified as financialized FOs. Since this type of information is often incomplete, inconsistently reported, or obscured by complex

holding structures, the procedure involved a certain degree of interpretive judgment and may suffer from potential misclassification errors.

The final dataset for this analysis includes 106 transactions, equally split between the two categories (53 financialized FOs and 53 co-existing core-business FOs). To assess whether this sample size is sufficient to draw meaningful conclusions, a dedicated post hoc power analysis was conducted using G*Power. The configuration follows that described in Section 4.2. “Sample Selection and Power Analysis”, with the only difference being the smaller group sizes ($n_1 = 53$; $n_2 = 53$). Using a medium effect size (Cohen’s $d = 0.5$), $\alpha = 0.05$, and a two-tailed test, the analysis yields a power of 0.72, as illustrated below in Figure 36.

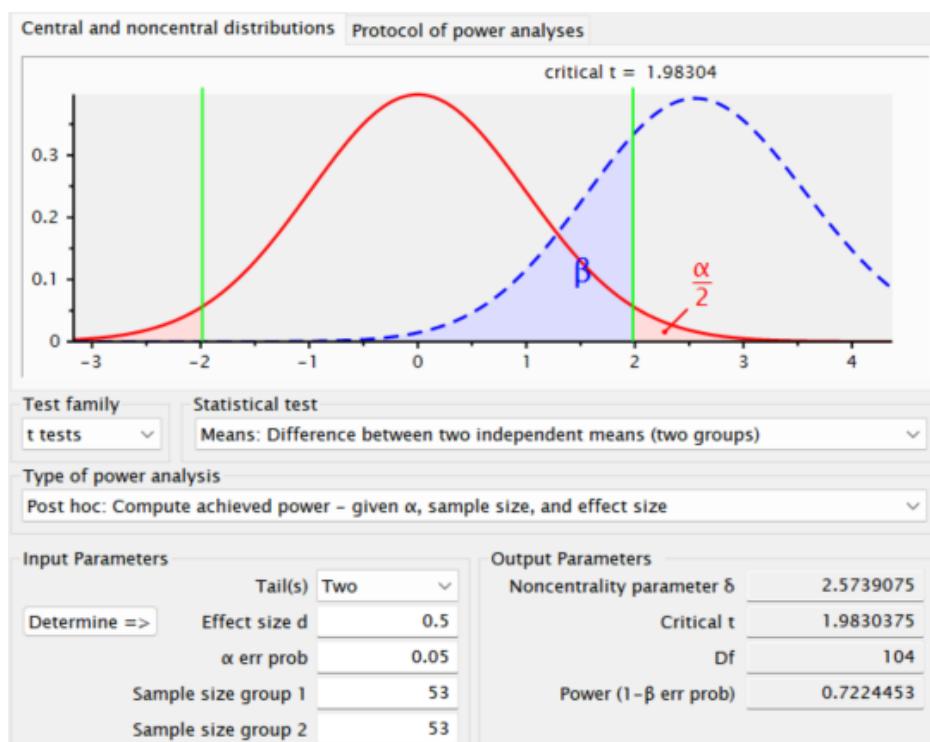


Figure 36: Power Analysis for FO heterogeneity.

A power level of 0.72 falls below the conventional threshold of 0.80, which is generally considered the minimum for adequate inferential reliability (Cohen, 1988). This means that the analysis has a relatively high risk of committing a Type II error, i.e., failing to detect true differences between subgroups when they exist. In practice, any non-significant results obtained in this preliminary analysis should be interpreted with caution, as they may reflect insufficient statistical power rather than the absence of substantive differences. For this reason, and given the exploratory scope of the analysis, the results are presented in the appendix rather than in the main body of the thesis. The descriptive evidence reported here can still offer useful initial insights into

intra-FO variation and motivate future research with larger and more balanced samples.

A.1.2. Methodology

The objective of this additional analysis was to test whether financialized Family Offices and co-existing core-business Family Offices exhibit systematic differences in their investment behavior. Two aspects were considered: (i) the preference for family-owned versus non-family-owned targets, and (ii) the likelihood of pursuing majority versus minority stakes. These dimensions are aligned with those analyzed in H1 and H3, where Family Offices were compared against Private Equity investors.

The procedure began by filtering the dataset to retain only transactions involving Family Offices. A new dummy variable, “*FO_Financialized*”, was then created, taking the value 1 if the FO had no continuing family business in the background (financialized FO), and 0 if the FO remained linked to the family’s operating business (co-existing core-business FO).

Once the two subgroups were established, the same methodology used in H1 and H3 was replicated, with the only difference being the dummy variable employed. Instead of the binary variable “*IS_FO*” (equal to 1 for Family Offices and 0 for Private Equity), the new dummy “*FO_Financialized*” was used as the key independent variable. For the test of ownership preference, both descriptive statistics and inferential analyses were performed: cross-tabulations, Chi-squared tests of independence, and a logistic regression model including firm-level and sectoral controls (gearing, revenue, ROA, and macro-sector dummies). For the test of deal type, cross-tabulations and Chi-squared tests were conducted to compare the relative frequencies of majority versus minority transactions between the two FO groups. In both cases, the empirical strategy follows the design of the main hypotheses to ensure methodological consistency and comparability.

For details on the empirical design, variable definitions, and motivations, reference should be made to Section 4.4. “Empirical Strategy”, in particular Subsections 4.4.1. “H1 – Investor Preference for Family-Owned Targets” and Subsection 4.4.3. “H3 – Deal Type and Investor Identity”, where the procedures are explained in depth.

A.1.3. Results

Starting with the analysis of the preference for family-owned versus non-family-owned targets, the descriptive evidence does not point to strong differences between the two FO subgroups. Figure 37 shows the share of deals completed by financialized and co-existing core-business Family Offices, distinguishing between family-owned

and non-family-owned targets. Financialized FOs appear slightly more likely to invest in family-owned firms (52.8%) compared to co-existing FOs (47.2%). On the other hand, co-existing FOs invest somewhat more often in non-family firms (52.8% vs. 47.2%). Even if the percentages suggest some variation, the Chi-squared test does not confirm any significant difference between the two groups ($\chi^2 = 0.15$, $p = 0.698$), meaning that the observed differences are most likely due to chance. This indicates that the small gap observed in the descriptive statistics cannot be interpreted as evidence of a systematic divergence in investment preferences. The fact that financialized FOs appear slightly more inclined towards family-owned targets and co-existing FOs towards non-family targets seems to reflect random variation rather than a stable behavioral pattern.

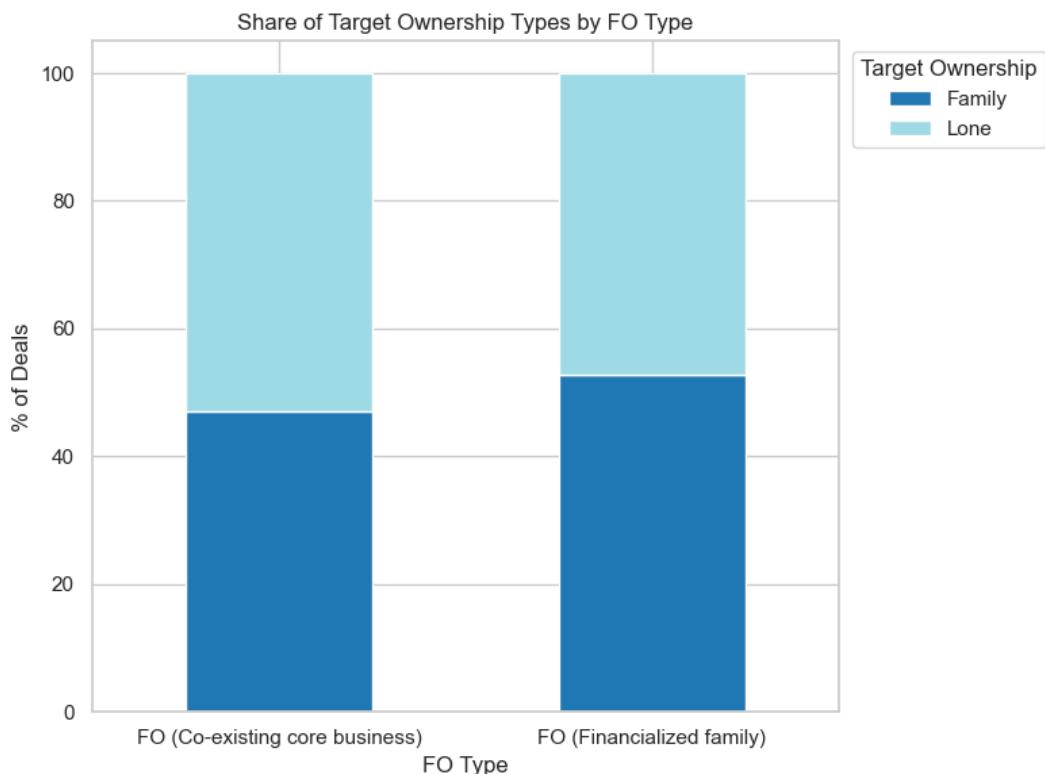


Figure 37: Share of target ownership types by FO type.

To check whether this finding also holds once company characteristics are considered, a logistic regression was estimated with “*IS_FAMILY_TARGET*” as the dependent variable and “*FO_Financialized*” as the main independent variable, together with controls for leverage, size, profitability, and sectoral dummies (Figure 38). The coefficient for “*FO_Financialized*” is positive but not significant ($\beta = 0.059$, $p = 0.912$), showing that financialized FOs are not more likely than co-existing FOs to invest in family-owned firms once these factors are considered. The lack of significance is consistent with the results of the Chi-squared test and suggests that the apparent

differences in the descriptive statistics do not translate into systematic patterns when controlling for other firm-level features. The results of both the descriptive and regression analyses reinforce the conclusion that financialized and co-existing FOs follow broadly similar strategies when it comes to investing in family versus non-family firms.

Optimization terminated successfully.						
Current function value: 0.615802						
Iterations 5						
Logit Regression Results						
<hr/>						
Dep. Variable:	IS_FAMILY_TARGET	No. Observations:	79			
Model:	Logit	Df Residuals:	69			
Method:	MLE	Df Model:	9			
Date:	sab, 30 ago 2025	Pseudo R-squ.:	0.1115			
Time:	09:43:37	Log-Likelihood:	-48.648			
converged:	True	LL-Null:	-54.752			
Covariance Type:	nonrobust	LLR p-value:	0.2018			
<hr/>						
	coef	std err	z	P> z	[0.025	0.975]
const	-0.4410	1.112	-0.396	0.692	-2.621	1.739
FO_Financialized	0.0589	0.532	0.111	0.912	-0.983	1.101
log_Gearing_t-1	0.2095	0.224	0.936	0.349	-0.229	0.648
log_Revenue_t-1	-0.1499	0.146	-1.025	0.305	-0.436	0.137
wins_ROA_t-1	-0.0360	0.028	-1.294	0.196	-0.091	0.019
Macro_Finance	1.4292	1.312	1.089	0.276	-1.143	4.001
Macro_Industrial	0.9807	0.779	1.259	0.208	-0.546	2.507
Macro_Real Estate	-1.4710	1.419	-1.037	0.300	-4.252	1.310
Macro_Services	-0.1056	0.967	-0.109	0.913	-2.001	1.789
Macro_Other	-0.7603	1.270	-0.599	0.549	-3.250	1.729
<hr/>						

Figure 38: Logistic regression results on FO type and family target deals.

Looking at the type of deal, Figure 39 compares the share of majority and minority deals for the two FO groups. Co-existing core-business FOs complete most of their transactions as majority acquisitions (80.4%), while minority deals are less common (19.6%). Financialized FOs, instead, show a higher share of minority investments (34.0%) and a lower share of majority acquisitions (66.0%) in respect to co-existing core-business FOs. At a descriptive level, this suggests that financialized FOs may adopt a more flexible approach, while co-existing FOs are more often focused on control.

Despite this apparent difference, the Chi-squared test of independence does not confirm statistical significance ($\chi^2 = 2.04$, $p = 0.153$). This means that, although financialized FOs seem descriptively more likely to take minority positions than co-existing FOs, the difference cannot be considered robust from a statistical perspective. The expected frequencies are well balanced, so the lack of significance cannot be

attributed to sparse data, but rather to the limited sample size and the relatively small effect size. As already discussed, the statistical power of 0.72 implies a substantial risk of Type II error, making it possible that real differences remain undetected.



Figure 39: Share of majority vs minority deals by FO type.

In conclusion, financialized FOs seem more inclined towards minority investments compared to co-existing FOs, but this tendency is not strong enough to be statistically confirmed. The results should therefore be read with caution: they give some useful descriptive evidence on possible differences between the two groups, but they do not allow firm conclusions.

A.1.4. Discussion of Results

The exploratory analysis of heterogeneity within Family Offices does not provide evidence of systematic differences between financialized and co-existing core-business FOs. In the case of ownership preferences, financialized FOs appear slightly more likely to invest in family-owned targets (52.8% vs. 47.2%, corresponding to only 3 additional deals), but the effect is not statistically significant and disappears once firm-level controls are included. Similarly, in the case of deal type, financialized FOs show a higher share of minority investments compared to co-existing FOs, yet the difference

is not statistically confirmed. In both dimensions, descriptive patterns suggest possible variation, but inferential tests point to similarity rather than divergence.

These results are somewhat counterintuitive. One might expect co-existing FOs, still tied to a family business, to display stronger affinities with family-owned targets and more willingness to take minority positions. Instead, the opposite tendencies appear in the descriptive statistics, though without statistical support. This highlights the difficulty of drawing robust conclusions from the available data.

At the same time, prior literature provides some possible explanations. Schickinger *et al.* (2023) identify four archetypes of SFOs, among which the “Entrepreneurial Nucleus” and “Founder” SFOs are particularly noteworthy for their entrepreneurial and risk-taking orientation. These categories, often linked to founder-led or early-generation families, emphasize expansion and active involvement, resembling venture capital more than traditional wealth management. Similarly, Wessel *et al.* (2014) emphasize that early-generation family investors are more prone to entrepreneurial risk-taking and expansionary strategies, with such tendencies gradually declining in later generations. From this perspective, co-existing core-business FOs, especially those still connected to founding families, may display a stronger inclination towards majority stakes to retain control and actively pursue growth.

Even taking these insights into account, it cannot be assumed that all co-existing core-business FOs are necessarily founder-controlled, nor that financialized FOs are exclusively detached from first-generation families. Some co-existing FOs may already be managed by later generations, while certain financialized entities might have been created directly by founders following the divestment of their original operating business. This overlap complicates the interpretation of the descriptive patterns and suggests that generational theories cannot be mapped one-to-one onto the financialized versus co-existing distinction. At the same time, Rottke and Thiele (2018) emphasize that FO investment behavior also depends on the specific conditions of the family business and its strategic objectives at the time, making the overall picture more complex.

While these theoretical perspectives provide useful insights into why differences might exist, the empirical evidence presented here remains too limited to confirm them. Two main factors limit the strength of these findings. First, as mentioned, the sample size is restricted (53 observations per subgroup), and the post-hoc power analysis shows a level of 0.72, below the conventional 0.80 threshold. This means that the tests have a relatively high probability of committing a Type II error, that is, failing to detect differences between groups even if they exist in reality. It is possible that heterogeneity in FO behavior does exist, but the available data are not sufficient to capture it. A larger and more balanced dataset would be required to provide more reliable evidence and to improve the power of the statistical tests beyond the conventional threshold. Second, the classification of FOs into financialized and co-

existing subgroups relies on information retrieved from public sources and shareholder data available in Orbis. While this approach is systematic and follows clear criteria, the opacity of ownership structures and the absence of standardized reporting make it difficult to exclude potential misclassification. Some Family Offices may maintain indirect or historical ties to their original family business that are not easily identifiable in databases, which could blur the distinction between the two categories.

In sum, the analysis suggests that financialized and co-existing Family Offices behave broadly similarly in their investment decisions, at least within the scope of this dataset. While not conclusive, these results offer useful descriptive insights and highlight the need for further research with larger samples and more refined classifications, potentially building on typologies such as those proposed by Schickinger *et al.* (2023).

A.1.5. Conclusion

The analysis of heterogeneity within Family Offices did not reveal significant differences between financialized and co-existing core-business FOs in either ownership preferences or deal structures. Descriptive evidence pointed to a slightly higher inclination of financialized FOs towards family-owned targets and minority stakes, but these patterns were not statistically confirmed. Given the limited sample size, low statistical power, and potential classification issues, the results should be interpreted with caution. It still provides a useful first step in exploring intra-FO variation and highlights the need for future research with larger datasets and more refined typologies.

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